



LambdaRouter™ All Optical Switch (AOS) 128/256 Release 3.0

Operations Systems Engineering Guide

365-375-013
Issue 1
April 2002

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Document Title: **LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0**
Operations Systems Engineering Guide

Document Number: 365-375-013 Issue 1 Publication Date: April 2002

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Using the OSEG

Introduction

This document is a reference to the Transaction Language 1 (TL1) commands/messages of the Lucent Technologies LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0. This document also provides brief tutorials on operations systems (OS) interfaces (the Transmission Control Protocol/Internet Protocol and File Transfer Protocol).

Intended Audience

This document is written for anyone who wishes to use TL1 commands. The audience may include network operations planners, facility maintenance center personnel, transmission engineers, and technical support staff. In addition, this document may be used by anyone desiring specific information about the OS interfaces.

Chapter Descriptions

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

Table 1. Chapter Descriptions

Chapter	Title	Description
	About This Document	■ describes the guide's purpose, intended audience, and organization ■ lists related documentation ■ explains how to comment on and order documents ■ provides technical support information
1	Introduction	lists the Telcordia standards documents on which the TL1 interface is based
2	Operations Systems Interfaces	provides information on the TL1 interface protocols: ■ TCP/IP ■ FTP
3	LambdaRouter™ All Optical Switch TL1 Message Details	provides detailed information on the TL1 Messages in the LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0.
Appendix A	LambdaRouter™ All Optical Switch TL1 Parameter Tables	contains the TL1 parameter tables for: ■ access identifiers (AIDs) ■ alarm/event condition types ■ error codes
	Abbreviations and Acronyms	expands common telecommunication abbreviations and acronyms used throughout LambdaRouter™ AOS 128/256 R3.0 documentation
	Glossary	defines telecommunication terms used throughout LambdaRouter™ AOS 128/256 R3.0 documentation
	Index	lists specific subjects and their corresponding page numbers

LambdaRouter™ AOS 128/256 R3.0 Documentation Set

Introduction

The Lucent Technologies documents listed in this section provide additional information about the LambdaRouter™ AOS 128/256 R3.0.

Product Documentation

Table 2 lists documents that support the LambdaRouter™ AOS 128/256 R3.0.

Table 2. LambdaRouter™ AOS 128/256 R3.0 Documentation Set

Document Number	Title
365-375-011	<i>LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0, Installation Guide</i> (for Lucent installers)
365-375-008	<i>LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0, Applications and Planning Guide</i>
365-375-009	<i>LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0, User Operations Guide</i>
365-375-010	<i>LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0, Alarm Messages and Trouble-Clearing Guide</i>
365-375-013	<i>LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0, Operations Systems Engineering Guide</i>

Other Documents

Customers may need information from the vendor of the personal computer used for the Optical Craft Interface (OCI) for LambdaRouter or other managing systems, for example the Navis™ Optical Element Management System. Contact your account executive.

Description of Documentation Set

Introduction	This section briefly describes the documents that are included in the LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0 documentation set.
Installation Guide	The <i>LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0, Installation Guide</i> is available to Lucent installers. It 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 and Planning Guide	The <i>LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0, Applications and Planning 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, ordering information, and technical specifications.
User Operations Guide	The <i>LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0, User Operations Guide</i> provides reference information and step-by-step procedures for use in daily system operations. The manual demonstrates how to perform system provisioning, operations, and administrative tasks.
Alarm Messages and Trouble-Clearing Guide	The <i>LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0, Alarm Messages and Trouble-Clearing Guide</i> provides procedures for routine maintenance and component replacement. It also includes tasks designed to clear specific alarm messages, plus supporting tasks, recovery tasks, and routine maintenance tasks.
Operations Systems Engineering Guide	The <i>LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0, Operations Systems Engineering Guides</i> provide detailed information on TL1 commands/ messages, error codes, provisionable parameters, and OS interfaces.

Documentation Ordering Information

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-

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Introduction

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Overview

Purpose

This document provides information on the Transaction Language 1 (TL1) commands/messages, operations systems (OS) interfaces, and protocol conversions of the Lucent Technologies LambdaRouter™ All Optical Switch (AOS) 128/256 Release 3.0.

TL1 Interface Standards

The TL1 interface communicates alarm, status, and control information to/from the alarm surveillance OS. The TL1 interface is based on the following Telcordia (formerly known as Bellcore) standards documents:

- GR-199-CORE, Issue 3, Revision 1
- GR-831-CORE, Issue 1
- GR-833-CORE, Issue 3
- GR-834-CORE, Issue 2, Revision 1
- TR-NWT-000835, Issue 3

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

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Operations Systems Interfaces Overview

Introduction

This chapter provides information about the Transmission Control Protocol/Internet Protocol (TCP/IP) and File Transfer Protocol (FTP) available for Operations Systems communications with the network element (NE).

TCP/IP Interface

Operations Systems (OSs) need to communicate with NEs for the purposes of sending control and provisioning information and receiving status and alarm information. The communications pathways consist of TCP/IP connections over a Local Area Network (LAN). Both the physical and logical connectivity between the network entities and the networks is shown in Figures 2-1 and 2-2.

FTP Interface

In addition, OSs need to communicate with NEs for the purposes of downloading new generic software, performing generic software upgrades, or performing database backup and restore operations as part of day-to-day software management operations. These functions are supported by FTP operating over the TCP/IP pathways.

TCP/IP Interface

Overview

This section discusses:

- OS Communication over TCP/IP
 - TCP/IP Interface Details
 - TCP/IP Technical Specifications
-

OS Communication over TCP/IP

Introduction

The LambdaRouter™ All Optical Switch (AOS) 128/256 NE provides an IEEE 802.3 compliant 10BaseT LAN interface between the LambdaRouter™ All Optical Switch (AOS) 128/256 NE and the OS. The interface supports TCP/IP for intraoffice (IAO) LAN communications. (See Figures 2-1 and 2-2.) The IP specifies a set of rules for unreliable packet delivery; those rules define:

- How packets should be processed by IP hosts and gateways
 - How error messages should be generated
 - When packets can be discarded
-

Data Transmission

Each IP datagram is treated as an independent unit and is transmitted across the network without establishment of connections or logical circuits. TCP is designed to work over networks that provide unreliable network service by allowing reliable data transmission between hosts across a network. This protocol provides:

- A data transfer mechanism that guarantees correct ordering of data between hosts
- Flow control in order to make best use of the underlying network service

TCP also supports a full-duplex connection between the communicating host systems, allowing the two hosts to exchange data in an efficient manner.

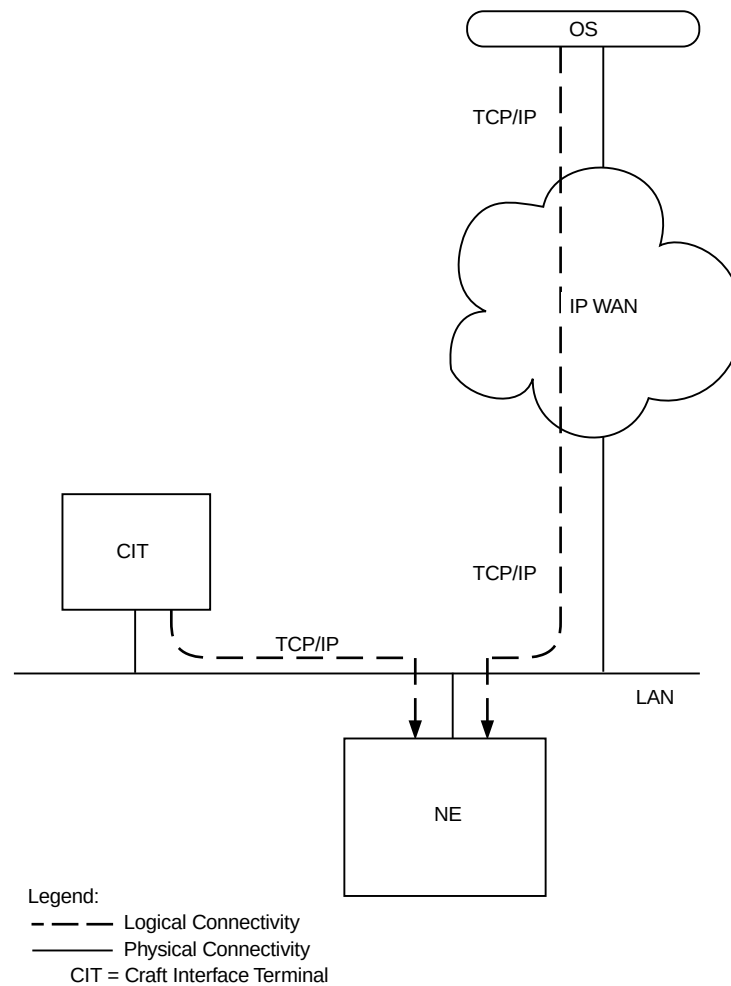
LambdaRouter™ AOS 128/256 Login

Upon login to the LambdaRouter™ AOS 128/256 NE, session activities and other interactions between the LambdaRouter™ AOS 128/256 NE and OS are treated in the same manner as with any other user. However, the LambdaRouter™ AOS 128/256 NE is equipped with certain features designed specifically for interactions with an automated OS, such as the abilities to:

- Report the complete text of local, Optical Craft Interface (OCI) generated commands to the controlling OS
 - Support the resynchronization of sessions with the OS
-

**OS and NE
Connectivity Using
TCP/IP**

Figure 2-1 shows the physical and logical connectivity between the OS and the NE for TL1 commands/messages.



NC-OSEG-29

Figure 2-1. OS Communication over TCP/IP

Note: The Craft Interface Terminal (CIT) referenced in Figure 2-1 is another name for the Optical Craft Interface (OCI).

**Logical
Connectivity
between OS and NE**

Figure 2-2 shows the logical connectivity between the OS and the NE. This figure illustrates the relevant protocol stacks in the OS and NE.

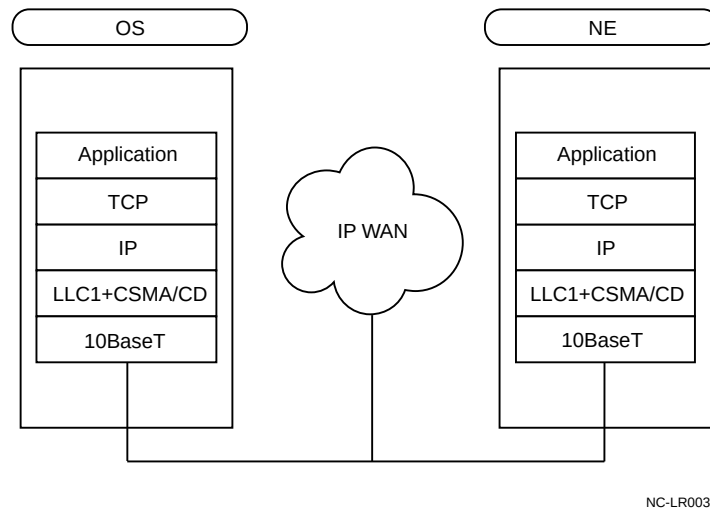


Figure 2-2. Logical Connectivity between OS and NE

TCP/IP Interface Details

TL1 over TCP/IP Interface

The TCP/IP interface for TL1 uses length-value encoding. The TL1 sessions are established over TCP/IP at the well-known port number 4096.

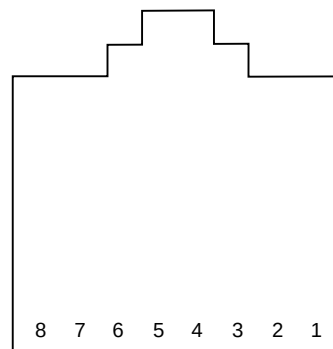
Length-Value Encoding

The TL1 TCP/IP interface is used with OSs that use length-value encoding for transmitting TL1. With length-value encoding, each TL1 message is encapsulated into the TCP data stream as follows:

- Version Number (1 byte, value set to 3)
 - Reserved (1 byte)
 - Length (2 bytes, value set to length in bytes of TL1 message + 4)
 - TL1 Message (variable length)
-

RJ45 Connector Figure

The RJ45 connector shown in Figure 2-3 is used by the NE to connect to the LAN. For signal descriptions assigned to the pins see Table 2-1.



NC-OSEG-04

Figure 2-3. RJ45 Connector

**RJ45 Connector
Table****Table 2-1. 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

TCP/IP Technical Specifications

Introduction

The following tables list the technical specifications for the TCP/IP interface.

Non-provisionable TCP/IP Interface Parameters Table

The non-provisionable parameters shown in Table 2-2 consist of the physical Media Access Control (MAC) layer (IEEE 802.3) and Logical Link Control (LLC) layer (IEEE 802.2) attribute values for TCP/IP.

Table 2-2. Non-provisionable TCP/IP Interface Parameters

Parameter	Value
Medium	10BaseT
Maximum Frame Size	1518 octets
Minimum Frame Size	64 octets
Address Size	6 octets
Padding	up to 64 octets
Jam Size	32 ones
Backoff Limit	10
Tx Attempt	15
Inter Frame Gap	9.6 microseconds
Slot Time	512 bit times
LLC Layer	Per RFC894
Type	0800 hex
MA-UNITDATA Request/Indication	Yes
MA-UNITDATA-STATUS Indication	No

**Provisionable
Parameters Table**

At the time of connection to the network, the user must provision the following parameters for both DCC circuit packs to a new value.

Table 2-3. TCP/IP Provisionable Parameters

Parameter	Default Value
IP Address	192.168.249.249
Subnet Mask	255.255.255.0
Default Router Address	0.0.0.0

**Additional
Parameters**

The following parameters are normally set for a domain name-address resolution service when connected to a network:

- Dynamic Host Configuration Protocol (DHCP) Server Address
- Domain Name Server (DNS)
- Windows Internet Network Service (WINS) Server

These additional parameters can be ignored because the NE acts only as a host and does not provide any such functionality.

The Adapter Address is automatically extracted from the network interface circuit card on startup.

FTP Interface

Overview

This section discusses:

- File Transfer via FTP
 - FTP Interface Details
 - FTP Technical Specifications
-

File Transfer via FTP

Introduction

The LambdaRouter™ All Optical Switch (AOS) 128/256 NE supports FTP per IETF STD0009. NE-to-OS file transfers of generic and database files are supported via FTP. The FTP sessions execute under the control of TL1 commands.

As described in IETF STD0009, at the initiation of the user, standard FTP commands are generated by the client and transmitted to the server process via the control connection. Standard replies are sent from the server to the client over the control connection in response to the commands.

FTP Commands

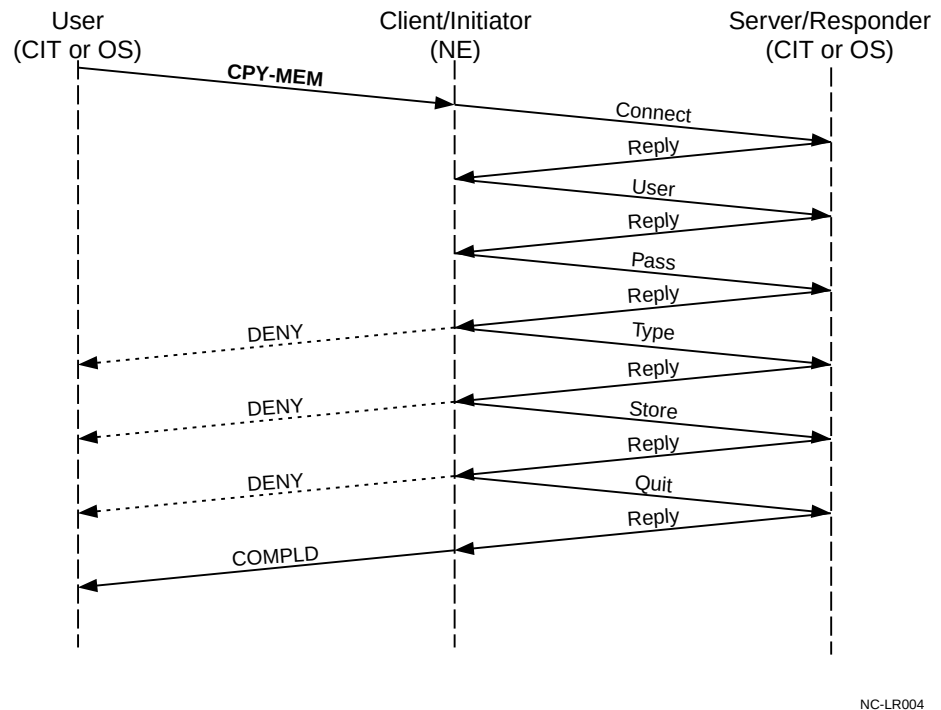
The FTP commands specify the parameters for the data connection (data port, transfer mode, representation type, and structure) and the nature of file system operations (for example, store, retrieve, append, delete). The client data transfer process “listens” on the specified data port, and the server initiates the data connection and data transfer in accordance with the specified parameters. FTP also supports backup and restore.

OS and NE Connectivity Using FTP

FTP is used to support the transfer of information during data backup and restore, as well as during software download. These transfer operations are initiated in the LambdaRouter™ AOS 128/256 via the **CPY-MEM** TL1 command. During the transfer, the LambdaRouter™ AOS 128/256 assumes the role of the FTP client, and the external system, for example, the OCI, assumes the role of the server. Therefore, the NE initiates the FTP session with the external system in response to receiving the **CPY-MEM** TL1 command.

Figure 2-4 shows an example of the logical connectivity between the user (OCI or OS), the client (NE), and the server (OCI or OS) for a file transfer operation from the client to the server employing the FTP interface.

Figure 2-4 also shows how the user initiates the connection. Using the **CPY-MEM** TL1 command, a user initiates the FTP session. A control connection is established using the Telnet protocol. Standard FTP commands are generated by the client (NE) and transmitted to the server (OS). Standard replies are sent from the server to the client. After exchanging user ID and password information, data are transferred. FTP uses separate connections for control and data transfer activities; this activity is hidden from the user. Replies that indicate an error has occurred cause a denial of the **CPY-MEM** TL1 command.



NC-LR004

Figure 2-4. OS Communication over FTP

Note: The Craft Interface Terminal (CIT) referenced in Figure 2-4 is another name for the Optical Craft Interface (OCI).

FTP Interface Details

Introduction

The **CPY - MEM** TL1 command initiates file transfers. The FTP services used by the LambdaRouter™ All Optical Switch (AOS) 128/256 are described in this section.

Data Transfer Protocol

The data transfer protocol employs a passive data transfer process (DTP). The passive DTP (a user-DTP or a server-DTP) “listens” on the data port prior to sending a transfer request command. The FTP request command determines the direction of the data transfer. The server, upon receiving the transfer request, initiates the data connection to the port. When the connection is established, the data transfer begins between DTPs, and the server sends a confirming reply to the user.

Default Data Ports

Both the user and the server DTP have a default data port. The user-process default data port is the same as the control connection port (designated as port 21). The server-process default data port is the port adjacent to the control connection port (designated as port 20).

Connection Security

FTP sessions require authentication utilizing a user ID and password for the user attempting to establish the session. The user ID and password for the FTP session are sent as parameters of the TL1 **CPY - MEM** command used to initiate the file transfer. An FTP session will be associated with the TL1 session that is being used to manage it.

**Lucent-Supported
FTP Commands**

The Lucent-supported FTP commands are listed in Table 2-4.

Table 2-4. Lucent-Supported FTP Commands

FTP Command Name	FTP Mnemonic Command Name
Change Working Directory	CWD
Data Port	PORT
Delete	DELE
File Structure	STRU
Logout	QUIT
Name List	NLST
Noop	NOOP
Password	PASS
Print Working Directory	PWD
Representation Type	TYPE
Retrieve	RETR
Status	STAT
Store	STOR
Transfer Mode	MODE
User Name	USER

Each FTP command operates on the host where the user is logged in, except when explicitly specified by the command.

**FTP Command
Syntax**

The command syntax of the FTP commands, parameters, and error reply codes are specified in IETF STD0009 for each command supported. Not all reply codes are used; only the ones applicable to commands supported will be included.

Format Control

Non-print format is supported by the LambdaRouter™ AOS 128/256 FTP implementation. Vertical format information is not required. Normally, this format will be used with files destined for processing or just storage. The file may contain ASCII vertical format controls (that is, carriage return [<CR>], line feed [<LF>], newline [<NL>], vertical tab [<VT>], form feed [<FF>]), which will be interpreted appropriately. <CRLF>, in exactly this sequence, also denotes end-of-line.

Structure

File-structure is the default to be assumed if the STRUcture command has not been used. In file-structure there is no internal structure; that is, the file is considered to be a continuous sequence of data bytes with no control characters, such as <LF> or <CR>, at regular intervals. Record-structures are accepted for “text” files (files with TYPE ASCII) by this FTP implementation. In record-structure the file is made up of sequential records.

Block Mode

The file is transmitted as a series of data blocks preceded by one or more header bytes. The header bytes contain a count field and descriptor code. The count field indicates the total length of the data block in bytes, thereby marking the beginning of the next data block. There are no filler bits.

The descriptor code defines the:

- Last block in the file (EOF)
- Last block in the record (EOR)
- Restart marker or suspect data (the data being transferred are suspected of errors and are not reliable)

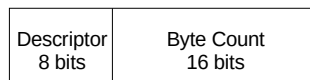
This last code is NOT intended for error control within FTP. Record-structures are allowed in this mode, and any representation type may be used.

Block Header

The block header consists of three bytes that represent the:

- Byte count (1 byte)
- Descriptor codes (2 bytes)

As shown in Figure 2-5, of the 24 bits of block header information, the 16 low-order bits represent byte count, and the 8 high-order bits represent descriptor codes.



NC-LR010

Figure 2-5. Block Header Example

Descriptor Code

A Descriptor Code is included in the Block Header. Four codes have been assigned, where each code number is the decimal value of the corresponding bit in the byte. With this encoding, more than one descriptor-coded condition may exist for a particular block. As many bits as necessary may be flagged. The following table contains the valid descriptor codes.

Table 2-5. Descriptor Code Table

Code	Description
128	End of data block is EOR
64	End of data block is EOF
32	Suspected errors in data block
16	Data block is a restart marker

Data Type Transfers

Two data type transfers are supported for the LambdaRouter™ AOS 128/256 FTP implementation: ASCII and Image.

ASCII Data Type Transfer

For the ASCII data type transfer the carriage return-line feed (<CRLF>) sequence is used where necessary to denote the end of a line of text. Data must be

interpreted as 8-bit bytes. This is the default type and must be accepted by all FTP implementations. It is intended primarily for the transfer of text files. The sender converts the data from an internal character representation to the standard 8-bit NVT-ASCII representation, and the receiver converts the data from the standard form to its own internal form, as required.

Image Data Type Transfer

For the image data type transfer the data are sent as contiguous bits that, for transfer, are packed into the 8-bit transfer bytes. The receiving site stores the data as contiguous bits. Padding of the file (or of each record, for a record-structured file) to some convenient boundary (byte, word, or block) is permitted. This padding, which is all zeros, occurs only at the end of the file (or at the end of each record), and there is a way of identifying the padding bits so that they may be stripped off when the file is retrieved. This is the method of transfer for the generic executable and database files.

Transfer Byte Size

The transfer byte size is 8-bit bytes. This byte size is relevant only for the actual transfer of the data; it has no bearing on representation of the data within the host file system.

Error Recovery and Restart

The FTP implementation used by the LambdaRouter™ AOS 128/256 supports file protection. This means that once a file transfer has begun, it will not be stopped until it is complete, whether or not it is correct. The file transfer may be restarted in its entirety in the event that the transfer fails.

A checksum is calculated and transmitted with the file. At the end of the transfer, the receiver of the file recalculates the checksum and compares it with the one transmitted with the file. In the event that the checksums disagree, the file is discarded and the receiver requests retransmission of the file. The sending (client or server) system makes at least three attempts to retransmit before failing the command.

Restart Marker

This implementation of FTP supports the insertion of a Restart marker in the data stream so that large files can be transferred in segments where it is necessary to support Error Recovery and Restart. The Restart marker is embedded in the data stream as an integral number of 8-bit bytes representing printable ASCII characters. A space character (<SP>) cannot be used within a Restart marker. For example, as shown in Figure 2-6, in order to transmit a six-character marker, the following data stream would be sent:

Descriptor Code = 16	Byte Count Value = 6	Marker 8 bits	Marker 8 bits	Marker 8 bits	Marker 8 bits	Marker 8 bits	Marker 8 bits

NC-LR009

Figure 2-6. Restart Marker Data Stream Example

FTP Technical Specifications

Introduction

The following table lists the technical specifications for the FTP interface.

FTP Specifications Table

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

Table 2-6. Non-provisionable FTP Interface Parameters

Parameter	Value
Default Server-Process Data Port	20
Default User-Process Data Port	21
Transfer Byte Size	8 bits

LambdaRouter™ All Optical Switch

TL1 Message Details

3

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DLT-USER-SECU	147
ED-DAT	151
ED-EQPT	155
ED-NE-SECU	191

ED-PID	197
ED-PM-PROF	201
ED-PORT-LINK	217
ED-rr	229
ED-ULSDCC-L3	281
ED-ULSDCN-L3	287
ED-USER-SECU	299
ENT-CRS	307
ENT-EQPT	341
ENT-PM-PROF	361
ENT-USER-SECU	367
EX-DTHR	377
INIT-EQPT	383
INIT-REG	387
INIT-SYS	395
OPR-ACO	399
OPR-LINK-VERF	403
OPR-LPBK	409
OPR-PROTNSW-FRCD	429
OPR-PROTNSW-MAN	435
REPT ALM	443
REPT DBCHG	447
REPT EVT	455
REPT SW	461
RLS-LPBK	465
RLS-PROTNSW-FRCD	471
RLS-PROTNSW-MAN	475
RTRV-ALM	479
RTRV-ATTR-ALM	487
RTRV-COND	491
RTRV-CRS	499
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RTRV-HDR	535
RTRV-LOG-ALM	541
RTRV-LOG-NTFCN	551
RTRV-LOG-PROTNSW	559
RTRV-LOG-SECU	567
RTRV-LOG-USER	577
RTRV-LSA	585
RTRV-LSP	589
RTRV-NE-SECU	595
RTRV-PM	599
RTRV-PMASGNMT	615
RTRV-PMDAY	621
RTRV-PMPROF	625
RTRV-PORT-LINK	637
RTRV-PRMTR-DATA	645

RTRV-PRMTR-SFTWR	653
RTRV-rr	659
RTRV-SYSID	695
RTRV-TACC	701
RTRV-TRACERT	711
RTRV-ULSDCC-L3	719
RTRV-ULSDCN-L3	723
RTRV-USER-SECU	731
SET-ATTR-ALM	737
SET-PMDAY	743
SET-SID	747
TEST-ALM	751
TEST-LED	755

TL1 Command Conventions

TL1 Command Page Overview

Introduction

This chapter provides detailed 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 operations system [OS] or OS user) are supported. The message details are provided in the form of TL1 command pages describing the message syntax and other information necessary to enter commands, process responses, or process autonomous messages.

TL1 Command Page Organization

The TL1 command pages are arranged alphabetically by message name. Each command page contains details (command sections) about each message. The information within the TL1 command page is dependent on whether the message is a user command or an autonomous message.

TL1 User Command

For a user command, each TL1 command page begins with the name of the command and its availability (the system release for which the command first became available). This is followed by the user privilege level required to execute the command. The command syntax is defined next followed by a brief description of the command, and a complete description of its input parameters and allowed values. The output response format and syntax, and output parameter descriptions and values, followed by input/output examples and defined error responses are then given. Finally, any related TL1 commands and autonomous messages are listed.

Command Priority

As user commands are entered into the system they are placed in one of two queues for execution: a High-Priority Queue (which receives all the **ACT - USER**, **ENT - CRS**, and **DLT - CRS** commands) or a Low-Priority Queue (which receives all other commands). The commands in the High-Priority Queue are processed before those in the Low-Priority Queue and are processed in first-in, first-out (FIFO) order. Then the commands in the Low-Priority Queue are processed in FIFO order.

TL1 Autonomous Message

For an autonomous message, the TL1 command page begins with the command name, the release it was first available, and a brief description of the message. This is followed by the output format and syntax, output parameter descriptions and allowed values, and output examples. Finally, any related TL1 commands and autonomous messages are listed.

TL1 Command Sections Table

The following table lists each TL1 command section name and where the section appears, either in a user command or an autonomous message or both.

Table 3-1. TL1 Command Sections

TL1 Command Section Name	Appears in:
NAME	a user command and an autonomous message
LOGIN PRIVILEGE	a user command only
INPUT FORMAT	a user command only
DESCRIPTION	a user command and an autonomous message
INPUT PARAMETERS	a user command only
OUTPUT FORMAT	a user command and an autonomous message
OUTPUT PARAMETERS	a user command and an autonomous message
EXAMPLE INPUT/OUTPUT	a user command (INPUT/OUTPUT) and an autonomous message (OUTPUT only)
ERROR RESPONSES	a user command only
RELATED TL1 MESSAGES	a user command and an autonomous message

Command Format Conventions

Input Format	TL1 input, which must be typed exactly as shown, is printed in bold courier type. Descriptive names of user entry values are shown in bold italic courier type. Items enclosed in brackets "[]" indicate optional parameters.
Input Parameter Names and Values	In each TL1 command, positional input parameter names are shown in bold italic lowercase characters. The named input parameters are shown in BOLD ITALIC UPPERCASE characters. Input parameter values are shown as BOLD UPPERCASE characters.
Output Format	In each TL1 command, command responses and autonomous messages are printed in <i>courier</i> type. All alphabetic characters in the TL1 command responses and autonomous messages are output in uppercase except: ■ Parameter values ■ Access identifier (<i>aid</i>) ■ Condition description (<i>conddescr</i>) ■ Alarm message description (<i>almmsg</i>) ■ Response text The <i>aid</i> is displayed in lowercase in the TL1 interface. The <i>conddescr</i>, <i>almmsg</i>, and response text are output in both lowercase and UPPERCASE for readability.
Output Parameter Names and Values	In each TL1 command, positional output parameter names are shown in <i>italic lowercase</i> characters. The named output parameters are shown in <i>ITALIC UPPERCASE</i> characters. Output parameter values are shown as UPPERCASE characters.
TL1 Date Format	TL1 messages use YY-MM-DD for the date format. The year (YY) in the date format has only two digits, consistent with Telcordia requirements. Internally, however, the system uses a 4-digit year. The TL1 command date can appear as:

- part of a TL1 command response or autonomous message (the internal 4-digit year is truncated to two digits), and
 - an input parameter with the years (YY) specified in the following ranges:
 - a. 90-99 (specified for the years, 1990-1999)
 - b. 00-89 (specified for the years, 2000-2089)
-

Parameter Blocks

Parameter Block Definition

In TL1 terminology, a ***parameter block*** is always followed by 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
- ***spec_block*** (a specific block of name-defined parameters).

Position-defined Parameter Block

In a block of position-defined parameters, the parameter values are supplied at predefined positions within the parameter block. Successive values are separated by commas (,).

If a parameter is not used, the parameter value is omitted from the command line and the position of the parameter is maintained by retaining the comma. When unused parameters occur at the end of the parameter block, it is not necessary to include all the trailing commas.

Notation for Position-defined Parameter Blocks

In all the TL1 commands with position-defined parameter blocks, the following simplified notation is defined as:

[d], [e], [f], [g] to represent the following format:
[d][,][e][,][f][,][g]]

The following notation is also equivalent:
[d], [e], [f][,][g]

Name-defined Parameter Blocks, Specific Block

In a specific block (***spec_block***), every parameter name is followed by an equal sign (=) and the parameter value. The ***spec_block*** parameters can appear in any order.

TL1 Command Responses

Introduction

After entering a TL1 command, three types of command responses can be returned:

- Normal Completion Response (COMPLD) (with or without a preceding In Progress [IP] Acknowledgment)
- Repeat Later (RL) Acknowledgment Response
- Error Response (DENY)

Command Response Notation Conventions

Table 3-2 lists notation conventions that are applicable when either a completion response, an acknowledgment, or a denial to a TL1 command is returned.

Table 3-2. TL1 Command Response Notation Conventions

Notation	Description
<cr>	Carriage return in ASCII
<lf>	Line feed in ASCII
<>	Brackets that enclose one or more information items, for example, <date>, <time>, <sid>. The brackets are not transmitted.
^	A blank space in the completion response

Normal Completion Response

After the system successfully completes a TL1 command, a normal completion response example is returned with the following format (see Table 3-2 for notation conventions).

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

The first two lines of this response example represent an IP acknowledgment message, which is transmitted only if the full response cannot be transmitted

within two seconds of receipt of the command. The *text block* is optional and depends on the command to which the response corresponds.

Repeat Later (RL) Acknowledgment Response

If a TL1 command cannot be executed at the present time, then the following RL acknowledgment response example is returned.

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

Error Response

If the system fails to complete a TL1 command, an error response is returned with the following format.

```
IP^ctag<cr><lf>
<<cr><lf><lf>
^^^sid^date^time<cr><lf>
M^^ctag^DENY<cr><lf>
^^^<errcde><cr><lf>
^^^/*error text*/<cr><lf>
;
```

The first two lines of this response example represent an IP acknowledgment message, which is transmitted only if the full response cannot be transmitted within two seconds of receipt of the command.

Output Response Length

For TL1 commands that generate output, if the output response is less than or equal to 4096 bytes, then the response will be terminated by the semicolon (;) character.

Multiple Responses

If the output response is greater than 4096 bytes, then the response lines will be partitioned into multiple responses. The continuation response will have another set of header lines with the same correlation tag, (*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, then an IP acknowledgment will be sent between the continuation responses if the delay between continuation responses is greater than two seconds.

Responses to Commands with AID Ranges

For TL1 commands that have an access identifier (*aid*) range as input, a COMPLD (see Table 3-3) completion code shows that the command was successful on all the access identifiers within the range.



NOTE:

The only access identifier ranges supported by Release 3.0 of the LambdaRouter™ All Optical Switch (AOS) 128/256 correspond to *aids* that contain the value **all** in their last field.

Parameter Reprovisioning

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, then the command will return a COMPLD completion code.

Output Parameters

Table 3-3 describes some of the output parameters for acknowledgments and responses to input command messages. Output parameters identified in previous message formats not explicitly defined in this table may be found in the **RTRV - HDR** Output Parameters Table shown later in this chapter in the **RTRV - HDR** TL1 command.

Table 3-3. TL1 Command Output Parameter Message Responses

Parameter Name	Description	Allowed Values
Acknowledgment Code	This indicates the reason for the acknowledgment.	IP In Progress The request has been initiated but an output response message cannot be transmitted within 2 seconds of its receipt. RL Repeat Later The requested command cannot be executed due to unavailable system resources. The command may be entered again later.
Command Response Identifier	This indicates the output message is generated in response to an input command.	M Response Message
Completion Code	This indicates the completion status of the command.	COMPLD Command Completed DENY Command Denied
Error Code (errcde)	This indicates the reason the command was denied.	See Appendix A for the list of error codes supported.
Error Text	This is a textual description of the error code.	See Appendix A for the error text associated with each error code.

TL1 Command
**Example Input/
Output**

The following example of a normal completion response to a **RTRV-HDR** command shows an IP acknowledgment that may appear in the output.

```
RTRV-HDR:LT-OXC::123456;  
IP 123456  
<  
      LT-OXC 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

The IP acknowledgment may appear in the response to any other TL1 command as well.

TL1 Command Classification and User Authorization

Command Function Categories

Commands are classified into one of four command function categories:

- M - Maintenance
 - P - Provisioning
 - S - Security and System Administration
 - T- Test Access
-

User Authorization Levels

Each command has been assigned a user authorization level. Five user authorization levels for each function category are provided to control which network element functions a particular user may perform. These levels range from **0** (low) to **5** (high), except for the Security and System Administration function category which supports only levels **1** to **5**. If an authorization level is set to **0**, the user will have no privileges for that function category. In other words, an authorization level of **0** disables that function category for that user. The default authorization level is **1** for all function categories.

When a command is executed, the authorization level for the command is compared against the authorization level assigned to the user for the associated function category. Users may execute any commands for that function category where their assigned authorization level is greater than or equal to the user authorization level of the command.

Example of a TL1 Command Privilege Level

User privilege levels are set based upon user authorization levels and function categories. For example, a user with authorization level 4 in the Security and System Administration function category (S4) can execute commands listed in authorization levels 4, 3, 2, and 1 in the Security and System Administration function category.

TL1 Message Details

Introduction

This section of Chapter 3 provides the detailed information for each supported TL1 command and autonomous message. The message details are provided in the form of TL1 command pages as described in the TL1 Command Page Overview section.

NAME

ACT-USER: Activate User

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

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

DESCRIPTION

Execution of the **ACT-USER** command on a network element initiates a session with the network element. A maximum of one active login session per TCP/IP connection is allowed. Any subsequent login attempt on the same connection, while a session is still active, is denied.

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

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.

No response will be provided for any other command, unless an active login session is established with the network element.

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.

If the association to the network element fails, all active logins are terminated without notice to the user.

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

The successful completion of an **ACT-USER** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

The denial of a TL1 login attempt is entered in the User Session Activity Log.

INPUT PARAMETERS

The "**ACT-USER** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ACT-USER** command.

Table 3-4. ACT-USER Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>uid</i>	User Identifier. This is the unique user login identifier. Grouping and/or ranging of <i>uid</i> values are/is not allowed.	Case-sensitive alphanumeric string of 1 to 10 characters
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>pid</i>	Password Identifier. Refer to the " ENT-USER-SECU Positional Input Parameters" table for the input parameter syntax and description of the <i>pid</i> parameter.	

OUTPUT FORMAT

If the **ACT-USER** request completes successfully, then the following normal 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.
*/
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "ACT-USER Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **ACT-USER** command.

Table 3-5. ACT-USER Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>uid</i>	User Identifier. This is the unique user login identifier provided in the command by the OS/OCI and repeated by the network element as a confirmation that the given user identifier is successfully logged in.	Alphanumeric string of 1 to 10 characters
<i>lastdate</i>	Last Date. This is the date of the last session established by this <i>uid</i> .	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31

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Table 3-5. ACT - USER Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>lasttime</i>	Last Time. This is the time of the last session established by this <i>uid</i> .	HH-MM-SS where HH=00-23, MM=00-59, SS=00-59
<i>attempts</i>	Attempts. This is the number of unsuccessful login attempts since the last successful login session on this network element.	0-98
<i>systype</i>	System Type. Specifies the type of system.	LambdaRouter_AOS_128 LambdaRouter_AOS_256
<i>release</i>	Release. Software release number of the system.	xx.yy.zz where xx=1-99, yy=0-99, zz=0-99
<i>upc</i>	User Privilege Code. Specifies the User Community Functional Category and User Community Authorization Level pair [UCFC/UCAL]. Multiple UCFC/UCALs may be shown each separated by an ampersand(&).	Pi, PMi, Mi, Si, Ti where i ranges from 0 to 5 except Si where i ranges from 1 to 5.

EXAMPLE INPUT/OUTPUT

The following example demonstrates the usage of the **ACT - USER** command with a successful login session initiation attempt.

```
ACT-USER:LT-OXC-789:mvd1m5:123456::kj5lee+3;

LT-OXC-789 02-01-01 08:00:00
M 123456 COMPLD
"mvd1m5:01-12-31,09-00-00,1,LambdaRouter_AOS_256,03.00.00,P3&M3"
/* Lucent Technologies LambdaRouter_AOS_256 Release 03.00.00
User Privilege Code: P3&M3
LUCENT TECHNOLOGIES - PROPRIETARY
THIS SOFTWARE CONTAINS INFORMATION OF LUCENT TECHNOLOGIES
AND IS NOT TO BE DISCLOSED OR USED EXCEPT IN ACCORDANCE
WITH APPLICABLE AGREEMENTS.
NOTICE: THIS IS A PRIVATE COMPUTER SYSTEM.
USE OF THIS SOFTWARE IS GOVERNED SOLELY AS EXPRESSLY
AUTHORIZED IN THE RELEVANT AGREEMENT BETWEEN
LUCENT TECHNOLOGIES AND CUSTOMER.
UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
*/
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ACT-USER** command. The following additional errors apply to the **ACT-USER** command as well.

If the network element receives a valid **ACT-USER** command on an already-active TCP/IP connection (this can occur if a user who is already logged into the network element issues another **ACT-USER** command during the currently established session), the following error response is returned.

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

If a user attempts to log in to a DCC after the maximum number of login sessions has been reached, the following error message will be displayed. There can be a maximum of 13 login sessions for a "normal" user with an additional 1 session for a superuser on a DCC. (Once the maximum of 13 sessions has been reached on

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a DCC, no more “normal” user sessions will be allowed. No more superuser sessions are allowed once the 24 +2 overload sessions have been activated on both DCCs.)

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

If a user attempts to login and the command fails due to any reason other than the one described previously, then the following denial message is returned.

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

RELATED TL1 MESSAGES

CANC - USER

CANC - USER - SECU

DLT - USER - SECU

ED - PID

ED - NE - SECU

ED - USER - SECU

ENT - USER - SECU

RTRV - NE - SECU

RTRV - USER - SECU

NAME

APPLY : Install New Software Generic

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

INPUT FORMAT

**APPLY:tid::ctag::[datesch],[timesch][,[qualifier][,initsys]
];**

DESCRIPTION

The **APPLY** command installs a copy of a software generic. The generic has to be downloaded previously, and currently stored in the network element. The procedure to install a generic overwrites the currently executing software, but preserves the network element (NE) data currently in use, including retrofitting the data to be compatible with the new generic. Installation of the software causes the system to reset.

The default action of the **APPLY** command is for the installation to start immediately after the command is issued, but an option allows the installation of the software to be delayed. This delay is designed to allow many network elements to be scheduled to have their generic installed at the same time.

The **APPLY** command shall proceed as follows:

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

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 the **APPLY** command causes the contents of previous NVM to be installed. During installation, a "pointer" is changed so that what is identified as current NVM now becomes the previous and vice-versa.

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

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INPUT PARAMETERS

The "**APPLY** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **APPLY** command.

Table 3-6. APPLY Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>datesch</i>	Date Scheduled. The <i>datesch</i> parameter identifies the date when the software is to be installed on the network element. When a <i>datesch</i> parameter is provided, a <i>timesch</i> parameter must be supplied as well.	YYMMDD where YY = 00-99, MM = 01-12, DD = 01-31 Note: Not applicable with <i>qualifier</i> is PREVIOUS .
<i>timesch</i>	Time Scheduled. The <i>timesch</i> parameter identifies the time the software is scheduled to be installed on the network element. If no <i>timesch</i> parameter is supplied, and the <i>qualifier</i> parameter does not have the value CANCEL , then the software will be installed immediately. When no <i>datesch</i> parameter is provided, the <i>timesch</i> parameter refers to a time that occurs within 24 hours of the current time.	HHMM[SS] where HH = 00-23, MM = 00-59, SS = 00-59 (SS is optional) Note: Not applicable with <i>qualifier</i> is PREVIOUS .

Table 3-6. APPLY Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
qualifier	Qualifier. The qualifier parameter indicates the instruction to the software process to be performed. If the qualifier parameter is set to CANCEL , then timesch and datesch should be omitted.	INSTALL installs new software generic (default) PREVIOUS installs previous generic CANCEL cancels scheduled installation Note: CANCEL applies to scheduled APPLY which has not been started. Ongoing installation and initiation cannot be cancelled.
initsys	Initiate system as part of the APPLY command. The initsys parameter is meaningful if qualifier is either INSTALL or PREVIOUS . Otherwise, this parameter is ignored.	YES System initiates immediately as part of APPLY . NO System continues to execute existing version. A separate INIT-SYS is required to activate new version. Note: Default is YES .

With the **qualifier** parameter set to **INSTALL** and **datesch** and **timesch** blank, the **APPLY** command shall execute the following steps:

- Verify that the software in the idle partition has the status of being "DOWNLOADED."
- Verify that the release of the generic is the same, or newer than that of the NE data in the current partition (RUNNING). This is needed to ensure that the NE data can be retrofitted. Then apply retrofitting to the current NE data, if retrofitting is necessary. The retrofitted NE data will be placed onto the idle data partition, and marked "DOWNLOADED."
- Mark the current software (and data if retrofitting is needed) "PREVIOUS"
- Switch both the current software and data with the corresponding idle software and data.
- Make sure that new current partitions are marked "RUNNING."
- Issue DBmessage and record command in Security Activity Log.
- Reset the system.

With the **qualifier** parameter set to **PREVIOUS**, the **APPLY** command shall execute the following steps:

- Validate the software and data in the idle partitions both have the status of "PREVIOUS."

- Validate that the release of the previous software and previous data is the same.
- Mark the current software and data "FAILED"
- Switch both the current software and data with the corresponding idle software and data.
- Make sure that new current partitions are marked "RUNNING."
- Issue message and record command in Security Activity Log.
- Reset the system.

With the **qualifier** parameter set to **INSTALL** and **datesch** and **timesch** are valid values, the **APPLY** command shall execute the following steps:

- Verify that the software in the idle partition has the status of being "DOWNLOADED."
- Enter the **APPLY** request in the schedule, to be executed at the specified time.

If the idle partition is not "DOWNLOADED," the command shall be denied because of "Generic Not Available."

When the scheduled time arrives, the NE shall execute the equivalent of the TL1 command:

APPLY:tid::ctag::, ,INSTALL;

This means that the only installing that can be scheduled shall be a generic upgrade (the initial generic must be manually installed).

Installation can be scheduled for at most four weeks in advance.

After the **APPLY** command has been used to schedule an installation, an autonomous message will be sent.

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

The execution of the **APPLY** command shall be recorded in the Security Activity Log.

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

If the **APPLY** command is used to invoke an immediate installation, then any scheduled installation is canceled. If an installation is already scheduled, then use of the **APPLY** command for another scheduled installation will supersede the previous installation (that is, the new *datesch*, *timesch* parameter values will replace the previous *datesch*, *timesch* parameter values).

If an installation is already in progress, then another request for an installation will be denied. This includes attempting to restore data, to do a backout, or to schedule another installation while one is in progress.

When the **APPLY** command is used for an immediate installation, then the command will not return a completion immediately, but as late in the installation procedure as possible. Because applying a new generic causes a system reset, at some stage of installation communications will fail. The command will indicate completion before that occurs.

If an **APPLY** command is received by the network element with the *qualifier* parameter set to **CANCEL**, but no outstanding **APPLY** command exists, then an error response will be returned.

OUTPUT FORMAT

If an **APPLY** command specifying an immediate installation (*initsys* defaults, or set to **YES**) completes successfully, then the following normal completion response is returned.

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

If an **APPLY** command specifying a delayed installation (*initsys* set to **NO**) completes successfully, then the following normal completion response is returned.

```
sid date time
M ctag COMPLD
/* Enter INIT-SYS to activate New software generic */
;
```

If an **APPLY** command causing an installation to be scheduled completes successfully, then the following normal completion response is returned indicating the starting time of the installation.

```
sid date time
M ctag COMPLD
/* New software generic installation scheduled */
"Date=datesch"
"Time=timesch"
;
```

If an **APPLY** command canceling an installation completes successfully, then the following normal completion response is returned.

```
sid date time
M ctag COMPLD
/* Scheduled software installation has been canceled */
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "APPLY Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **APPLY** command.

Table 3-7. APPLY Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>datesch</i>	Date Scheduled. The <i>datesch</i> parameter indicates the date (year, month, day) the software is scheduled to be installed.	YY-MM-DD where YY= 00-99, MM= 01-12, DD= 01-31
<i>timesch</i>	Time Scheduled. The <i>timesch</i> parameter indicates the time (hours, minutes, seconds) the software is scheduled to be installed.	HH-MM-SS where HH=00-23, MM= 00-59, SS= 00-59

EXAMPLE INPUT/OUTPUT

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

```
APPLY:LT-OXC::123456;  
  
LT-OXC 98-01-02 08:00:00  
M 123456 COMPLD  
/* New Software generic installation in progress */  
;
```

The following example shows an **APPLY** command that requests delayed activation of a new generic.

```
APPLY:LT-OXC::123456,,NO;  
  
LT-OXC 98-01-02 08:00:00  
M 123456 COMPLD  
/* Enter INIT-SYS to activate New software generic */  
;
```

The following example shows an **APPLY** command that requests the cancellation of scheduled software.

```
APPLY:LT-OXC::123456::,CANCEL;  
  
LT-OXC 98-01-02 08:35:00  
M 123456 COMPLD  
/* Scheduled software installation has been canceled */  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **APPLY** command. The following additional errors apply to the **APPLY** command as well.

If an **APPLY** request is entered and an uncorrupted copy of software does not reside in the network element, then the following error response is returned.

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

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

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

If an **APPLY** request is entered and the software copy has been previously installed (that is, its state is **PREVIOUS**), and the **datesch** or **timesch** is provided, then the following error response is returned.

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

If an **APPLY** request is issued and an installation is already in progress or a resource is busy for other reasons, then the following error response is returned.

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


If the **APPLY** command is received with an invalid **datesch** parameter value, then the following error response is returned.

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

If the **APPLY** command is received with an invalid **timesch** parameter value, then the following error response is returned.

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

If the **APPLY** command is received with an valid **datesch**, but **timesch** is not provided, then the following error response is returned.

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

If the **APPLY** command is received with an invalid **qualifier** parameter value, then the following error response is returned.

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

If the **APPLY** command is received with the **qualifier** set to **CANCEL**, with **datesch** and **timesch** provided, then the following error response is returned.

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

If an **APPLY** request is entered with the qualifier **CANCEL** but there is no outstanding **APPLY** command, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, no outstanding APPLY command */
;
```

If the **APPLY** command is received with the **datesch** and **timesch** value exceeding 4 weeks, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, scheduled date exceeds 4 weeks */
;
```

RELATED TL1 MESSAGES

CPY-MEM

CPY-NVM

RTRV-PRMTR-DATA

RTRV-PRMTR-SFTWR

RTRV-SYSID

NAME

CANC-USER: Cancel User

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

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

DESCRIPTION

Execution of this command on a network element terminates the current 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.

The completion of **CANC-USER** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "**CANC-USER** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **CANC-USER** command.

Table 3-8. CANC-USER Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-8. CANC-USER Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **CANC-USER** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

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

```
CANC-USER:LT-0XC-789::123456;
LT-0XC-789 98-01-01 08:00:00
M 123456 COMPLD
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section 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:

- LambdaRouter All Optical Switch 128 & 256, Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

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.

The successful completion of an **CANC-USER-SECU** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "**CANC-USER-SECU** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **CANC-USER-SECU** command.

Table 3-9. CANC-USER-SECU Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-9. CANC - USER - SECU Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>uid</i>	User Identifier. This is the <i>uid</i> of the user whose session is being terminated. If an S5 user or a Superuser wants to force log out another user or all the users that are currently logged in, then the S5 user or the Superuser could do so by specifying that <i>uid</i> or "ALL". "ALL" does not include the current session of the S5 user or Superuser login sessions. A Superuser can log out the other Superuser individually.	Case-sensitive alphanumeric string of 1 to 10 characters or ALL
<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **CANC - USER - SECU** 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* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

EXAMPLE INPUT/OUTPUT

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

```
CANC-USER-SECU:LT-0XC-789:jsmith:123456;  
  
LT-0XC-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **CANC-USER-SECU** command. The following additional errors apply to the **CANC-USER-SECU** command as well.

If the network element receives **CANC-USER-SECU** command with a login identifier specified by the **uid** that is not currently logged in, the following error response is returned.

```
sid date time  
M ctag DENY  
SRQN  
/* Status, Request Not Valid */  
;
```

If the network element receives the **CANC-USER-SECU** command with a **uid** that is syntactically incorrect, the following error response is returned.

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

If the network element receives **CANC-USER-SECU** command with a login identifier specified by the *uid* that belongs to the user entering this command, then the following error response is returned.

```
sid date time
M ctag DENY
SRQN
/* Status, Request Not Valid, current session user uid not allowed */
;
```

RELATED TL1 MESSAGES

ACT-USER

CANC-USER

DLT-USER-SECU

ED-NE-SECU

ED-PID

ED-USER-SECU

ENT-USER-SECU

RTRV-NE-SECU

RTRV-USER-SECU

NAME

CONN-TACC: Connect Test Access

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

INPUT FORMAT

CONN-TACC: *tid*: [*taport1*] [, *taport2*]: *ctag*: : *tstmde*, [*eport_aid*], [*sw_fabe*], [*fport_aid*], [*sw_fabf*], [*injt_sige*], [*J0_insrte*], [*injt_sigf*] [, *J0_insrtf*];

DESCRIPTION

The **CONN-TACC** command can be used to establish two types of test access (TA) cross-connections at a LambdaRouter AOS:

- Add a simplex bridge leg at a *busy input port* that belongs to an duplex, merge, or bridge and merge cross-connection that was previously established by using the **ENT-CRS** command. (A port is busy when it is being used for a cross-connection.) An input port being used for a TA cross-connection may be a transparent port (with or without the capability for optical amplification) or an OEO port.

The purpose of the bridge leg is to convey a signal to the appropriate LambdaRouter AOS TA output port where the signal can be monitored. The signal to be monitored may be an incoming live traffic signal or a test signal being generated by an external test set. A busy OEO input port, which may be in either a DOS or LOS condition, can be used to inject a test signal to be monitored at either a local or a remote output port. An OEO input port performing signal injection will suppress an incoming signal that it receives during the signal injection period. (Note that the output port of a TA cross-connection will be referred to as a TA Monitoring (TAM) port. An output port must be idle in order to be selected to be a TAM port.)

- Establish either a duplex or a simplex 1-way cross-connection (as instructed by the user in the command) between an *idle input port* and the TAM port that has been selected for the test access operation. The idle input port may be in a DOS ("detection of signal") condition or a LOS ("loss of signal") condition when the TA cross-connection is established, that is, the port currently may or may not be detecting an incoming signal, respectively. An idle OEO input port, which may be in either a DOS or LOS

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condition, may be used to inject a test signal to be monitored; the input port will suppress an incoming signal that it receives during the signal injection period.

The TA feature will allow a signal being received by an input port, or being injected by an OEO input port, to be handled as follows:

- Be monitored by the TAM, if the TAM is an OEO port.
- Be passed through the TAM to an external test set.
- Be transmitted through one or more network links for monitoring at a TAM at another LambdaRouter AOS location.

Based on traditional TA terminology, for this LambdaRouter AOS feature, an input port that terminates an incoming “E-tributary” or an “F-tributary” is called an “eport” or an “fport”, respectively. (In traditional networks, an incoming “E-tributary” refers to a circuit incoming to the TA equipment from the central office “Equipment”; an “F-tributary” is incoming to the TA equipment from its network “Facility” side.)

For the LambdaRouter AOS R3.0 TA feature, the “eport” and “fport” names will apply as follows:

- For an existing 1-way cross-connection leg, the input port will be called an “eport”.
- For an existing 2-way incoming signal, the input port for either direction can arbitrarily be called the “eport” and the input port for the other direction will therefore be called the “fport”. Therefore, an fport has no meaning unless a 2-way cross-connection already exists.
- An idle input port to be used subsequently for establishing a 1-way TA cross-connection will be called an “eport”.

A TAM port can be of different types:

- A TAM port, either an OEO or an OCHT port, may be reserved for the TA feature by provisioning its usage to “TEST_ACC”. Reserving a port for the TA feature is especially appropriate if a port is to be “semi-permanently” unavailable because it is needed for multiple sequential TA sessions at various times to monitor an incoming signals. For example, an external test set may be connected to an OCHT port. (Ports that have been provisioned as TEST_ACC ports can be identified by using the **RTRV-rr** command.) (An input port may also be reserved as a TEST_ACC port for test signal injection.) If a port that is needed frequently for signal monitoring or signal injection is not reserved, while it is idle because no TA session is currently in progress, the system may seize the port in order to establish a regular cross-connection.

Even if an OEO port has not been provisioned as a "TEST_ACC" port, it may be used to obtain performance monitoring information for either a live traffic signal or a test signal. The OEO port may also be used to read the J0 bytes that are being received.

- A TAM port may also be an OCHT or OEO NNI output port that is connected to a network link. This port has been selected to serve briefly as part of an end-to-end network path while a test signal is being injected from an eport. An NNI TAM port allows a signal to be monitored at a LambdaRouter AOS other than the one where the bridged TA cross-connection has been established or where a test signal is being injected.
- A Client or UNI TAM port allows a signal to be monitored at a point in a customer's network.
- The **CONN-TACC** command will be denied if a port specified in the command to be a TAM has been provisioned as a LINK_PROBE port.

The **CONN-TACC** command supports three different types of test modes, which distinguish different types of TA cross-connections that can be established between an input port and a LambdaRouter AOS TAM port. Basically, all of these test modes pertain to "monitoring" the signal being received at a TAM. However, note that the term "monitoring" is being used in a general sense; a command user can choose whether or not it will be beneficial to actually collect and retrieve information concerning the integrity of the signal at a particular TAM or an associated external test set.

- The "MONE" test mode establishes a TA cross-connection in order to monitor a signal being received (or being injected) at an eport.
- The "MONF" test mode establishes a TA cross-connection in order to monitor a signal being received at an fport. (Typically an fport will be viewed as the second input port associated with an existing 2-way cross-connection.)
- The "MONEF" test mode allows a user to establish the two TA cross-connections needed in order to simultaneously monitor the signals being received or being injected at both the eport and the fport, where both of these signals pertain to the same 2-way cross-connection. In order to have a "MONEF" test mode, both of these TA cross-connections must be established with one entry of the **CONN-TACC** command.

A MONEF TA session may not be established by first requesting a "MONE" or a "MONF" test session and then submitting a second command that requests either a "MONF" or a "MONE" test session. The second command will be denied. A change of test mode is not allowed.

The optical splitter within the LambdaRouter AOS input port makes it possible for an incoming live traffic signal to be monitored without being interrupted. The splitter allows one of the LambdaRouter AOS switch fabric transmission paths to continue providing a regular simplex cross-connection leg to the original output port. The transmission path through the other switch fabric allows a bridge leg to

be established, which provides a simplex TA cross-connection leg. Thus, whenever an eport (or fport) is busy with a regular duplex cross-connection, the **CONN-TACC** command will cause the system to convert the duplex cross-connection into a bridge cross-connection configuration. One leg of the bridge will allow either the incoming signal or the signal being injected to continue downstream; the other leg will provide the TA cross-connection, which will allow the signal to be monitored at the TAM. (This bridge configuration is similar to a forced simplex loopback. See the description of the **OPR-LPBK** command.)

A basic objective of the test access feature is to avoid impacting an incoming signal (especially a live traffic signal) during a TA session. The system will satisfy this objective if the user submits the default switch fabric parameter value. If the eport (or fport) already has a regular duplex cross-connection, the default value instructs the system to establish the TA cross-connection using the switch fabric that is currently *not* selected at the output port of the regular cross-connection. The switch fabric that is currently selected at this output port is providing the transmission path for the signal being received by the input port. In order to establish a TA cross-connection on an input port that is associated with a service cross-connection belonging to an ONNS path, the default switch fabric value must be used.

When a user specifies an input port that is not associated with an ONNS path, the user may specify that the TA cross-connection be established by using a particular switch fabric side, when there is a special need to use a particular switch fabric. However, the user should be aware that by specifying a particular switch fabric side, the user may cause the original outgoing signal to experience a "hit". A "hit" will occur if the currently selected side must change in order for the TA cross-connection to use the specified switch fabric.

For a busy input port, the system will deny a command if it specifies that both switch fabrics are to be used for a TA cross-connection.

When a merge cross-connection is established (by using the **ENT-CRS** command), one of the switch fabric transmission paths to the output port is unused. A user may select that transmission path in order to add a TA cross-connection to the merge configuration for signal monitoring purposes. As illustrated in the **EXAMPLE INPUT/OUTPUT** section of the **ENT-CRS** command description, 2-way simplex legs may be added to an existing 2-way duplex cross-connection to form a 2-way bridge and merge configuration. Furthermore, when necessary, additional 2-way simplex legs can be added to an existing 2-way bridge and merge. A TA bridge leg may be established at an input port belonging to one of these bridge and merge configurations for which the input port has only a simplex leg being used to form a merge.

When a bridge cross-connection has been established by using the **ENT-CRS** command, both of the simplex switch fabric transmission paths are being used to carry the incoming signal. If it is necessary to interrupt one of these transmission paths, a tester should determine, if possible, which of these paths is currently not

selected at the remote merge location. The switch fabric associated with this path should be specified in order to request a forced simplex loopback with the **OPR-LPBK** command. In contrast to the **CONN-TACC** command, the **OPR-LPBK** command allows a switch fabric transmission path to be purposely interrupted when appropriate. If a bridge leg to be tested belongs to a path established for ONNS, neither the **CONN-TACC** command nor the **OPR-LPBK** command can be used. Instead, the not-selected bridge leg should be deleted, which will leave a duplex cross-connection, to which a TA cross-connection can be established at the input port.

If a loopback already exists at a particular eport or fport, a TA cross-connection may not be established at that port. Likewise, a loopback may not be established at a port where a TA cross-connection already exists. However, for a 2-way cross-connection configuration, a TA cross-connection may be established at the eport and a loopback at the corresponding fport; likewise, a loopback may be established at the eport and a TA cross-connection at the associated fport.

When information concerning an incoming signal is to be obtained by monitoring a TAM port at a particular LambdaRouter AOS, the specified TAM port may be either an OEO port (either OCH10GC or OCH2GC) or a transparent OCHT port to which external test equipment is currently connected. Performance monitoring information can be collected automatically at OEO TAM ports; this information can be retrieved by using the various PM commands.

For the "MONE" test mode, the ***eport_aid*** parameter in the command identifies the eport. Likewise, for the "MONF" test mode, the ***fport_aid*** parameter identifies the fport. The ***taport1*** parameter identifies the TAM port when only one incoming signal is to be monitored, which may be at either the eport or the fport. If the eport or the fport is idle, a user may specify the switch fabric to be used for the TA cross-connection. If the eport or the fport is busy, the system will select the switch fabric by determining the switch fabric that is currently ***not*** selected at the output port, unless the user specifies otherwise.

In order to establish a "MONEF" test mode, a value for both the ***eport_aid*** and the ***fport_aid*** as well as both the ***taport1*** and ***taport2*** must be specified. Note that two TAM ports must be specified in order to establish a "MONEF" TA session, which allows both directions of a 2-way signal to be monitored simultaneously; for that case, the ***taport2*** parameter will be associated with the fport. Note that the ***eport_aid*** and the ***fport_aid*** parameters always refer to input ports, and the ***taport1*** and ***taport2*** parameters always refer to TAM ports.

In order to confirm the availability and proper functionality of a new installation, or in order to perform various maintenance operations to determine the continuity and operational integrity of a network path involving multiple LambdaRouter AOSs, there is frequently the need to inject a test signal at some point in the network and monitor it at another. The LambdaRouter AOS **CONN-TACC** command has been designed with the following options in order to meet this need.

- In addition to establishing a TA cross-connection as discussed previously, the command can instruct an OEO port to inject a test signal. While an OEO port is in the signal injection mode, it will ignore a DOS condition that exists when the command is submitted or any DOS indications that it receives subsequently.

For a 2-way cross-connection, signal injection may be requested in either direction or in both directions simultaneously.

Note that an OEO port selected to inject a test signal will be referred to as a Test Access Injection (TAI) port. A TAI port may or may not be provisioned as a TEST_ACC port.

A TAI port may be busy or idle. If the port is busy, the injected signal will be transmitted through the two simplex legs that result from establishing the bridged TA cross-connection with the **CONN-TACC** command. On the other hand, if the TAI port is idle, the injected signal will be transmitted to the TAM through either both of the duplex legs or only the simplex leg specified by the user.

The command allows signal injection to occur in only one direction, where an eport is used as the TAI port.

The payload of the injected test signal may have all "1"s (representing AIS-L and AIS-P) or all "0"s (representing RDI-L and UNEQ-P).

- Whenever an OEO port is being used for signal injection, a 16 byte J0 sequence will be inserted in the section overhead of the test signal. Unless the user requests otherwise, the J0 byte sequence will include the IP v4 address of the LambdaRouter AOS and the AID of the TAI port. This information will be transmitted in hexadecimal format. Note that the J0 byte sequence cannot be inserted into an incoming live signal or a signal from an external test set. If a user does not want the test signal to include the IP address and port AID, the J0 sequence will consist of zeroes. Inserting J0 has no meaning unless a user requests signal injection of either all "1"s or all "0"s.

A J0 sequence may be inserted in either one direction or both directions for a 2-way cross-connection. An OEO TAM is required in order to monitor a J0 sequence that is being inserted.

An injected test signal may be monitored by a TAM port that is located at the same LambdaRouter AOS where the signal is being injected. On the other hand, a TAM port may be an NNI port and therefore associated with a link to another LambdaRouter AOS. This allows a signal being injected at a particular LambdaRouter AOS to be monitored at another LambdaRouter AOS, which may be an adjacent LambdaRouter AOS, the LambdaRouter AOS at the distant end of a network path, or at one or more intermediate LambdaRouter AOSs along this path. A user may retrieve the hexadecimal J0 byte sequence collected at an OEO TAM port along a path by using the **RTRV-TACC** command. (The J0 sequence is also available from the **RTRV-r** Specific Block Output parameter named *STRC*.)

As has been mentioned, when a user injects a test signal at a particular LambdaRouter AOS, the user may intend to monitor this signal further downstream, such as at the end of a network path. However, this network path may include an OEO eport at some intermediate LambdaRouter AOS. If so, a user can specify parameter values in the command when establishing the TA cross-connection at the intermediate LambdaRouter AOS that will prevent this OEO eport from affecting the incoming test signal.

A TA cross-connection involving an idle eport or fport may be established before or after the beginning of an external test signal injection. If the **CONN - TACC** command specifies that an OEO port shall inject a test signal, the port will automatically begin injecting the test signal through the TA cross-connection that has been established in response to this command.

An TAM port can be selected only if the output port has been provisioned and is currently idle. The port cannot be associated with an unequipped slot. The current state of an output port to be selected for a TAM can be determined by using the **RTRV - rr** command.

Successfully establishing a TA cross-connection begins a TA session that continues until the cross-connection is disconnected, which occurs when a user enters the **DISC - TACC** command. Disconnecting the TA cross-connection by entering the **DISC - TACC** command will also stop a signal from being injected at an OEO TAI port.

The **CONN - TACC** command generates a **REPT DBCHG** message that can be used to update a database. The format for this message appears in a following section of this command description.

INPUT PARAMETERS

The “**CONN - TACC** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **CONN - TACC** command.

Table 3-10. CONN - TACC Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-10. CONN - TACC Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>taport1</i>	Access Identifier (AID) of the TAM to be used when one TA cross-connection is to be established. (The TAM is the output port being used for a TA cross-connection.) This parameter shall be used for the "MONE" test mode, the "MONF" test mode, or for one direction of the "MONEF" test mode. An output port selected to be a TAM must be an idle port.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>taport2</i>	Access Identifier (AID) of the second TAM to be used when two TA cross-connections are to be established for the "MONEF" test mode. An output port selected to be a TAM must be an idle port.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.	

Table 3-10. CONN - TACC Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>tstmde</i>	Test Access Mode. The value of the <i>tstmde</i> parameter specifies the type of TA cross-connection to be established during this TA session. In order to establish a MONEF test mode, the eport and the fport must belong to the same 2-way cross-connection. For 1-way signal injection at a busy OEO eport or fport, this parameter must have a value of "MONE" or "MONF", respectively. The <i>injt_sige</i> or the <i>injt_sigf</i> parameter must have an allowed value other than "NA". For 1-way signal injection at an idle OEO eport or fport, this parameter can have only a value of "MONE". The <i>injt_sige</i> parameter must have an allowed value other than "NA". The MONEF test mode is required for 2-way signal injection. 2-way signal injection is allowed only at the two input ports belonging to the same 2-way cross-connection. For this case, both the <i>injt_sige</i> and <i>injt_sigf</i> parameters must have an allowed value other than "NA".	MONE Establish a TA cross-connection between the <i>eport_aid</i> and <i>taport1</i>; inject a signal in accordance with the value of the <i>injt_sige</i> parameter. MONF Establish a TA cross-connection between the <i>fport_aid</i> and the <i>taport1</i>; inject a signal in accordance with the value of the <i>injt_sigf</i> parameter. MONEF Establish a TA cross-connection between the <i>eport_aid</i> and the specified <i>taport1</i> and a second TA cross-connection between the <i>fport_aid</i> and the specified <i>taport2</i>. For busy eport and fport, inject a signal in accordance with the value of the <i>injt_sige</i> and <i>injt_sigf</i> parameters.
<i>eport_aid</i>	Eport Access Identifier (AID). The value of the <i>eport_aid</i> parameter identifies an input port for which a TA cross-connection is being established.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}

Table 3-10. CONN - TACC Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
sw_fabe	Switch fabric. The value of the sw_fabe parameter will determine the switch fabric(s) to be used for connecting a busy or idle eport to a TAM port. The system will interpret the default value "3" differently, depending on whether the eport is busy or idle when a user submits a command. When the eport is idle, the system shall interpret the default value as "2", meaning use both switch fabrics for the TA cross-connection. A user may also submit either "0" or "1" in order to establish a simplex TA cross-connection from an idle eport. When the eport is busy, for a default value of "3", the system shall establish a bridged TA cross-connection by selecting the switch fabric that is currently not selected at the original cross-connection output port. If a user specifies a value of "2" when the eport is busy, the system will deny the command. In order to avoid impacting a live traffic signal when the eport is busy, a user should use caution when specifying either "0" or "1".	0 Switch Fabric 0 1 Switch Fabric 1 2 Both Switch Fabrics 3 <i>(Default value, to be interpreted by the system depending on whether the eport is busy or idle)</i>
fport_aid	Fport Access IDentifier (AID). The value of the fport_aid parameter identifies an input port for which a TA cross-connection is being established. This port will be the second input port associated with a 2-way cross-connection. A value for this parameter is required only for a test mode of MONF or MONEF.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
sw_fabf	Switch fabric. The value of the sw_fabf parameter will determine the switch fabric to be used for connecting a busy fport to a TAM port. For a default value of "3", the system shall establish a bridged TA cross-connection by selecting the switch fabric that is currently not selected at the original cross-connection output port. If a user specifies a value of "2" for a busy fport, the system will deny the command. In order to avoid impacting a live traffic signal using a busy fport, a user should use caution when specifying either "0" or "1".	0 Switch Fabric 0 1 Switch Fabric 1 3 <i>(Default value)</i>

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Table 3-10. CONN - TACC Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>injt_sige</i>	Injected Signal Type at the eport. This parameter specifies the type of test signal, if any, to be injected by an OEO eport identified by the <i>eport_aid</i> .	0 1 NA	All zeroes in the payload (Identified by RDI-L and UNEQ-P) All ones in the payload (Identified by AIS-L and AIS-P) Not Applicable -- (Inject no test signal) -- (<i>Default</i>)
<i>J0_insrt</i>	J0 byte sequence insert indicator for eport. This indicator specifies whether a 16 byte hexadecimal J0 sequence containing the IP address of the node and the AID of the port generating the test signal is to be inserted by the OEO eport specified by the <i>eport_aid</i> . If this information is not requested, the J0 sequence will contain zeroes except for the framing byte. If the <i>injt_sige</i> parameter has the value "NA", the command will be denied if the user submits a value other than the forced default parameter value of "NA".	YES NO NA	Send the 16 byte J0 sequence containing the IP address of the node and the AID of the port generating the test signal (<i>Default if injt_sige has a value of 0 or 1</i>) Send zeroes in the J0 byte. Not Applicable -- (<i>Forced default value if injt_sige has the value NA</i>)
<i>injt_sigf</i>	Injected Signal Type at the fport. This parameter specifies the type of test signal, if any, to be injected by an OEO fport identified by the <i>fport_aid</i> .	0 1 NA	All zeroes in the payload (Identified by RDI-L and UNEQ-P) All ones in the payload (Identified by AIS-L and AIS-P) Not Applicable -- (Inject no test signal) -- (<i>Default</i>)

Table 3-10. CONN - TACC Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>J0_insrft</i>	J0 byte sequence insert indicator for fport. This indicator specifies whether a 16 byte hexadecimal J0 sequence containing the IP address of the node and the AID of the port generating the test signal is to be inserted by the OEO eport specified by the <i>fport_aid</i> . If this information is not requested, the J0 sequence will contain zeroes except for the framing byte. If the <i>injt_sigf</i> parameter has the value "NA", the command will be denied unless this parameter also has the value "NA".	YES Send the 16 byte J0 sequence containing the IP address of the node and the AID of the port generating the test signal (<i>Default if injt_sigf has a value of 0 or 1</i>) NO Send zeroes in the J0 byte. NA Not Applicable -- (<i>Forced default value if injt_sigf has the value NA</i>)

OUTPUT FORMAT

If the **CONN - TACC** command completes successfully, the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

REPT DBCHG MESSAGE FORMAT

Shown below is the **REPT DBCHG** message that is generated as a result of the **CONN - TACC** command. This format is based on the general **REPT DBCHG**

message format that appears in the **OUTPUT FORMAT** section of the **REPT DBCHG** message description.

```
sid date time
A atag REPT DBCHG
  "TIME=ocrtm,DATE=ocrdat:CONN-TACC::[spec_block]:"
;
```

The "*spec_block*", which will contain one or more "add" name-defined parameters that precede a grouping of cross-connection parameters pertaining to the TA cross-connection leg(s) that have been established by the command. Each "add=" that appears in the "*spec_block*" indicates that a new simplex or duplex TA cross-connection leg has been established.

Shown below are the types of "add" sequences that can be generated for the TA feature. These sequences are specified in terms of TA parameters. Note that the last two parameter fields will always contain zeroes because this command does not associate a cross-connection number or an operations system identifier with a TA cross-connection. Information concerning these parameters, which are used for regular cross-connections, appears in the documentation for the **ENT-CRS** and **RTRV-CRS** commands.

```
add="\eport_aid,taport1,sw_fabe,MONE,,000000,0"
```

```
add="\fport_aid,taport1,sw_fabf,MONF,,000000,0"
```

For a 2-way signal, two "add" sequences will appear in the same DBCHG message.

```
add="\eport_aid,taport1,sw_fabe,MONEF,,000000,0"
```

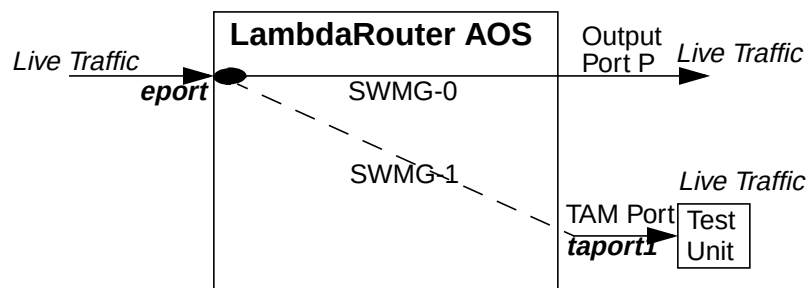
```
add="\fport_aid,taport2,sw_fabf,MONEF,,000000,0"
```

Examples of the **REPT DBCHG** message that are generated for the **CONN-TACC** command appear in the **EXAMPLE INPUT/OUTPUT** section of this document.

EXAMPLE INPUT/OUTPUT

The following example (applicable for either LambdaRouter AOS 128 or LambdaRouter AOS 256) shows a MONE test mode configuration. A TA cross-connection has been established which allows a 1-way bridged live traffic input signal to be monitored at the specified idle TAM port. This TA cross-connection is illustrated by the dashed line. The input port receiving the live traffic signal is the eport. Because this is a 1-way signal, there is no fport.

For this example, the system has determined that switch fabric side 0 (SWMG-0) is the selected switch fabric side at Output Port P. Therefore, switch fabric side 1 (SWMG-1) is being used for the TA cross-connection. Note that the test unit shown in the diagram may be either an idle OEO TAM port or an external test set connected to an idle OCHT TAM port.



Port	AID
Output Port P	och-1-4-1
eport	och-1-6-1
TAM Port (<i>taport1</i>)	och-1-8-1

CONN-TACC:LT-AOS:och-1-8-1:123456::MONE,och-1-6-1,3;

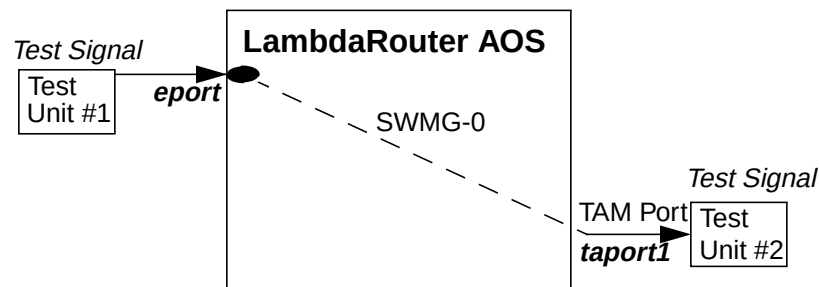
LT-AOS 01-08-16 08:03:23
M 123456 COMPLD
;

LT-AOS 01-08-16 08:03:23
A 006 REPT DBCHG
"TIME=08-03-23,DATE=01-08-16:CONN-TACC:::add=\"och-1-6-1,och-1-8-1,1,MONE,,,000000,0\":"
;

The following example (applicable for either LambdaRouter AOS 128 or LambdaRouter AOS 256) shows a successful completion of a **CONN-TACC** command to establish a MONE test access session that involves a test signal that is incoming at the eport and being monitored at a TAM port at the same LambdaRouter AOS.

For this example, Test Unit #1 appearing in the diagram may be either an idle OEO TAI port or an external test set connected to a transparent input port. If the eport is an idle OEO TAI port in a LOS condition, the command parameter values will inject a test signal with an all zeroes payload and a J0 byte sequence containing node and port identity information. Furthermore, if Test Unit #2 represents an idle OEO TAM port, the J0 byte sequence being received will be read and stored to permit its retrieval by using the **RTRV-TACC** command.

As shown by the dashed line, the user has chosen to use only switch fabric “0” for the TA cross-connection. Note that the command would have allowed either switch fabric “0” or “1” or both to be used.



Port	AID
eport	och-2-4-1
TAM Port (<i>taport1</i>)	och-2-5-1

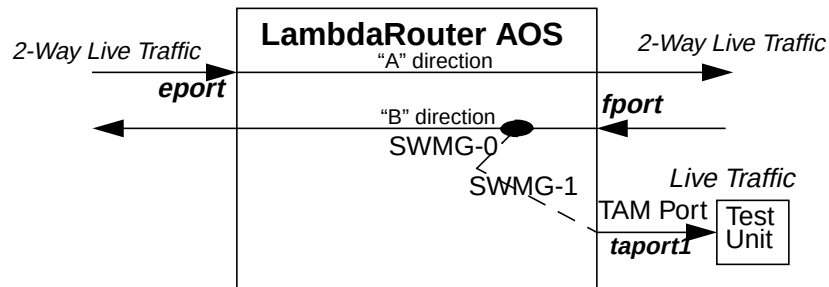
```
CONN-TACC:LT-AOS:och-2-5-1:123456::MONE,och-2-4-1,0,,0;
```

```
LT-AOS 01-08-16 08:11:29  
M 123456 COMPLD  
;
```

```
LT-AOS 01-08-16 08:11:29  
A 006 REPT DBCHG  
"TIME=08-11-29,DATE=01-08-16:CONN-TACC:::add=\"och-2-4-1,och-2-5-  
1,0,MONE,,,000000,0\": \"  
;
```

There may be a need for a test signal to be monitored alternately through switch fabric "0" and switch fabric "1" to discern whether there is a significant difference in the transmission quality of the two cross-connection paths. This can be accomplished between two idle ports if the user specifies "3" in the initial command for the **sw_fabe** parameter, which will establish a duplex cross-connection, and then uses the protection switch command to alternate observation of the signal being transmitted through the two switch fabrics to the TAM.

The following example (applicable for either LambdaRouter AOS 128 or LambdaRouter AOS 256) shows a successful completion of a **CONN-TACC** command to establish a MONF test access session for testing one direction of a 2-way live traffic signal. The input signal to be monitored is being received at the input port that is arbitrarily being viewed as the fport. For this example, the system has determined that the test access cross-connection should be established through switch fabric "1", as shown by the dashed line. The test unit shown in the diagram may be an idle OEO TAM port or an external test set that is connected to an idle OCHT TAM port.



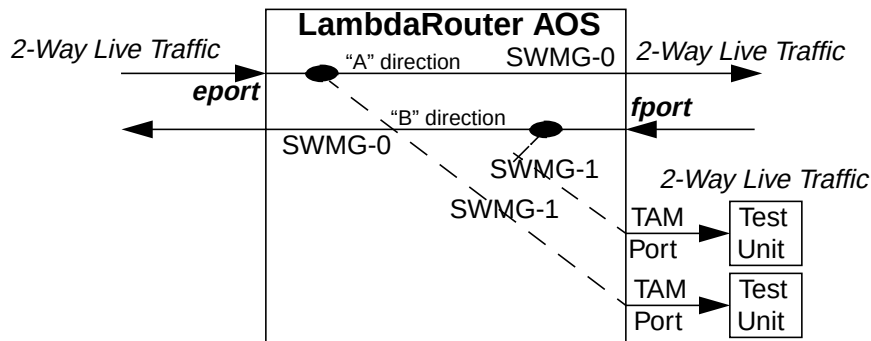
Port	AID
eport	och-1-4-1
Output Port "A" direction	och 3-6-2
fport	och-1-5-1
Output Port "B" direction	och-3-4-2
TAM Port (taport1)	och-1-20-1

CONN-TACC:LT-AOS:och-1-20-1:123456::MONF,,,och-1-5-1,3;

LT-AOS 01-08-16 08:17:23
M 123456 COMPLD
;

LT-AOS 01-08-16 08:17:23
A 006 REPT DBCHG
"TIME=08-17-23,DATE=01-08-16:CONN-TACC:::add=\"och-1-5-1,och-1-20-1,1,MONF,,,000000,0\":"
;

The following example (applicable for either LambdaRouter AOS 128 or LambdaRouter AOS 256) shows the successful completion of a **CONN-TACC** command to establish a MONEF test access session for simultaneously monitoring both directions of a 2-way live traffic signal. For this case the input signals are being received at both an eport and an fport. For this example, the system has determined that both of these signals should be monitored using switch fabric "1", as shown by the dashed lines. Each of the Test Units shown in the diagram may be either an OEO TAM port or an external test set connected to an OCHT TAM port. As shown, two idle TAM ports are required for a MONEF session.



Port	AID
eport	och-3-3-1
Output Port "A" direction	och 1-1-2
fport	och-1-3-1
Output Port "B" direction	och-3-3-2
TAM Port (<i>taport1</i>)	och-2-2-1
TAM Port (<i>taport2</i>)	och-2-3-1

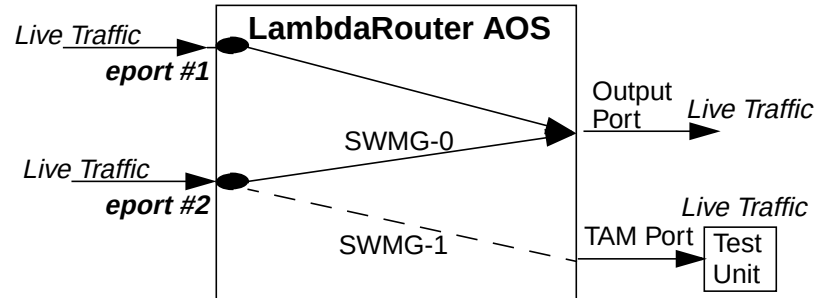
CONN-TACC:LT-AOS:och-2-2-1,och-2-3-1:123456::MONEF,och-3-3-1,3,och-1-3-1,3;

LT-AOS 01-08-16 08:29:13
M 123456 COMPLD
;

LT-AOS 01-08-16 08:29:13
A 006 REPT DBCHG
"TIME=08-29-13,DATE=01-08-16:CONN-TACC:::add=\"och-3-3-1,och-2-2-1,1,MONEF,,,000000,0\",add=\"och-1-3-1,och-2-3-1,1,MONEF,,,000000,0\":"
;

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The following example (applicable for either LambdaRouter AOS 128 or LambdaRouter AOS 256) shows a MONE TA cross-connection that has been established in order to monitor the live traffic being received at **eport #2**, which is one of the two input ports being used for a merge cross-connection configuration. Because switch fabric side 0 (SWMG-0) is being used for this merge leg, switch fabric side 1 (SWMG-1) can be used for the associated TA cross-connection leg, which is illustrated by the dashed line. Note that the test unit shown in the diagram may be either an idle OEO TAM port or an external test set connected to an OCHT TAM port. If required, a second TA cross-connection could also be established between **eport #1** and another idle TAM port.



Port	AID
eport #1	och-1-4-1
Output Port	och 3-6-2
eport #2	och-1-5-1
TAM Port (<i>taport1</i>)	och-1-10-1

CONN-TACC:LT-AOS:och-1-10-1:123456::MONE,och-1-5-1,3;

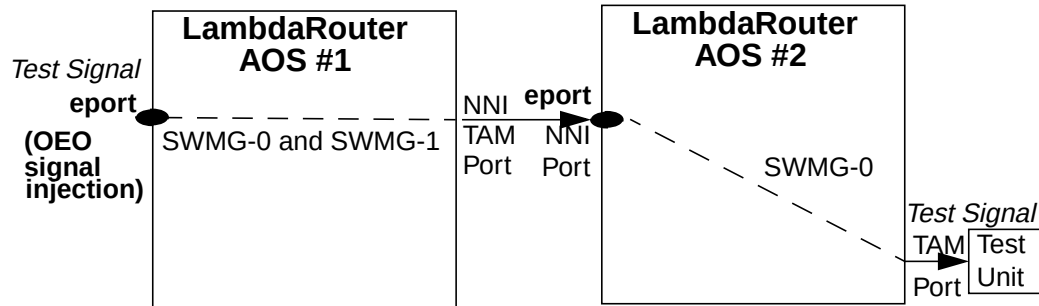
LT-AOS 01-09-16 08:27:28
M 123456 COMPLD
;

LT-AOS 01-09-16 08:27:28
A 006 REPT DBCHG
"TIME=08-27-28,DATE=01-09-16:CONN-TACC:::add=\"och-1-5-1,och-1-10-1,1,MONE,,,000000,0\":"
;

As illustrated in the **EXAMPLE INPUT/OUTPUT** section of the **ENT-CRS** command description, 2-way simplex legs may be added to an existing 2-way duplex cross-connection to form a 2-way bridge and merge configuration.

Furthermore, when necessary, additional 2-way simplex legs can be added to an existing 2-way bridge and merge. The diagram shown above may be viewed as an illustration of a TA bridge leg that has been established at an input port belonging to one of these bridge and merge configurations for which the input port has only a simplex leg being used to form a merge.

The following example (applicable for either LambdaRouter AOS 128 or LambdaRouter AOS 256) illustrates the use of the command at two different LambdaRouter AOSs. At AOS #1, a test signal with an all-zeroes payload and a J0 overhead byte is being injected by an *idle* OEO TAI eport. A TA cross-connection using both switch fabrics is established to an idle NNI TAM port, which is connected by a network link to an eport at AOS #2. At AOS #2, the eport is connected by a TA cross-connection using only switch fabric side "0" to a TAM port, where the incoming test signal is to be monitored. Note that the test unit shown at AOS #2 may be either an OEO TAM port or an external test set connected to an OCHT TAM port.



AOS #1 Ports	AOS #1 AIDs		AOS #2 Ports	AOS #2 AIDs
eport	och-1-4-1		eport	och-2-3-1
TAM Port	och 3-6-2		TAM Port	och-1-4-2

**AOS #1
Command**

```
CONN-TACC:LT-AOS1:och-3-6-2:123456::MONE,och-1-4-1,,,,0;  
  
LT-AOS1 01-09-18 08:24:22  
M 123456 COMPLD  
;
```

**AOS #1
DBCHG
Message**

```
LT-AOS1 01-09-18 08:24:22  
A 006 REPT DBCHG  
"TIME=08-24-22,DATE=01-09-18:CONN-TACC:::add=\"och-1-  
4-1,och-3-6-2,2,MONE,,,000000,0\":"  
;
```

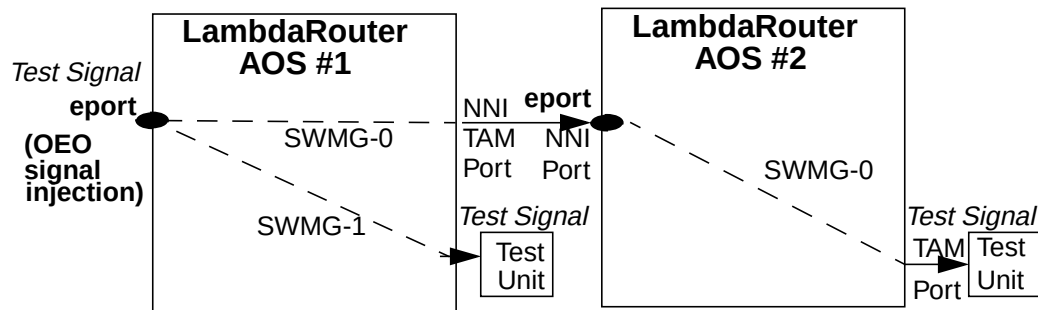
**AOS #2
Command**

```
CONN-TACC:LT-AOS2:och-1-4-2:123456::MONE,och-2-3-1,0;  
  
LT-AOS2 01-09-18 08:32:25  
M 123456 COMPLD  
;
```

**AOS #2
DBCHG
Message**

```
LT-AOS2 01-09-18 08:32:25  
A 006 REPT DBCHG  
"TIME=08-32-25,DATE=01-09-18:CONN-TACC:::add=\"och-2-  
3-1,och-1-4-2,0,MONE,,,000000,0\":"  
;
```


The following example (applicable for either LambdaRouter AOS 128 or LambdaRouter AOS 256) is very similar to the previous example, except that the test signal (with an all-zeroes payload and a J0 overhead byte) is being injected by a *busy* OEO TAI port. A bridged TA cross-connection using SWMG-1 is established at AOS #1 to an idle TAM port. The signal will go to both the TAM port and the NNI port. At AOS #2, the eport is connected by a TA cross-connection using only switch fabric side “0” to a TAM port, where the incoming test signal is to be monitored. Note that the test unit shown at AOS #2 may be either an OEO TAM port or an external test set connected to an OCHT TAM port.



AOS #1 Ports	AOS #1 AIDs		AOS #2 Ports	AOS #2 AIDs
eport	och-1-4-1		eport	och-2-3-1
TAM Port	och 3-6-2		TAM Port	och-1-4-2

**AOS #1
Command**

```
CONN-TACC:LT-AOS1:och-3-6-2:123456::MONE,och-1-4-1,,,0;  
  
LT-AOS1 01-09-18 08:24:22  
M 123456 COMPLD  
;
```

**AOS #1
DBCHG
Message**

```
LT-AOS1 01-09-18 08:24:22  
A 006 REPT DBCHG  
"TIME=08-24-22,DATE=01-09-18:CONN-TACC:::add=\"och-1-  
4-1,och-3-6-2,2,MONE,,,000000,0\" :"  
;
```

**AOS #2
Command**

```
CONN-TACC:LT-AOS2:och-1-4-2:123456::MONE,och-2-3-1,0;  
  
LT-AOS2 01-09-18 08:32:25  
M 123456 COMPLD  
;
```

**AOS #2
DBCHG
Message**

```
LT-AOS2 01-09-18 08:32:25  
A 006 REPT DBCHG  
"TIME=08-32-25,DATE=01-09-18:CONN-TACC:::add=\"och-2-  
3-1,och-1-4-2,0,MONE,,,000000,0\" :"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **CONN-TACC** command. The following additional errors apply to the **CONN-TACC** command as well.

If the network element receives an **CONN-TACC** command with an invalid **tstmde** parameter value, then the following error response is returned.

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

If the network element receives a **CONN-TACC** command with an invalid **taport1** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid ACcess identifier, invalid taport1 */
;
```

If the network element receives a **CONN-TACC** command with an invalid **taport2** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid ACcess identifier, invalid taport2 */
;
```

If the network element receives a **CONN-TACC** command with an invalid **eport_aid** parameter value, then the following error response is returned.

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

If the network element receives a **CONN - TACC** command with an invalid **fport_aid** parameter value, then the following error response is returned.

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

If the network element receives a **CONN - TACC** command when there is no optical cross-connect interface circuit pack associated with the port specified by the **taport1** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, taport1 slot unequipped */
;
```

If the network element receives a **CONN - TACC** command when there is no optical cross-connect interface circuit pack associated with the port specified by the **taport2** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, taport2 slot unequipped */
;
```

If the network element receives a **CONN - TACC** command when there is no optical cross-connect interface circuit pack associated with the port specified by the **eport_aid** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, eport_aid slot unequipped */
;
```

If the network element receives a **CONN - TACC** command when there is no optical cross-connect interface circuit pack associated with the port specified by the **fport_aid** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, fport_aid slot unequipped */
;
```

If the network element receives an **CONN - TACC** command, then the following error response is returned if either of the following conditions exist:

- For a duplex TA cross-connection, no SWIPs have been assigned to at least one of the ports specified by an input AID parameter (either **eport_aid** or **fport_aid**) or an output AID parameter (either **taport1** or **taport2**).
- For a simplex cross-connection, at least one of the SWIPs that is required to establish the simplex leg has not been assigned to the specified ports.

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

NOTE: For information concerning the case when one switch fabric has been removed, please see the NOTE following the corresponding Error Code in the **ENT - CRS** command description.

If the network element receives an **CONN - TACC** command with an invalid **injt_sige** parameter value, then the following error response is returned.

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

If the network element receives an **CONN - TACC** command that does not contain a value for the mandatory **tstmde** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
/* Input, Parameter MiSsing, missing tstmde parameter */
;
```

If the network element receives an **CONN - TACC** command with an invalid **J0_insrte** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid J0_insrte */
;
```

If the network element receives a **CONN - TACC** command containing a number of AID values that is inconsistent with the specified **tstmde** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent tstmde and AID values */
;
```

The IDNC error message above will result if any one of the following criteria is not satisfied:

- A **tstmde** value of “**MONE**” requires two AID values, which are the **eport_aid** and the **taport1**.
- A **tstmde** value of “**MONF**” requires two AID values, which are the **fport_aid** and the **taport1**.
- A **tstmde** value of “**MONEF**” requires four AID values, which are the **eport_aid** and the **taport1** as well as the **fport_aid** and the **taport2**.

If the network element receives a **CONN - TACC** command with an invalid **sw_fabe** parameter value, then the following error response is returned.

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

A **sw_fabe** value may be invalid because it is not one of the allowed values for the parameter (that is, "0", "1", "2", or "3"), or because a value "2" has been specified for a busy eport. A **sw_fabe** value may also be invalid if a value other than "3" is specified when the **eport_aid** specifies an input port that is associated with a service cross-connection owned by ONNS.

If the network element receives a **CONN - TACC** command with an invalid **sw_fabf** parameter value, then the following error response is returned.

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

A **sw_fabf** value may be invalid because it is not one of the allowed values for the parameter (that is, 0, 1, 2, or 3), or because a value "2" has been specified for a busy fport. A **sw_fabf** value may also be invalid if a value other than "3" is specified when the **fport_aid** specifies an input port that is associated with a service cross-connection owned by ONNS.

If the network element receives an **CONN - TACC** command with an invalid **injt_sigf** parameter value, then the following error response is returned.

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

If the network element receives an **CONN - TACC** command with an invalid **J0_insrtrf** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid J0_insrtrf */
;
```

If the network element receives a **CONN - TACC** command containing a signal injection instructions that are inconsistent with the specified **tstmde** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent tstmde and signal injection */
;
```

The IDNC error message above will result if any one of the following criteria is not satisfied:

- 1-way signal injection and J0 insertion at a busy or idle eport requires a **tstmde** value of “**MONE**”.
- 1-way signal injection and J0 insertion at a busy fport requires a **tstmde** value of “**MONEF**”. 1-way signal injection and J0 insertion at an idle fport will be denied.
- 2-way signal injection and J0 insertion at a busy eport and a busy fport (belonging to the same 2-way cross-connection) requires a **tstmde** value of “**MONEF**”. 2-way signal injection and J0 insertion at an idle eport and idle fport will be denied.

If the network element receives a **CONN - TACC** command specifying the AID of an idle TAM (output) port that currently has a forced protection switch in effect, then the following error response is returned.

```
sid date time
M ctag DENY
  SAPR
/* Status, Already in Protection, output port */
;
```


If the network element receives a **CONN - TACC** command specifying the AID of an output port that is reserved for ONNS use as a “REVERTIVE” path testing port, then the following error response is returned.

```
sid date time
M ctag DENY
  SAAS
  /* Status, Already ASSigned, port reserved for path testing by ONNS */
;
```

If the network element receives a **CONN - TACC** command specifying an **taport1** or an **taport2** that is busy, that is, the output port is already being used for some type of cross-connection or loopback, then the following error response is returned.

```
sid date time
M ctag DENY
  SAIS
  /* Status, Already In-Service, output port unavailable */
;
```

If the network element receives a **CONN - TACC** command that specifies a MONEF test mode but the specified **eport_aid** and **fport_aid** do not belong to the same 2-way cross-connection configuration, then the following error response is returned.

```
sid date time
M ctag DENY
  SRQN
  /* Status, ReQuest Not valid, not a 2-way configuration */
;
```

If the network element receives a **CONN - TACC** command that specifies a MONE, MONF, or MONEF test mode for a 2-way cross-connection when a MONE or a MONF test mode already exists, then the following error response is returned.

```
sid date time
M ctag DENY
  SRQN
  /* Status, ReQuest Not valid, cannot change test mode */
;
```

Because a 2-way signal involves both an eport and an fport, a MONE or a MONF test session cannot be established in both directions.

If the network element receives a **CONN - TACC** command that specifies an **taport1** or an **taport2** for which the **USAGE** parameter is LINK_PROBE, then the following error response is returned.

```
sid date time
M ctag DENY
SAAS
/* Status, Already ASSigned, port reserved for AIRP */
;
```

If the network element receives a **CONN - TACC** command that requests signal injection at a transparent eport or fport, then the following error response is returned.

```
sid date time
M ctag DENY
SRQN
/* Status, ReQuest Not valid, signal injection denied, transparent port */
;
```

For 2-way signal injection, the command will be denied if either the eport or the fport is a transparent port.

If the network element receives a **CONN - TACC** command that contains inconsistent values for **injt_sige** and **J0_insrte**, then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, inconsistent injt_sige and J0_insrte */
;
```

If the **injt_sige** parameter has a value of "0" or "1", the **J0_insrte** parameter must have a value of either "YES" or "NO".

If the **injt_sige** parameter has a value of "NA", the **J0_insrte** parameter must also have a value of "NA".

If the network element receives a **CONN - TACC** command that contains inconsistent values for **injt_sigf** and **J0_insrtrf**, then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, inconsistent injt_sigf and J0_insrtrf */
;
```

If the **injt_sigf** parameter has a value of "0" or "1", the **J0_insrtrf** parameter must have a value of either "YES" or "NO".

If the **injt_sigf** parameter has a value of "NA", the **J0_insrtrf** parameter must also have a value of "NA".

If the network element receives an **CONN - TACC** command when the optical cross-connect interface circuit pack associated with the port identified by the **eport_aid** parameter is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
SNIS
/* Status, Not In Service, eport_aid pack out-of-service */
;
```

If the network element receives an **CONN - TACC** command when the optical cross-connect interface circuit pack associated with the port identified by the **fport_aid** parameter is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
SNIS
/* Status, Not In Service, fport_aid pack out-of-service */
;
```

If the network element receives an **CONN - TACC** command when the optical cross-connect interface circuit pack associated with the port identified by the **taport1** parameter is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
SNIS
/* Status, Not In Service, taport1 pack out-of-service */
;
```

If the network element receives an **CONN - TACC** command when the optical cross-connect interface circuit pack associated with the port identified by the **taport2** parameter is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, taport2 pack out-of-service */
;
```

If the network element receives a **CONN - TACC** command when the Switch Shelf that is required to establish the simplex leg for the test access cross-connection is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, switch fabric shelf */
;
```

If the network element receives a **CONN - TACC** command specifying an **eport_aid** (or an **fport_aid**) that has a format (rate) attribute that is incompatible with the format (rate) attribute of the TAM port that is identified by **taport1** (or by **taport2**), then the following error response is returned.

```
sid date time
M ctag DENY
  SSPN
  /* Status, SPeed Not correct, incompatible transparent and OEO ports */
;
```

The following table shows the OCHT TAM port format (rate) attribute values that are compatible with a particular type of OEO eport (or fport).

	Provisioned IFMT Parameter for OCHT TAM (Output) Port					
OEO Eport or Fport (ISTD= SONET or SDH)	OC48/ STM16	OC192/ STM64	OC768/ STM256	GBELX	HSBB	OTHER
OCH10GC	Deny	Allow	Deny	Deny	Deny	Allow
OCH2GC	Allow	Deny	Deny	Allow	Allow	Allow

The following table shows the type of OEO TAM port that is compatible with the format (rate) attribute value of a transparent eport (or fport).

Provisioned IFMT Parameter for a Transparent* Eport or Fport	OEO TAM (Output) Port	
	OCH10GC (ISTD= SONET or SDH)	OCH2GC (ISTD= SONET or SDH)
OC48/STM16	Deny	Allow
OC192/STM64	Allow	Deny
OC768/STM256	Deny	Deny
GBELX	Deny	Allow
HSBB	Deny	Allow
OTHER	Allow	Allow

Note that for a 2-way MONEF TA cross-connection, all ports identified in a command by the four AID values must have compatible format (rate) attributes.

* OCHT, OCHA13, and OCHA15 are transparent input ports. The latter two are equipped with an optical amplifier.

If the network element receives a **CONN - TACC** command specifying the AID for a transparent* eport (or fport) that has an incompatible provisioned format (rate) attribute with respect to those of the transparent OCHT TAM (output) port, then the following error response is returned.

```
sid date time
M ctag DENY
  SSPN
/* Status, SSpeed Not correct, incompatible transparent ports */
;
```

Note that for a 2-way MONEF TA cross-connection, all ports identified in a command by the four AID values must have compatible format (rate) attributes.

* OCHT, OCHA13, and OCHA15 are transparent input ports. (The latter two are equipped with an optical amplifier.) All transparent output ports are OCHT ports.

The following table shows the combinations of provisioned transparent input and output port format (rate) attributes for which TA cross-connections shall be allowed or denied.

	Provisioned IFMT Parameter for OCHT Output Port that has been Selected to Serve as a TAM Port					
Provisioned IFMT Parameter for a Transparent Eport or Fport	OC48/STM16	OC192/STM64	OC768/STM256	GBELX	HSBB	OTHER
OC48 /STM16	Allow	Deny	Deny	Allow	Allow	Allow
OC192STM64	Deny	Allow	Deny	Deny	Deny	Allow
OC768/STM256	Deny	Deny	Allow	Deny	Deny	Allow
GBELX	Allow	Deny	Deny	Allow	Allow	Allow
HSBB	Allow	Deny	Deny	Allow	Allow	Allow
OTHER	Allow	Allow	Allow	Allow	Allow	Allow

If the network element receives a **CONN - TACC** command containing the AID values for incompatible OEO input ports and OEO TAM ports, then the following error response is returned.

```

sid date time
M ctag DENY
SSPN
/* Status, SSpeed Not correct, incompatible OEO ports */
;
```

Note that for a 2-way MONEF TA cross-connection, all ports identified in a command by the four AID values must have compatible standards and format (rate) attributes.

The following table shows the combinations of OEO input and output port standards and format (rate) attributes for which TA cross-connections will be allowed or denied:

OEO Eport or Fport	OEO TAM (Output) Port			
	OCH10GC SONET	OCH10GC SDH	OCH2GC SONET	OCH2GC SDH

OEO Eport or Fport	OEO TAM (Output) Port			
OCH10GC SONET	Allow	Deny	Deny	Deny
OCH10GC SDH	Deny	Allow	Deny	Deny
OCH2GC SONET	Deny	Deny	Allow	Deny
OCH2GC SDH	Deny	Deny	Deny	Allow

If the network element receives a **CONN - TACC** command when a cross-connect loopback currently exists for the specified *eport_aid* or *fport_aid*, then the following error response is returned.

```

sid date time
M ctag DENY
SADS
/* Status, Access unit in Diagnostic State, loopback exists */
;
```

If the network element receives a **CONN - TACC** command containing an *eport_aid* that specifies an unprovisioned eport, the network element will return the following error response.

```

sid date time
M ctag DENY
IENE
/* Input, object Entity does Not Exist, eport */
;
```

If the network element receives a **CONN - TACC** command containing an *fport_aid* that specifies an unprovisioned fport, the network element will return the following error response.

```

sid date time
M ctag DENY
IENE
/* Input, object Entity does Not Exist, fport */
;
```

If the network element receives a **CONN-TACC** command containing an **taport1** or **taport2** that specifies an unprovisioned TAM port, the network element will return the following error response.

```
sid date time
M ctag DENY
  IENE
  /* Input, object Entity does Not Exist, TAM port */
;
```

If the network element receives a **CONN-TACC** command containing the AID value for a port (that is, either an **eport_aid**, **fport_aid**, **taport1**, or **taport2**) that belongs to an out-of-service OIS shelf, the network element will return the following error response.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, OIS shelf */
;
```

If the network element receives an **CONN-TACC** command when the High Voltage Shelf that is required to establish the test access cross-connection leg is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, high voltage shelf */
;
```

If the network element receives a **CONN-TACC** command specifying either an **eport_aid** or an **fport_aid** that is being used as the input port for a bridge cross-connection configuration, the network element will return the following error response:

```
sid date time
M ctag DENY
  SAIS
  /* Status, Already In-Service, bridge input port */
;
```

The **OPR-LPBK** command can be used to establish a forced simplex loopback on the desired bridge leg.

If the network element receives a **CONN - TACC** command specifying either an ***eport_aid*** or an ***fport_aid*** that is currently being used for an AIRP cross-connection, the network element will return the following error response:

```
sid date time
M ctag DENY
  SADS
/* Status, Access Unit in Diagnostic State, AIRP operation in progress */
;
```

If the network element receives a **CONN - TACC** command specifying either an ***eport_aid*** or an ***fport_aid*** that is already being used for another TA cross-connection, the network element will return the following error response:

```
sid date time
M ctag DENY
  SAIS
/* Status, Already In-Service, TA cross-connection */
;
```

RELATED TL1 MESSAGES

DISC - TACC

RTRV - TACC

RTRV - CRS

RTRV - rr

NAME

CPY-MEM : Copy Memory

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

INPUT FORMAT

CPY-MEM: *tid::ctag::from, [src], to, [dst], ftpipaddr, ftpuserid, password, class;*

DESCRIPTION

The **CPY-MEM** command can be used to copy Software and Data files between a file store on the PRI and that on an external management system. Use the **CPY-NVM** command to copy between the primary non-volatile memory (PRI, PRI NVM or PRI MEM) and the secondary non-volatile memory (SEC, SEC NVM or SEC MEM). The **CPY-MEM** command uses FTP to copy data or software files.

The **CPY-MEM** command is used to download software and in the backup and restore operations on the database. The files on the external management system are identified by the full path name of a directory node. When restoring, all the files, sub-directories, and their contents are copied. When backing up, the network element (NE) data that are to be backed up are copied to the specified node, preserving the directory structure at the PRI.

The execution of this command is allowed in both in service and out of service states for downloads and backups. For restoring data, the system must be out-of-service to prevent any new configuration from being entered. After the files are copied during a restoration, the **CPY-MEM** command resets the system to activate the restored data.

Note: For the PRI NVM, there are two software partitions and two NE data partitions. One software and one NE data partition are in used, and are called the "Current" partitions (pointed to by the Current Pointer). The other partitions are non-current (pointed to by the Standby Pointer).

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

The completion of **CPY-MEM** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "CPY-MEM Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **CPY-MEM** command.

Table 3-11. CPY-MEM Positional Input Parameters

Parameter Name	Description	Allowed Values	
<i>tid</i>	Target Identifier. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.		
<i>ctag</i>	Correlation Tag. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.		
<i>from</i>	From Memory Type. Specifies the memory from where the data is being transferred.	CIT EMS PRI	Craft Interface Terminal Element Management System Primary Non-Volatile Memory
<i>src</i>	Source. This parameter is omitted if the <i>from</i> parameter value is PRI , otherwise it contains a filename.	ASCII character string, enclosed in a pair of double quotes ("), of up to 128 characters with the format " <i>filename</i> " where <i>filename</i> has a format consistent with the file system where the file is located (for example, a DOS filename would contain backslashes (\), whereas a UNIX filename would contain slashes (/)). Because a (\) is interpreted as an escape character in TL1, it will be represented in the output as a double backslash (\\). A double backslash counts as only one character.	
<i>to</i>	To Memory Type. Specifies the memory to where the data is being transferred.	CIT EMS PRI	Craft Interface Terminal Element Management System Primary Non-Volatile Memory

Table 3-11. CPY - MEM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>dst</i>	Destination. This parameter is omitted if the to parameter value is PRI , otherwise it contains a filename.	ASCII character string, enclosed in a pair of double quotes ("), of up to 128 characters with the format " filename " where filename has a format consistent with the file system where the file is located (for example, a DOS filename would contain backslashes (\), whereas a UNIX filename would contain slashes (/)). Because a (\) is interpreted as an escape character in TL1, it will be represented in the output as a double backslash (\\). A double backslash counts as only one character.
<i>ftpipaddr</i>	FTP Internet Protocol Address. The Internet Protocol Address of the remote system (FTP Server) to which the network element database backup/restore is to be made. This address must be the address of a remote system (CIT or SNMS) that is currently connected to the NE.	www.xxx.yyy.zzz where www=0-255 , xxx=0-255 , yyy=0-255 , zzz=0-255
<i>ftpuserid</i>	FTP User Name. The FTP Server user that will have access to the backed-up NE database.	Case-sensitive alphanumeric string of 1 to 10 characters which has been previously provisioned as a valid login ID in the network element.
<i>password</i>	Password. The FTP Server password that the NE will use when establishing an FTP session for copying the NE database onto the FTP Server. Password strings are transmitted in unencrypted form in the CPY - MEM command. Note: Null password is NOT supported.	The CPY - MEM command is not required to validate the password for the FTP server.
<i>class</i>	Class. Specifies the class of the copy.	BACKUP Copy the database to a backup file RESTORE Restore the database from a backup file DOWNLOAD Copy software from a specified node

The following table summarizes the capabilities supported by the **CPY-MEM** command.

Table 3-12. Summary of **CPY-MEM** Command Capabilities

<i>class</i>	<i>from</i>	<i>src</i>	<i>to</i>	<i>dst</i>
BACKUP	PRI	Current	external system	"filename"
RESTORE	external system	"filename"	PRI	Non-current
DOWNLOAD	external system	"filename"	PRI	Non-current

Note: Examples of external systems are SNMS and CIT.

The **CPY-MEM** command performs the following when used to back up the current NE database, which includes the ONN data,

- Opens and logs onto the FTP channel to the external system.
- Checkpoints the provisionable NE data in the Current NE data partition, which includes the ONN data, of the PRI.
- Copies the provisionable NE data through the FTP to the specified node on the external system. Makes sure that the data identification information is updated and preserved with the data.
- Validates the copy is successful.
- Releases the FTP channel.
- Logs backup in DBCHG.
- If any step is unsuccessful, issues error message, and removes effect of database check pointing, if needed.

The **CPY-MEM** command performs the following when used to restore a previously backed up NE database, which includes the ONN data,

- Opens and logs onto the FTP channel to the external system.
- Validates if the data to be copied and the TID and the current software are compatible.
- Copies the NE data, which includes the ONN data, in the specified node on the external system through the FTP to the non-current PRI.
- Validates the copy is successful.
- Releases the FTP channel.
- Marks the restored data "PREVIOUS."
- Logs restoration in DBCHG.

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See notice on first page

- If any step is unsuccessful, issues error message, and removes effect of database check pointing, if needed.
- Responds with command completed message.
- If the copying is successful, and the **restoremode** is omitted or set to **ON**, issues command completion message and resets system.

After the database has been installed to working memory, the working database contains provisioning that was in the restoration file.

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

The **CPY-MEM** command performs as follows when used to download a generic upgrade to the NE,

- Opens and logs onto the FTP channel to the external system.
- Copies the new NE generic, which includes ONN generic, in the specified node on the external system through the FTP to the non-current PRI.
- Validates if the copy is successful.
- Releases the FTP channel.
- Validates if copied generic and current NE data is compatible.
- Marks the new software "Downloaded."
- Logs upgrade in DBCHG.
- If any step is unsuccessful, issues error message, and removes effect of database check pointing, if needed.

Currently, **CPY-MEM** will reset system for the data to take effect.

For database restoration, the TID and the software release ID (available from the heading information) must be compatible. This condition is issued as an error response.

The **CPY-MEM** does not impact existing transport services provided by the NE.

The **CPY-MEM** does not impact user services provided by the NE, except the locking of the target partition to which the **CPY-MEM** is writing.

OUTPUT FORMAT

If the **CPY-MEM** command completes successfully, then the following normal completion response is returned after the copy has been completed.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

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 file named "98_01_01". (When the GUI is used to specify a download, backup, or restore, the GUI prompts the craft for a file name and automatically replaces each backslash with a double backslash).

```
CPY-MEM:LT-OXC::123456::PRI,,CIT,"\\data\\98_01_01",207.34.52.6,
dbbacker,backman#99,BACKUP;

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

The following example shows a **CPY-MEM** command that restores the database from the CIT. The restoration causes the database to be placed in the previous partition of NVM and then installed to working memory. By completion, an NVM pointer will be adjusted so that it correctly indicates the database as being in the current partition of NVM.

```
CPY-MEM:LT-OXC::123456::CIT,"\\data\\98_01_01",PRI,,207.34.52.6,
dbbacker,backman#99,RESTORE;

LT-OXC 98-01-02 08:00:00
M 123456 COMPLD
;
```


ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **CPY-MEM** command. The following additional errors apply to the **CPY-MEM** command as well.

If the **CPY-MEM** command is received with an invalid **from** parameter value, then the following error response is returned.

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

If the **CPY-MEM** command is received with an invalid **to** parameter value, then the following error response is returned.

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

If the **CPY-MEM** command is received and the value of the **src** parameter is not enclosed in quotation marks (" "), then the following error response is returned.

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

If the **CPY-MEM** command is received and the value of the **dst** parameter is not enclosed in quotation marks (" "), then the following error response is returned.

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

If the **CPY-MEM** command is received with an invalid **ftpipaddr** parameter value, then the following error response is returned.

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

If the **CPY-MEM** command is received with an invalid **ftpuserid** parameter value, then the following error response is returned.

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

If the **CPY-MEM** command is received with an invalid **class** parameter value, then the following error response is returned.

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

If the **from** parameter value is equal to **PRI** and the **src** parameter value is not blank or if the **from** parameter value is equal to **CIT** or **EMS** and the **src** parameter value is blank, then the following error response is returned.

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

If the **to** parameter value is equal to **PRI** and the **dst** parameter value is not blank or if the **to** parameter value is equal to **CIT** or **EMS** and the **src** parameter is blank, then the following error response is returned.

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

If the **from** parameter value is equal to **PRI** and the **to** parameter value is not equal to **CIT** or **EMS** or if the **from** parameter value is equal to **CIT** or **EMS** and the **to** parameter value is not equal to **PRI**, then the following error response is returned.

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

If the **from** parameter value is equal to **CIT** or **EMS** and the **class** parameter value is not equal to **RESTORE**, or if the **from** parameter value is equal to **PRI** and the **class** parameter value is not equal to **BACKUP**, then the following error response is returned.

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

If a file transfer is attempted but cannot be performed due to an incorrect FTP IP address, then the following error response is returned.

```
sid date time
M ctag DENY
INAC
/* Input, Access Number not Correct */
;
```

If a file transfer is attempted but cannot be performed due to an improper user ID or password, then the following error response is returned.

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

If a file is specified that cannot be found or cannot be accessed due to improper privileges, then the following error response is returned.

```
sid date time
M ctag DENY
  PIMF
/* Privilege, Invalid Memory File */
;
```

If a **CPY-MEM** command is received and a previous **CPY-MEM** command has not finished or a resource is busy for other reasons, then the following error response is returned.

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

If a source file or the transferred data is deemed invalid for miscellaneous reasons such as incorrect CRC (Cyclic Redundancy Code), invalid control information, etc., then the following error response is returned.

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

If the destination does not have sufficient storage capacity, then the following error response is returned.

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

For a download to NVM, the network element will check the available space and DENY the request even before the file transfer starts. This is preferable to attempting the transfer and DENYing when there is no more space left.

If any of the required parameters (*from*, *src*, *to*, *dst*, *ftpipaddr*, *ftpuserid*, *password*, *class*) are not provided, then the following error response is returned.

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

The value <parameter> is equal to the name of the missing parameter.

If the system's current primary state is not equal to OOS-MA (Out-of-Service, Management) when the command is issued with the **class** parameter equal to **RESTORE**, then the following error response is returned.

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

RELATED TL1 MESSAGES

APPLY

CPY-NVM

RTRV-PRMTR

RTRV-PRMTR-DATA

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See notice on first page

RTRV-PRMTR-SFTWR

RTRV-SYSID

NAME

CPY-NVM : Copy Non-Volatile Memory

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL):S4

INPUT FORMAT

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

DESCRIPTION

The **CPY-NVM** command can be used to copy between the primary non-volatile memory (PRI, PRI NVM or PRI MEM) and the secondary non-volatile memory (SEC, SEC NVM or SEC MEM). Use the **CPY-MEM** command to copy between the network element (NE) and an external management system. The **CPY-NVM** command can be used to copy NE software, data or both, which includes ONN software and data. Execution of **CPY-NVM** command is allowed in both in service and out-of-service states, except for data restore, which is allowed in OOS-MA state only.

The **CPY-NVM** command is used in the local backup and restore operations on the database; it can also be used for local upgrade.

Note: For the PRI NVM, there are two software partitions, which include ONN software, and two NE data partitions, which include ONN data. One software and one NE data partition are in use, and are called the "Current" partitions (pointed to by the Current Pointer). The other partitions are non-current (pointed to by the Standby Pointer). Only one partition is supported in the SEC NVM.

Note: When the **restoremode** is **ON**, system will reset automatically to make restored data active.

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

The completion of **CPY-NVM** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "**CPY-NVM** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **CPY-NVM** command.

Table 3-13. CPY-NVM Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>from</i>	Source Location. Specifies the NVM from which the data is being transferred. A copy from standby to secondary or vice versa is not allowed.	ACTV current partition in primary NVM SEC secondary NVM
<i>to</i>	Destination Location. Specifies the NVM to which the data is being transferred.	ACTV previous partition in primary NVM SEC secondary NVM
<i>datatype</i>	DataType. Type of data that will be copied.	DATA database includes ONN data SFTWR generic software includes ONN generic database and generic software ALL calibration data (includes the mirror training and optical mapping files) CAL
<i>restore-mode</i>	Restore mode, to specify if the data are to be made active immediately after being copied.	ON Make data active immediately OFF Keep data as standby Default is ON .

The **CPY - NVM** command supports the capabilities specified in the following table:

Table 3-14. Summary of **CPY - NVM** Command Capabilities

Function	<i>from</i>	<i>src</i>	<i>to</i>	<i>dst</i>	<i>datatype</i>
Local Backup	ACTV (PRI)	Current	SEC	Older	DATA
Local Backup	ACTV (PRI)	Current	SEC	Older	SFTWR
Local Backup	ACTV (PRI)	Current	SEC	Older	ALL
Local Restore	SEC	Current	PRI	Non-cur- rent	DATA
Install SWS	SEC	Current	PRI	Non-cur- rent	CAL
Installation/ Upgrade	SEC	Newer	PRI	Non-cur- rent	SFTWR

For copying from the active primary NVM to the secondary NVM:

- Reads from the "Current" PRI partition, and writes to the SEC NVM.
- Validates copying has been successful.
- Marks the states of the just-copied SEC partition with "Previous".

For copying software and/or NE data from the secondary NVM to the primary NVM:

- Reads from the partition on the SEC, and writes to the non-current partition on the PRI.
- Validates the copy has been successful.
- Marks the state of the just-copied PRI partition "Downloaded."

The **APPLY** command has to be invoked separately to activate the copied software.

For copying switch shelf (SWS) calibration files from the SEC to the PRI:

- Reads the calibration files from the SEC.
- Installs the information into the internal database.
- Reflects the new SWS information on the PRI.

The copying process of the **CPY - NVM** and the system reset process to activate the restored data does not impact existing transport services provided by the NE.

However, if the incorrect data were restored, leading to the physical configuration being incompatible with the data, then service may be affected.

The **CPY-NVM** does not impact user services provided by the NE, except the locking of the target partition to which the **CPY-NVM** is writing.

OUTPUT FORMAT

If the **CPY-NVM** command completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example demonstrates copying data and software (the generic) from the active primary NVM to secondary NVM.

```
CPY-NVM:LT-OXC::123456::ACTV,SEC,ALL;

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

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **CPY-NVM** command. The following additional errors apply to the **CPY-NVM** command as well.

If the **CPY-NVM** command is received with an invalid **from** parameter value, then the following error response is returned.

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

If the **CPY - NVM** command is received with an invalid **to** parameter value, then the following error response is returned.

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

If the **CPY - NVM** command is received with an invalid **datatype** parameter value, then the following error response is returned.

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

If the **CPY - NVM** command is received with an invalid **restoremode** parameter value, then the following error response is returned.

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

If the **CPY - NVM** command is received with the **from** and **to** parameters equal to the same value, then the following error response is returned.

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

If the **CPY -NVM** command is received with the **from** parameter value equal to **PRI** and the **datatype** parameter value equal to **CAL**, then the following error response is returned.

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

If a **CPY -NVM** command is issued and a previous **CPY -NVM** command has not finished or a resource is busy for other reasons, then the following error response is returned.

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

If a source or the transferred data is deemed invalid for miscellaneous reasons such as incorrect checksum, invalid control information, etc., then the following error response is returned.

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

If a mismatch on the SNIP ID is found between the calibration files and the hardware (Switch Shelf), then the following error response is returned.

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

If the destination does not have sufficient storage capacity, then the following error response is returned.

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

If any of the required parameters (**from**, **to**, **datatype**) are not provided, then the following error response is returned.

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

The value <parameter> is equal to the name of the missing parameter.

RELATED TL1 COMMANDS/MESSAGES

APPLY

CPY-MEM

RTRV-PRMTR

RTRV-PRMTR-DATA

RTRV-PRMTR-SFTWR

RTRV-SYSID

NAME

DISC-TACC: Disconnect Test Access

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

INPUT FORMAT

DISC-TACC: *tid: taport1[, taport2] : ctag;*

DESCRIPTION

The **DISC-TACC** command can be used to disconnect a test access (TA) cross-connection that has been established between an eport and/or fport and the specified LambdaRouter AOS TA output port(s). Removing a TA cross-connection will terminate the associated TA session. At an OEO port, disconnecting a TA cross-connection will stop a signal from being injected and the associated J0 byte from being inserted; the OEO port will resume its normal reaction to an incoming signal that causes a DOS indication. Reacting to a DOS indication is suspended while an OEO port is in a signal injection mode.

A MONE or MONF TA cross-connection can be disconnected by specifying only its output port; note that both output ports associated with a MONEF TA cross-connection must be specified or else the command will be denied.

The **DISC-TACC** command generates a **REPT DBCHG** message that can be used to update a database. The format for this message appears in a following section of this command description.

INPUT PARAMETERS

The “**DISC - TACC** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **DISC - TACC** command.

Table 3-15. DISC - TACC Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier: Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>taport1</i>	TAM Port #1 Access IDentifier (AID). When a TA session involving only one TA cross-connection is to be disconnected, this parameter must specify the output port being used for this TA cross-connection. When a MONEF cross-connection is to be disconnected, both TAM ports being used must be specified with the <i>taport1</i> and the <i>taport2</i> parameters.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>taport2</i>	TAM Port #2 Access IDentifier (AID). This parameter is required when a MONEF TA cross-connection is to be disconnected. It must be included in the command to specify the second output port that is associated with the two MONEF TA cross-connections.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<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 **DISC - TACC** command completes successfully, the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

REPT DBCHG MESSAGE FORMAT

The general **REPT DBCHG** message format that appears below is specified in the **OUTPUT FORMAT** section of the **REPT DBCHG** message.

```
sid date time
A atag REPT DBCHG
  "TIME=ocrtm,DATE=ocrdat:[ccb]:[aid]:[com_block]:[spec_block]:[pst]
  [,sst]"
;
```

Shown below is the **REPT DBCHG** message that is generated as a result of the **DISC-TACC** command. This format is based on the general **REPT DBCHG** message format that appears in the **OUTPUT FORMAT** section of the **REPT DBCHG** message description.

```
sid date time
A atag REPT DBCHG
  "TIME=ocrtm,DATE=ocrdat:DISC-TACC:::[spec_block]:"
;
```

The "*spec_block*" will contain one or more "del" name-defined parameters that precede a grouping of cross-connection parameters pertaining to the TA cross-connection leg(s) that have been deleted by the command. Each "del=" that appears in the "*spec_block*" indicates that an existing TA cross-connection leg has been deleted. The information describing this deleted leg is contained in a sequence of cross-connection parameters identified by '\' at its beginning and end. The last two parameter fields will always contain zeroes because the **CONN-TACC** command does not associate a cross-connection number or an operations system identifier with a TA cross-connection. Information concerning these parameters, which are used for regular cross-connections, appears in the documentation for the **ENT-CRS** and **RTRV-CRS** commands.

Shown below are the types of "del" sequences that can be generated for the TA feature. These sequences are specified in terms of TA parameters.

```
del=\"eport_aid,taport1,sw_fabe,MONE,,000000,0"
```

```
del=\"fport_aid,taport1,sw_fabf,MONEF,,000000,0"
```

For a 2-way signal, two "del" sequences will appear in the same DBCHG message.

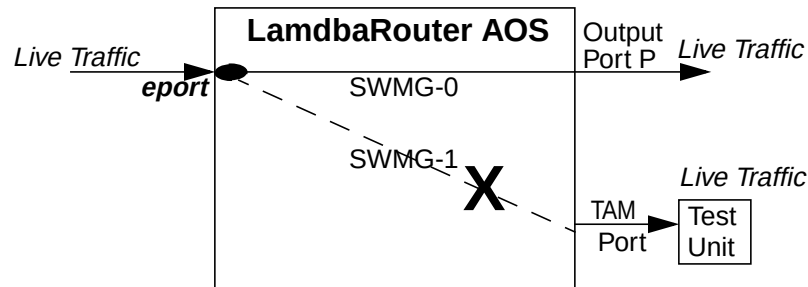
```
del=\"eport_aid,taport1,sw_fabe,MONEF,,000000,0"
```

```
del=\"fport_aid,taport2,sw_fabf,MONEF,,000000,0"
```

Examples of the **REPT DBCHG** message that are generated for the **DISC - TACC** command appear in the **EXAMPLE INPUT/OUTPUT** section of this document.

EXAMPLE INPUT/OUTPUT

The following example (applicable for both LambdaRouter AOS 128 and LambdaRouter AOS 256) shows the disconnect of a MONE TA cross-connection, which is shown by the dashed line. The input port receiving the live traffic signal is the eport. Because this is a 1-way signal, there is no fport. As a result of the disconnect action, the original cross-connect will resume its duplex nature.



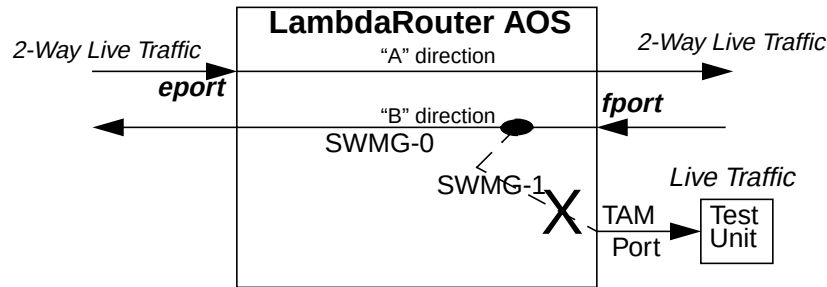
Port	AID
Output Port P	och-1-4-1
eport	och-1-6-1
TAM Port	och-1-8-1

DISC-TACC:LT-AOS:och-1-8-1:123456;

LT-AOS 01-08-16 08:03:23
M 123456 COMPLD
;

LT-AOS 01-08-16 08:03:23
A 006 REPT DBCHG
"TIME=08-03-23,DATE=01-08-16:DISC-TACC:::del=\"och-1-6-1,och-1-8-1,1,MONE,,,000000,0\":"
;

The following example (applicable for both LambdaRouter AOS 128 and LambdaRouter AOS 256) shows a successful completion of a **DISC-TACC** command to disconnect a MONF TA cross-connection, which appears as a dashed line. For this case, the input signal being monitored is one direction of a 2-way cross-connection; this signal is being received at an input port that has been labeled as the fport. As a result of the disconnect action, the cross-connect in the "B" direction will resume its duplex nature.



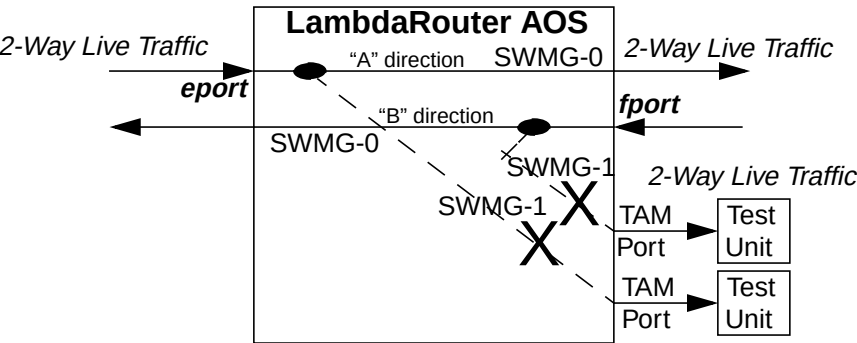
Port	AID
eport	och-3-4-1
Output Port "A" direction	och 1-3-2
fport	och-1-5-1
Output Port "B" direction	och-3-4-2
TAM Port	och-2-2-1

DISC-TACC:LT-AOS:och-2-2-1:123456;

LT-AOS 01-08-16 08:17:23
 M 123456 COMPLD
 ;

LT-AOS 01-08-16 08:17:23
 A 006 REPT DBCHG
 "TIME=08-17-23,DATE=01-08-16:DISC-TACC:::del=\"och-1-5-1,och-2-2-1,1,MONF,,,000000,0\": \"
 ;

The following example (applicable for both LambdaRouter AOS 128 and LambdaRouter AOS 256) shows a successful completion of a **DISC-TACC** command to disconnect the two MONEF TA cross-connections appearing as dashed lines. Both directions will resume their duplex nature.



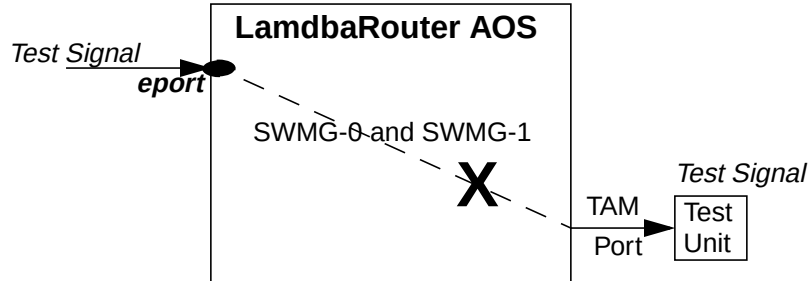
Port	AID
eport	och-3-3-1
Output Port "A" direction	och 1-1-2
fport	och-1-3-1
Output Port "B" direction	och-3-3-2
TAM Port for eport	och-2-2-1
TAM Port for fport	och-2-3-1

DISC-TACC:LT-AOS:och-2-2-1,och-2-3-1:123456;

LT-AOS 01-08-16 08:29:13
M 123456 COMPLD
;

LT-AOS 01-08-16 08:29:13
A 006 REPT DBCHG
"TIME=08-29-13,DATE=01-08-16:DISC-TACC:::del=\"och-3-3-1,och-2-2-1,1,MONEF,,,000000,0\",del=\"och-1-3-1,och-2-3-1,1,MONEF,,,000000,0\":"
;

The following example (applicable for both LambdaRouter AOS 128 and LambdaRouter AOS 256) shows the disconnect of a duplex MONE TA cross-connection, which is shown by the dashed line. If signal injection is occurring at the OEO eport, the command will stop this activity. After the disconnect activity is finished, the eport and the TAM port will be idle ports.



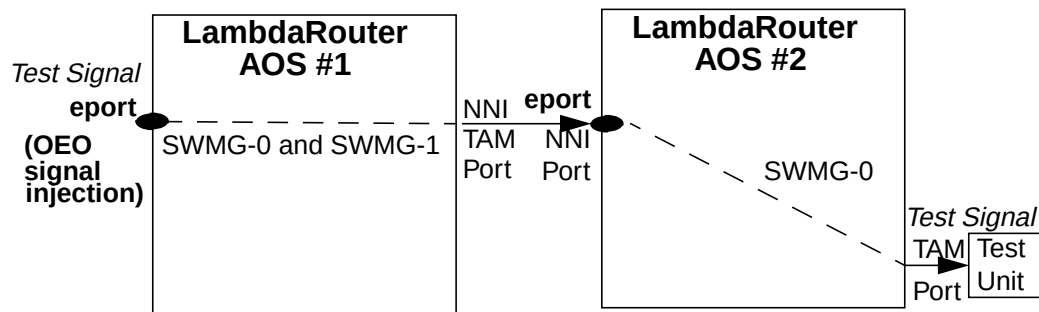
Port	AID
Output Port P	och-1-4-1
eport	och-1-6-1
TAM Port	och-1-8-1

DISC-TACC:LT-AOS:och-1-8-1:123456;

LT-AOS 01-08-16 08:03:23
 M 123456 COMPLD
 ;

LT-AOS 01-08-16 08:03:23
 A 006 REPT DBCHG
 "TIME=08-03-23,DATE=01-08-16:DISC-TACC:::del=\"och-1-6-1,och-1-8-1,2,MONE,,,000000,0\":"
 ;

The following example (applicable for either LambdaRouter AOS 128 or LambdaRouter AOS 256) illustrates the use of the command at two different LambdaRouter AOSs. At LambdaRouter AOS #1, a test signal with an all-zeroes payload and a J0 overhead byte is being injected by an OEO port. A TA cross-connection using both switch fabrics has been established to an NNI output port, which is connected by a network link to an eport at LambdaRouter AOS #2. At LambdaRouter AOS #2, the eport is connected by a TA cross-connection using only switch fabric side 0 to a TAM port, where the incoming test signal is being monitored. Note that the test unit shown at LambdaRouter AOS #2 may be either an OEO port or an external test set connected to an OCHT port.



AOS #1 Ports	AOS #1 AIDs		AOS #2 Ports	AOS #2 AIDs
eport	och-1-4-1		eport	och-2-3-1
TAM Port	och 3-6-2		TAM Port	och-1-4-2

**AOS #1
Command**

```
DISC-TACC:LT-AOS1:och-3-6-2:123456;  
  
LT-AOS1 01-09-18 08:24:22  
M 123456 COMPLD  
;
```

**AOS #1
DBCHG
Message**

```
LT-AOS1 01-09-18 08:24:22;  
A 006 REPT DBCHG  
"TIME=08-24-22,DATE=01-09-18:DISC-TACC:::del=\"och-1-  
4-1,och-3-6-2,2,MONE,,,000000,0\";"  
;
```

**AOS #2
Command**

```
DISC-TACC:LT-AOS2:och-1-4-2:123456;  
  
LT-AOS2 01-09-18 08:32:25  
M 123456 COMPLD  
;
```

**AOS #2
DBCHG
Message**

```
LT-AOS2 01-09-18 08:32:25  
A 006 REPT DBCHG  
"TIME=08-32-25,DATE=01-09-18:DISC-TACC:::del=\"och-2-  
3-1,och-1-4-2,0,MONE,,,000000,0\";"  
;
```


ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **DISC-TACC** command. The following additional errors apply to the **DISC-TACC** command as well.

If the network element receives a **DISC-TACC** command with an invalid **taport1** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid ACcess identifier, invalid taport1 */
;
```

If the network element receives a **DISC-TACC** command containing an **taport1** or **taport2** that specifies an unprovisioned TAM port, the network element will return the following error response.

```
sid date time
M ctag DENY
  IENE
  /* Input, object Entity does Not Exist, TAM port */
;
```

If the network element receives a **DISC-TACC** command with an invalid **taport2** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid ACcess identifier, invalid taport2 */
;
```

If the network element receives a **DISC-TACC** command specifying the AID for an output port that has no cross-connection leg, then the following error response is returned.

```
sid date time
M ctag DENY
  SNCC
  /* Status, Not Cross-Connected, TAM port AID */
;
```

If the network element receives a **DISC - TACC** command that identifies a MONEF test session but the AIDs specified by *taport1* and *taport2* do not belong to the same 2-way cross-connection configuration, then the following error response is returned.

```
sid date time
M ctag DENY
SRQN
/* Status, ReQuest Not valid, not a 2-way configuration */
;
```

If the network element receives a **DISC - TACC** command specifying the AID of an output port that has a cross-connection but it is not a TA cross-connection, then the following error response is returned.

```
sid date time
M ctag DENY
SRQN
/* Status, ReQuest Not valid, no TA cross-connection */
;
```

If the network element receives a **DISC - TACC** command containing a number of AID values that is inconsistent with the test mode of the existing TA cross-connection, then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, inconsistent test mode and AID values */
;
```

The IDNC error message above will result if the following criteria are not satisfied:

- When the existing test mode is “MONE” or “MONF”, the command must contain a value for only the *taport1* parameter.
- When the existing test mode is “MONEF”, the command must contain a value for both the *taport1* and *taport2* parameters.

If the network element receives an **DISC-TACC** command when the High Voltage Shelf that is required to delete a TA cross-connection leg is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, high voltage shelf */
;
```

If the network element receives an **DISC-TACC** command that does not contain a value for the mandatory **taport1** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
  /* Input, Parameter MiSSing, missing taport1 parameter */
;
```

RELATED TL1 MESSAGES

CONN-TACC

RTRV-TACC

ENT-CRS

DLT-CRS

RTRV-CRS

NAME

DLT - CRS : Delete Cross-Connect

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

INPUT FORMAT

DLT-CRS: *tid: in_aid_1, out_aid_1[, in_aid_2[, out_aid_2]] : ctag:*
: cct;

DESCRIPTION

The **DLT - CRS** command can be used to delete one or more cross-connection legs from an existing configuration that has been established within the network element. The AID values in the command must specify the input and output ports of each leg that is to be deleted. If an existing configuration consists of only a 1-way duplex, a 2-way duplex, or a merge, the entire configuration can be deleted with one entry of the command. Deleting all legs of other configurations will require additional entries of the command. The software will confirm that the cross-connection topology specified in the command agrees with the topology that is currently stored in the database for the specified AID values. Therefore, the command will not allow one direction of a 2-way configuration to be deleted.

The **DLT - CRS** command will be denied if a loopback or a test access cross-connection exists at the input port of the service cross-connection specified by the command. The **RLS - LPBK** command or the **DISC - TACC** command must first be used, respectively, to remove the loopback or test access cross-connection.

An entry of the **DLT - CRS** command will be denied if at least one of the AIDs specified in the command pertains to a cross-connection associated with an AIRP operation of port discovery or link verification. The command will also be denied if an output port AID specifies an output port that is being used by LambdaRouter ONNS for revertive path testing.

The **DLT - CRS** command will generate a **REPT DBCHG** message for use by associated operations systems to update their cross-connection databases.

The general **REPT DBCHG** message format is specified in the **OUTPUT FORMAT** section of the **REPT DBCHG** message. The format of the **REPT DBCHG** message ***spec_block*** that is generated as a result of the **DLT - CRS** command is specified in a subsequent section of this command description.

INPUT PARAMETERS

The "**DLT-CRS** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **DLT-CRS** command.

Table 3-16. DLT-CRS Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>in_aid_1</i>	Input Access IDentifier (AID) #1. This parameter identifies the input port of the first leg that is to be deleted with this command.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>out_aid_1</i>	Output Access IDentifier (AID) #1. This parameter identifies the output port of the first leg that is to be deleted with this command.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>in_aid_2</i>	Input Access IDentifier (AID) #2. This parameter identifies the input port of the second leg that is to be deleted with this command. A value for this parameter is required when the <i>cct</i> parameter is set to " 2WAY ", which means both directions of the 2-way must be deleted together. A value for this parameter is allowed when the <i>cct</i> parameter is set to " 1WAY " to allow both legs of a merge configuration to be deleted simultaneously.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}

Table 3-16. DLT - CRS Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
out_aid_2	Output Access IDentifier (AID) #2. This parameter identifies the output port of the second leg that is to be deleted with this command. A value for this parameter is required when the cct parameter is set to "2WAY", which means both directions of the 2-way must be deleted together. A value for this parameter is not allowed when the cct parameter is set to "1WAY".	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
ctag	Correlation Tag. Refer to the "RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the ctag parameter.	
cct	Cross-Connect Topology. This parameter specifies the basic topology of the cross-connection configuration from which one or more legs are to be removed.	1WAY 1-way (point-to-point, bridge, merge, etc.) 2WAY 2-way (point-to-point, bridge and merge, etc.)

OUTPUT FORMAT

If the **DLT - CRS** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

REPT DBCHG MESSAGE FORMAT

Shown below is the **REPT DBCHG** message that is generated as a result of the **DLT-CRS** command. This format is based on the general **REPT DBCHG** message format that appears in the **OUTPUT FORMAT** section of the **REPT DBCHG** message description.

```
sid date time
A atag REPT DBCHG
  "TIME=ocrtm,DATE=ocrdat:DLT-CRS:::[spec_block]:"
;
```

The "*spec_block*" will contain one or more "del" and "ed" name-defined parameters that precede a grouping of cross-connection parameters pertaining to the cross-connection leg(s) that have been deleted or changed by the command. Each parameter contained in an "del" or "ed" sequence is defined in the **RTRV-CRS** command.

Each "del=" that appears in the "*spec_block*" indicates that an existing (duplex or simplex) cross-connection leg has been deleted. The information describing this deleted leg is contained in the sequence of cross-connection parameters identified by \ at its beginning and end as shown below.

```
del="\in_aid,out_aid,sw_fab,cct,merg_ind,tw_link,ccnum,op_sys_id"
```

Each "ed=" that appears in the "*spec_block*" indicates that one or more characteristics of an existing cross-connection leg has changed. The information describing the leg with the changed characteristics is contained in the sequence of cross-connection parameters identified by \ at its beginning and end as shown below.

```
ed="\in_aid,out_aid,sw_fab,cct,merg_ind,tw_link,ccnum,op_sys_id"
```

When "ed=" appears in a **REPT DBCHG** message for a **DLT-CRS** command, it denotes that one or more of the following changes have occurred:

A simplex leg has become duplex, which will cause a "2" (instead of a "0" or "1") to appear in the *sw_fab* parameter for the leg.

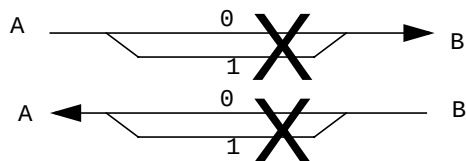
A leg is no longer part of a merge configuration, which will cause the *merg_ind* parameter field to be blank.

When the "*spec_block*" contains both an "ed=" and a "del=" sequence pertaining to a particular operation, the "del=" sequence will always appear before the "ed=" sequence. A **REPT DBCHG** message for the **DLT-CRS** command may contain multiple pairs of "del=" and "ed=" sequences.

Examples of the **REPT DBCHG** message that are generated for the **DLT - CRS** command appear in the **EXAMPLE INPUT/OUTPUT** section of this document.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **DLT-CRS** command to remove both directions of a 2-way point-to-point cross-connection. Note that for this case, the AID for the input port interface for one direction is the same as the AID for the output port interface in the opposite direction.



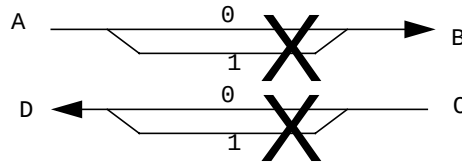
Port	AID
A	och-1-11-3
B	och-2-6-1

```
DLT-CRS:LT-AOS:och-1-11-3,och-2-6-1,och-2-6-1,och-1-11-3:123456::2WAY;
```

```
LT-AOS 01-04-16 08:19:31
M 123456 COMPLD
;
```

```
LT-AOS 01-04-16 08:19:31
A 006 REPT DBCHG
"TIME=08-19-31,DATE=01-04-16:DLT-CRS:::del=\"och-1-11-3,och-2-6-1,2,2WAY,,och-1-11-3,020601,1\",del=\"och-2-6-1,och-1-11-3,2,2WAY,,och-2-6-1,020601,1\":"
;
```

The following example shows the successful completion of a **DLT-CRS** command to remove both directions of a 2-way cross-connection involving four different ports.



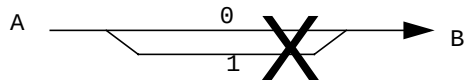
Port	AID
A	och-1-11-2
B	och-2-6-2
C	och-1-10-3
D	och-2-5-2

DLT-CRS:LT-AOS:och-1-11-2,och-2-6-2,och-1-10-3,och-2-5-2:123456::2WAY;

LT-AOS 01-04-16 08:22:13
M 123456 COMPLD
;

LT-AOS 01-04-16 08:22:13
A 006 REPT DBCHG
"TIME=08-22-13,DATE=01-04-16:DLT-CRS:::del=\"och-1-11-2,och-2-6-2,2,2WAY,,och-2-5-2,020602,1\",del=\"och-1-10-3,och-2-5-2,2,2WAY,,och-2-6-2,020602,1\":"
;

The following example shows the successful completion of a **DLT-CRS** command to remove a 1-way point-to-point cross-connection.



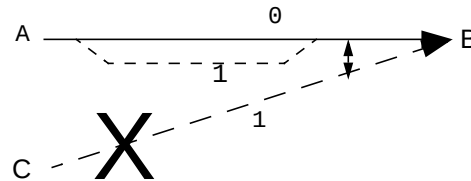
Port	AID
A	och-1-11-3
B	och-2-6-3

DLT-CRS:LT-AOS:och-1-11-3,och-2-6-3:123456::1WAY;

LT-AOS 01-04-16 08:24:56
 M 123456 COMPLD
 ;

LT-AOS 01-04-16 08:24:56
 A 006 REPT DBCHG
 "TIME=08-24-56,DATE=01-04-16:DLT-CRS:::del=\"och-1-11-3,och-2-6-3,2,1WAY,,,020603,1\":"
 ;

The following example shows a successful completion of the **DLT-CRS** command to delete a leg (shown as a dashed line) of an existing 1-way merge. As a result of this command, the duplex nature of the cross-connection from port A to port B (shown as a dotted line) will be restored.



Port	AID
A	och-1-15-1
B	och-1-7-1
C	och-1-16-4

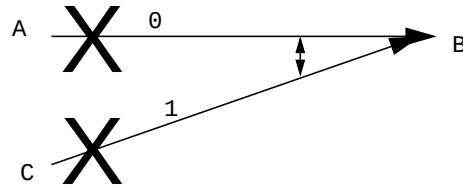
DLT-CRS:LT-AOS:och-1-16-4,och-1-7-1:123456::1WAY;

LT-AOS 01-04-16 08:27:01
M 123456 COMPLD
;

LT-AOS 01-04-16 08:27:01
A 006 REPT DBCHG
"TIME=08-27-01,DATE=01-04-16:DLT-CRS:::del=\"och-1-16-4,och-1-7-1,1,1WAY,MERG,,010701,1\",ed=\"och-1-15-1,och-1-7-1,2,1WAY,,,010701,1\":"
;

The following example shows the successful completion of a **DLT-CRS** command to remove both of the cross-connection legs in a merge configuration.

The command specifies the AID for the output port of the merge as well as the AIDs for the two input ports associated with the merge.



Port	AID
A	och-1-10-1
B	och-1-18-1
C	och-1-11-1

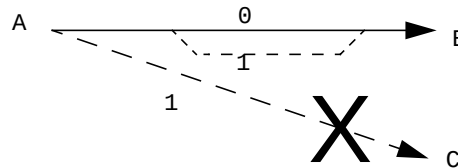
```
DLT-CRS:LT-AOS:och-1-10-1,och-1-18-1,och-1-11-1:123456::1WAY;
```

```
LT-AOS 01-04-16 08:29:15
M 123456 COMPLD
;
```

```
LT-AOS 01-04-16 08:29:15
A 006 REPT DBCHG
"TIME=08-29-15,DATE=01-04-16:DLT-CRS:::del=\"och-1-10-1,och-1-18-
1,0,1WAY,MERG,,011801,1\",del=\"och-1-11-1,och-1-18-
1,1,1WAY,MERG,,011801,1\":"
;
```

The following example shows the successful completion of a **DLT-CRS** command to remove one of the cross-connection legs (shown as a dashed line) in a bridge configuration. As a result of this command, the duplex nature of the cross-connection from port A to port B (shown as a dotted line) will be restored.

The command specifies the AIDs for the input port and the output port of the bridge leg to be deleted



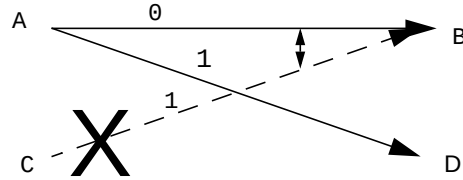
Port	AID
A	och-1-10-1
B	och-1-11-1
C	och-1-12-1

DLT-CRS:LT-AOS:och-1-10-1,och-1-12-1:123456::1WAY;

LT-AOS 01-04-16 08:32:51
 M 123456 COMPLD
 ;

LT-AOS 01-04-16 08:32:51
 A 006 REPT DBCHG
 "TIME=08-32-51,DATE=01-04-16:DLT-CRS:::del=\"och-1-10-1,och-1-12-1,1,1WAY,,,011101,1\",ed=\"och-1-10-1,och-1-11-1,2,1WAY,,,011101,1\":"
 ;

The following example shows a successful completion of the **DLT-CRS** command to delete a leg (shown as a dashed line) of an existing 1-way merge configuration.



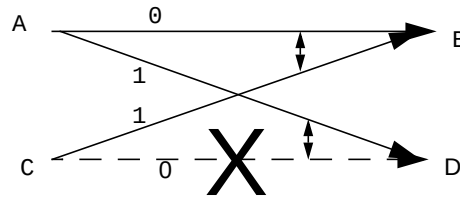
Port	AID
A	och-2-12-1
B	och-2-17-1
C	och-1-16-4
D	och-1-16-3

DLT-CRS:LT-AOS:och-1-16-4,och-2-17-1:123456::1WAY;

LT-AOS 01-04-16 08:35:02
M 123456 COMPLD
;

LT-AOS 01-04-16 08:35:02
A 006 REPT DBCHG
"TIME=08-35-02,DATE=01-04-16:DLT-CRS:::del=\"och-1-16-4,och-2-17-1,1,1WAY,MERG,,021701,1\",ed=\"och-2-12-1,och-2-17-1,0,1WAY,,,021701,1\":"
;

The following example shows a successful completion of the **DLT-CRS** command to delete a simplex leg (shown as a dashed line) that belongs to an existing cross-connect configuration. The leg to be deleted forms a bridge at the input port and a merge at the output port.



Port	AID
A	och-1-15-1
B	och-1-17-1
C	och-1-21-4
D	och-1-21-3

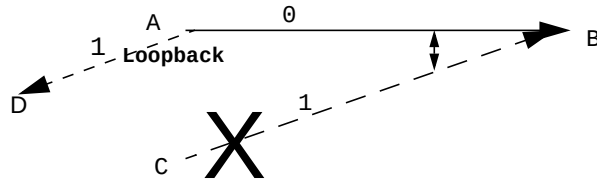
DLT-CRS:LT-AOS:och-1-21-4,och-1-21-3:123456::1WAY;

LT-AOS 01-04-16 08:37:41
 M 123456 COMPLD
 ;

LT-AOS 01-04-16 08:37:41
 A 006 REPT DBCHG
 "TIME=08-37-41,DATE=01-04-16:DLT-CRS:::del=\"och-1-21-4,och-1-21-3,0,1WAY,MERG,,011701,1\",ed=\"och-1-15-1,och-1-21-3,1,1WAY,,,011701,1\":"
 ;

The following example shows a successful completion of the **DLT-CRS** command to delete a leg (shown as a dashed line) of an existing 1-way merge configuration. For this case, assume a loopback leg (shown as a dotted line) was previously established on input port "A".

After the merge leg has been deleted, the remaining 1-way leg ("A" to "B") will be viewed in the cross-connection database as a duplex cross-connection, even while one of its transmission paths is being used to support the loopback. After the loopback has been released, the duplex cross-connection will physically exist.



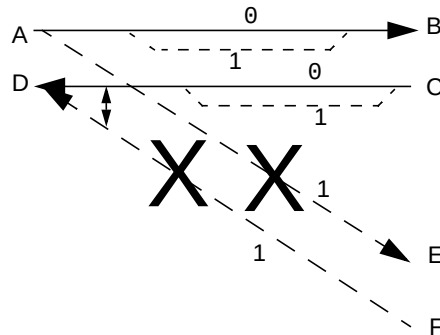
Port	AID
A	och-2-12-1
B	och-2-17-1
C	och-1-16-4
D	och-1-16-2

DLT-CRS:LT-AOS:och-1-16-4,och-2-17-1:123456::1WAY;

LT-AOS 01-04-16 08:37:12
M 123456 COMPLD
;

LT-AOS 01-04-16 08:37:12
A 006 REPT DBCHG
"TIME=08-37-12,DATE=01-04-16:DLT-CRS:::del=\"och-1-16-4,och-2-17-1,1,1WAY,MERG,,021701,1\",ed=\"och-2-12-1,och-2-17-1,2,1WAY,,,021701,1\":"
;

The following example shows successful completion of the **DLT-CRS** command to delete the 2-way legs (shown as dashed lines) that are being used to form a 2-way bridge and merge configuration. With these two legs removed, the remaining legs will become a duplex 2-way configuration (as shown by the dotted lines).



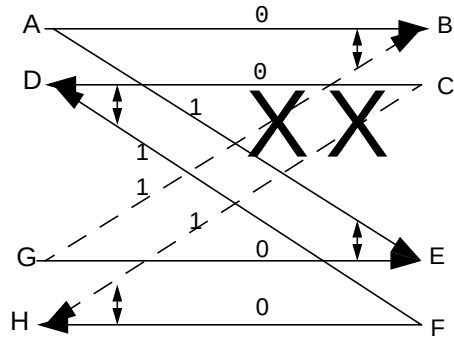
Port	AID
A	och-1-12-1
B	och-1-17-1
C	och-3-17-1
D	och-2-12-1
E	och-2-17-1
F	och-3-15-1

DLT-CRS:LT-AOS:och-1-12-1,och-2-17-1,och-3-15-1,och-2-12-1:123456::2WAY;

LT-AOS 01-04-16 08:41:29
 M 123456 COMPLD
 ;

LT-AOS 01-04-16 08:41:29
 A 006 REPT DBCHG
 "TIME=08-41-29,DATE=01-04-16:DLT-CRS:::del=\"och-1-12-1,och-2-17-1,1,2WAY,,och-2-12-1,011701,1\",ed=\"och-1-12-1,och-1-17-1,2,2WAY,,och-2-12-1,011701,1\",del=\"och-3-15-1,och-2-12-1,1,2WAY,MERG,och-2-17-1,011701,1\",ed=\"och-3-17-1,och-2-12-1,2,2WAY,,och-1-17-1,011701,1\":"
 ;

The following example shows a successful completion of the **DLT-CRS** command to delete one of the four sets of 2-way legs that have been used to construct the 2-way multiple bridge and merge configuration illustrated below. The set of 2-way legs to be deleted is shown as dashed lines. The command could have been applied to any of the other three sets of 2-way legs. This example uses some of the same ports that were used for the previous example.



Port	AID
A	och-1-12-1
B	och-1-17-1
C	och-3-17-1
D	och-2-12-1
E	och-2-17-1
F	och-1-15-1
G	och-1-16-1
H	och-1-9-1

```
DLT-CRS:LT-AOS:och-1-16-1,och-1-17-1,och-3-17-1,och-1-9-1:123456::2WAY;
```

```
LT-AOS 01-04-16 08:45:09  
M 123456 COMPLD  
;
```

```
LT-AOS 01-04-16 08:45:09  
A 006 REPT DBCHG  
"TIME=08-45-09,DATE=01-04-16:DLT-CRS:::del=\"och-1-16-1,och-1-17-1,1,2WAY,MERG,och-1-9-1,011701,1\",ed=\"och-1-12-1,och-1-17-1,0,2WAY,,och-2-12-1,011701,1\",del=\"och-3-17-1,och-1-9-1,1,2WAY,MERG,och-1-17-1,011701,1\",ed=\"och-1-15-1,och-1-9-1,0,2WAY,,och-2-17-1,011701,1\":"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **DLT-CRS** command. The following additional errors apply to the **DLT-CRS** command as well.

If the network element receives a **DLT-CRS** command with an invalid **cct** parameter value, then the following error response is returned.

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

If the network element receives a **DLT-CRS** command with an invalid **in_aid_1** parameter value, then the following error response is returned.

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid ACcess identifier, invalid in_aid_1 */  
;
```

If the network element receives a **DLT-CRS** command with an invalid *in_aid_2* parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid ACcess identifier, invalid in_aid_2 */
;
```

If the network element receives a **DLT-CRS** command with an invalid *out_aid_1* parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid ACcess identifier, invalid out_aid_1 */
;
```

If the network element receives a **DLT-CRS** command with an invalid *out_aid_2* parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid ACcess identifier, invalid out_aid_2 */
;
```

If the network element receives a **DLT-CRS** command when at least two of the port(s) specified by the AID parameters are cross-connected but not to one another, then the following error response is returned.

```
sid date time
M ctag DENY
  SNCC
/* Status, Not Cross-Connected */
;
```

If the network element receives a **DLT-CRS** command containing a number of AID values that is inconsistent with the specified **cct** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
  /* Input, Data Not Consistent, inconsistent cct and AID values */
;
```

The IDNC error message above will result if any one of the following criteria is not satisfied:

- Either two AID values (that is, one input port AID value and one output AID value) or three AID values (that is, two input port AID values and one output port AID value) are allowed when the **cct** parameter has a value of “**1WAY**”.
- A **cct** value of “**2WAY**” requires four AID values, which means two input port AID values and two output AID values.

If the network element receives a **DLT-CRS** command specifying an input port AID for which there is no existing cross-connection leg, then the following error response is returned.

```
sid date time
M ctag DENY
  SNCC
  /* Status, Not Cross-Connected, input port AID */
;
```

If the network element receives a **DLT-CRS** command specifying an output port AID for which there is no cross-connection leg, then the following error response is returned.

```
sid date time
M ctag DENY
  SNCC
  /* Status, Not Cross-Connected, output port AID */
;
```

If the network element receives an **DLT - CRS** command specifying an input port AID or an output port AID while the port is being used by AIRP for port discovery or link verification, then the following error response is returned.

```
sid date time
M ctag DENY
SADS
/* Status, Access unit in Diagnostic State, AIRP operation in progress */
;
```

If the network element receives a **DLT - CRS** command specifying an input port AID or an output port AID while the port is being used for a test access cross-connection, then the following error response is returned.

```
sid date time
M ctag DENY
SADS
/* Status, Access unit in Diagnostic State, test access session in
progress */
;
```

If the network element receives a **DLT - CRS** command specifying the AID of an output port that is being used by ONNS use as a “REVERTIVE” path testing port, then the following error response is returned.

```
sid date time
M ctag DENY
SADS
/* Status, Access unit in Diagnostic State, ONNS path testing in progress */
;
```

If the network element receives an **DLT - CRS** command when the High Voltage Shelf that is required to delete a cross-connection leg is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
SNIS
/* Status, Not In Service, high voltage shelf */
;
```


If the network element receives a **DLT-CRS** command to delete a leg from an input port at which a loopback currently exists, the following error response is returned.

```
sid date time
M ctag DENY
  SADS
  /* Status, Access unit in Diagnostic State, loopback exists */
;
```

If the network element receives a **DLT-CRS** command for which the requested operation cannot be successfully completed, then the following error response is returned.

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

If the network element receives a **DLT-CRS** command with a **cct** value that differs from the current value contained in the cross-connection database for the AID value(s) specified in the command, then the following error response is returned.

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

RELATED TL1 MESSAGES

ENT-CRS

RTRV-CRS

RTRV-rr

OPR-LPBK

RLS-LPBK

NAME

DLT-EQPT: Delete Equipment

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

INPUT FORMAT

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

DESCRIPTION

The **DLT-EQPT** command deletes equipment objects from the database and from the non-volatile memory.

A shelf cannot be deleted if any slots exist within the shelf. An optical cross-connect interface slot cannot be deleted if any of its associated ports are cross-connected. Both SWIP Maintenance Group (SWMG) objects must exist before one SWMG can be deleted.

An optical cross-connect interface slot or personality module slot cannot be deleted unless the slot is unequipped. Exception: an optical cross-connect interface slot can be deleted if the equipage status of the slot cannot be determined due to the Optical Interface Shelf (OIS) being out-of-service.

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

INPUT PARAMETERS

The “**DLT-EQPT** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **DLT-EQPT** command.

Table 3-17. DLT-EQPT Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. This is the entity identifier for which the DLT-EQPT command is intended, an equipment component.	swmg-{0,1} pmod-1-{1-4} LambdaRouter AOS 128: ois-{1-4} oxi-{1-4}-{1-32} LambdaRouter AOS 256: ois-{1-7} oxi-{1-7}-{1-32}
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **DLT-EQPT** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **DLT-EQPT** command.

```
DLT-EQPT:LT-0XC:ois-2:123456;  
  
LT-0XC 00-08-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **DLT-EQPT** command. The following additional errors apply to the **DLT-EQPT** command as well.

If the network element receives a **DLT-EQPT** command for a non-existent AID, then the following error response is returned.

```
sid date time  
M ctag DENY  
IENE  
/* Input, object Entity does Not Exist */  
;
```

If the network element receives a **DLT-EQPT** command that attempts to delete a shelf with existing slots, then the following error response is returned.

```
sid date time  
M ctag DENY  
SRQN  
/* Status, ReQuest Not valid, hierarchy not satisfied */  
;
```

If the network element receives a **DLT-EQPT** command that attempts to delete the last remaining SWIP Maintenance Group, then the following error response is returned.

```
sid date time
M ctag DENY
SRQN
/* Status, ReQuest Not valid, minimal equipage violation */
;
```

If the network element receives a **DLT-EQPT** command for an optical cross-connect interface slot that is equipped (in other words, the slot is not unequipped nor is the slot's equipage status unknown due to the associated Optical Interface Shelf being out-of-service), then the following error response is returned.

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

If the network element receives a **DLT-EQPT** command that attempts to delete the SWIP Maintenance Group while it is in the IS-NR or OOS-AU state, then the following error response is returned.

```
sid date time
M ctag DENY
SNOS
/* Status, Not manually Out of Service */
;
```

If the network element receives a **DLT-EQPT** command that attempts to delete an optical cross-connect interface slot with a cross-connected associated port, then the following error response is returned.

```
sid date time
M ctag DENY
SCBS
/* Status, Channel BuSy, associated port is busy */
;
```

If the network element receives a **DLT-EQPT** command for a personality module slot that is not unequipped, then the following error response is returned.

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

RELATED TL1 MESSAGES

ED-EQPT

ENT-EQPT

RTRV-EQPT

NAME

DLT-PM-PROF: Delete PM Profile

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

INPUT FORMAT

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

DESCRIPTION

The **DLT-PM-PROF** command can be initiated by users to remove a Performance Monitoring (PM) profile from the system memory. The system supports a system default set of profiles called DefaultS. DefaultS has default values of parameters in the profile. The DefaultS profiles cannot be deleted. For a general description of PM profiles, refer to the **ENT-PM-PROF** command.

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

INPUT PARAMETERS

The "**DLT-PM-PROF** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **DLT-PM-PROF** command.

Table 3-18. DLT-PM-PROF Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of <i>ctag</i> parameter.	

Table 3-18. DLT - PM - PROF Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>pftype</i>	Profile Type. This indicates the type of PM profile for the selected facility.	PHY_SNT Physical SEC Section LNE Line Near-End LFE Line Far-End PHY_SDH Physical RS RS MSNE MS Near-End MSFE MS Far-End
<i>pname</i>	Profile Name. This indicates the name of the PM profile to be deleted. The DefaultS and DefaultM profiles cannot be deleted.	

OUTPUT FORMAT

If the **DLT - PM - PROF** command completes successfully, the following message is the normal response.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

EXAMPLE INPUT/OUTPUT

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

```
DLT-PM-PROF:LT-0XC::123456::sec,att;
LT-0XC 98-01-01 08:00:00
M 123456 COMPLD
;
```

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ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **DLT-PM-PROF** command. The following additional errors apply to the **DLT-PM-PROF** command as well.

If the network element receives a **DLT-PM-PROF** command with a missing **pftype** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
/* Input, Parameter MiSsing, missing pftype */
;
```

If the network element receives a **DLT-PM-PROF** command with a missing **pfname** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
/* Input, Parameter MiSsing, missing pfname */
;
```

If the network element receives an **DLT-PM-PROF** command with an invalid **pftype** parameter value, then the following error response is returned.

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

If the network element receives an **DLT-PM-PROF** command with an invalid **pfname** parameter value, then the following error response is returned.

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

If the network element receives a **DLT-PM-PROF** command with a DefaultM or DefaultS profile name, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, DefaultM or DefaultS profile cannot
be deleted. */
;
```

If the network element receives an **DLT-PM-PROF** command with a non-existent profile name, then the following error response is returned.

```
sid date time
M ctag DENY
  IENE
/* Input, object Entity does Not Exist */
;
```

If the network element receives an **DLT-PM-PROF** command with a profile name specified that is in use for the provisioned ports, then the following error response is returned.

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, profile used by provisioned ports */
;
```

RELATED TL1 MESSAGES

ED-PM-PROF

ENT-PM-PROF

RTRV-PMASGNMT

RTRV-PMPROF

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NAME

DLT-USER-SECU: Delete User Security

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

INPUT FORMAT

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

DESCRIPTION

The **DLT-USER-SECU** command is used by an administrator (S5 privilege) to remove a non-administrator type user from the network element.

The network element always has two preinstalled users with full privileges in all functional categories. These two users are referred to as Superusers. It is not possible to remove either of the Superuser login IDs or of the S5 Administrator who is executing this command.

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. It shall not be possible to delete the login id of either of the Superusers or ID of the S5 administrator who is executing this command.

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

The successful completion of an **DLT-USER-SECU** TL1 command is entered in the Security Log and the User Session Log.

INPUT PARAMETERS

The “**DLT-USER-SECU** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **DLT-USER-SECU** command.

Table 3-19. DLT-USER-SECU Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>uid</i>	User Identifier. Refer to the “ ACT-USER Positional Input Parameters” table for the input parameter syntax and description of the <i>uid</i> parameter.	Case-sensitive alphanumeric string of 1 to 10 characters
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **DLT-USER-SECU** request completes successfully, then the following normal completion response is returned.

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

If the user specified by the value of the *uid* parameter is currently logged into the network element when this command is executed, then the user session identified by the *uid* parameter value is terminated, and the network element responds to the user who entered the **DLT-USER-SECU** command with the normal completion message (shown above).

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of 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-0XC-789:kjlee:123456;  
LT-0XC-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **DLT-USER-SECU** command. The following additional errors apply to the **DLT-USER-SECU** command as well.

If the network element receives a **DLT-USER-SECU** command with an invalid *uid* parameter value, then the following error response is returned.

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

If the network element receives the **DLT-USER-SECU** attempting to delete a Superuser identified by the *uid* parameter value, then the following error response is returned.

```
sid date time  
M ctag DENY  
SRQN  
/* Status, ReQuest Not valid, superuser uid */  
;
```

If the network element receives a **DLT-USER-SECU** command that is attempting to delete an S5 administrator of the current session identified by the **uid** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
SRQN
/* Status, ReQuest Not valid, current session uid not allowed */
;
```

RELATED TL1 COMMANDS

CANC-USER-SECU

ENT-USER-SECU

ED-USER-SECU

RTRV-USER-SECU

NAME

ED-DAT : Edit Date and Time

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

INPUT FORMAT

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

DESCRIPTION

The **ED-DAT** command changes the date and time information in the network element.

The system must be in-service for this command to complete.

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

The successful completion of an **ED-DAT** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "**ED-DAT** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ED-DAT** command.

Table 3-20. ED-DAT Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-20. ED - DAT Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>date</i>	Date. Specifies the current date. If a <i>time</i> parameter value is not specified, then a <i>date</i> parameter value must be specified for the ED - DAT command to complete successfully.	YY-MM-DD where YY=00-99 , MM=01-12 , DD=01-31 subject to calendar rules
<i>time</i>	Time. Specifies the current time of day. If a <i>date</i> parameter value is not specified, then a <i>time</i> parameter value must be specified for the ED - DAT command to complete successfully.	HH-MM-SS where HH=00-23 , MM=00-59 , SS=00-59

OUTPUT FORMAT

If the **ED - DAT** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of 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-OXC-789::123456::01-12-31,11-50-30;  
  
LT-OXC-789 01-12-31 11:50:31  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ED-DAT** command. The following additional errors apply to the **ED-DAT** command as well.

If the network element receives an **ED-DAT** command with an invalid date parameter value, then the following error response is returned.

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

The value of DD is checked for validity with MM (for example, February 30 cannot exist) and for validity with YY for MM-DD equaling 02-29 for leap years.

If the network element receives an **ED-DAT** command with an invalid time parameter value, then the following error response is returned.

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

If the network element receives an **ED-DAT** command with both the **date** and **time** parameter values missing, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing date/time */
;
```

If the network element receives an **ED-DAT** command when the system is out-of-service (in the OOS-MA state), then the following error response is returned.

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

RELATED TL1 MESSAGES

RTRV-HDR

NAME

ED-EQPT : Edit Equipment

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

INPUT FORMAT

ED-EQPT: *tid:aid:ctag*[:::[*spec_block*][:[*pst*][,*sst*]]];

DESCRIPTION

The **ED-EQPT** command modifies the provisioning values associated with already existing equipment objects. The system, shelf, slot, SWIP (Switch Interface Point), and SWMG (SWIP Maintenance Group) objects are subject to this command. Equipment objects must first be created, either manually, via the **ENT-EQPT** command, or autonomously by the network element, before they can be modified.

The following restrictions apply to the **ED-EQPT** command for an Optical Interface Shelf (OIS):

- In LambdaRouter AOS 256, the number of available SWIP blocks left for each SWIP Maintenance Group (SWMG) is defined as 14 minus the number of assigned SWIP blocks on the SWMG minus every reserved SWIP block on that SWMG beyond the first 2 reserved SWIP blocks. In LambdaRouter AOS 128, the number of available SWIP blocks left for each SWIP Maintenance Group (SWMG) is defined as 7 minus the number of assigned SWIP blocks on the SWMG minus every reserved SWIP block on that SWMG beyond the first reserved SWIP block. If more new SWIP block assignments are provisioned than the quantity of available SWIP blocks on either SWMG, then the command will be denied. {Note: a reserved SWIP block is defined as any unassigned SWIP block containing at least one SWIP that is in any of the following states: (IS-NR,), (OOS-MA,FLT&MEA), (OOS-MA,MT&BUSY), (OOS-MA,MT), (OOS-MA,UAS&MEA).}
- If the SWIP block assigned to a **SIDExBLKy** (where *x* = {0,1} and *y* = {1-8}) parameter is currently assigned or reserved, then the command will be denied.
- If a currently assigned **SIDExBLKy** (*x* = {0,1} and *y* = {1-8}) parameter (in other words **SIDExBLKy** currently does not equal UAS) is provisioned while ports exist within that port group, then the command will be denied.

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- If a ***SIDE1BLKy*** ($y = \{1-8\}$) parameter is assigned without assigning a ***SIDE0BLKz*** ($z = \text{the value of } y \text{ in } \mathbf{SIDE1BLKy}$) parameter when both ***SIDE1BLKy*** and ***SIDE0BLKz*** are currently unassigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the command will be denied. If a ***SIDE0BLKy*** ($y = \{1-8\}$) parameter is assigned without assigning a ***SIDE1BLKz*** ($z = \text{the value of } y \text{ in } \mathbf{SIDE0BLKy}$) parameter when both ***SIDE0BLKy*** and ***SIDE1BLKz*** are currently unassigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the command will be denied.
- If a ***SIDE1BLKy*** ($y = \{1-8\}$) parameter is unassigned without unassigning a ***SIDE0BLKz*** ($z = \text{the value of } y \text{ in } \mathbf{SIDE1BLKy}$) parameter when both ***SIDE1BLKy*** and ***SIDE0BLKz*** are currently assigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the command will be denied. If a ***SIDE0BLKy*** ($y = \{1-8\}$) parameter is unassigned without unassigning a ***SIDE1BLKz*** ($z = \text{the value of } y \text{ in } \mathbf{SIDE0BLKy}$) parameter when both ***SIDE0BLKy*** and ***SIDE1BLKz*** are currently assigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the command will be denied.
- If a ***SIDE1BLKy*** ($y = \{1-8\}$) parameter is assigned without assigning a ***SIDE0BLKz*** ($z = \text{the value of } y \text{ in } \mathbf{SIDE1BLKy}$) parameter when ***SIDE1BLKy*** is currently assigned and ***SIDE0BLKz*** is currently unassigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the command will be denied. If a ***SIDE0BLKy*** ($y = \{1-8\}$) parameter is assigned without assigning a ***SIDE1BLKz*** ($z = \text{the value of } y \text{ in } \mathbf{SIDE0BLKy}$) parameter when ***SIDE0BLKy*** is currently assigned and ***SIDE1BLKz*** is currently unassigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the command will be denied.

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

INPUT PARAMETERS

The "ED-EQPT Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ED-EQPT** command.

Table 3-21. ED-EQPT Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-21. ED-EQPT Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
aid	Access Identifier. This parameter is the AID of the equipment component to be modified.	system scs-1 swmg-{0,1} pmod-1-{1-4} LambdaRouter AOS 128: hvs-0 sws-0 ois-{1-4} oxi-{1-4}-{1-32} swip-0-{in,out}-{[A,B][1-8]}-{1-16} LambdaRouter AOS 256: hvs-{0,1} sws-{0,1} ois-{1-7} oxi-{1-7}-{1-32} swip-{0,1}-{in,out}-{[A,B][1-8]}-{1-16}
ctag	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the ctag parameter.	
spec_block	Specific Block Parameters. See the table " ED-EQPT Specific Block Parameters" for the detailed descriptions of these parameters.	
pst	Primary State. This parameter is only allowed when a system , oxi , pmod , or swmg aid is specified.	IS In-Service OOS Out-Of-Service
sst	Secondary State. This parameter is only allowed when a swip aid is specified and when the respective object has the current pst parameter value in the database =OOS-MA and current sst parameter value in the database =UEQ, MT, or FLT	UEQ Unequipped ("idle" SWIP) MT Maintenance ("suspect" SWIP) FLT Fault ("dead" SWIP)

The "**ED-EQPT** Specific Block Parameters" table contains the detailed descriptions and allowed values for the *spec_block* input parameters of the **ED-EQPT** command.

Table 3-22. ED-EQPT Specific Block Input Parameters

Parameter Name	Description	Allowed Values
AUTODISC	Automatic Port Neighbor Discovery and Link Verification Process Enable. This parameter activates or aborts the automatic port neighbor discovery and link verification process. Regardless of whether the process is already enabled, setting AUTODISC to ACTIVATE will cause the process to begin immediately. After the process completes, it will continue to run at the scheduled interval specified by AUTOVINT and AUTOVTIME. This parameter is allowed only when the system's ONNCFG is currently equal to ENABLE. This parameter is only allowed when a system aid is specified. When AUTODISC is provisioned to ACTIVATE in ED-EQPT, the REPT DBCHG message will report that AUTODISC = ENABLE and the Specific Block Output Parameter AUTODISC will return the value of ENABLE in the RTRV-EQPT command.	ACTIVATE Activate the automatic port neighbor discovery and link verification process and begin immediate processing DISABLE Disable (abort) the automatic port neighbor discovery and link verification process Initial value: DISABLE
AUTOVINT	Automatic Link Verification Interval. This parameter specifies the interval, in hours, between the execution of the background automatic link verification process. This parameter is allowed only when the system's ONNCFG is currently equal to ENABLE. This parameter is only allowed when a system aid is specified.	1, 2, 3, 4, 6, 8, 12, 24 Initial value: 24

Table 3-22. ED - EQPT Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
AUTOVTIME	Automatic Link Verification Start Time. This parameter specifies the start time for the execution of the background automatic link verification process, in hour-of-day format. Based upon the AUTOVTIME and AUTOVINT parameters, multiple start times can occur within one day (for example, if AUTOVTIME = 3 and AUTOVINT = 8, then the automatic link verification process will have start times of 3 am, 11 am, and 7 pm every day) This parameter is allowed only when the system's ONNCFG is currently equal to ENABLE . This parameter is only allowed when a system aid is specified.	0-23 Initial value: 4
DISCTXTMR	Discovery Signal Transmit Timer. This parameter specifies the interval, in seconds, that the discovery signal will be transmitted per discovery attempt. This parameter is allowed only when the system's ONNCFG is currently equal to ENABLE . This parameter is only allowed when a system aid is specified.	1-60 Initial value: 35
ID	Identifier. Physical Location of the equipment. This parameter is only allowed when a scs , hvs , ois , or sws aid is specified.	Alphanumeric string of up to 20 characters Initial value: Null value.
IFDF	Interface Format Default. Changing the value of this parameter has no effect on established ports, only on the IFMT parameter of transparent ports (OCHT, OCHA13, or OCHA15) that are established from that point onwards. This parameter is only allowed when a system aid is specified.	OC48/STM16 SONET OC-48 or SDH STM-16 OC192/STM64 SONET OC-192 or SDH STM-64 OC768/STM256 SONET OC-768 or SDH STM-256 GBELX Gigabit Ethernet HSBB High-speed Broadband OTHER Unknown Initial value: OTHER

Table 3-22. ED-EQPT Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
ISTDDFLT	Interface Standard Default. Changing the value of this parameter has no effect on established ports, only on the ISTD parameter of opaque ports (OCH10GC or OCH2GC) that are established from that point onwards. This parameter is only allowed when a system aid is specified.	SDH SDH interface standard SONET SONET interface standard Initial value: SONET
ONNCFG	ONN Configuration. This parameter specifies whether the system is to support the ONN (Optical Network Navigator) features. If ONNCFG = DISABLE , the following TL1 commands will be denied: - ED-PORT-LINK - OPR-LINK-VERF - RTRV-PORT-LINK If ONNCFG = DISABLE , the following AIDs will not exist: - rip-1-{1,2} - pmod-1-{1-4} - rip10-1-{1,2}-1 - rip100-1-{1,2}-1 - ripip-1-{1,2}-1 - pmoch-1-{1-4}-{1,2} The modification of this parameter is only allowed in the out-of-service (OOS-MA) state of the system. If the parameter is modified, the new parameter value will become effective after a system reboot. This parameter is only allowed when a system aid is specified.	ENABLE Enable ONN Features DISABLE Disable ONN Features Initial value: DISABLE

Table 3-22. ED - EQPT Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
RETRYCTR	Neighbor Discovery and Verification Retry Counter. This parameter specifies the number of times port neighbor discovery or link verification is re-tried before issuing a notification. This parameter is allowed only when the system's ONNCFG is currently equal to ENABLE . This parameter is only allowed when a system aid is specified.	0-20 Initial value: 5
RETRYTMR	Neighbor Discovery and Verification Retry Interval Timer. This parameter specifies the waiting time, in seconds, between retries of port neighbor discovery or link verification. This parameter is allowed only when the system's ONNCFG is currently equal to ENABLE . This parameter is only allowed when a system aid is specified.	1-30 Initial value: 5
SIDE0BLK1	First Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified.	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
SIDE0BLK2	Second Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified.	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
SIDE0BLK3	Third Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and OIS type = T , 2G , or MX	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}

Table 3-22. ED -EQPT Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>SIDE0BLK4</i>	Fourth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and OIS type = T or 2G	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK5</i>	Fifth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and OIS type = T	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK6</i>	Sixth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and OIS type = T	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK7</i>	Seventh Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and OIS type = T	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK8</i>	Eighth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and OIS type = T	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK1</i>	First Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified.	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}

Table 3-22. ED - EQPT Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>SIDE1BLK2</i>	Second Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified.	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK3</i>	Third Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and OIS type = T , 2G , or MX	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK4</i>	Fourth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and OIS type = T or 2G	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK5</i>	Fifth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and OIS type = T	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK6</i>	Sixth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and OIS type = T	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK7</i>	Seventh Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and OIS type = T	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}

Table 3-22. ED - EQPT Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
SIDE1BLK8	Eighth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and OIS type = T	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
SPARESWIP	Substitute Spare SWIP. This parameter associates a SWIP's associated port to a spare SWIP. The SWIP specified by the aid parameter will have no port association (APORT = NONE) after the successful provisioning of the SPARE-SWIP parameter. If the SWIP specified by the aid parameter does not have an associated port, provisioning the SPARESWIP parameter will have no affect. This parameter is provisionable only, it cannot be retrieved. The sst (Secondary State) of the spare SWIP must be equal to UEQ (unequipped). This parameter is only allowed when a swip aid is specified.	LambdaRouter AOS 128: swip-0-in-A{1-8}-{1-16} when aid = swip-0-in-A{1-8}-{1-16} . swip-0-in-B{1-8}-{1-16} when aid = swip-0-in-B{1-8}-{1-16} . swip-0-out-A{1-8}-{1-16} when aid = swip-0-out-A{1-8}-{1-16} . swip-0-out-B{1-8}-{1-16} when aid = swip-0-out-B{1-8}-{1-16} . LambdaRouter AOS 256: swip-0-in-[[A,B][1-8]]-{1-16} when aid = swip-0-in-[[A,B][1-8]]-{1-16} . swip-1-in-[[A,B][1-8]]-{1-16} when aid = swip-1-in-[[A,B][1-8]]-{1-16} . swip-0-out-[[A,B][1-8]]-{1-16} when aid = swip-0-out-[[A,B][1-8]]-{1-16} . swip-1-out-[[A,B][1-8]]-{1-16} when aid = swip-1-out-[[A,B][1-8]]-{1-16} .
SYSCFG	System Configuration. This parameter is used to set the initial system configuration and to perform system configuration upgrades. The modification of this parameter is only allowed in the out-of-service (OOS-MA) state of the system. While in the CD2 system configuration, SYSCFG can be provisioned to DD2 . Once SYSCFG is set to DD2 , it cannot be modified again. This parameter is only allowed when a system aid is specified.	CD2 LambdaRouter AOS 128 (Compact Duplex 2) DD2 LambdaRouter AOS 256 (Diverse Duplex 2) Initial value: UN (Unknown)

Table 3-22. ED-EQPT Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
USAGEDFLT	Port Usage Default. Changing the value of this parameter has no effect on established ports, only on the USAGE parameter of ports that are established from that point onwards. This parameter is only allowed when a system aid is specified.	CLIENT Client interface port NNI Network-to-Network Interface port UNI User-to-Network Interface port Initial value: CLIENT
VRECVTMR	Verification Receive Timer. This parameter specifies the waiting time, in seconds, at the target NE for appearance of the J0 in-band probe signal after receiving verification notification from the source NE. This parameter is allowed only when the system's ONNCFG is currently equal to ENABLE . This parameter is only allowed when a system aid is specified.	1-59 VRECVTMR < VRESPTMR Initial value: 30
VRESPTMR	Verification Response Timer. This parameter specifies the waiting time, in seconds, at the verification source for an out-of-band response from the target NE. This parameter is allowed only when the system's ONNCFG is currently equal to ENABLE . This parameter is only allowed when a system aid is specified.	2-60 Initial value: 35

OUTPUT FORMAT

If the **ED-EQPT** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example demonstrates the usage of the **ED-EQPT** command for provisioning the system-level spec_block parameter values.

```
ED-EQPT:LT-OXC:system:123456:::IFDF=0C192/STM64,AUTOVTIME=0,  
AUTOVINT=24,DISCTXTMR=20,RETRYCTR=5,RETRYTMR=5,VRECVTMR=4,  
VRESPTMR=5,ISTDDFLT=SONET,USAGEDFLT=CLIENT,AUTODISC=DISABLE;  
  
LT-OXC 00-08-01 08:00:24  
M 123456 COMPLD  
;
```

The following example demonstrates the usage of the **ED-EQPT** command for provisioning the system out of service.

```
ED-EQPT:LT-OXC:system:123457:::00S;  
  
LT-OXC 00-08-01 08:00:50  
M 123457 COMPLD  
;
```

The following example demonstrates the usage of the **ED-EQPT** command for provisioning the system configuration.

```
ED-EQPT:LT-OXC:system:123458:::SYSCFG=DD2;  
  
LT-OXC 00-08-01 08:05:57  
M 123458 COMPLD  
;
```


The following example demonstrates the usage of the **ED-EQPT** command for the provisioning of an Optical Interface Shelf.

```
ED-EQPT:LT-OXC:ois-1:123459:::ID=ISLE3BAY4TOP, SIDE0BLK1=A8,  
SIDE0BLK2=A7, SIDE0BLK3=A6, SIDE0BLK4=A5, SIDE0BLK5=A4, SIDE0BLK6=A3,  
SIDE0BLK7=A2;
```

```
LT-OXC 00-08-01 08:06:02  
M 123459 COMPLD  
;
```

The following example demonstrates the usage of the **ED-EQPT** command for the provisioning of an optical cross-connect interface slot.

```
ED-EQPT:LT-OXC:oxi-1-9:123460:::00S;
```

```
LT-OXC 00-08-01 08:06:12  
M 123460 COMPLD  
;
```

The following example demonstrates the usage of the **ED-EQPT** command for the provisioning of a Switch Interface Point (SWIP).

```
ED-EQPT:LT-OXC:swip-0-in-B3-13:123461:::,UEQ;
```

```
LT-OXC 00-08-01 08:06:23  
M 123461 COMPLD  
;
```

The following example demonstrates the usage of the **ED-EQPT** command for the provisioning of a SWIP Maintenance Group (SWMG).

```
ED-EQPT:LT-OXC:swmg-0:123462:::00S;
```

```
LT-OXC 00-08-01 08:08:17  
M 123462 COMPLD  
;
```

The following example demonstrates the usage of the **ED-EQPT** command for the provisioning of a personality module slot.

```
ED-EQPT:LT-0XC:pmod-1-2:123463:::00S;
```

```
LT-0XC 00-08-01 08:10:16  
M 123463 COMPLD  
;
```

The following example demonstrates the usage of the **ED-EQPT** command for provisioning a spare Switch Interface Point (SWIP) to be associated with a SWIP's current associated port.

```
ED-EQPT:LT-0XC:swip-0-in-B2-16:123464:::SPARESWIP=swip-0-in-B3-13;
```

```
LT-0XC 00-08-01 08:15:21  
M 123464 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ED-EQPT** command. The following additional errors apply to the **ED-EQPT** command as well.

If the network element receives an **ED-EQPT** command for an object that does not exist, then the following error response is returned.

```
sid date time  
M ctag DENY  
IENE  
/* Input, object Entity does Not Exist */  
;
```

If the network element receives an **ED-EQPT** command with an invalid Specific Block input parameter name, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNV
/* Input, Parameter Not Valid */
;
```

If the network element receives an **ED-EQPT** command for a non-shelf entity with the **ID** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command for a non-system entity with any of the following parameters specified:

- **AUTODISC**
- **AUTOVINT**
- **AUTOVTIME**
- **DISCTXTMR**
- **IFDF**
- **ISTDDFLT**
- **ONNCFG**
- **RETRYCTR**
- **RETRYTMR**
- **SYSCFG**
- **USAGEDFLT**
- **VRECVTMR**
- **VRESPTMR**

then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent aid and system parameter */
;
```

If the network element receives an **ED-EQPT** command for one of the following entities:

- Optical Interface Shelf
- Switch Shelf
- High-Voltage Shelf
- System Controller Shelf
- Switch Interface Point (SWIP)

with the **pst** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command for a non-Switch Interface Point (SWIP) entity with the **sst** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **ID** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command for the system with an invalid **SYSCFG** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command for the system with an invalid **IFDF** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **pst** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **sst** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command for the system with an invalid **ISTDDFLT** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command to modify the **SYSCFG** parameter for the system, while the system is not in the OOS-MA state, then the following error response is returned.

```
sid date time
M ctag DENY
  SNOS
/* Status, Not manually Out of Service */
;
```

If the network element receives an **ED-EQPT** command to modify the **pst** parameter for an OXI slot to **IS** while the slot's current pst parameter is not OOS-MA, then the following error response is returned.

```
sid date time
M ctag DENY
  SNOS
/* Status, Not manually Out of Service */
;
```

If the network element receives an **ED-EQPT** command to modify the *pst* parameter for an OXI slot to **OOS** while any of the associated ports of the OXI are not in the OOS-MA, then the following error response is returned.

```
sid date time
M ctag DENY
  SNOS
/* Status, Not manually Out of Service, ports not manually OOS */
;
```

If the network element receives an **ED-EQPT** command to modify the *pst* parameter for an OXI slot to **IS**, while the slot is in the OOS-MA state, but the circuit pack in the slot has a fault condition, then the following error response is returned.

```
sid date time
M ctag DENY
  SWFA
/* Status, Working unit FAiled */
;
```

If the network element receives an **ED-EQPT** command to modify the *pst* parameter for an OXI slot, while the slot is in any other state than the following:

- IS-NR
- OOS-AU, UEQ
- OOS-AU, FLT
- OOS-MA

then the following error response is returned.

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

If the network element receives an **ED-EQPT** command to modify the **sst** parameter for a Switch Interface Point (SWIP) when the SWIP is in the IS-NR state, then the following error response is returned.

```
sid date time
M ctag DENY
  SNOS
/* Status, Not manually Out of Service */
;
```

If the network element receives an **ED-EQPT** command to modify the **sst** parameter for a Switch Interface Point (SWIP) when the SWIP is in the (OOS-MA,FLT&MEA) state, the (OOS-MA,UAS&MEA) state, or in the (OOS-MA,UAS) state, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command to modify the **sst** parameter for a Switch Interface Point (SWIP) to one of the following:

- **FLT** when the SWIP is in the (OOS-MA,UEQ) state
- **UEQ** when the SWIP is in the (OOS-MA,FLT) state

then the following error response is returned.

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

If the network element receives an **ED-EQPT** command to modify the **sst** parameter for a Switch Interface Point (SWIP) when the SWIP is in the

(OOS-MA,UEQ&BUSY) state or in the (OOS-MA,MT&BUSY) state, then the following error response is returned.

```
sid date time
M ctag DENY
SCBS
/* Status, Channel BuSy */
;
```

If the network element receives an **ED-EQPT** command to modify the **SYSCFG** parameter when the hardware configuration is inconsistent with the new parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
SRQN
/* Status, ReQuest Not valid */
;
```

A SWIP Maintenance Group (SWMG) cannot be provisioned out of service if the other SWMG is not in service. If the network element receives an **ED-EQPT** command to modify the **pst** parameter from **IS** to **OOS** for a SWMG, while the other SWMG is not in the IS-NR state, then the following error response is returned.

```
sid date time
M ctag DENY
SDNA
/* Status, Duplex unit Not Available */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE0BLK1** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE0BLK1 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE0BLK2** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE0BLK2 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE0BLK3** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE0BLK3 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE0BLK4** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE0BLK4 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE0BLK5** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE0BLK5 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE0BLK6** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE0BLK6 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE0BLK7** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE0BLK7 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE0BLK8** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE0BLK8 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE1BLK1** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE1BLK1 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE1BLK2** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK2 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE1BLK3** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK3 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE1BLK4** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK4 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE1BLK5** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK5 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE1BLK6** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE1BLK6 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE1BLK7** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE1BLK7 */
;
```

If the network element receives an **ED-EQPT** command with an invalid **SIDE1BLK8** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SIDE1BLK8 */
;
```

If the network element receives an **ED-EQPT** command for a 10G-type OIS shelf with any of the following parameters specified:

- **SIDE0BLKy**
- **SIDE1BLKy**

where **y** = {3-8}, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent SWIP block and OIS type */
;
```

If the network element receives an **ED-EQPT** command for a non-OIS shelf entity with any of the following parameters specified:

- ***SIDE0BLKy***
- ***SIDE1BLKy***

where **y** = {1-8}, then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, inconsistent aid and SWIP block */
;
```

If the network element receives an **ED-EQPT** command that attempts to provision a ***SIDExBLKy*** (where **x** = {0,1} and **y** = {1-8}) parameter to equal a SWIP block that is not free (unreserved, unassigned), then the following error response is returned.

```
sid date time
M ctag DENY
SRQN
/* Status, ReQuest Not valid, SWIP block is not free */
;
```

If the network element receives an **ED-EQPT** command with an invalid ***USAGEDFLT*** input parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command that attempts to provision any two or more **SIDExBLKy** (where $x = \{0,1\}$ and $y = \{1-8\}$) parameters to the same value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command that attempts to provision any **SIDE0BLKy** (where $y = \{1-8\}$) parameters when SWIP Maintenance Group-0 (SWMG-0) does not exist or any **SIDE1BLKy** (where $y = \{1-8\}$) parameters when SWIP Maintenance Group-1 (SWMG-1) does not exist, then the following error response is returned.

```
sid date time
M ctag DENY
  IENE
/* Input, Entity does Not Exist, SWMG does not exist */
;
```

If the network element receives an **ED-EQPT** command that attempts to provision a currently assigned **SIDExBLKy** ($x = \{0,1\}$, $y = \{1-8\}$) parameter (in other words **SIDExBLKy** currently does not equal UAS) while ports exist within the port group being modified, then the following error response is returned.

```
sid date time
M ctag DENY
  SRQN
/* Status, ReQuest Not valid, port objects exist */
;
```

If the network element receives an **ED-EQPT** command that attempts to assign a **SIDE1BLKy** ($y = \{1-8\}$) parameter without assigning a **SIDE0BLKz** ($z =$ the value of y in **SIDE1BLKy**) parameter when both **SIDE1BLKy** and **SIDE0BLKz** are

currently unassigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing SIDE0BLK assignment */
;
```

If the network element receives an **ED-EQPT** command that attempts to assign a **SIDE0BLKy** ($y = \{1-8\}$) parameter without assigning a **SIDE1BLKz** ($z =$ the value of y in **SIDE0BLKy**) parameter when both **SIDE0BLKy** and **SIDE1BLKz** are currently unassigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing SIDE1BLK assignment */
;
```

If the network element receives an **ED-EQPT** command that attempts to unassign a **SIDE1BLKy** ($y = \{1-8\}$) parameter without unassigning a **SIDE0BLKz** ($z =$ the value of y in **SIDE1BLKy**) parameter when both **SIDE1BLKy** and **SIDE0BLKz** are currently assigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing SIDE0BLK unassignment */
;
```

If the network element receives an **ED-EQPT** command that attempts to unassign a **SIDE0BLKy** ($y = \{1-8\}$) parameter without unassigning a **SIDE1BLKz** ($z =$ the value of y in **SIDE0BLKy**) parameter when both **SIDE0BLKy** and **SIDE1BLKz** are

currently assigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing SIDE1BLK unassignment */
;
```

If the network element receives an **ED-EQPT** command that attempts to assign a **SIDE1BLKy** ($y = \{1-8\}$) parameter without assigning a **SIDE0BLKz** ($z =$ the value of y in **SIDE1BLKy**) parameter when **SIDE1BLKy** is currently assigned and **SIDE0BLKz** is currently unassigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing SIDE0BLK assignment */
;
```

If the network element receives an **ED-EQPT** command that attempts to assign a **SIDE0BLKy** ($y = \{1-8\}$) parameter without assigning a **SIDE1BLKz** ($z =$ the value of y in **SIDE0BLKy**) parameter when **SIDE0BLKy** is currently assigned and **SIDE1BLKz** is currently unassigned and both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing SIDE1BLK assignment */
;
```

If the network element receives an **ED-EQPT** command that attempts to assign more SWIP blocks than are currently available on either Switch Shelf (SWS), then the following error response is returned.

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

If the network element receives an **ED-EQPT** command for a 2G-type OIS shelf with any of the following parameters specified:

- ***SIDE0BLKy***
- ***SIDE1BLKy***

where **y** = {5-8}, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent SWIP block and OIS type */
;
```

If the network element receives an **ED-EQPT** command for a MX-type OIS shelf with any of the following parameters specified:

- ***SIDE0BLKy***
- ***SIDE1BLKy***

where **y** = {4-8}, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent SWIP block and OIS type */
;
```

If the network element receives an **ED-EQPT** command with an invalid **ONNCFG** input parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command to modify the **ONNCFG** parameter for the system, while the system is not in the OOS-MA state, then the following error response is returned.

```
sid date time
M ctag DENY
  SNOS
/* Status, Not manually Out of Service */
;
```

If the network element receives an **ED-EQPT** command with an invalid **AUTOVINT** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **AUTOVTIME** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **DISCTXTMR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **RETRYCTR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **RETRYTMR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **VRECVTMR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **VRESPTMR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with a **VRESPTMR** parameter value less than the **VRECVTMR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with **SYSCFG** specified as **CD2** when the **SYSCFG** parameter is currently equal to **DD2**, then the following error response is returned.

```
sid date time
M ctag DENY
  SRQN
/* Status, ReQuest Not valid, invalid system transition */
;
```

If the network element receives an **ED-EQPT** command for a non-Switch Interface Point (SWIP) entity with the **SPARESWIP** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **SPARESWIP** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with the **SPARESWIP** parameter specifying a Switch Interface Point (SWIP) which is not in the (OOS-MA, UEQ) state, then the following error response is returned.

```
sid date time
M ctag DENY
SRQN
/* Status, ReQuest Not valid, SWIP not in valid state */
;
```

If the network element receives an **ED-EQPT** command with the **SPARESWIP** and **aid** parameters not specified as one of the valid combinations in the following two tables:

Table 3-23. LambdaRouter AOS 128 SPARESWIP Values

<i>aid</i>	<i>SPARESWIP</i>
swip-0-in-A{1-8}-{1-16}	swip-0-in-A{1-8}-{1-16}
swip-0-in-B{1-8}-{1-16}	swip-0-in-B{1-8}-{1-16}
swip-0-out-A{1-8}-{1-16}	swip-0-out-A{1-8}-{1-16}
swip-0-out-B{1-8}-{1-16}	swip-0-out-B{1-8}-{1-16}

Table 3-24. LambdaRouter AOS 256 SPARESWIP Values

<i>aid</i>	<i>SPARESWIP</i>
swip-0-in-[[A,B][1-8]]-{1-16}	swip-0-in-[[A,B][1-8]]-{1-16}
swip-1-in-[[A,B][1-8]]-{1-16}	swip-1-in-[[A,B][1-8]]-{1-16}
swip-0-out-[[A,B][1-8]]-{1-16}	swip-0-out-[[A,B][1-8]]-{1-16}
swip-1-out-[[A,B][1-8]]-{1-16}	swip-1-out-[[A,B][1-8]]-{1-16}

then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with an invalid **AUTODISC** parameter value, then the following error response is returned.

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

If the network element receives an **ED-EQPT** command with any of the following parameters specified:

- **AUTODISC**
- **AUTOVINT**
- **AUTOVTIME**
- **DISCTXTMR**
- **RETRYCTR**
- **RETRYTMR**
- **VRECVTMR**
- **VRESPTMR**

when the system's attribute **ONNCFG=DISABLE**, then the following error response is returned.

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

RELATED TL1 MESSAGES

DLT-EQPT

ENT-EQPT

RTRV-EQPT

NAME

ED-NE-SECU: Edit Network Element Security

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

INPUT FORMAT

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

DESCRIPTION

The **ED-NE-SECU** command modifies global security parameters in the network element. These changes will apply to a users on their next login.

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

The successful completion of an **ED-NE-SECU** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "**ED-NE-SECU** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ED-NE-SECU** command.

Table 3-25. ED-NE-SECU Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

Table 3-25. ED - NE - SECU Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>spec_block</i>	Specific Block Parameters. See the table "ED - NE - SECU Specific Block Parameters" for the detailed descriptions of these parameters.	

The "ED - NE - SECU Specific Block Input Parameters" table contains the detailed descriptions and allowed values for the named input parameters of the **ED - NE - SECU** command.

Table 3-26. ED - NE - SECU Specific Block Input Parameters

Parameter Name	Description	Allowed Values
<i>THRSHLD</i>	Lockout Threshold. The maximum number of consecutive invalid login attempts that are allowed by a user identifier. If the count of invalid login attempts is equal to the threshold, the user identifier is locked out for <i>INTRVL</i> period of time. If a login attempt is successful, the count of invalid login attempts by that user identifier is reset to zero. If the parameter is not specified, it retains its current value. The initial value for this parameter is 5.	2-99 Initial Value = 5
<i>INTRVL</i>	Lockout Period. The time in minutes during which login attempts using that user identifier will not be allowed. This occurs when the number of consecutive invalid login attempts by a user identifier reaches <i>THRSHLD</i> . When <i>INTRVL</i> expires, login attempts will again be allowed from that user identifier. If this parameter is set to 0 (zero), the lockout feature is disabled. If the parameter is not specified, it retains its current value. The initial value for this parameter is 10 minutes.	0-99 (minutes) Initial value = 10 min

Table 3-26. ED - NE - SECU Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
AGE	Lockout Aging Period. This specifies the time interval during which the number of invalid login attempts are counted. When AGE expires, the counter of invalid login attempts by that user id is reset to zero. If the parameter is not specified, it retains its current value. The initial value is 60 minutes.	1-999 (in minutes) Initial value = 60 min
USRAGE	User ID Aging Period. This specifies the time interval during which if a User Id has not been used, the User ID is disabled. User ID Aging does not apply to superuser login. The initial value is 10 days. A value of 0 disables the User ID Aging.	0-999 (in days) Initial Value = 10 days

OUTPUT FORMAT

If the **ED - NE - SECU** request completes successfully, then the following normal completion response is returned.

```
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 *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of 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-0XC-789::123456:::THRSHLD=5,INTRVL=2;  
  
LT-0XC-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ED-NE-SECU** command. The following additional errors apply to the **ED-NE-SECU** command as well.

If the network element receives an **ED-NE-SECU** command with an invalid **THRSHLD** parameter value, then the following error response is returned.

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

If the network element receives an **ED-NE-SECU** command with an invalid **INTRVL** parameter value, then the following error response is returned.

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

If the network element receives an **ED-NE-SECU** command with an invalid **AGE** parameter value, then the following error response is returned.

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

If the network element receives an **ED-NE-SECU** command with an invalid **USRAGE** parameter value, then the following error response is returned.

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

If the network element receives an **ED-NE-SECU** command with an invalid Specific Block parameter name, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNV
  /* Input, Parameter Not Valid */
;
```

RELATED TL1 MESSAGES

ACT-USER

RTRV-NE-SECU

NAME

ED-PID : Edit Password Identifier

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

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

DESCRIPTION

The **ED-PID** command changes the password on the network element for the user executing the **ED-PID** command.

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

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

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

The successful completion of an **ED-PID** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "**ED - PID** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ED - PID** command.

Table 3-27. ED - PID Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>old_pid</i>	Old Password Identifier. Refer to the " ENT - USER - SECU Positional Input Parameters" table for the input parameter syntax and description of the <i>pid</i> parameter.	
<i>new_pid</i>	New Password Identifier. Refer to the " ENT - USER - SECU Positional Input Parameters" table for the input parameter syntax and description of the <i>pid</i> parameter.	

OUTPUT FORMAT

If the password change request completes successfully, then the following normal completion response is returned.

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


OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful password change operation.

```
ED-PID:LT-0XC-789::123456::soup3r+,mash%52;  
LT-0XC-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ED-PID** command. The following additional errors apply to the **ED-PID** command as well.

If the network element receives an **ED-PID** command with an *old_pid* parameter value that is invalid or does not match the password ID of the associated user login ID, then the following error response is returned.

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

If the network element receives an **ED-PID** command with an invalid *new_pid* parameter value, then the following error response is returned.

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

If the network element receives an **ED-PID** command without an *old_pid* or *new_pid* parameter, then the following error response is returned.

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

The value of <parameter> is equal to the name of the missing parameter.

RELATED TL1 MESSAGES

ACT-USER

CANC-USER

CANC-USER-SECU

DLT-USER-SECU

ED-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

NAME

ED-PM-PROF: Edit PM Profile

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

INPUT FORMAT

ED-PM-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-PM-PROF** command allows the user to modify the existing performance monitoring profile contents or the profile name. The system default profile names ("DefaultM" or "DefaultS") cannot be changed. For a general description of PM profiles, refer to the **ENT-PM-PROF** command.

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

INPUT PARAMETERS

The "**ED-PM-PROF** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ED-PM-PROF** command.

Table 3-28. ED-PM-PROF Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of <i>ctag</i> parameter.	

Table 3-28. ED - PM - PROF Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>pftype</i>	Profile Type. This indicates the type of PM profile for the selected facility.	For SONET signals the values are: PHY_SNT Physical SEC Section LNE Line Near-End LFE Line Far-End For SDH signals the values are: PHY_SDH Physical RS RS MSNE MS Near-End MSFE MS Far-End
<i>pfname</i>	Profile Name. This indicates the name of the PM profile which was already established by the command ENT - PM - PROF for further modifications of its content. The names of the DefaultM or DefaultS profiles cannot be modified.	The name is an alphanumeric character string with a maximum of 24 characters.
<i>spec_block</i>	Specific Block Parameters. See the table " ED - PM - PROF Specific Block Parameters" for the detailed descriptions of these parameters.	

The "**ED - PM - PROF** Specific Block Input Parameters" table contains the detailed descriptions and allowed values for the named input parameters of the **ED - PM - PROF** command.

Table 3-29. ED - PM - PROF Specific Block Input Parameters

Parameter Name	Description	Allowed Values
<i>NEWNAME</i>	New Name. This parameter allows a new name to be assigned to the already established profile. If the value is omitted, the current name is not modified.	The name is an alphanumeric character string with a maximum of 24 characters.

Table 3-29. ED - PM - PROF Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
PARM	PM Parameter. This lists the parameter of the PM profile. The PARM parameter is required input if values of any of the parameters PM , TH15 , THDAY , TCA are to be changed otherwise it is not required. If only the profile name is to be changed, then PARM parameter is not required.	For SONET Physical profile, the parameters are: LBC Laser Bias Current OPT Optical Power Transmitted OPR Optical Power Received For SONET Section profile, the parameters are: CV-S-OC48 Coding Violations - Section for OC-48 CV-S-OC192 Coding Violations - Section for OC-192 ES-S Errored Seconds - Section for OC-48/OC-192 SES-S Severely Errored Seconds - Section for OC-48/OC-192 SEFS-S Severely Errored Frame second - Section for OC-48/OC-192 For SONET Line Near-End profile, the parameters are: CV-L-OC48 Coding Violations - Line Near-End for OC-48 CV-L-OC192 Coding Violations - Line Near-End for OC-192 ES-L Errored Seconds - Line Near End for OC-48/OC-192 SES-L Severely Errored Seconds - Line Near End for OC-48/OC-192 UAS-L Unavailable Seconds - Line Near-End for OC-48/OC-192

Table 3-29. ED - PM - PROF Specific Block Input Parameters *(continued)*

Parameter Name	Description	Allowed Values
PARM (cont.)		For SONET Line Far-End profile, the parameters are: CV-LFE-OC48 Coding Violations - Line Far-End for OC-48 CV-LFE-OC192 Coding Violations - Line Far-End for OC-192 ES-LFE Errored Seconds - Line Far End for OC-48/OC-192 SES-LFE Severely Errored Seconds - Line Far End for OC-48/OC-192 UAS-LFE Unavailable Seconds - Line Far-End for OC-48/OC-192 For SDH Physical profile, the parameters are: LBC Laser Bias Current OPT Optical Transmitter OPR Optical Receiver For SDH RS profile, the parameters are: RS_N_BBE RS Near-End Background Block Errors for STM-16/STM-64 RS_N_ES RS Near-End Errored Seconds for STM-16/STM-64 RS_N_SES RS Near-End Severely Errored Seconds for STM-16/STM-64 RS_N_UAS RS Near-End Unavailable Seconds for STM-16/STM-64

Table 3-29. ED - PM - PROF Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
PARM (cont.)		For SDH MS Near-End profile, the parameters are: MS_N_BBE-STM16 MS Near-End Background Block Errors for STM-16 MS_N_BBE-STM64 MS Near-End Background Block Errors for STM-64 MS_N_ES MS Near-End Errored Seconds for STM-16/STM64 MS_N_SES MS Near-End Severely Errored Seconds for STM-16/STM-64 MS_N_UAS MS Near-End Unavailable Seconds for STM-16/STM-64 For SDH MS Far-End profile, the parameters are: MS_F_BBE-STM16 MS Far-End Background Block Errors for STM-16 MS_F_BBE-STM64 MS Far-End Background Block Errors for STM-64 MS_F_ES MS Far-End Errored Seconds for STM-16/STM-64 MS_F_SES MS Far-End Errored Seconds for STM-16/STM-64 MS_F_UAS MS Far-End Unavailable Seconds for STM-16/STM-64
PM	Performance Monitoring Status. This parameter indicates whether performance monitoring is being performed on the specific parameter listed in the profile or not.	1 Means PM is being done for this specific parameter in the profile 0 Means PM is not being done for this specific parameter in the profile

Table 3-29. ED - PM - PROF Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
TH15	Specifies threshold for 15-minute bin for the selected profile parameter. As Physical parameters are not binned, TH15 does not apply to Physical profile parameters. The next column shows the range of values allowed for the parameter with the default value given within parentheses.	The following threshold value ranges and default values apply to SONET Section profile parameters. 15-min CV-S-OC48 bin for OC-48 Range: 0-16777215 (Default=2240) 15-min CV-S-OC192 bin for OC-192 Range: 0-16777215 (Default=8960) 15-min ES-S bins for OC-48/OC-192 Range: 0-900 (Default=25) 15-min SES-S bins for OC-48/OC-192 Range: 0-810 (Default=10) 15-min SEFS-S bins for OC-48/OC-192 Range: 0-900 (Default=5) The following threshold value ranges and default values apply to SONET Line Near-End and Far-End profile parameters. 15-min CV-L-OC48 and CV-LFE-OC48 bins for OC-48 Range: 0-16777215 (Default=2240) 15-min CV-L-OC192 and CV-LFE-OC192 bins for OC-192 Range: 0-16777215 (Default=8960) 15-min ES-L and ES-LFE bins for OC-48/OC-192 Range: 0-900 (Default=25) 15-min SES-L and SES-LFE bins for OC-48/OC-192 Range: 0-810 (Default=10) 15-min UAS-L and UAS-LFE bins for OC-48/OC-192 Range: 0-900 (Default=10) The following threshold value ranges and default values apply to SDH RS profile parameters. 15-min RS_N_BBE bins for STM-16/STM-64 Range: 0-7200000 (Default=9000) 15-min RS_N_ES bins for STM-16/STM-64 Range: 0-900 (Default=180)

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See notice on first page

Table 3-29. ED - PM - PROF Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
TH15 (cont.)		15-min RS_N_SES bins for STM-16/STM-64 Range: 0-810 (Default=15) 15-min RS_N_UAS bins for STM-16/STM-64 Range: 0-900 (Default=15) The following threshold value ranges and default values apply to SDH MS Near-End and Far-End profile parameters. 15-min MS_N_BBE-STM16 and MS_F_BBE-STM16 bins for STM-16 Range: 0-16777215 (Default=3648000) 15-min MS_N_BBE-STM64 and MS_F_BBE-STM64 bins for STM-64 Range: 0-16777215 (Default=14592000) 15-min MS_N_ES and MS_F_ES bins for STM-16/STM-64 Range: 0-900 (Default=15) 15-min MS_N_SES and MS_F_SES bins for STM-16/STM-64 Range: 0-810 (Default=10) 15-min MS_N_UAS and MS_F_UAS bins for STM-16/STM-64 Range: 0-900 (Default=15)
THDAY	Specifies threshold for Day bin for the selected profile parameter. As Physical parameters are not binned, THDAY does not apply to Physical profile parameters. The next column shows the range of values allowed for the parameter with the default value given within parentheses.	The following threshold value ranges and default values apply to SONET Section profile parameters. Day CV-S-OC48 bin for OC-48 Range: 0-2147483647 (Default=21504) Day CV-S-OC192 bin for OC-192 Range: 0-2147483647 (Default=86016) Day ES-S bins for OC-48/OC192 Range: 0-86400 (Default=250) Day SES-S bins for OC-48/OC192 Range: 0-77760 (Default=40) Day SEFS-S bins for OC-48/OC192 Range: 0-86400 (Default=10)

Table 3-29. ED - PM - PROF Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
THDAY (cont.)		The following threshold value ranges and default values apply to SONET Line Near-End and Far-End profile parameters. Day CV-L-OC48 and CV-LFE-OC48 bins for OC-48 Range: 0-2147483647 (Default=21504) Day CV-L-OC192 and CV-LFE-OC192 bins for OC-192 Range: 0-2147483647 (Default=86016) Day ES-L and ES-LFE bins for OC-48/OC192 Range: 0-86400 (Default=250) Day SES-L and SES-LFE bins for OC-48/OC192 Range: 0-77760 (Default=40) Day UAS-L and UAS-LFE bins for OC-48/OC192 Range: 0-86400 (Default=10) The following threshold value ranges and default values apply to SDH RS profile parameters. Day RS_N_BBE bins for STM-16/STM-64 Range: 0-691200000 (Default=48000) Day RS_N_ES bins for STM-16/STM-64 Range: 0-86400 (Default=1500) Day RS_N_SES bins for STM-16/STM-64 Range: 0-77760 (Default=20) Day RS_N_UAS bins for STM-16/STM-64 Range: 0-86400 (Default=20) The following threshold value ranges and default values apply to SDH MS Near-End and Far-End profile parameters. Day MS_N_BBE-STM16 and MS_F_BBE-STM16 bins for STM-16 Range: 0-2147483647 (Default=6912000) Day MS_N_BBE-STM64 and MS_F_BBE-STM64 bins for STM-64 Range: 0-2147483647 (Default=27648000)

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See notice on first page

Table 3-29. ED - PM - PROF Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
THDAY (cont.)		Day MS_N_ES and MS_F_ES bins for STM-16/STM-64 Range: 0-86400 (Default=150) Day MS_N_SES and MS_F_SES bins for STM-16/STM-64 Range: 0-77760 (Default=15) Day MS_N_UAS and MS_F_UAS bins for STM-16/STM-64 Range: 0-86400 (Default=20)
TCA	TCA Reporting Status. This indicates whether the TCAs for parameters in the profile are to be generated or inhibited.	1 Means TCA generation is on for the specific parameter in the profile. 0 Means TCA are inhibited for the specific parameter in the profile. For SONET parameters the default is 1 and for SDH parameters the default is 0.

OUTPUT FORMAT

If the **ED - PM - PROF** command completes successfully, this is the normal response.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of an **ED-PM-PROF** command by the network element.

```
ED-PM-PROF:LT-OXC::123456::lne,sprint:newname=sprint2,  
parm=es-l,pm=1,th15=50,thday=300,tca=1;  
  
LT-OXC 98-01-01 08:00:00  
M 123456 COMPLD
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ED-PM-PROF** command. The following additional errors apply to the **ED-PM-PROF** command as well.

If the network element receives a **ED-PM-PROF** command with a missing *pftype* parameter, then the following error response is returned.

```
sid date time  
M ctag DENY  
IPMS  
/* Input, Parameter MiSsing, missing pftype */  
;
```

If the network element receives a **ED-PM-PROF** command with a missing *pfname* parameter, then the following error response is returned.

```
sid date time  
M ctag DENY  
IPMS  
/* Input, Parameter MiSsing, missing pfname */  
;
```

If the network element receives an **ED-PM-PROF** command with an invalid **pftype** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PM-PROF** command with an invalid **pfname** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PM-PROF** command with an invalid **NEWNAME** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PM-PROF** command with an invalid **PARM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PM-PROF** command with an invalid **PM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PM-PROF** command with an invalid **TH15** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TH15 */
;
```

If the network element receives an **ED-PM-PROF** command with an invalid **THDAY** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PM-PROF** command with an invalid **TCA** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PM-PROF** command with no **PARM** parameter value specified when the value of any of the associated parameters

PM,TH15, THDAY, or TCA is changed or no **NEWNAME** parameter value specified, the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing PARM */
;
```

If the network element receives an **ED-PM-PROF** command with a **PARM** value inconsistent for the **pftype**, then the following error response is returned.

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

If the network element receives an **ED-PM-PROF** command that assigns a new name to a DefaultS or DefaultM profile, then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, DefaultS or DefaultM profile name cannot
be modified */
;
```

If the network element receives an **ED-PM-PROF** command with a profile name that matches the name of a DefaultM profile, then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, DefaultM profile cannot be modified */
;
```

If the network element receives an **ED-PM-PROF** command with a non-existent **pfname**, then the following error response is returned.

```
sid date time
M ctag DENY
  IENE
/* Input, object Entity does Not Exist */
;
```

If the network element receives an **ED-PM-PROF** command that assigns an existing profile name (including the DefaultS or DefaultM profile name) to the same **pftype**, then the following error response is returned.

```
sid date time
M ctag DENY
  IEAE
/* Input, Entity to be created Already Exists, new pfname already exists */
;
```

If the network element receives an **ED-PM-PROF** command for which the information cannot be updated in the NVM, then the following error response is returned.

```
sid date time
M ctag DENY
  SWFA
/* Status, Working unit FAiled, failure to update NVM */
;
```

If the network element receives an **ED-PM-PROF** command with a **PARM** that has no value assigned to anyone of of the **PM**, **TH15**, **THDAY**, or **TCA** parameters, then the following error response is returned.

```
sid date time
M ctag DENY
  IDMS
/* Input, Data MiSsing, missing Value(s) for PM/TH15/THDAY/TCA */
;
```


If the network element receives an **ED-PM-PROF** command where a user tries to set **PM=0** for a parameter for which has **TCA=1**, or tries to set **TCA=1** for a parameter for which has **PM=0**, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, PM=0 and TCA=1 combination not allowed */
;
```

If the network element receives an **ED-PM-PROF** command that tries to set the **TH15/THDAY** for physical parameters, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, TH15/THDAY for physical parameter are not
user settable */
;
```

RELATED TL1 MESSAGES

DLT-PM-PROF

ED-rr

ENT-PM-PROF

RTRV-PMASGNMT

RTRV-PMPROF

NAME

ED-PORT-LINK: Edit Port Link association information

The **ED-PORT-LINK** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

INPUT FORMAT

ED-PORT-LINK: *tid:aid:ctag*[::[*dir*][:*spec_block*]];

DESCRIPTION

The **ED-PORT-LINK** command provisions all parameters related to port-link association. It also allows the removal or modification of the existing parameters and the provisioning of ports from manual discovery to automatic discovery/verification. This command can only be used if the system ONNCFG parameter is enabled. The port USAGE parameter has to be NNI and the IFMT parameter for OCHT, OCHA13, or OCHA15 type ports has to be one of the following: OC48/STM16 or OC192/STM64 or OC768/STM256. The DISCMODE parameter allows for the ports provisioning from manual discovery to automatic discovery/verification. Modification of the port-link parameters is allowed regardless of the state of the system AUTODISC parameter and port DISCMODE parameter.

The **ED-PORT-LINK** command will generate a **REPT DBCHG** message.

INPUT PARAMETERS

The "**ED-PORT-LINK** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ED-PORT-LINK** command.

Table 3-30. ED-PORT-LINK Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-30. ED - PORT - LINK Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the port to which the command is directed.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>ctag</i>	Correlation Tag. Refer to the "RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>dir</i>	Directional qualifier.	IN OUT (default)
<i>spec_block</i>	Specific Block Parameters. See the table "ED - PORT - LINK Specific Block Parameters" for the detailed descriptions of these parameters.	

The "ED - PORT - LINK Specific Block Input Parameters" table contains the detailed descriptions and allowed values for the named input parameters of the **ED - PORT - LINK** command.

Table 3-31. ED - PORT - LINK Specific Block Input Parameters

Parameter Name	Description	Allowed Values
<i>COST</i>	Administrative cost of the port connection.	Initial value: 1 Range: 1-255
<i>DISCMODE</i>	Discovery mode. This parameter sets the automatic discovery/link verification process in motion.	Initial value: ENABLE ENABLE Automatic discovery/verification allowed DISABLE Manual provisioning allowed
<i>IPADDR</i>	The RC IP Address of the OXC that is a neighbor to the port specified in the <i>aid</i> parameter. The IP address has to be entered together with the <i>NAID</i> . The <i>IPADDR</i> can not be modified when <i>DISCMODE=ENABLE</i>	w.x.y.z where w, x, y, z = {0-255} Initial value: NONE In case there is no more need for the neighbor address the value should be set to: NONE .

Table 3-31. ED - PORT - LINK Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
NAID	Neighbor Access Identifier. Represents the entity (i.e., the port) which is neighbor to the port specified in the <i>aid</i> parameter. The NAID has to entered together with IPADDR . The IPADDR can not be modified when DISCMODE=ENABLE	och-{1-99}-{1-99}-{1-99} Initial value: NONE In case there is no more need for the neighbor port the value should be set to: NONE .
PROPDE-LAY	Propagation delay through the link between the pair of ports. The time needed for a signal to traverse from this node to the neighbor node. Transport delay in milliseconds.	Initial value: 0 (1km=5 microsecs) Range: 0-255
SRLG1	Shared Risk Link Group identifiers used to exclude links from the connection path(s) being created. Three different shared risk link groups are allowed. Can not have the same value as SRLG2 or SRLG3.	Initial value: 0 (UNDEFINED) Range: 0-65535
SRLG2	Shared Risk Link Group identifiers used to exclude links from the connection path(s) being created. Three different shared risk link groups are allowed. Can not have the same value as SRLG1 or SRLG3	Initial value: 0 (UNDEFINED) Range: 0-65535
SRLG3	Shared Risk Link Group identifiers used to exclude links from the connection path(s) being created. Three different shared risk link groups are allowed. Can not have the same value as SRLG1 or SRLG2.	Initial value: 0 (UNDEFINED) Range: 0-65535
VPNID	Virtual Private Network ID identifies ports which are contracted to carry traffic for a specific customer.	Initial value: 0 (UNDEFINED) Range: 0-65535

The following table demonstrates the behavior of the **DISCMODE** parameter.

Table 3-32. DISCMODE behavior

IPADDR/NAID	DISCMODE	
	DISABLE	ENABLE
None	Do nothing	Auto discovery
Provisioned	Do nothing	Verification

If the DISCMODE parameter is DISABLE the automatic discovery/verification feature is not allowed. If DISCMODE parameter is ENABLE and IPADDR & NAID parameters are not provisioned manually the automatic discovery process will be performed and the values of IPADDR & NAID parameters will be populated by the system. In case the IPADDR & NAID parameters are manually provisioned, link verification will be performed as soon as the scheduled time is reached.

OUTPUT FORMAT

If the **ED-PORT-LINK** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example demonstrates the usage of the **ED-PORT-LINK** command for requesting to manually provision a port with port neighbor information.

```
ED-PORT-LINK:LT-OXC:och-1-1-3:123456::  
IN:IPADDR=192.168.34.7,NAID=och-1-3-2;  
  
LT-OXC 00-08-01 08:01:28  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ED-PORT-LINK** command. The following additional errors apply to the **ED-PORT-LINK** command as well.

If the network element receives an **ED-PORT-LINK** command for an object that does not exist, then the following error response is returned.

```
sid date time  
M ctag DENY  
IENE  
/* Input, object Entity does Not Exist, port does not exist */  
;
```

If the network element receives an **ED-PORT-LINK** command with an invalid **IPADDR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PORT-LINK** command with an invalid **NAID** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PORT-LINK** command with an invalid **PROPDELAY** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PORT-LINK** command with an invalid **COST** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PORT-LINK** command with an invalid **SRLG1** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SRLG1 */
;
```


If the network element receives an **ED-PORT-LINK** command with an invalid **SRLG2** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SRLG2 */
;
```

If the network element receives an **ED-PORT-LINK** command with an invalid **SRLG3** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SRLG3 */
;
```

If the network element receives an **ED-PORT-LINK** command with an invalid **VPNID** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PORT-LINK** command with an invalid **dir** parameter value, then the following error response is returned.

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

If the network element receives an **ED-PORT-LINK** command with an **aid** parameter specifying a port which has a port USAGE attribute that does not equal NNI, then the following error response is returned.

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

If the network element receives an **ED-PORT-LINK** command with an **IPADDR** parameter missing when the **NAID** parameter is specified, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
/* Input, Parameter MiSsing, missing IPADDR parameter */
;
```

If the network element receives an **ED-PORT-LINK** command with a **NAID** parameter missing when the **IPADDR** parameter is specified, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
/* Input, Parameter MiSsing, missing NAID parameter */
;
```

If the network element receives an **ED-PORT-LINK** command with the **SRLG** (**SRLG1,SRLG2,SRLG3**) parameters provisioned in a way that at least two of the

SRLG parameters would have the same value (other than zero), then the following error response is returned.

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

If the network element receives an **ED-PORT-LINK** command with an *aid* parameter specifying a port which has a port IFMT parameter equal to something

other than "OC48/STM16", "OC192/STM64", or "OC768/STM256", then the following error response is returned.

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

If the network element receives an **ED-PORT-LINK** command and the system's ONN Configuration equipment parameter (ONNCFG) is currently equal to DISABLE, then the following error response is returned.

```
sid date time
M ctag DENY
  EFON
/* Equipage, Feature Option Not provided, ONNCFG=DISABLE */
;
```

If the network element receives an **ED-PORT-LINK** command for a port involved with a cross-connection, then the following error response is returned.

```
sid date time
M ctag DENY
  SCBS
/* Status, Channel BuSy */
;
```

If the network element receives an **ED-PORT-LINK** command with an **IPADDR** and **NAID** parameter combination which is not unique, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, not unique IPADDR and NAID */
;
```

If the network element receives an **ED-PORT-LINK** command with an invalid

DISCMODE parameter value, then the following error response is returned.

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

If the network element receives an **ED-PORT-LINK** command with an **IPADDR** same as the local IP address parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, IPADDR conflicts with local IP address */
;
```

If the network element receives an **ED-PORT-LINK** command with an **IPADDR** specified when the local systems, IP address is not provisioned, then the following error response is returned.

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, local IP address not provisioned */
;
```

RELATED TL1 MESSAGES

RTRV-PORT-LINK

ED-rr

RTRV-rr

OPR-LINK-VERF

NAME

ED-rr : Edit Facility

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

INPUT FORMAT

ED-rr: tid: aid: ctag: : type[, dir] [: [spec_block] [: [pstin][, pstop]]];

DESCRIPTION

The **ED-rr** command provisions all parameters related to optical ports.

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

INPUT PARAMETERS

The "**ED-rr** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ED-rr** command. The **Port Type** column identifies the parameter's allowable port types. If the **Port Type** field is blank then the row applies to all port types.

Table 3-33. ED-rr Positional Input Parameters

Port Type	Parameter Name	Description	Allowed Values
	rr	Port Modifier.	OCH
	tid	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the tid parameter.	

Table 3-33. ED - rr Positional Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCHT OCHA13 OCHA15	aid	Access Identifier. This parameter is the address of the port to be modified.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4,all} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4,all}
OCH2GC			LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-2,all} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-2,all}
OCH10GC			LambdaRouter AOS 128: och-{1-4}-{1-32}-1 LambdaRouter AOS 256: och-{1-7}-{1-32}-1
	ctag	Correlation Tag. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the ctag parameter.	
OCHT	type	Port Type. This parameter is mandatory. For ports on the OXI4A13 and OXI4A15 circuit packs, the input and output ports will have different port types (OCHA13/OCHA15 vs. OCHT). If dir is specified as BOTH when the aid specifies a port(s) on a OXI4A13 or OXI4A15 circuit pack, then type must be specified as OCHA13 or OCHA15 , respectively. In other words, type = OCHT will not be allowed when dir = BOTH and the aid specifies a port(s) on a OXI4A13 or OXI4A15 circuit pack. type cannot be specified as OCHA13 or OCHA15 when dir = OUT .	OCHT Transparent port (no optical amplifier)
OCHA13			OCHA13 Transparent port with 1310 nm Optical Amplifier
OCHA15			OCHA15 Transparent port with 1550 nm Optical Amplifier
OCH2GC			OCH2GC 2G (OC-48/ STM-16) Client port
OCH10GC			OCH10GC 10G (OC-192/ STM-64) Client port

Table 3-33. ED - rr Positional Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values	
	<i>dir</i>	Directional Qualifier.	IN OUT BOTH	Input Port Output Port Both Input and Output Ports (default)
	<i>spec_block</i>	Specific Block Parameters. See the table "ED - rr Specific Block Parameters" for the detailed descriptions of these parameters. No <i>spec_block</i> parameters allowed when <i>pstin</i> or <i>pstout</i> are specified.		
	<i>pstin</i>	Input Port Primary State. This parameter is used to modify the state of the input port to in-service or out-of-service. Note: the allowed values are not the exact value of an input port primary state. For example, specifying <i>pstin</i> as OOS will place the input port in the OOS-MA (Out-of-Service, Management) state. Not allowed with <i>dir=OUT</i> . Not allowed when any <i>spec_block</i> parameters are specified.	IS OOS	In-Service Out-Of-Service
	<i>pstout</i>	Output Port Primary State. This parameter is used to modify the state of the output port to in-service or out-of-service. Note: the allowed values are not the exact value of an output port primary state. For example, specifying <i>pstout</i> as OOS will place the output port in the OOS-MA (Out-of-Service, Management) state. Not allowed with <i>dir=IN</i> . Not allowed when any <i>spec_block</i> parameters are specified.	IS OOS	In-Service Out-Of-Service

The "**ED-rr** Specific Block Input Parameters" table contains the detailed descriptions and allowed values for the named input parameters of the **ED-rr** command. The **Port Type** column identifies the parameter's allowable port types. If the **Port Type** field is blank then the row applies to all port types.

Table 3-34. ED-rr Specific Block Input Parameters

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	AISLSW	AIS-L Protection Switch enable. This parameter sets whether to perform a protection switch at the output port selector based upon the detection of an AIS-L signal. Not allowed with <i>dir=IN</i> .	ENABLE Enable protection switching for AIS-L signal detection DISABLE Disable protection switching for AIS-L signal detection Initial value: ENABLE
OCH2GC OCH10GC	ALSO	Automatic Laser Shut-off. This parameter sets whether to automatically turn off the port laser upon detection of loss of signal (LOS), loss of frame (LOF), or excessive bit error rate (EBER) { <i>DEXCTHR</i> when <i>ISTD=SDH</i> or <i>SFTHR</i> when <i>ISTD=SONET</i> }.	ENABLE Turn off laser upon detection of LOS, LOF, or EBER DISABLE Laser unaffected by detection of LOS, LOF, or EBER Initial value: ENABLE
OCH2GC OCH10GC	AUTOLOCK	Output Port Selector Autolock. This parameter sets whether to monitor the frequency of SONET/SDH triggered protection switch requests. If the frequency exceeds 3 triggers within 3 seconds, all SONET/SDH triggered protection switch requests will be suppressed for a period of 5 minutes. Not allowed with <i>dir=IN</i> .	ENABLE Enable output port selector autolock DISABLE Disable output port selector autolock Initial value: DISABLE

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
	AUTOMODE	Auto-enable port alarm monitoring. This parameter sets whether the alarm monitoring on a cross-connected input port will start automatically upon the detection of signal. For further clarification of the AUTOMODE parameter, see Table 3-35 on page 244 and its accompanying figure. This parameter can only be modified for a cross-connected port. This parameter cannot be provisioned as ENABLE when there is detection of signal (DOS) at the input port. Not allowed with dir=OUT .	ENABLE Auto Mode Enabled DISABLE Auto Mode Disabled Initial value: DISABLE
OCH2GC OCH10GC	BERSW	BER Protection Switch enable. This parameter sets whether to perform a protection switch at the output port selector based upon the detection of DEGTHR when ISTD=SDH or the detection of SDTHR when ISTD=SONET . Not allowed with dir=IN .	ENABLE Enable protection switching for BER detection DISABLE Disable protection switching for BER detection Initial value: DISABLE
OCH2GC OCH10GC	DEGTHR	Degrade Threshold. This parameter sets the bit error rate threshold for the optical signal. This parameter is allowed only when the port's ISTD is currently equal to SDH .	Values are specified as exponents of 10. -5 -6 -7 -8 -9 Initial value: -6
OCH2GC OCH10GC	DEXCTHR	Excessive Degrade Threshold. This parameter sets the excessive bit error rate threshold for the optical signal. This parameter is allowed only when the port's ISTD is currently equal to SDH .	Values are specified as exponents of 10. -3 -4 -5 Initial value: -3

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	EBERSW	EBER Protection Switch enable. This parameter sets whether to perform a protection switch at the output port selector based upon the detection of DEXCTHR when ISTD=SDH or the detection of SFTHR when ISTD=SONET . Not allowed with dir=IN .	ENABLE Enable protection switching for EBER detection DISABLE Disable protection switching for EBER detection Initial value: ENABLE
OCHA13 OCHA15	ICOLOSS	Ingress Central Office Loss. Not allowed with dir=OUT .	Integer values in the range: 0 to 3 . Initial value: 1
OCHT OCHA13 OCHA15	IFMT	Interface Format. This parameter cannot be modified for a cross-connected port.	OC48/STM16 SONET OC-48 or SDH STM-16 OC192/STM64 SONET OC-192 or SDH STM-64 OC768/STM256 SONET OC-768 or SDH STM-256 GBELX Gigabit Ethernet HSBB High-speed Broadband OTHER Unknown See Table 3-36 on page 245 for the allowed combinations of IFMT , IOPT , and type . Initial value: value of system-level parameter IFDF.

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
	<i>INSWIP0</i>	Input SWIP on Fabric Side 0. SWIP assignment for <i>INSWIP0</i> via ED - rr is not allowed if <i>INSWIP0</i> is currently equal to UAS (unassigned). Not allowed with <i>dir=OUT</i> . Not allowed when a range of <i>aids</i> is specified. Not allowed when <i>INSWIP1</i> , <i>OUTSWIP0</i> , or <i>OUTSWIP1</i> is specified.	LambdaRouter AOS 128: swip-0-in-A{1-8}~{1-16} LambdaRouter AOS 256: swip-0-in-[[A,B][1-8]]~{1-16} Initial value: determined by the SWIP block provisioning of the port's associated shelf.
	<i>INSWIP1</i>	Input SWIP on Fabric Side 1. SWIP assignment for <i>INSWIP1</i> via ED - rr is not allowed if <i>INSWIP1</i> is currently equal to UAS (unassigned). Not allowed with <i>dir=OUT</i> . Not allowed when a range of <i>aids</i> is specified. Not allowed when <i>INSWIP0</i> , <i>OUTSWIP0</i> , or <i>OUTSWIP1</i> is specified.	LambdaRouter AOS 128: swip-0-in-B{1-8}~{1-16} LambdaRouter AOS 256: swip-1-in-[[A,B][1-8]]~{1-16} Initial value: determined by the SWIP block provisioning of the port's associated shelf.

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCHT OCHA13 OCHA15	<i>IOPT</i>	Interface Optics. This parameter cannot be modified for a cross-connected output port. However, it is allowable to modify this parameter for a cross-connected input port.	SR Short Reach IR Intermediate Reach LAMBDAXTREME LambdaXtreme LR Long Reach VSR600-2M1 Very Short Reach with 12 dB Budget (1310 nm) VSR600-2M2 Very Short Reach with 12 dB Budget (1550 nm) VSR600-2R1 Very Short Reach with 4 dB Budget VSR2000-2L2 Very Short Reach with 6 dB Budget VSR2000-2R1 Very Short Reach with 4 dB Budget OTHER Unknown See Table 3-36 on page 245 for the allowed combinations of <i>IFMT</i> , <i>IOPT</i> , and <i>type</i> . Initial value: OTHER
OCH2GC OCH10GC	<i>ISTD</i>	Interface Standard. This parameter cannot be modified for a cross-connected port.	SONET SONET interface standard SDH SDH interface standard Initial value: value of system-level parameter ISTDDFLT.

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	KA	Keep Alive. This parameter enables/disables the generation of an AIS-L signal for an idle (non-cross-connected) output port. Not allowed with dir=IN .	ENABLE Enable keep alive signal DISABLE Disable keep alive signal Initial value: DISABLE
	KAALM	Keep Alive Alarm. This parameter enables/disables a non-service affecting alarm upon detection of loss of signal, loss of frame, BER, or EBER for an idle (non-cross-connected) input port. Not allowed with dir=OUT .	ENABLE Enable keep alive alarm DISABLE Disable keep alive alarm Initial value: DISABLE
OCH2GC OCH10GC	LFEPM	Line Far-End PM. Enables/Disables Line Far-End PM. This parameter is allowed only when the port's ISTD is currently equal to SONET .	ENABLE Enable Line Far-End PM DISABLE Disable Line Far-End PM Initial value: DISABLE
OCH2GC OCH10GC	LFEPROF	Line Far-End PM Profile. This parameter points to a Line Far-End PM profile name for the designated aid . This parameter is allowed only when the port's ISTD is currently equal to SONET .	Alphanumeric string up to a maximum of 24 characters that specifies an existing profile name. DEFAULTS Default profile Initial value: DEFAULTS
OCH2GC OCH10GC	LNEPM	Line Near-End PM. Enables/Disables Line Near-End PM. This parameter is allowed only when the port's ISTD is currently equal to SONET .	ENABLE Enable Line Near-End PM DISABLE Disable Line Near-End PM Initial value: DISABLE
OCH2GC OCH10GC	LNEPROF	Line Near-End PM Profile. This parameter points to a Line Near-End PM profile name for the designated aid . This parameter is allowed only when the port's ISTD is currently equal to SONET .	Alphanumeric string up to a maximum of 24 characters that specifies an existing profile name. DEFAULTS Default profile Initial value: DEFAULTS

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	MSFEPM	Enables/Disables Multiplex Section Far-End PM. This parameter is allowed only when the port's ISTD is currently equal to SDH .	ENABLE Enable Multiplex Section Far-End PM DISABLE Disable Multiplex Section Far-End PM Initial value: DISABLE
OCH2GC OCH10GC	MSFEPROF	Multiplex Section Far-End PM Profile. This parameter points to a Multiplex Section Far-End PM profile name for the designated aid . This parameter is allowed only when the port's ISTD is currently equal to SDH .	Alphanumeric string up to a maximum of 24 characters that specifies an existing profile name. DEFAULTS Default profile Initial value: DEFAULTS
OCH2GC OCH10GC	MSNEPM	Enables/Disables Multiplex Section Near-End PM. This parameter is allowed only when the port's ISTD is currently equal to SDH .	ENABLE Enable Multiplex Section Near-End PM DISABLE Disable Multiplex Section Near-End PM Initial value: DISABLE
OCH2GC OCH10GC	MSNEPROF	Multiplex Section Near-End PM Profile. This parameter points to a Multiplex Section Near-End PM profile name for the designated aid . This parameter is allowed only when the port's ISTD is currently equal to SDH .	Alphanumeric string up to a maximum of 24 characters that specifies an existing profile name. DEFAULTS Default profile Initial value: DEFAULTS

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCHA13	OAPWR	Optical Amplifier Output Power. This parameter sets the optical amplifier output power, in dBm, when either the input port's IFMT parameter or IOPT parameter is equal to OTHER . If IFMT and IOPT both have values other than OTHER , the appropriate optical amplifier output power is determined by the system and the provisioned value of OAPWR is ignored. Not allowed with dir=OUT .	Values (up to one decimal place) in the range: [1.0,4.0] Initial value: 1.0
OCHA15			Values (up to one decimal place) in the range: [0.0,6.0] Initial value: 1.8
	OUTSWIP0	Output SWIP on Fabric Side 0. SWIP assignment for OUTSWIP0 via ED-rr is not allowed if OUTSWIP0 is currently equal to UAS (unassigned). Not allowed with dir=IN . Not allowed when a range of aids is specified. Not allowed when INSWIP0 , INSWIP1 , or OUTSWIP1 is specified.	LambdaRouter AOS 128: swip-0-out-A{1-8}-{1-16} LambdaRouter AOS 256: swip-0-out-{[A,B][1-8]}-{1-16} Initial value: determined by the SWIP block provisioning of the port's associated shelf.
	OUTSWIP1	Output SWIP on Fabric Side 1. SWIP assignment for OUTSWIP1 via ED-rr is not allowed if OUTSWIP1 is currently equal to UAS (unassigned). Not allowed with dir=IN . Not allowed when a range of aids is specified. Not allowed when INSWIP0 , INSWIP1 , or OUTSWIP0 is specified.	LambdaRouter AOS 128: swip-0-out-B{1-8}-{1-16} LambdaRouter AOS 256: swip-1-out-{[A,B][1-8]}-{1-16} Initial value: determined by the SWIP block provisioning of the port's associated shelf.
OCH2GC OCH10GC	PHYPM_SDH	Enables/Disables Physical PM. This parameter is allowed only when the port's ISTD is currently equal to SDH .	ENABLE Enable Physical PM DISABLE Disable Physical PM Initial value: DISABLE

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	PHYPM_SNT	Enables/Disables Physical PM. This parameter is allowed only when the port's ISTD is currently equal to SONET .	ENABLE Enable Physical PM DISABLE Disable Physical PM Initial value: DISABLE
OCH2GC OCH10GC	PHYPROF_SDH	Physical PM Profile. This parameter points to a Physical PM profile name for the designated aid . This parameter is allowed only when the port's ISTD is currently equal to SDH .	Alphanumeric string up to a maximum of 24 characters that specifies an existing profile name. DEFAULTS Default profile Initial value: DEFAULTS
OCH2GC OCH10GC	PHYPROF_SNT	Physical PM Profile. This parameter points to a Physical PM profile name for the designated aid . This parameter is allowed only when the port's ISTD is currently equal to SONET .	Alphanumeric string up to a maximum of 24 characters that specifies an existing profile name. DEFAULTS Default profile Initial value: DEFAULTS
OCH2GC OCH10GC	PMMSFESES	PM Multiplex Section Far-End SES Threshold. The values are a percentage of the maximum number of bit errors. This parameter is allowed only when the port's ISTD is currently equal to SDH .	1, 5-100 (in increments of 5) Initial value: 15
OCH2GC OCH10GC	PMMSNESES	PM Multiplex Section Near-End SES Threshold. The values are a percentage of the maximum number of bit errors. This parameter is allowed only when the port's ISTD is currently equal to SDH .	1, 5-100 (in increments of 5) Initial value: 15
OCH2GC OCH10GC	PMRSNESES	PM Regenerator Section Near-End SES Threshold. The values are a percentage of the maximum number of errored frames. This parameter is allowed only when the port's ISTD is currently equal to SDH .	1, 5-100 (in increments of 5) Initial value: 30

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCHT	PWRMDF	Minimum Ingress Client Power. This parameter sets the associated minimum ingress client power level when either the input port's IFMT parameter or IOPT parameter is equal to OTHER . Not allowed with dir=OUT .	Integer values in the range: -25 to 25 . Initial value: -5
OCHA13 OCHA15			Integer values in the range: -10 to 8 . Initial value: -5
OCH2GC OCH10GC	RSPM	Enables/Disables Regenerator Section PM. This parameter is allowed only when the port's ISTD is currently equal to SDH .	ENABLE Enable Regenerator Section PM DISABLE Disable Regenerator Section PM Initial value: DISABLE
OCH2GC OCH10GC	RSPROF	Regenerator Section PM Profile. This parameter points to a Regenerator Section PM profile name for the designated aid . This parameter is allowed only when the port's ISTD is currently equal to SDH .	Alphanumeric string up to a maximum of 24 characters that specifies an existing profile name. DEFAULTS Default profile Initial value: DEFAULTS
OCH2GC OCH10GC	SDTHR	Signal Degrade Threshold. This parameter sets the bit error rate threshold for the optical signal. This parameter is allowed only when the port's ISTD is currently equal to SONET .	Values are specified as exponents of 10. -5 -6 -7 -8 -9 Initial value: -6
OCH2GC OCH10GC	SECPM	Enables/Disables Section PM. This parameter is allowed only when the port's ISTD is currently equal to SONET .	ENABLE Enable Section PM DISABLE Disable Section PM Initial value: DISABLE

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	SECPROF	Section PM Profile. This parameter points to a Section PM profile name for the designated <i>aid</i> . This parameter is allowed only when the port's ISTD is currently equal to SONET .	Alphanumeric string up to a maximum of 24 characters that specifies an existing profile name. DEFAULTS Default profile Initial value: DEFAULTS
OCH2GC OCH10GC	SFTHR	Signal Failure Threshold. This parameter sets the excessive bit error rate threshold for the optical signal. This parameter is allowed only when the port's ISTD is currently equal to SONET .	Values are specified as exponents of 10. -3 -4 -5 Initial value: -3
OCH2GC OCH10GC	TCARPT	TCA Report. Enables/Disables TCA reporting.	ENABLE Enable TCA reporting DISABLE Disable TCA reporting Initial value: ENABLE when system-level parameter ISTDDFLT = SONET ; DISABLE when system-level parameter ISTDDFLT = SDH .

Table 3-34. ED - rr Specific Block Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
	USAGE	Port Usage. This parameter cannot be modified for a cross-connected port. USAGE cannot be specified as REVERTIVE when dir = IN or BOTH .	CLIENT Client interface port (a non-NNI port without a UNI interface) NNI Network-to-Network Interface port TEST_ACC Port dedicated for test access signal monitoring or injection (not necessarily a "Test Access (TA) port") UNI User-to-Network Interface port (a non-NNI port with a UNI interface) Initial value: value of system-level parameter USAGEDFLT.
OCH2GC OCH10GC			LINK_PROBE Dedicated port for link discovery and verification REVERTIVE Dedicated port for revertive restoration {only allowed with dir=OUT }

The following figure and table demonstrate the behavior and allowed provisioning of the **AUTOMODE** input port parameter. While **AUTOMODE** is set to **ENABLE**, signal-related alarms are suppressed at the input port. While **AUTOMODE** is set

to **DISABLE**, port alarms are raised as normal. Any transition not shown below will be denied.

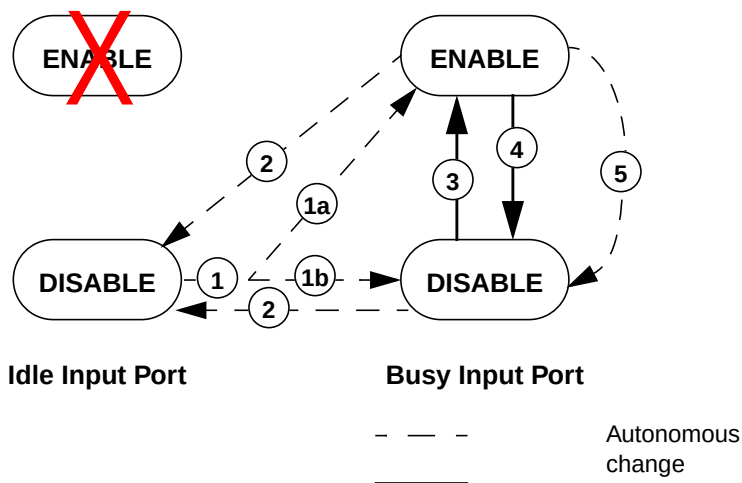


Table 3-35. AUTOMODE Allowed Transitions

Transition #	Triggers
1	Port becomes busy (cross-connected).
1a	Loss of signal (LOS) at input port.
1b	Detection of signal (DOS) at input port.
2	Port becomes idle (not cross-connected).
3	AUTOMODE is provisioned as ENABLE via ED-rr . The ED-rr command will be denied if DOS exists at the input port power monitor.
4	AUTOMODE is provisioned as DISABLE via ED-rr .
5	DOS at input port.

Only the combinations of **IFMT**, **IOPT**, and port **type** in the following table will be allowed. Therefore, any combination not shown will be denied. *{OCHT-type ports are allowed with all of the combinations of **IFMT** and **IOPT** in the following table.

Therefore **type OCHT** has been omitted from all of the cells in the "**Allowed Port Type (type)**" column.}.

Table 3-36. Valid Combinations of *IFMT*, *IOPT*, & *type*

<i>IFMT</i>	<i>IOPT</i>	Allowed Port Types (<i>type</i>) *{OCHT valid for all}
OC48/STM16	SR	OCHA13
	IR	OCHA13
	LR	OCHA13
	OTHER	OCHA13, OCHA15
OC192/STM64	SR	OCHA13
	IR	OCHA15
	LR	OCHA15
	VSR600-2M1	OCHA13
	VSR600-2M2	OCHA15
	VSR600-2R1	OCHA13
	VSR2000-2L2	OCHA15
	VSR2000-2R1	OCHA13
	OTHER	OCHA13, OCHA15
OC768/STM256	LAMBDAXTREME	OCHA13
	OTHER	OCHA13, OCHA15
GBELX	SR	OCHA13
	OTHER	OCHA13, OCHA15
HSBB	IR	OCHA13
	OTHER	OCHA13, OCHA15
OTHER	SR IR LAMBDAXTREME LR VSR600-2M1 VSR600-2M2 VSR600-2R1 VSR2000-2L2 VSR2000-2R1 OTHER	OCHA13, OCHA15

OUTPUT FORMAT

If the **ED-rr** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example demonstrates the usage of the **ED-rr** command for provisioning an OCHT-type input port.

```
ED-0CH:LT-0XC:och-1-1-3:123456::OCHT,IN:INSWIP0=swip-0-in-A4-3,  
IFMT=OC192/STM64,IOPT=LR,PWRMDF=-2,USAGE=NNI,KAALM=ENABLE,  
AUTOMODE=DISABLE;
```

```
LT-0XC 00-08-01 08:00:24  
M 123456 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning an OCHT-type output port.

```
ED-0CH:LT-0XC:och-1-1-3:123457::OCHT,OUT:OUTSWIP0=swip-0-out-A8-12,  
IFMT=OC48/STM16,IOPT=IR,USAGE=CLIENT;
```

```
LT-0XC 00-08-01 08:01:28  
M 123457 COMPLD  
;
```


The following example demonstrates the usage of the **ED-rr** command for provisioning both an input and output OCHT-type port.

```
ED-OCH:LT-OXC:och-1-1-4:123458::OCHT:INSWIP0=swip-0-in-A2-4,  
IFMT=OC192/STM64,IOPT=IR,PWRMDF=-1,USAGE=NNI,KAALM=ENABLE,  
AUTOMODE=DISABLE;  
  
LT-OXC 00-08-01 08:02:54  
M 123458 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning a SONET OCH10GC-type input port.

```
ED-OCH:LT-OXC:och-2-1-1:123459::OCH10GC,IN:INSWIP0=swip-1-in-A7-5,  
SDTHR=-5,SFTHR=-3,USAGE=CLIENT,ALSO=ENABLE,TCARPT=ENABLE,  
AUTOMODE=DISABLE,LFEP=DISABLE,LFEPF=DEFAULTS,LNEP=DISABLE,  
LNEPF=DEFAULTS,PHYPM_SNT=ENABLE,PHYPROF_SNT=DEFAULTS,SECPM=DISABLE,  
SECPRF=DEFAULTS,KAALM=DISABLE;  
  
LT-OXC 00-08-01 08:04:19  
M 123459 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning a SONET OCH10GC-type output port.

```
ED-OCH:LT-OXC:och-2-1-1:123460::OCH10GC,OUT:OUTSWIP0=swip-0-out-A5-7,  
SDTHR=-6,SFTHR=-4,USAGE=NNI,AISLSW=ENABLE,BERSW=ENABLE,EBERSW=ENABLE,  
AUTOLOCK=ENABLE,KA=ENABLE,LFEP=DISABLE,LFEPF=DEFAULTS,  
LNEP=DISABLE,LNEPF=DEFAULTS,PHYPM_SNT=ENABLE,PHYPROF_SNT=DEFAULTS,  
SECPM=DISABLE,SECPRF=DEFAULTS,TCARPT=ENABLE,ALSO=DISABLE;  
  
LT-OXC 00-08-01 08:06:29  
M 123460 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning both an input and output SONET OCH10GC-type port.

```
ED-OCH:LT-OXC:och-2-2-1:123461::OCH10GC:OUTSWIP0=swip-0-out-A8-13,  
SDTHR=-5,SFTHR=-3,USAGE=CLIENT,AISLSW=DISABLE,BERSW=DISABLE,  
EBERSW=DISABLE,AUTOLOCK=DISABLE,ALSO=ENABLE,KA=ENABLE,  
LFEPM=DISABLE,LFEPROF=DEFAULTS,LNEPM=DISABLE,LNEPROF=DEFAULTS,  
PHYPM_SNT=ENABLE,PHYPROF_SNT=DEFAULTS,SECPM=DISABLE,SECPROF=DEFAULTS,  
TCARPT=ENABLE,KAALM=DISABLE,AUTOMODE=DISABLE;
```

```
LT-OXC 00-08-01 08:08:34  
M 123461 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning the interface standard of both an input and output SONET OCH10GC-type port.

```
ED-OCH:LT-OXC:och-2-1-1:123462::OCH10GC,BOTH:ISTD=SDH;
```

```
LT-OXC 00-08-01 08:09:43  
M 123462 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning a SDH OCH10GC-type input port.

```
ED-OCH:LT-OXC:och-2-10-1:123463::OCH10GC,IN:INSWIP0=swip-0-in-A2-11,  
DEGTHR=-5,DEXCTHR=-3,USAGE=CLIENT,ALSO=DISABLE,TCARPT=ENABLE,  
AUTOMODE=DISABLE,MSFEPM=DISABLE,MSFEPROF=DEFAULTS,MSNEPM=DISABLE,  
MSNEPROF=DEFAULTS,PHYPM_SDH=ENABLE,PHYPROF_SDH=DEFAULTS,RSPM=DISABLE,  
RSPROF=DEFAULTS,KAALM=DISABLE,PMMSFESES=15,PMMSNESES=15,PMRSNESES=30;
```

```
LT-OXC 00-08-01 08:10:51  
M 123463 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning a SDH OCH10GC-type output port.

```
ED-OCH:LT-OXC:och-2-10-1:123464::OCH10GC,OUT:OUTSWIP0=
swip-0-out-A5-12,DEGTHR=-6,DEXCTHR=-4,USAGE=NNI,AISLSW=ENABLE,
BERSW=DISABLE,EBERSW=ENABLE,AUTOLOCK=DISABLE,TCARPT=ENABLE,
MSFEPM=DISABLE,MSFEPROF=DEFAULTS,MSNEPM=DISABLE,MSNEPROF=DEFAULTS,
PHYPM_SDH=ENABLE,PHYPROF_SDH=DEFAULTS,RSPM=DISABLE,RSPROF=DEFAULTS,
PMMSFESES=15,PMMSNESES=15,PMRSNESES=30,KA=ENABLE,ALSO=DISABLE;

LT-OXC 00-08-01 08:12:14
M 123464 COMPLD
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning both an input and output SDH OCH10GC-type port.

```
ED-OCH:LT-OXC:och-2-11-1:123465::OCH10GC:OUTSWIP0=swip-0-out-A6-5,
DEGTHR=-5,DEXCTHR=-3,USAGE=CLIENT,AISLSW=DISABLE,BERSW=ENABLE,
EBERSW=ENABLE,AUTOLOCK=ENABLE,ALSO=DISABLE,TCARPT=ENABLE,
MSFEPM=DISABLE,MSFEPROF=DEFAULTS,MSNEPM=DISABLE,MSNEPROF=DEFAULTS,
PHYPM_SDH=ENABLE,PHYPROF_SDH=DEFAULTS,RSPM=DISABLE,RSPROF=DEFAULTS,
PMMSFESES=15,PMMSNESES=15,PMRSNESES=30,AUTOMODE=DISABLE,KA=ENABLE,
KAALM=DISABLE;

LT-OXC 00-08-01 08:14:47
M 123465 COMPLD
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning the interface standard of both an input and output SDH OCH10GC-type port.

```
ED-OCH:LT-OXC:och-2-10-1:123466::OCH10GC,BOTH:ISTD=SONET;

LT-OXC 00-08-01 08:17:09
M 123466 COMPLD
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning a SONET OCH2GC-type input port.

```
ED-OCH:LT-OXC:och-3-1-1:123467::OCH2GC,IN:INSWIP0=swip-0-in-A4-3,  
SDTHR=-5,SFTHR=-3,USAGE=CLIENT,ALSO=ENABLE,TCARPT=ENABLE,  
AUTOMODE=DISABLE,LFEPM=DISABLE,LFEPROF=DEFAULTS,LNEPM=DISABLE,  
LNEPROF=DEFAULTS,PHYPM_SNT=ENABLE,PHYPROF_SNT=DEFAULTS,SECPM=DISABLE,  
SECPROF=DEFAULTS,KAALM=DISABLE;
```

```
LT-OXC 00-08-01 08:18:19  
M 123467 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning a SONET OCH2GC-type output port.

```
ED-OCH:LT-OXC:och-3-1-1:123468::OCH2GC,OUT:OUTSWIP0=swip-0-out-A8-11  
SDTHR=-6,SFTHR=-4,USAGE=NNI,AISLSW=ENABLE,BERSW=ENABLE,EBERSW=ENABLE,  
AUTOLOCK=ENABLE,KA=ENABLE,LFEPM=DISABLE,LFEPROF=DEFAULTS,  
LNEPM=DISABLE,LNEPROF=DEFAULTS,PHYPM_SNT=ENABLE,PHYPROF_SNT=DEFAULTS,  
SECPM=DISABLE,SECPROF=DEFAULTS,TCARPT=ENABLE,ALSO=DISABLE;
```

```
LT-OXC 00-08-01 08:18:59  
M 123468 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning both an input and output SONET OCH2GC-type port.

```
ED-OCH:LT-OXC:och-3-2-1:123469::OCH2GC:OUTSWIP0=swip-0-out-A8-16,  
SDTHR=-5,SFTHR=-3,USAGE=CLIENT,AISLSW=DISABLE,BERSW=DISABLE,  
EBERSW=DISABLE,AUTOLOCK=DISABLE,ALSO=ENABLE,KA=ENABLE,LFEPM=DISABLE,  
LFEPROF=DEFAULTS,LNEPM=DISABLE,LNEPROF=DEFAULTS,PHYPM_SNT=ENABLE,  
PHYPROF_SNT=DEFAULTS,SECPM=DISABLE,SECPROF=DEFAULTS,TCARPT=ENABLE,  
KAALM=DISABLE,AUTOMODE=DISABLE;
```

```
LT-OXC 00-08-01 08:19:33  
M 123469 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning the interface standard of both an input and output SONET OCH2GC-type port.

```
ED-OCH:LT-OXC:och-3-1-1:123470::OCH2GC,BOTH:ISTD=SDH;  
  
LT-OXC 00-08-01 08:19:49  
M 123470 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning a SDH OCH2GC-type input port.

```
ED-OCH:LT-OXC:och-3-10-2:123471::OCH2GC,IN:INSWIP0=swip-0-in-A1-16,  
DEGTHR=-5,DEXCTHR=-3,USAGE=CLIENT,ALSO=DISABLE,TCARPT=ENABLE,  
AUTOMODE=DISABLE,MSFEPM=DISABLE,MSFEPROF=DEFAULTS,MSNEPM=DISABLE,  
MSNEPROF=DEFAULTS,PHYPM_SDH=ENABLE,PHYPROF_SDH=DEFAULTS,RSPM=DISABLE,  
RSPROF=DEFAULTS,KAALM=DISABLE,PMMSFESES=15,PMMSNESES=15,PMRSNESES=30;  
  
LT-OXC 00-08-01 08:20:39  
M 123471 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning a SDH OCH2GC-type output port.

```
ED-OCH:LT-OXC:och-3-10-2:123472::OCH2GC,OUT:OUTSWIP0=swip-0-out-A5-1,  
DEGTHR=-6,DEXCTHR=-4,USAGE=NNI,AISLSW=ENABLE,BERSW=DISABLE,  
EBERSW=ENABLE,AUTOLOCK=DISABLE,TCARPT=ENABLE,MSFEPM=DISABLE,  
MSFEPROF=DEFAULTS,MSNEPM=DISABLE,MSNEPROF=DEFAULTS,PHYPM_SDH=ENABLE,  
PHYPROF_SDH=DEFAULTS,RSPM=DISABLE,RSPROF=DEFAULTS,PMMSFESES=15,  
PMMSNESES=15,PMRSNESES=30,KA=ENABLE,ALSO=DISABLE;  
  
LT-OXC 00-08-01 08:22:01  
M 123472 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning both an input and output SDH OCH2GC-type port.

```
ED-OCH:LT-OXC:och-3-11-2:123473::OCH2GC:OUTSWIP0=swip-0-out-A6-14,  
DEGTHR=-5,DEXCTHR=-3,USAGE=CLIENT,AISLSW=DISABLE,BERSW=ENABLE,  
EBERSW=ENABLE,AUTOLOCK=ENABLE,ALSO=DISABLE,TCARPT=ENABLE,  
MSFEPM=DISABLE,MSFEPROF=DEFAULTS,MSNEPM=DISABLE,MSNEPROF=DEFAULTS,  
PHYPM_SDH=ENABLE,PHYPROF_SDH=DEFAULTS,RSPM=DISABLE,RSPROF=DEFAULTS,  
PMMSFESES=15,PMMSNESES=15,PMRSNESES=30,AUTOMODE=DISABLE,KA=ENABLE,  
KAALM=DISABLE;
```

```
LT-OXC 00-08-01 08:22:41  
M 123473 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning the interface standard of both an input and output SDH OCH2GC-type port.

```
ED-OCH:LT-OXC:och-3-10-2:123474::OCH2GC,BOTH:ISTD=SONET;
```

```
LT-OXC 00-08-01 08:24:11  
M 123474 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning the primary state of an OCHT-type input port.

```
ED-OCH:LT-OXC:och-1-1-3:123475::OCHT,IN::OOS;
```

```
LT-OXC 00-08-01 08:24:53  
M 123475 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning the primary state of a OCH10GC-type output port.

```
ED-OCH:LT-OXC:och-2-1-1:123476::OCH10GC,OUT::,IS;  
  
LT-OXC 00-08-01 08:26:12  
M 123476 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning the primary state of both an input and output OCH2GC-type port.

```
ED-OCH:LT-OXC:och-3-10-1:123477::OCH2GC,BOTH::IS,00S;  
  
LT-OXC 00-08-01 08:27:02  
M 123477 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning an OCHA13-type input port.

```
ED-OCH:LT-OXC:och-1-9-2:123478::OCHA13,IN:INSWIP0=swip-0-in-A5-8,  
IFMT=OC192/STM64,IOPT=LR,PWRMDF=-2,USAGE=NNI,KAALM=ENABLE,ICOLOSS=0,  
AUTOMODE=DISABLE,OAPWR=1.0;  
  
LT-OXC 00-08-01 08:28:24  
M 123478 COMPLD  
;
```

The following example demonstrates the usage of the **ED-rr** command for provisioning both an OCHA15-type input port and an OCHT-type output port.

```
ED-OCH:LT-OXC:och-1-10-4:123479::OCHA15:INSWIP0=swip-0-in-A5-9,  
IFMT=OC192/STM64,IOPT=LR,PWRMDF=-1,USAGE=NNI,KAALM=ENABLE,ICOLOSS=0,  
AUTOMODE=DISABLE,OAPWR=2.0;  
  
LT-OXC 00-08-01 08:30:54  
M 123479 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ED-rr** command. The following additional errors apply to the **ED-rr** command as well.

If the network element receives an **ED-rr** command for an object that does not exist, then the following error response is returned.

```
sid date time
M ctag DENY
  IENE
/* Input, object Entity does Not Exist */
;
```

If the network element receives an **ED-rr** command with an invalid **INSWIP0** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid INSWIP0 */
;
```

If the network element receives an **ED-rr** command with an invalid **INSWIP1** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid INSWIP1 */
;
```


If the network element receives an **ED-rr** command with an invalid **OUTSWIP0** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid OUTSWIP0 */
;
```

If the network element receives an **ED-rr** command with an invalid **OUTSWIP1** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid OUTSWIP1 */
;
```

If the network element receives an **ED-rr** command with an invalid **pstin** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **pstout** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **IFMT** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **USAGE** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **IOPT** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **PWRMDF** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **dir** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=IN** and the **OUTSWIP0** or **OUTSWIP1** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=OUT** and the **INSWIP0** or **INSWIP1** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=OUT** and the **pstin** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=IN** and the **pstout** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with a range of aids and any **INSWIP0**, **INSWIP1**, **OUTSWIP0**, or **OUTSWIP1** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=OUT** and the **PWRMDF** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command to put the input port in service when the input port is in the (OOS-AU, FLT) state, then the following error response is returned.

```
sid date time
M ctag DENY
  SNOS
/* Status, Not manually Out of Service */
;
```

If the network element receives an **ED-rr** command to put the output port in service when the output port is in the (OOS-AU, FLT) state, then the following error response is returned.

```
sid date time
M ctag DENY
  SNOS
/* Status, Not manually Out of Service */
;
```

If the network element receives an **ED-rr** command to put the input port in service when the input port is in the (OOS-AU, UEQ) state, then the following error response is returned.

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

If the network element receives an **ED-rr** command to put the output port in service when the output port is in the (OOS-AU, UEQ) states, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an **INSWIP0**, **INSWIP1**, **OUTSWIP0**, or **OUTSWIP1** parameter specifying a Switch Interface Point (SWIP)

which is not in the (OOS-MA, UEQ) state, then the following error response is returned.

```
sid date time
M ctag DENY
  SRQN
/* Status, ReQuest Not valid, SWIP not in valid state */
;
```

If the network element receives an **ED-rr** command with an invalid Specific Block input parameter name, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNV
/* Input, Parameter Not Valid */
;
```

If the network element receives an **ED-rr** command with two or more of the following parameters specified:

- **INSWIP0**
- **INSWIP1**
- **OUTSWIP0**
- **OUTSWIP1**

then the following error response is returned.

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

If the network element receives an **ED-rr** command with any of the following parameters specified:

- **IFMT**
- **ISTD**

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■ **USAGE**

for a port involved with a cross-connection, then the following error response is returned.

```
sid date time
M ctag DENY
  SCBS
/* Status, Channel BuSy */
;
```

If the network element receives an **ED-rr** command with an invalid **DEGTHR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **DEXCTHR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **ISTD** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **SDTHR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **SFTHR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with any of the following parameters specified:

- **DEGTHR**
- **DEXCTHR**
- **MSFEPM**
- **MSFEPROF**
- **MSNEPM**
- **MSNEPROF**
- **PHYPM_SDH**
- **PHYPROF_SDH**
- **PMMSFESES**
- **PMMSNESES**
- **PMRSNESES**
- **RSPM**
- **RSPROF**

when the port's attribute **ISTD=SONET**, then the following error response is returned.

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

If the network element receives an **ED-rr** command with any of the following parameters specified:

- **LFEPM**
- **LFEPROF**
- **LNEPM**
- **LNEPROF**
- **PHYPM_SNT**
- **PHYPROF_SNT**
- **SDTHR**
- **SECPM**
- **SECPROF**
- **SFTHR**

when the port's attribute **ISTD=SDH**, then the following error response is returned.

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

If the network element receives an **ED-rr** command with any of the following parameters specified:

- **AISLSW**
- **ALSO**
- **AUTOLOCK**
- **BERSW**
- **DEGTHR**

- *DEXCTHR*
- *EBERSW*
- *ISTD*
- *KA*
- *LFEPM*
- *LFEPROF*
- *LNEPM*
- *LNEPROF*
- *MSFEPM*
- *MSFEPROF*
- *MSNEPM*
- *MSNEPROF*
- *PHYPM_SDH*
- *PHYPM_SNT*
- *PHYPROF_SDH*
- *PHYPROF_SNT*
- *PMMSFESES*
- *PMMSNESES*
- *PMRSNESES*
- *RSPM*
- *RSPROF*
- *SDTHR*
- *SECPM*
- *SECPROF*
- *SFTHR*
- *TCARPT*

for an OCHT, OCHA13, or OCHA15-type port, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNC
/* Input, Parameter Not Consistent, inconsistent parameter and port type */
;
```

If the network element receives an **ED-rr** command with any of the following parameters specified:

- **ICOLOSS**
- **IFMT**
- **IOPT**
- **OAPWR**
- **PWRMDF**

for an OCH10GC-type port, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNC
/* Input, Parameter Not Consistent, inconsistent parameter and port type */
;
```

If the network element receives an **ED-rr** command with an invalid **AISLSW** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **EBERSW** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **BERSW** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **AUTOLOCK** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=IN** and the **AISLSW** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=IN** and the **BERSW** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=IN** and the **EBERSW** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with a value specified for any of the following output port parameters:

- **IFMT**
- **IOPT**

which would provision the output port in a way not allowed by Table 3-36 on page 245, then the following error response is returned.

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

If the network element receives an **ED-rr** command with a value specified for any of the following parameters for an OCHT, OCHA13, or OCHA15-type input port:

- **IFMT**
- **IOPT**

which would provision the input port in a way not allowed by Table 3-36 on page 245, then the following error response is returned.

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

If the network element receives an **ED-rr** command with the **pstin** or **pstout** parameter specified and any **spec_block** parameters specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **type** input parameter value, then the following error response is returned.

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

If the network element receives a **ED-rr** command without a **type** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSSing, missing type */
;
```

If the network element receives an **ED-rr** command with an invalid **ALSO** input parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=IN** and the **AUTOLOCK** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with any of the following parameters specified:

- **ICOLOSS**
- **IFMT**
- **IOPT**
- **OAPWR**
- **PWRMDF**

for a OCH2GC-type port, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNC
/* Input, Parameter Not Consistent, inconsistent parameter and port type */
;
```

If the network element receives an **ED-rr** command with an invalid **LFEPM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid or non-existing profile name specified for the **LFEPROF** parameter, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **LNEPM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid or non-existing profile name specified for the **LNEPROF** parameter, then the following error response is returned.

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


If the network element receives an **ED-rr** command with an invalid **MSFEPM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid or non-existing profile name specified for the **MSFEPROF** parameter, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **MSNEPM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid or non-existing profile name specified for the **MSNEPROF** parameter, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **PHYPM_SDH** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **PHYPM_SNT** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid or non-existing profile name specified for the **PHYPROF_SDH** parameter, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid or non-existing profile name specified for the **PHYPROF_SNT** parameter, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **RSPM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid or non-existing profile name specified for the **RSPROF** parameter, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **SECPM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid or non-existing profile name specified for the **SECPROF** parameter, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **TCARPT** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with the **USAGE** parameter specified as **LINK_PROBE** or **REVERTIVE** for an OCHT, OCHA13, or OCHA15-type port, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent USAGE and port type */
;
```

If the network element receives an **ED-rr** command with **dir=OUT** and the **KAALM** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **KAALM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **PMMSFESES** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **PMMSNESES** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **PMRSNESES** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **AUTOMODE** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=OUT** and the **AUTOMODE** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=OUT** and the **type** parameter specified as **OCHA13** or **OCHA15**, then the following error response is returned.

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

If the network element receives an **ED-rr** command with an **INSWIP0**, **INSWIP1**, **OUTSWIP0**, or **OUTSWIP1** parameter specified when that parameter's current value is UAS (unassigned), then the following error response is returned.

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

If the network element receives an **ED-rr** command with an invalid **ICOLOSS** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with any of the following parameters specified:

- **ICOLOSS**
- **OAPWR**

for a OCHT-type port, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNC
/* Input, Parameter Not Consistent, inconsistent parameter and port type */
;
```

If the network element receives an **ED-rr** command with an **IOPT** parameter specified for an output port (**dir** = **OUT** or **BOTH**) involved with a cross-connection, then the following error response is returned.

```
sid date time
M ctag DENY
  SCBS
/* Status, Channel BuSy */
;
```

If the network element receives an **ED-rr** command with an invalid **KA** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=IN** and the **KA** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with a **type** value specified that does not agree with the port's actual type, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent type and actual port type */
;
```

If the network element receives an **ED-rr** command with the **AUTOMODE** parameter specified for an input port that is not involved with a cross-connection, then the following error response is returned.

```
sid date time
M ctag DENY
  SNCC
/* Status, Not Cross-Connected */
;
```

If the network element receives an **ED-rr** command with the **AUTOMODE** parameter specified as **ENABLE** while the input port power monitor is detecting signal (DOS), then the following error response is returned.

```
sid date time
M ctag DENY
  SRQN
/* Status, ReQuest Not valid, DOS at input port */
;
```


If the network element receives an **ED-rr** command with an invalid **OAPWR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=OUT** and the **OAPWR** parameter specified, then the following error response is returned.

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

If the network element receives an **ED-rr** command with **dir=IN** or **dir=BOTH** and the **USAGE** parameter specified as **REVERTIVE**, then the following error response is returned.

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

RELATED TL1 MESSAGES

RTRV-rr

NAME

ED-ULSDCC-L3: Edit Layer 3 Data Communication Channel Parameters

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

INPUT FORMAT

ED-ULSDCC-L3: *tid:aid:ctag:::spec_block;*

DESCRIPTION

The **ED-ULSDCC-L3** command modifies the user provisionable parameters in Layer 3 of the network communications stack for the DCC network interface. Layer 3 parameters include the IP Address, IP Subnet Mask, and Default Router IP Address. The **ED-ULSDCC-L3** command allows the user to change each of the network addressing parameters independently.

When this command changes the Layer 3 IP address, any existing session on that network interface (DCC) is broken and its owner must log on again using the new IP address. The circuit pack restarts when the changes are made causing all current sessions to be broken.

The **ED-ULSDCC-L3** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

The "**ED-ULSDCC-L3** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ED-ULSDCC-L3** command.

Table 3-37. ED-ULSDCC-L3 Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-37. ED - ULSDCC - L3 Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the entity to which the command is directed.	dcc-1-{1,2}
<i>ctag</i>	Correlation Tag. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>spec_block</i>	Specific Block Parameters. See the table "ED - ULSDCC - L3 Specific Block Input Parameters" table for detailed descriptions of these parameters.	

The "ED - ULSDCC - L3 Specific Block Input Parameters" table contains the detailed descriptions and allowed values for the named input parameters of the **ED - ULSDCC - L3** command.

Table 3-38. ED - ULSDCC - L3 Specific Block Input Parameters

Parameter Name	Description	Allowed Values
<i>IP_AD</i>	IP Address. The <i>IP_AD</i> parameter represents the 32-bit Internet Protocol Version 4 address of the DCC circuit pack.	w.x.y.z where w , x , y , and z are integers in the range 0-255
<i>IP_SNM</i>	IP Subnet Mask. The <i>IP_SNM</i> parameter represents the 32-bit Internet Protocol Version 4 subnet mask of the DCC circuit pack.	w.x.y.z where w , x , y , and z are integers in the range 0-255
<i>IP_DRAD</i>	IP Default Router Address. The <i>IP_DRAD</i> parameter represents the 32-bit Internet Protocol Version 4 default router address of the DCC circuit pack.	w.x.y.z where w , x , y , and z are integers in the range 0-255

OUTPUT FORMAT

If the **ED-ULSDCC-L3** request completes successfully, then the following normal completion response is returned.

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

The provisioned values do not take effect until after the DCC circuit pack resets.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **ED-ULSDCC-L3** command.

```
ED-ULSDCC-L3:LT-0XC:dcc-1-1:123456:::IP_AD=132.23.79.5;  
LT-0XC 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ED-ULSDCC-L3** command. The following additional errors apply to the **ED-ULSDCC-L3** command as well.

If the network element receives an **ED-ULSDCC-L3** command with an invalid Specific Block input parameter name, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNV
/* Input, Parameter Not Valid */
;
```

If the network element receives an **ED-ULSDCC-L3** command with an invalid **IP_AD** parameter value, then the following error response is returned.

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

If the network element receives an **ED-ULSDCC-L3** command with an invalid **IP_SNM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-ULSDCC-L3** command with an invalid **IP_DRAD** parameter value, then the following error response is returned.

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

If the network element receives an **ED-ULSDCC-L3** command with an all zeroes (0.0.0.0) value (invalid IP address value) for the **IP_AD** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, all zeroes is invalid IP_AD */
;
```

If the network element receives an **ED-ULSDCC-L3** command with an all zeroes (0.0.0.0) value (invalid IP address value) for the **IP_DRAD** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, all zeroes is invalid IP_DRAD */
;
```

If the network element receives an **ED-ULSDCC-L3** command with an all zeroes (0.0.0.0) value (invalid subnetwork mask value) for the **IP_SNM** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, all zeroes is invalid IP_SNM */
;
```

RELATED TL1 MESSAGES

RTRV-ULSDCC-L3

NAME

ED-ULSDCN-L3: Edit Upper Layer Stack Layer 3 Data Communication Network Parameters

The **ED-ULSDCN-L3** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

INPUT FORMAT

ED-ULSDCN-L3: *tid:aid:ctag:::spec_block;*

DESCRIPTION

The **ED-ULSDCN-L3** command is used to provision Control Communications Network (CCN) network communications stack Layer 3 parameters for the Restoration Controller (RC) circuit pack, Restoration Interface Processor (RIP) circuit pack, and 2.5 Gb/s Personality Modules residing in the RIP. Relevant parameters include: IP (Internet Protocol) Address, IP Subnetwork Mask, active or inactive status (port is usable or not), OSPF (Open Shortest Path First) enable or disable (port participates in the OSPF domain or not), standards format for IP over SONET/SDH, and Gateway Identifier (IP address) for operations messaging. The **ED-ULSDCN-L3** command allows the user to provision each of the parameters independently.

Any change in parameter values requires a pack reset to take effect.

When execution of this command changes a Layer 3 IP address, any existing session using the affected network IP address is broken and a new session must be established using the new IP address.

Note that changes to RC circuit pack IP ports are common to both active and standby RC circuit packs, independent of the particular RC circuit pack *aid* specified in the command. One set of provisionable parameters applies to both RC circuit packs because only one of the two RC circuit packs is active at any one time. Note that if this command is targeted to the RC pack that is currently in standby mode, the command will be denied.

The **ED-ULSDCN-L3** command generates a **REPT DBCHG** message.

Any change in any of the parameters requires that the new value(s) be stored in Non-Volatile Memory (NVM) and associated with the input *aid*. In particular, if the change in IP address requires a circuit pack reset, the new value(s) must be stored in NVM before the reset occurs.

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The following are examples of the **REPT DBCHG** message for RC circuit pack IP-port IP-address change, one **REPT DBCHG** message for the active RC, and one **REPT DBCHG** message for the standby RC.

```
LT-OXC 02-01-01 08:00:00
A 001 REPT DBCHG
"TIME=07-59-59,DATE=02-01-01:ED-ULSDCN-L3:rcip-1-0-
1::IP_ADDR=192.168.249.209,IP_SNM=255.255.255.0:"
;
```

```
LT-OXC 02-01-01 08:00:00
A 001 REPT DBCHG
"TIME=07-59-59,DATE=02-01-01:ED-ULSDCN-L3:rcip-1-1-
1::IP_ADDR=192.168.249.209,IP_SNM=255.255.255.0:"
;
```

INPUT PARAMETERS

The “**ED-ULSDCN-L3** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **ED-ULSDCN-L3** command.

Table 3-39. ED-ULSDCN-L3 Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the port to which the command is directed. If the rcip-1-{0,1}-1 <i>aid</i> is specified, it must correspond to the active RC, and not the standby RC, or the command will be denied.	rcip-1-{0,1}-1 Internal 100 Base-T ripip-1-{1,2}-1 Internal 100 Base-T rc10-1-{0,1}-1 External 10 Base-T rc100-1-{0,1}-1 External 100 Base-T rip10-1-{1,2}-1 External 10 Base-T rip100-1-{1,2}-1 External 100 Base-T pmoch-1-{1-4}-{1,2} 2.5 Gb/s PM port

Table 3-39. ED-ULSDCN - L3 Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>spec_block</i>	Specific Block Parameters. See the table “ ED-ULSDCN - L3 Specific Block Input Parameters” table for detailed descriptions of these parameters.	

The “**ED-ULSDCN - L3** Specific Block Input Parameters” table contains the detailed descriptions and allowed values for the named input parameters of the **ED-ULSDCN - L3** command.

Table 3-40. ED-ULSDCN - L3 Specific Block Input Parameters

Parameter Name	Description	Allowed Values
<i>IP_ADDR</i>	IP Address. The <i>IP_ADDR</i> parameter represents the 32-bit Internet Protocol Version 4 address of a port on either the RC or RIP pack. If a value for <i>IP_SNM</i> is provided, a value for this parameter is mandatory. Further, this parameter is mandatory if values for <i>IP_SNM</i> and/or <i>GTWAY_ID</i> are provided for aid rc10-1-{0,1}-1 .	w.x.y.z where w , x , y , and z are integers in the range 0-255
<i>IP_SNM</i>	IP Subnet Mask. The <i>IP_SNM</i> parameter represents the 32-bit Internet Protocol Version 4 subnet mask of the port. If a value for <i>IP_ADDR</i> is provided, a value for this parameter is mandatory. Further, this parameter is mandatory if values for <i>IP_ADDR</i> and/or <i>GTWAY_ID</i> are provided for aid rc10-1-{0,1}-1 .	w.x.y.z where w , x , y , and z are integers in the range 0-255

Table 3-40. ED - ULSDCN - L3 Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
STAT	CCN Status Indicator. The STAT parameter indicates whether the port is active (usable in the DCN). If inactive, no session can be established to that port. This parameter is only allowed with aid = rip10-1-{1,2}-1, rip100-1-{1,2}-1 pmoch-1-{1-4}-{1,2} The initial value of this parameter for all allowed aids is ACTIVE. The internal RIP 100 Base-T port (ripip-1-{1,2}-1) must be active. All RC DCN ports must be active.	ACTIVE INACTIVE
OSPF	CCN OSPF domain member indicator. The OSPF parameter indicates whether the port is a member of the DCN OSPF domain (participates in OSPF messages). This parameter is only allowed with aid = rip10-1-{1,2}-1, rip100-1-{1,2}-1 pmoch-1-{1-4}-{1,2} The initial value of this parameter for all allowed aids is ENABLE. The internal RIP 100 Base-T port (ripip-1-{1,2}-1) must participate in OSPF. No RC DCN ports participate in OSPF.	ENABLE DISABLE
FORMAT	Format standard indicator. The FORMAT parameter indicates whether a 2.5 Gb/s port is to adhere to SONET format or SDH format. This parameter is only allowed with aid = pmoch-1-{1-4}-{1,2} The initial value of this parameter for allowed aids is SONET.	SONET SDH

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Table 3-40. ED - ULSDCN - L3 Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>GTWAY_ID</i>	IP Address for the operations messaging gateway. The <i>GTWAY_ID</i> parameter represents the 32-bit Internet Protocol Version 4 address of a gateway for connected to the RC pack for operations messaging. This parameter is only allowed with <i>aid = rc10-1-{0,1}-1</i> , If values for <i>IP_ADDR</i> and/or <i>IP_SNM</i> are provided for <i>rc10-1-{0,1}-1</i> , a value for this parameter is mandatory as well.	<i>w.x.y.z</i> where w , x , y , and z are integers in the range 0-255

OUTPUT FORMAT

If the **ED - ULSDCN - L3** request completes successfully, then the following normal completion response is returned.

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

The provisioned values for RIP circuit pack ports and/or personality module ports do not take effect until after the RIP circuit pack resets. The RC circuit pack requires a reset if a port IP address/Subnetwork mask is changed.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **ED-ULSDCN-L3** command.

```
ED-ULSDCN-L3:LT-OXC:pmoch-1-2-1:123456:::  
IP_ADDR=132.23.79.5,IP_SNM=255.255.255.0,STAT=ACTIVE,OSPF=ENABLE,FORM  
AT=SDH;  
  
LT-OXC 01-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ED-ULSDCN-L3** command. The following additional errors apply to the **ED-ULSDCN-L3** command as well.

If the network element receives an **ED-ULSDCN-L3** command where the *aid* parameter value corresponds to a personality module that does not exist, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command with an invalid Specific Block input parameter name, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNV
/* Input, Parameter Not Valid */
;
```

If the network element receives an **ED-ULSDCN-L3** command with an invalid **IP_ADDR** parameter value, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command with an invalid **IP_SNM** parameter value, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command with an invalid **STAT** parameter value, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command with an invalid **OSPF** parameter value, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command and a value for **IP_ADDR** and/or **GTWAY_ID** is provided without a value for **IP_SNM**, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing IP_SNM */
;
```

If the network element receives an **ED-ULSDCN-L3** command and a value for **IP_SNM** and/or **GTWAY_ID** is provided without a value for **IP_ADDR**, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing IP_ADDR */
;
```

If the network element receives an **ED-ULSDCN-L3** command with **aid rc10-1-{0,1}-1** and values are provided for **IP_ADDR** and **IP_SNM** without a value for **GTWAY_ID**, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing GTWAY_ID */
;
```

If the network element receives an **ED-ULSDCN-L3** command where the **aid** is **ripip-1-{1,2}-1**, **rip10-1-{1,2}-1**, **rip100-1-{1,2}-1**, or **pmoch-1-{1-4}-{1,2}** and the system's ONN Configuration equipment parameter (ONNCFG) is currently equal to **DISABLE**, then the following

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error response is returned.

```
sid date time
M ctag DENY
EFON
/* Equipage, Feature Option Not provided, ONNCFG=DISABLE */
;
```

If the network element receives an **ED-ULSDCN-L3** command with an invalid **FORMAT** parameter value, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command where the **aid** parameter value corresponds to an RC pack that is in standby mode, that is, not in active mode, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command with the **STAT** parameter specified for a port that does not quality, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command with the **OSPF** parameter specified for a port that does not quality, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command with the **FORMAT** parameter specified for a port that does not quality, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command with an invalid **GTWAY_ID** parameter value, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command with the **GTWAY_ID** parameter specified for a port that does not quality, then the following error response is returned.

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

If the network element receives an **ED-ULSDCN-L3** command with an all zeroes (0.0.0.0) value (invalid IP address value) for the **IP_ADDR** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, all zeroes is invalid IP_ADDR */
;
```

If the network element receives an **ED-ULSDCN-L3** command with an all zeroes (0.0.0.0) value (invalid IP address value) for the **GTWAY_ID** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, all zeroes is invalid GTWAY_ID */
;
```

If the network element receives an **ED-ULSDCN-L3** command with an all zeroes (0.0.0.0) value (invalid subnetwork mask value) for the **IP_SNM** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, all zeroes is invalid IP_SNM */
;
```

If the network element receives an **ED-ULSDCN-L3** command that specifies an IP address value for the **IP_ADDR** parameter that is already assigned to another IP

port on any of the RC or RIP circuit packs, then the following error response is returned.

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

RELATED TL1 MESSAGES

RTRV-ULSDCN-L3

NAME

ED-USER-SECU: Edit User Security

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

INPUT FORMAT

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

DESCRIPTION

The **ED-USER-SECU** command edits the security parameters associated with a user. It is used by a Superuser (who has level 5 authorization in all categories) or any other user who has S5 privilege. The **ED-USER-SECU** command enables a user to modify the password (*new_pid*), user privilege code(s) (*upc*), and/or user security parameters of the non-Superusers. An existing login ID (*uid*) of a non-Superuser cannot be renamed. It must be deleted and re-entered. A user with S5 privilege may modify the password and/or user security parameters (except the user privilege code) of the other S5 users. This command allows a Superuser to change his/her own User Id.

The network element always has two pre-installed users (Superusers) with full privileges in all functional categories. The network element does not allow adding additional Superusers. It will not be possible to remove either of the Superuser's login IDs. The network element allows addition of users who have S5 privilege code but are not Superusers.

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

The successful completion of an **ED-USER-SECU** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "**ED-USER-SECU** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ED-USER-SECU** command.

Table 3-41. ED-USER-SECU Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> 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 (S5 Privilege) when changing parameters of another user; otherwise, the ED-USER-SECU command is denied.	Case-sensitive alphanumeric string of 1 to 10 characters
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>new_pid</i>	Specifies the New Password ID. Refer to the " ENT-USER-SECU Positional Input Parameters" table for the input parameter syntax and description of the <i>pid</i> parameter.	

Table 3-41. ED - USER - SECU Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<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 and Security Administration), T (Test access), M (Maintenance), P (Provisioning), and PM (Performance Monitoring). Within each functional category, there is an authorization level that restricts user access to certain commands within the category; a user level allows access to commands of that level and lower. An S3 user, for example, can execute all commands with privilege S1, S2 (not used anymore), and S3. The <i>upc</i> parameter is a list of these category/level pairs. If the <i>upc</i> 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.	An ampersand (&) separated list from the following set: Pi, PMi, Mi, Ti, and Si, where "i" is an integer which is the authorization level in that category. The value of i is 0 (low) to 5 (high), except for the S category, which only supports levels 1 to 5. If an authorization level is set to 0, the user will have no privileges for that functional category. In other words, an authorization level of 0 disables that functional category for that user. The initial authorization level is 1 for all functional categories.
<i>spec_block</i>	Specific Block Parameters. See the table " ED - USER - SECU Specific Block Input Parameters" for the detailed descriptions of these parameters.	

The "ED-USER-SECU Specific Block Input Parameters" table contains the detailed descriptions and allowed values for the named input parameters of the ED-USER-SECU command.

Table 3-42. ED-USER-SECU Specific Block Input Parameters

Parameter Name	Description	Allowed Values
UCPL	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. Note: This parameter is designated for implementation in future release.	1-5 (Future release)
SCREEN	Screen. Message screening specifies the type of notifications and/or responses that are received by the uid . Any ampersand (&) separated combination of DBCHG , STCHG , PSCHG , and ALARMS may be specified. If a value is not specified, the parameter retains its current value.	DBCHG Report creation of entities/report changes in user provisionable parameters/report deletion of entities. User receives REPT DBCHG messages. STCHG Report changes in non-user provisionable parameters (state changes). User receives REPT DBCHG messages. PSCHG Report protection switch changes. User receives REPT EVT and REPT SW messages. ALARMS Report alarms. User receives REPT ALM, and REPT EVT messages. ALL User receives all notifications. If ALL is one of the values specified, the NE will disregard other values. OWN User receives only responses to his/her own commands, no other notifications are received.

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Table 3-42. ED - USER - SECU Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
PAGE	Password Aging Interval. Refer to “ ENT - USER - SECU Positional Input Parameters” table for the input parameter syntax and description of the PAGE parameter.	
TMOUT	Inactivity Timeout Period. Refer to “ ENT - USER - SECU Positional Input Parameters” table for the input parameter syntax and description of the TMOUT parameter.	
ALW_LOGIN	Allow Login. This parameter allows an S5 user to enable a User Id that is disabled.	YES User Id is enabled.
NEWUID	New User ID. This parameter allows an existing Superuser to change his/her own login ID. It cannot be used to rename a non-Superuser login ID. Refer to “ ACT - USER Positional Input Parameters” table for the input parameter syntax and description of the uid parameter.	

OUTPUT FORMAT

If the **ED - USER - SECU** request completes successfully, then the following normal completion response is returned.

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

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 *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **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-0XC-  
789:kjlee:123456::,pass13+, ,P3&M3:SCREEN=DBCHG,PAGE=10,TMOUT=20;  
  
LT-0XC-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ED-USER-SECU** command. The following additional errors apply to the **ED-USER-SECU** command as well.

If the network element receives an **ED-USER-SECU** command with an invalid *uid* parameter value, then the following error response is returned.

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

If the network element receives an **ED-USER-SECU** command with an invalid *new_pid* (password) parameter value, then the following error response is returned.

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

If the network element receives an **ED-USER-SECU** command with an invalid **upc** parameter value, **upc=P5&PM5&M5&T5&S5** for a non-Administrator login, or **upc=S0** then the following error response is returned.

```
sid date time
M ctag DENY
  PIUC
/* Privilege, Invalid User Code */
;
```

If the network element receives an **ED-USER-SECU** command with an invalid **SCREEN** parameter value, then the following error response is returned.

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

If the network element receives an **ED-USER-SECU** command with an invalid Specific Block input parameter name, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNV
/* Input, Parameter Not Valid */
;
```

If the network element receives an **ED-USER-SECU** command with an invalid **PAGE** parameter value, then the following error response is returned.

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

If the network element receives an **ED-USER-SECU** command with an invalid **TMOUT** parameter value, then the following error response is returned.

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

If the network element receives an **ED-USER-SECU** command with an invalid **ALW_LOGIN** parameter value, then the following error response is returned.

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

If the network element receives an **ED-USER-SECU** command with an invalid **NEWUID** parameter value, then the following error response is returned.

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

RELATED TL1 MESSAGES

CANC-USER-SECU

DLT-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

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NAME

ENT - CRS : Enter Cross-Connect

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

INPUT FORMAT

ENT-CRS: *tid: in_aid 1, out_aid 1* [, *in_aid 2* [, *out_aid 2*]] : ctag:
: [*cct*] [, [*valck*], [*ccnum*] [, *op_sys_id*]] ;

DESCRIPTION

The **ENT - CRS** command can be used to establish various cross-connection configurations within the network element. A configuration may involve one or more cross-connection legs between compatible input port and output port interfaces. A cross-connection leg may be duplex (that is, a transmission path is established through each of the two switch fabrics) or a leg may be simplex (that is, a transmission path is established through only one of the switch fabrics).

One entry of this command will allow any one of the following cross-connection configurations to be established: a 1-way point-to-point, a 2-way point-to-point, or a merge. Multiple entries of this command are required to establish all other configurations. When all of the ports being used to establish a 1-way or 2-way point-to-point configuration are idle, the cross-connection legs will be duplex. Idle ports are ports in service but with no existing cross-connection or loopback. Only simplex legs can be added to a configuration when at least one of the ports specified by the command is already being used for a cross-connection.

A 1-way point-to-point cross-connection has one (duplex or simplex) leg between the specified input port and the specified output port. A 2-way point-to-point cross-connection has two (duplex or simplex) legs, which can be envisioned as being in two opposite directions. A merge configuration is formed by two simplex legs that originate on different input ports and terminate on the same output port.

A user may submit this command to request that a second 1-way cross-connection be established even though the specified input port or output port already has an existing 1-way leg. One purpose of such an entry would be to convert a 1-way duplex leg into two simplex legs. When both of these 1-way simplex legs are associated with a specified input port, the result is a bridge configuration. When both legs are associated with a specified output port, the two 1-way simplex legs form a merge configuration.

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The two paths of a bridge are possible because each input port (in the circuit packs being used for this software release) has a 1:2 optical splitter, which provides a 1:2 multi-cast. The two legs of a merge cross-connection can co-exist because each output port in these circuit packs has a 2:1 selector, which selects one of the two signals from the two associated input ports.

When a user submits this command in order to add a second 1-way cross-connection to an existing 1-way cross-connection, the command will be successful only if the user includes the proper value for the validity check parameter. For example, a user may specify in the command an AID value for an idle input port and the AID value for an output port that already has a duplex leg. This command will fail unless the validity check parameter contains the value **"MERG"**. This parameter value will be interpreted by the network element to mean that the user really wants to allow the signals being received through the two different input ports to converge at the same output port. The value **"MERG"** is also required for the validity check parameter when a merge configuration (involving three idle ports) is established with only one command.

Likewise, a user may specify in the command an AID value for an idle output port and the AID value for an input port that already has a duplex leg. For this case, the command will fail unless the validity check parameter contains the value **"BRDG"**. This parameter value will be interpreted by the network element to mean that the user really wants a bridge configuration to be established, which will cause the signal that is currently being transmitted by one output port to also be transmitted by a second output port.

Network element cross-connections for a 2-way point-to-point configuration can be established by using either two, three, or four different ports, each of which may be in different circuit packs which can be located on the same or different shelves. If only two ports are used for a 2-way cross-connection, which is the default case, the input interface for one direction has the same AID as the output interface for the opposite direction, and vice versa. However, when appropriate, a user may select more than two port AIDs to be used for a 2-way cross-connection. The command input format therefore allows two different input AIDs and two different output AIDs to be specified.

A user may also enter this command in order to add a second 2-way cross-connection to an existing 2-way cross-connection. This allows a user to establish a "bridge and merge" configuration, as illustrated in the Example Input/Output Section, providing the validity check parameter has a value of **"BRMG"**. The Example Input/Output Section also illustrates how multiple 2-way cross-connections can be joined together (if the need should arise), providing the specified rules are satisfied. The Examples Section also specifies (and illustrates) several operational rules that pertain to 1-way and 2-way cross-connections.

The command allows a user to assign a "label", which is called a cross-connect number, to each of the cross-connection legs that are established by the command operation. This label may be any numerical value. However, an

operations system may typically form the label by concatenating the digits of a particular AID associated with the cross-connection configuration being established. The cross-connect number will appear in the retrieval output as a six-digit number, with leading zeroes if necessary. The command also allows a user to include a pre-assigned numerical value that identifies the operations system that originated the command.

This command may not be used to enter a cross-connection that includes an AID for a port that has been reserved for or is currently being used for the test access feature or the feature involving port discovery and link verification. Test access cross-connections can be established by using the **CONN-TACC** command.

The command is based on the expectation that an input port equipped with an optical amplifier can supply the amount of gain requested by the output port in order to provide adequate signal power to the receiving equipment; this receiver may be an inherent part of an OEO output port or be external equipment connected to an OCHT port.

The required compatibility of input and output ports to ensure successful cross-connections should be considered by users prior to making attempts to establish these cross-connections. In general, the input port and output port must be provisioned with compatible interface formats (*IFMT*). For a bridge configuration, the two output ports should have the same provisioned value for optics type (*IOPT*) and egress central office loss (*ECOLOSS*). For a merge configuration, each of the two input ports should be able to provide sufficient signal power to the output port.

A cross-connection may be established with or without a signal being present at an input port.

The **ENT-CRS** command generates a **REPT DBCHG** message that can be used to update a cross-connection database.

The general **REPT DBCHG** message format is specified in the **OUTPUT FORMAT** section of the **REPT DBCHG** message. The format of the *spec_block* in the **REPT DBCHG** message that is generated as a result of the **ENT-CRS** command is specified in a subsequent section of this command description.

INPUT PARAMETERS

The "ENT - CRS Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the ENT - CRS command.

Table 3-43. ENT - CRS Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the "RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>in_aid_1</i>	Input Access IDentifier (AID) #1. This parameter identifies the first input port for the cross-connection configuration to be established.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>out_aid_1</i>	Output Access IDentifier (AID) #1. This parameter identifies the first output port for the cross-connection configuration to be established.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>in_aid_2</i>	Input Access IDentifier (AID) #2. This parameter identifies the second input port for the cross-connection configuration to be established. A value for this parameter is required when the <i>cct</i> parameter is set to "2WAY". A value for this parameter is allowed when the <i>cct</i> parameter is set to "1WAY" and the <i>valck</i> parameter is set to "MERG" or "BRMG". Otherwise, the command shall be denied when the <i>cct</i> parameter is set to "1WAY".	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>out_aid_2</i>	Output Access IDentifier (AID) #2. This parameter identifies the second output port for the cross-connection configuration to be established. A value for this parameter is required when the <i>cct</i> parameter is set to "2WAY". A value is not allowed when the <i>cct</i> parameter is set to "1WAY".	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}

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Table 3-43. ENT - CRS Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values	
ctag	Correlation Tag. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the ctag parameter.		
cct	Cross-Connect Topology. This parameter specifies the basic topology for the cross-connection configuration to be established.	1WAY	1-way (point-to-point, bridge, merge, etc.)
		2WAY	2-way (point-to-point, bridge and merge, etc.) (Default)*
valck	Validation Check. The proper value for this parameter is required when a user submits this command in order to add a second 1-way cross-connection to an existing 1-way cross-connection or add another 2-way to an existing 2-way cross-connection. However, the command will be denied if this parameter is included when there is no bridge or merge to be formed by the command operation. The value of “ MERG ” is also required for this parameter when a merge configuration is established with only one command entry.	BRDG MERG BRMG	bridge merge bridge and merge
ccnum	Cross-Connect Number. A user may optionally include a numerical “label” that will be associated with each cross-connection leg generated by the command operation. There is no guarantee concerning the uniqueness of this number within the network element. A user may not use these “labels” in order to retrieve a particular group of cross-connections. There is no command available to allow a user to modify cross-connect numbers that have been previously entered. When this number is retrieved, it will be a six-digit number, with default value “000000”.	Any number up to and including six digits. (A user may assign this number by concatenating the digits for a particular port AID in the configuration to be established, as illustrated in the Examples Section.)	

Table 3-43. ENT - CRS Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>op_sys_id</i>	Operations System Identifier. Each operations system may optionally enter a pre-assigned numerical value that identifies it as the originator of the command that established a particular cross-connection. If no value is entered, a zero will appear in the retrieval output. A value cannot be entered to represent the LambdaRouter ONNS.	1 Optical Craft Inter- face (OCI) 3 Navis Optical NMS 4 Navis Optical EMS 5 Other

*A command for a “**2WAY**” cross-connect topology must always contain four AID values (*in_aid_1*, *out_aid_1*, *in_aid_2*, and *out_aid_2*).

Note that cross-connection legs that are established by using the “**2WAY**” cross-connect topology value shall be associated in the cross-connection database. This association shall be used by the system when **DLT - CRS** or **RTRV - CRS** commands are entered.

OUTPUT FORMAT

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

```

sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

REPT DBCHG MESSAGE FORMAT

Shown below is the **REPT DBCHG** message that is generated as a result of the **ENT - CRS** command. This format is based on the general **REPT DBCHG** message

format that appears in the **OUTPUT FORMAT** section of the **REPT DBCHG** message description.

```
sid date time
A atag REPT DBCHG
  "TIME=ocrtm,DATE=ocrdat:ENT-CRS:::[spec_block]:"
;
```

The "*spec_block*" will contain one or more "add" and "ed" name-defined parameters that precede a grouping of cross-connection parameters pertaining to the cross-connection leg(s) that have been established or changed by the command. Each parameter contained in an "add" or "ed" sequence is defined in the **RTRV-CRS** command.

Each "add=" that appears in the "*spec_block*" indicates that a new (duplex or simplex) cross-connection leg has been established. The information describing this new leg is contained in the sequence of cross-connection parameters identified by \ at its beginning and end as shown below.

```
add="\in_aid,out_aid,sw_fab,cct,merg_ind,tw_link,ccnum,op_sys_id"
```

Each "ed=" that appears in the "*spec_block*" indicates that one or more characteristics of an existing cross-connection leg has changed. The information describing the leg with the changed characteristics is contained in the sequence of cross-connection parameters identified by \ at its beginning and end as shown below.

```
ed="\in_aid,out_aid,sw_fab,cct,merg_ind,tw_link,ccnum,op_sys_id"
```

When "ed=" appears in a **REPT DBCHG** message for a **ENT-CRS** command, it denotes that one or more of the following changes have occurred:

A duplex leg has become simplex, which will cause a "0" or "1" (instead of a "2") to appear in the *sw_fab* parameter for the leg.

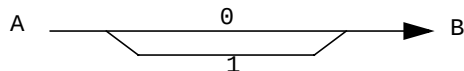
A leg has become part of a merge configuration, which will cause the value "MERG" to appear in the *merg_ind* parameter field.

When the "*spec_block*" contains both an "ed=" and an "add=" sequence pertaining to a particular operation, the "ed=" sequence will always appear before the "add=" sequence. A **REPT DBCHG** message for the **ENT-CRS** command may contain multiple pairs of "ed=" and "add=" sequences. Note that there are also cases for which an "add=" sequence can appear without an accompanying "ed=" sequence.

Examples of the **REPT DBCHG** message that are generated for the **ENT-CRS** command appear in the **EXAMPLE INPUT/OUTPUT** section of this document.

EXAMPLE INPUT/OUTPUT

The following example shows a successful completion of the **ENT-CRS** command, and the generated **REPT DBCHG** message, for a 1-way duplex cross-connection leg between two ports. For this case, as shown by the diagram, there is a transmission path through both switching fabrics from the input port to the output port.



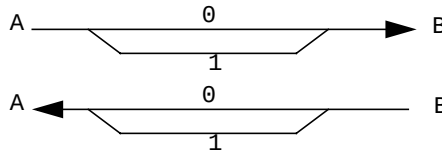
Port	AID
A	och-1-12-1
B	och-1-17-1

```
ENT-CRS:LT-AOS:och-1-12-1,och-1-17-1:123456::1WAY,,011701,3;
```

```
LT-AOS 01-04-16 08:11:01
M 123456 COMPLD
;
```

```
LT-AOS 01-04-16 08:11:02
A 006 REPT DBCHG
"TIME=08-11-01,DATE=01-04-16:ENT-CRS:::add=\"och-1-12-1,och-1-17-1,2,1WAY,,,011701,3\":"
;
```

The following example shows a successful completion of the **ENT-CRS** command for a 2-way duplex cross-connection involving two ports. This cross-connection involves two legs, one in each direction.



Port	AID
A	och-1-10-1
B	och-1-15-1

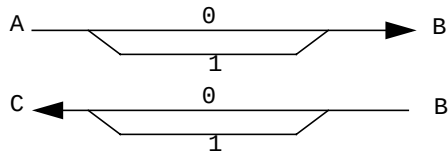
```
ENT-CRS:LT-AOS:och-1-10-1,och-1-15-1,och-1-15-1,och-1-10-1:123456::2WAY,,011501,1;
```

```
LT-AOS 01-04-16 08:15:11
M 123456 COMPLD
;
```

```
LT-AOS 01-04-16 08:15:11
A 006 REPT DBCHG
"TIME=08-15-11,DATE=01-04-16:ENT-CRS:::add=\"och-1-10-1,och-1-15-1,2,2WAY,,och-1-10-1,011501,1\",add=\"och-1-15-1,och-1-10-1,2,2WAY,,och-1-15-1,011501,1\":"
;
```

Note that for a two-port 2-way case, the AID specified in the *in_aid_2* position is the same as the *out_aid_1* value, and the AID specified for *out_aid_2* is the same as for *in_aid_1*. All four AIDs are required for entering a 2-way cross-connection.

The following example shows a successful completion of the **ENT-CRS** command for a 2-way duplex cross-connection between three ports.



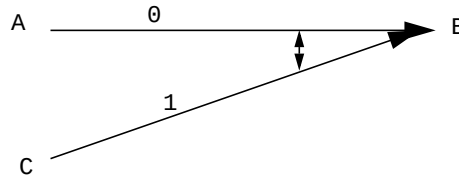
Port	AID
A	och-1-4-1
B	och-1-6-1
C	och-1-8-1

ENT-CRS:LT-AOS:och-1-4-1,och-1-6-1,och-1-6-1,och-1-8-1:123456::2WAY,,010601,1;

LT-AOS 01-04-16 08:17:23
M 123456 COMPLD
;

LT-AOS 01-04-16 08:17:23
A 006 REPT DBCHG
"TIME=08-17-23,DATE=01-04-16:ENT-CRS:::add=\"och-1-4-1,och-1-6-1,2,2WAY,,och-1-8-1,010601,1\",add=\"och-1-6-1,och-1-8-1,2,2WAY,,och-1-6-1,010601,1\":"
;

The following example shows a successful completion of the **ENT-CRS** command to establish a 1-way merge using only idle ports. This cross-connection involves two simplex legs. The numbers "0" and "1" illustrate the switching fabric being used for each leg in this particular example. A validation check value of "**MERG**" is required for this case.



Port	AID
A	och-1-15-1
B	och-1-7-1
C	och-1-16-4

```

ENT-CRS:LT-AOS:och-1-15-1,och-1-7-1,och-1-16-
4:123456::1WAY,MERG,010701,3;
  
```

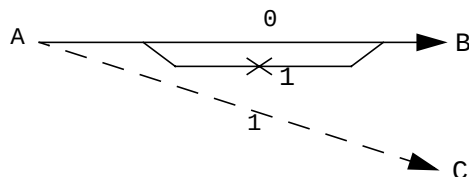
```

      LT-AOS 01-04-16 08:19:18
M 123456 COMPLD
;
  
```

```

      LT-AOS 01-04-16 08:19:18
A 006 REPT DBCHG
  "TIME=08-19-18,DATE=01-04-16:ENT-CRS:::add=\"och-1-15-1,och-1-7-
1,0,1WAY,MERG,,010701,3\",add=\"och-1-16-4,och-1-7-
1,1,1WAY,MERG,,010701,3\":"
;
  
```

The following example shows a successful completion of the **ENT-CRS** command to add a leg (shown as a dashed line) to an existing 1-way duplex cross-connection (shown as solid lines). Note that the validation check parameter must have the value "**BRDG**" in order to add the second leg at the input port. For this case the transmission path through switching fabric "1" is selected to provide the simplex leg to the new output port.



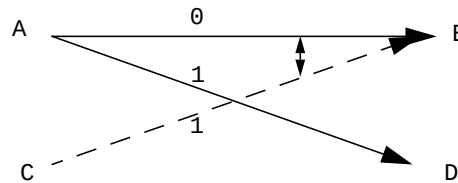
Port	AID
A	och-2-12-1
B	och-2-17-1
C	och-2-17-2

ENT-CRS:LT-AOS:och-2-12-1,och-2-17-2:123456::1WAY,BRDG,021701,3;

LT-AOS 01-04-16 08:22:31
M 123456 COMPLD
;

LT-AOS 01-04-16 08:22:31
A 006 REPT DBCHG
"TIME=08-22-31,DATE=01-04-16:ENT-CRS:::ed=\"och-2-12-1,och-2-17-1,0,1WAY,,,021701,1\",add=\"och-2-12-1,och-2-17-2,1,1WAY,,,021701,3\":"
;

The following example shows a successful completion of the **ENT-CRS** command to add a leg (shown as a dashed line) to form a merge with an existing 1-way leg (shown as a solid line). For this case, the validation check parameter must have a value of **"MERG"** in order for the second leg to be added at the output port.



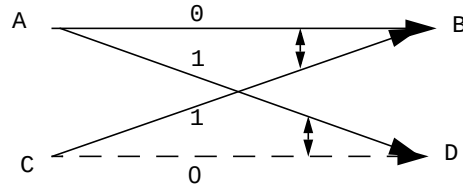
Port	AID
A	och-2-14-3
B	och-2-17-3
C	och-1-16-4
D	och-1-6-3

```
ENT-CRS:LT-AOS:och-1-16-4,och-2-17-3:123456::1WAY,MERG,021703,1;
```

```
LT-AOS 01-04-16 08:23:19
M 123456 COMPLD
;
```

```
LT-AOS 01-04-16 08:23:19
A 006 REPT DBCHG
"TIME=08-23-19,DATE=01-04-16:ENT-CRS:::ed=\"och-2-14-3,och-2-17-
3,0,1WAY,MERG,,021703,1\",add=\"och-1-16-4,och-2-17-
3,1,1WAY,MERG,,021703,1\";"
;
```

The following example shows a successful completion of the **ENT-CRS** command to add a simplex leg (shown as a dashed line) to an existing configuration (shown as solid lines). For this case, the validation check parameter must have a value of **"BRMG"** in order for the second leg to be added at both the input port and the output port. The final result may be viewed as a double merge.



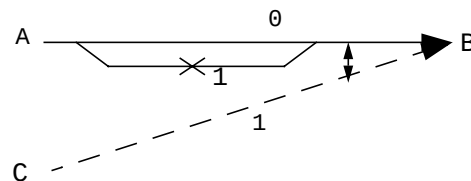
Port	AID
A	och-1-15-1
B	och-1-7-1
C	och-1-16-4
D	och-1-6-3

```
ENT-CRS:LT-AOS:och-1-16-4,och-1-6-3:123456::1WAY,BRMG,010701,1;
```

```
LT-AOS 01-04-16 08:26:13
M 123456 COMPLD
;
```

```
LT-AOS 01-04-16 08:26:13
A 006 REPT DBCHG
"TIME=08-26-13,DATE=01-04-16:ENT-CRS:::ed=\"och-1-15-1,och-1-6-3,1,1WAY,MERG,,010701,1\",add=\"och-1-16-4,och-1-6-3,0,1WAY,MERG,,010701,1\":"
;
```

The following example shows a successful completion of the **ENT-CRS** command to add a leg (shown as a dashed line) to an existing duplex 1-way (shown as solid lines) to form a 1-way merge. For this case, the validation check parameter must have a value of "**MERG**" in order for the second leg to be added at the output port. The transmission path through switching fabric "1" is selected to provide the simplex leg from the new input port to the existing output port.



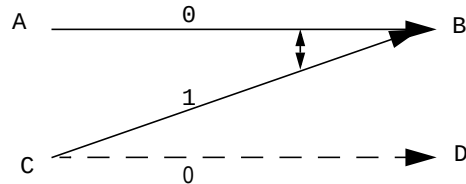
Port	AID
A	och-1-15-1
B	och-1-5-3
C	och-1-16-4

ENT-CRS:LT-AOS:och-1-16-4,och-1-5-3:123456::1WAY,MERG,010503,1;

LT-AOS 01-04-16 08:28:41
M 123456 COMPLD
;

LT-AOS 01-04-16 08:28:41
A 006 REPT DBCHG
"TIME=08-28-41,DATE=01-04-16:ENT-CRS:::ed=\"och-1-15-1,och-1-5-3,0,1WAY,MERG,,010503,1\",add=\"och-1-16-4,och-1-5-3,1,1WAY,MERG,,010503,1\":"
;

The following example shows a successful completion of the **ENT-CRS** command to add a simplex leg (shown as a dashed line) to one leg of an existing 1-way merge (shown as a solid line). Note that the validation check parameter must have the value "**BRDG**" in order to add the second leg at the input port.



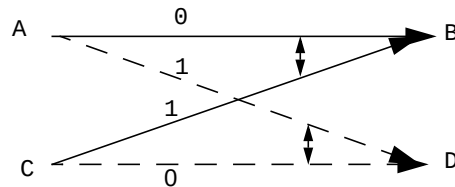
Port	AID
A	och-1-17-4
B	och-1-17-1
C	och-2-17-1
D	och-1-17-3

```
ENT-CRS:LT-AOS:och-2-17-1,och-1-17-3:123456::1WAY,BRDG,011701,1;
```

```
LT-AOS 01-04-16 08:30:11
M 123456 COMPLD
;
```

```
LT-AOS 01-04-16 08:30:11
A 006 REPT DBCHG
"TIME=08-30-11,DATE=01-04-16:ENT-CRS:::add=\"och-2-17-1,och-1-17-3,0,1WAY,,,011701,1\":"
;
```

The following example shows a successful completion of the **ENT-CRS** command to add a merge (shown as dashed lines) to an existing merged cross-connect (shown as solid lines), which forms a configuration that can be viewed as a double merge.



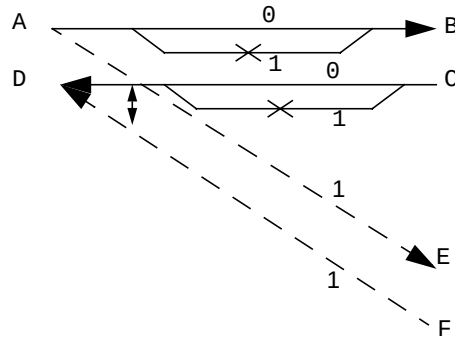
Port	AID
A	och-1-15-1
B	och-1-7-2
C	och-1-16-4
D	och-1-6-4

ENT-CRS:LT-AOS:och-1-15-1,och-1-6-4,och-1-16-4:123456::1WAY,BRMG,010702,1;

LT-AOS 01-04-16 08:32:43
 M 123456 COMPLD
 ;

LT-AOS 01-04-16 08:32:43
 A 006 REPT DBCHG
 "TIME=08-32-43,DATE=01-04-16:ENT-CRS:::add=\"och-1-15-1,och-1-6-4,1,1WAY,MERG,,010702,1\",add=\"och-1-16-4,och-1-6-4,0,1WAY,MERG,,010702,1\";"
 ;

The following example shows a successful completion of the **ENT-CRS** command to add 2-way legs (shown as dashed lines) to an existing 2-way duplex cross-connection (shown as solid lines) in order to form a 2-way bridge and merge. This case requires a validation check value of **"BRMG"**.



Port	AID
A	och-1-1-1
B	och-1-3-1
C	och-1-1-2
D	och-1-2-1
E	och-1-1-3
F	och-1-2-2

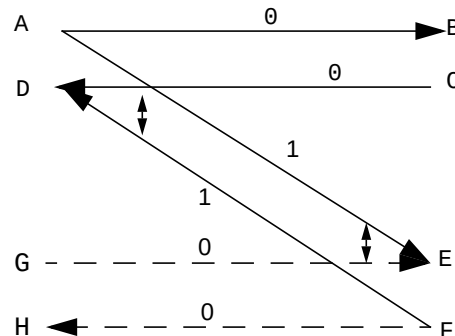
ENT-CRS:LT-AOS:och-1-1-1,och-1-1-3,och-1-2-2,och-1-2-1,:123456::2WAY,BRMG,010301,1;

LT-AOS 01-04-16 08:35:21
M 123456 COMPLD
;

LT-AOS 01-04-16 08:35:21
A 006 REPT DBCHG
"TIME=08-35-21,DATE=01-04-16:ENT-CRS:::ed=\"och-1-1-1,och-1-3-1,0,2WAY,,och-1-2-1,010301,1\",add=\"och-1-1-1,och-1-1-3,1,2WAY,,och-1-2-1,010301,1\",ed=\"och-1-1-2,och-1-2-1,0,2WAY,MERG,och-1-3-1,010301,1\",add=\"och-1-2-2,och-1-2-1,1,2WAY,MERG,och-1-1-3,010301,1\":"
;

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The following example shows a successful completion of the **ENT-CRS** command to add 2-way legs (shown as dashed lines) to an existing 2-way bridge and merge simplex cross-connect (shown as solid lines). This case requires a validation check value of "**BRMG**".



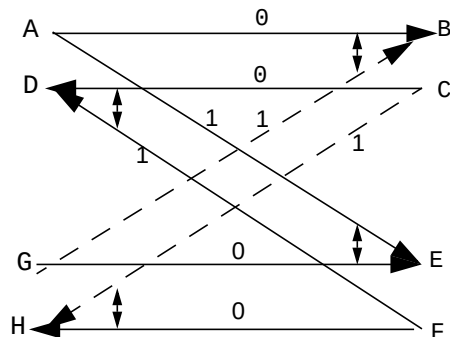
Port	AID
A	och-1-20-1
B	och-1-21-1
C	och-1-17-1
D	och-1-19-1
E	och-1-10-1
F	och-1-23-1
G	och-1-12-1
H	och-1-9-1

ENT-CRS:LT-AOS:och-1-12-1,och-1-10-1,och-1-23-1,och-1-9-1:123456::2WAY,BRMG,012101,1;

LT-AOS 01-04-16 08:37:28
 M 123456 COMPLD
 ;

LT-AOS 01-04-16 08:37:28
 A 006 REPT DBCHG
 "TIME=08-37-28,DATE=01-04-16:ENT-CRS:::ed=\"och-1-20-1,och-1-10-1,1,2WAY,MERG,och-1-19-1,012101,1\",add=\"och-1-12-1,och-1-10-1,0,2WAY,MERG,och-1-9-1,012101,1\",add=\"och-1-23-1,och-1-9-1,0,2WAY,,och-1-10-1,012101,1\":"
 ;

This example shows the successful completion of the **ENT-CRS** command to add additional simplex 2-way legs (shown as dashed lines) to the 2-way bridge and merge cross-connect configuration (shown as solid lines) that was established in the previous example. This case requires a validation check value of **"BRMG"**.



Port	AID
A	och-1-20-1
B	och-1-21-1
C	och-1-17-1
D	och-1-19-1
E	och-1-10-1
F	och-1-23-1
G	och-1-12-1
H	och-1-9-1

ENT-CRS:LT-AOS:och-1-12-1,och-1-21-1,och-1-17-1,och-1-9-1:123456::2WAY,BRMG,012101,1;

LT-AOS 01-04-16 08:41:33
M 123456 COMPLD
;

LT-AOS 01-04-16 08:41:33
A 006 REPT DBCHG
"TIME=08-41-33,DATE=01-04-16:ENT-CRS:::ed=\"och-1-20-1,och-1-21-1,0,2WAY,MERG,och-1-19-1,012101,1\",add=\"och-1-12-1,och-1-21-1,1,2WAY,MERG,och-1-9-1,012101,1\",ed=\"och-1-23-1,och-1-9-1,0,2WAY,MERG,och-1-10-1,012101,1\",add=\"och-1-17-1,och-1-9-1,1,2WAY,MERG,och-1-21-1,012101,1\":"
;

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ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ENT-CRS** command. The following additional errors apply to the **ENT-CRS** command as well.

If the network element receives an **ENT-CRS** command with an invalid **cct** parameter value, then the following error response is returned.

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

If the network element receives an **ENT-CRS** command with an invalid **valck** parameter value, then the following error response is returned.

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

When the **cct** has a value of “**1WAY**”, the **valck** parameter may be blank or have a value of either “**BRDG**”, “**MERG**”, or “**BRMG**”. When the **cct** has a value of “**2WAY**”, the **valck** parameter may be blank or have a value of “**BRMG**”.

If the network element receives an **ENT-CRS** command with an invalid **in_aid_1** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid ACcess identifier, invalid in_aid_1 */
;
```

If the network element receives an **ENT-CRS** command with an invalid **in_aid_2** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid ACcess identifier, invalid in_aid_2 */
;
```

If the network element receives an **ENT-CRS** command with an invalid **out_aid_1** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid ACcess identifier, invalid out_aid_1 */
;
```

If the network element receives an **ENT-CRS** command with an invalid **out_aid_2** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid ACcess identifier, invalid out_aid_2 */
;
```

If the network element receives an **ENT-CRS** command when there is no optical cross-connect interface circuit pack associated with the port specified by the **in_aid_1** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, in_aid_1 unequipped */
;
```

If the network element receives an **ENT-CRS** command when there is no optical cross-connect interface circuit pack associated with the port specified by the **in_aid_2** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, in_aid_2 unequipped */
;
```

If the network element receives an **ENT -CRS** command when there is no optical cross-connect interface circuit pack associated with the port specified by the **out_aid_1** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, out_aid_1 unequipped */
;
```

If the network element receives an **ENT -CRS** command when there is no optical cross-connect interface circuit pack associated with the port specified by the **out_aid_2** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, out_aid_2 unequipped */
;
```

If the network element receives an **ENT -CRS** command, then the following error response is returned if either of the following conditions exist:

- For a duplex cross-connection, no SWIPs have been assigned to at least one of the ports specified by an input AID or an output AID parameter.
- For a simplex cross-connection, at least one of the SWIPs that is required to establish the simplex leg (such as for a bridge or a merge) has not been assigned to the specified ports.

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

NOTE: If a command to establish a duplex cross-connection is submitted while a switch fabric is removed, the cross-connection will be established but it will have only one transmission path to the output port. An alarm pertaining to the removal of the switch fabric will be in effect, which will cause the alarm concerning the nature of this cross-connection to be suppressed. When the switch fabric has been replaced, a Loss-of-Signal Minor Alarm will exist at the output port for the selector side associated with the replaced switch fabric. This alarm should clear after all appropriate ingress and egress SWIPs in the replacement fabric have been assigned and the high-voltage shelf controller has been reinitialized. Information existing in the cross-connection database will be used to

automatically establish the second transmission path pertaining to each currently existing duplex cross-connection. A command to establish a simplex cross-connection will be denied if the required switch fabric has been removed.

If the network element receives an **ENT - CRS** command containing a number of AID values that is inconsistent with the specified **cct** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent cct and AID values */
;
```

NOTE: The IDNC error message above will result if any one of the following criteria is not satisfied:

- A **cct** value of “**1WAY**” along with either a blank or “**BRDG**” value for the **valck** parameter requires two AID values, that is, one input port AID value and one output AID value.
- Either two AID values (that is, one input port AID value and one output AID value) or three AID values (that is, two different input port AID values and one output port AID value) are allowed when the **cct** parameter has a value of “**1WAY**” and the **valck** parameter has a value of “**MERG**”.
- A **cct** value of “**2WAY**” requires four AID values, which means two different input port AID values and two different output AID values.

If the network element receives an **ENT - CRS** command containing a non-numerical string or a number exceeding six digits, then the following error response is returned.

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

If the network element receives an **ENT - CRS** command with an invalid **op_sys_id** parameter value, then the following error response is returned.

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

NOTE: The *op_sys_id* value of "2" (representing LambdaRouter ONNS) is an invalid entry. Only cross-connections that are established by a request received via the ONN interface will be identified in the cross-connection database as being generated by LambdaRouter ONNS.

If the network element receives an **ENT - CRS** command specifying the AID of an idle output port that currently has a forced protection switch in effect, then the following error response is returned.

```
sid date time
M ctag DENY
  SAPR
/* Status, Already in Protection, output port */
;
```

If the network element receives an **ENT - CRS** command specifying an input port AID for which one cross-connection leg already exists, then the following error response is returned unless the *valck* parameter has a value of "BRDG" or "BRMG".

```
sid date time
M ctag DENY
  SAAS
/* Status, Already ASsigned, input port in use */
;
```

If the network element receives an **ENT - CRS** command specifying the AID of an input port or an output port that is reserved for AIRP use as a "LINK_PROBE" port, then the following error response is returned.

```
sid date time
M ctag DENY
  SAAS
/* Status, Already ASsigned, port reserved for AIRP */
;
```

If the network element receives an **ENT - CRS** command specifying an input port AID or an output port AID while the port is being used by AIRP for port discovery or link verification, then the following error response is returned.

```
sid date time
M ctag DENY
SADS
/* Status, Access unit in Diagnostic State, AIRP operation in progress */
;
```

If the network element receives an **ENT - CRS** command specifying the AID of an input port or an output port for which the USAGE parameter has been set to "TEST_ACC", which means it has been reserved for the test access feature, then the following error response is returned.

```
sid date time
M ctag DENY
SAAS
/* Status, Already ASSigned, port reserved for Test Access */
;
```

If the network element receives an **ENT - CRS** command specifying an input port AID or an output port AID while the port is being used temporarily for a test access cross-connection, then the following error response is returned.

```
sid date time
M ctag DENY
SADS
/* Status, Access unit in Diagnostic State, test access session in
progress */
;
```

If the network element receives an **ENT - CRS** command specifying an output port AID for which one cross-connection leg already exists, then the following error response is returned unless the **valck** parameter contains a value of "MERG" or "BRMG".

```
sid date time
M ctag DENY
SAAS
/* Status, Already ASSigned, output port in use */
;
```

If the network element receives an **ENT - CRS** command specifying the AID of an output port that is reserved for ONNS use as a "REVERTIVE" path testing port, then the following error response is returned.

```
sid date time
M ctag DENY
  SAAS
  /* Status, Already ASSigned, port reserved for path testing by ONNS */
;
```

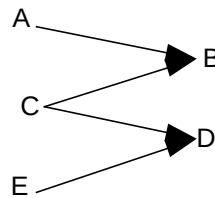
If the network element receives an **ENT - CRS** command containing the **valck** parameter with a value of "BRDG" or "BRMG" when the specified input port AID has no existing cross-connection leg, then the following error response is returned.

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

If the network element receives an **ENT - CRS** command specifying two input ports and having a **cct** parameter value of "1WAY", the following error response is returned unless the **valck** parameter has a value of "MERG" when both of these input ports are idle or "BRMG" when both are busy on one side, that is, each input port already has a simplex cross-connection.

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

NOTE: If a merge configuration (AB and CB) has been established, this configuration may be changed into a configuration (illustrated below) that consists of two merges in the same direction that have only one input port (C) in common. This can be accomplished by submitting two additional **ENT - CRS** command entries. One of these commands (to add the CD leg) will require a **valck** parameter with a value of "BRDG", and the second (to add the ED leg) will require a **valck** parameter with a value of "MERG".



If the network element receives an **ENT - CRS** command when the optical cross-connect interface circuit pack associated with a specified port AID parameter value is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, OXI pack */
;
```

If the network element receives an **ENT - CRS** command when the port associated with a specified AID parameter value has been manually placed out of service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, port OOS-MA */
;
```

If the network element receives an **ENT - CRS** command when the Switch Shelf that is required to establish a simplex cross-connection leg (such as for a bridge or a merge) is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, switch fabric shelf */
;
```

If the network element receives an **ENT - CRS** command containing the AID value for an OCHT input port that has incompatible provisioned standards/rate attributes

with respect to those of an OCHT output port, which is specified by the associated output AID parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
SSPN
/* Status, SPeed Not correct, incompatible transparent ports */
;
```

NOTE: For a 2-way cross-connection, all ports identified in a command by the four AID values must have compatible standards/format (rate) attributes. Also, the three (input and output) ports being used for a bridge or a merge configuration must have compatible standards/format attributes.

The following table shows the combinations of provisioned input and output OCHT port standards/rate attributes for which cross-connections shall be allowed or denied.

Provisioned IFMT Parameter for OCHT, OCHA13, or OCHA15 Input Port	Provisioned IFMT Parameter for OCHT Output Port					
	OC48/STM16	OC192/STM64	OC768/STM256	GBELX	HSBB	OTHER
OC48 /STM16	Allow	Deny	Deny	Allow	Allow	Allow
OC192/STM64	Deny	Allow	Deny	Deny	Deny	Allow
OC768/STM256	Deny	Deny	Allow	Deny	Deny	Allow
GBELX	Allow	Deny	Deny	Allow	Allow	Allow
HSBB	Allow	Deny	Deny	Allow	Allow	Allow
OTHER	Allow	Allow	Allow	Allow	Allow	Allow

If the network element receives an **ENT - CRS** command specifying a transparent input port that has incompatible standards/format (rate) attributes with respect to those of the specified OEO (OCH10GC or OCH2GC) output port (or specifying an

OEO input port that is incompatible with the standards/rate attributes of the specified OCHT output port), then the following error response is returned.

```
sid date time
M ctag DENY
SSPN
/* Status, SSpeed Not correct, incompatible transparent and OEO ports */
;
```

NOTE: For a 2-way cross-connection, all ports identified in a command by the four AID values must have compatible standards/rate attributes. Also, the three (input and output) ports being used for a bridge or a merge configuration must have compatible standards/rate attributes.

The following tables show the combinations of Transparent and OEO input and output port standards/rate attributes for which cross-connections shall be allowed or denied.

	Provisioned IFMT Parameter for OCHT Output Port					
OEO Input Port	OC48/STM16	OC192/STM64	OC768/STM256	GBELX	HSBB	OTHER
OCH10GC	Deny	Allow	Deny	Deny	Deny	Allow
OCH2GC	Allow	Deny	Deny	Allow	Allow	Allow

	OEO Output Ports	
Provisioned IFMT Parameter for Transparent Input Port	OCH10GC	OCH2GC
OC48/STM16o	Deny	Allow
OC192/STM64	Allow	Deny
OC768/STM256	Deny	Deny
GBELX	Deny	Allow
HSBB	Deny	Allow
OTHER	Allow	Allow

If the network element receives an **ENT - CRS** command containing the AID value for either an OCH2GC input port and the AID value for an OCH10GC output port

(or the AID value for an OCH10GC input port and the AID value for an OCH2GC output port), then the following error response is returned.

```
sid date time
M ctag DENY
SSPN
/* Status, SPeed Not correct, incompatible OEO ports */
;
```

NOTE: For a 2-way cross-connection, all ports identified in a command by the four AID values must have compatible standards/rate attributes. Also, the three (input and output) ports being used for a bridge or a merge configuration must have compatible standards/rate attributes.

The following table shows the combinations of OEO input and output port standards and format (rate) attributes for which test access cross-connections will be allowed or denied:

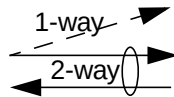
OEO Input Ports	OEO Output Ports			
	OCH10GC SONET	OCH10GC SDH	OCH2GC SONET	OCH2GC SDH
OCH10GC SONET	Allow	Deny	Deny	Deny
OCH10GC SDH	Deny	Allow	Deny	Deny
OCH2GC SONET	Deny	Deny	Allow	Deny
OCH2GC SDH	Deny	Deny	Deny	Allow

If the network element receives an **ENT-CRS** command when a specified input port (identified by an input AID parameter value) or an output port (identified by an output AID parameter value) is being used for a cross-connect loopback, then the following error response is returned.

```
sid date time
M ctag DENY
SADS
/* Status, Access unit in Diagnostic State, loopback exists */
;
```

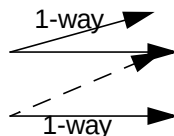
If the network element receives an **ENT-CRS** command that violates any of the rules listed below for establishing a cross-connection configuration, then the following error response is returned.

- This command cannot be used to add a 1-way cross-connection (as illustrated by the dotted line) to an existing 2-way cross-connection configuration. (Note that this complex configuration can be established by using the **OPR-LPBK** command.)

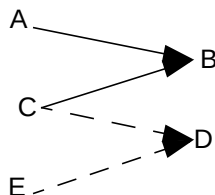


Also, a 2-way cross-connection cannot be added to an existing 1-way configuration.

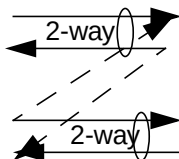
- This command cannot be used to add a 1-way cross-connection (as illustrated by the dotted line) to connect two existing 1-way configurations when either (or both) of the existing configurations is(are) duplex.



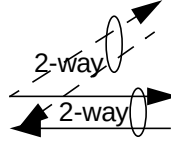
- One entry of the **ENT-CRS** command cannot be used to add a second merge (both legs CD and ED) to an existing merge (legs AB and CB), when the new merge uses one of the same input ports as the existing merge. However, the configuration shown below can be established by first adding the CD leg with one command entry and then the ED leg with a second command entry. These two commands will require the "BRDG" and "MERG" values for the **valck** parameter, respectively.



- This command cannot be used to add a 2-way cross-connection (as illustrated by the dotted lines) to connect two existing 2-way configurations when either (or both) of the existing configurations is(are) duplex.

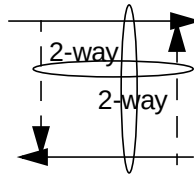


- This command can be used to add a new 2-way cross-connection (as illustrated by the dotted lines) to an existing 2-way cross-connection to form a “bridge and merge” configuration. Both the new and the existing 2-way configuration must use a common input port in one direction and a common output port in the opposite direction.



This is allowed.

However, a particular leg of the new 2-way cross-connection being added cannot be used to form both a bridge and a merge as illustrated below.



This is not allowed.

```
sid date time
M ctag DENY
SRQN
/* Status, ReQuest Not valid, cross-connection rule violated */
;
```

If the network element receives an **ENT - CRS** command for which the requested operation cannot be successfully completed, then the following error response is returned.

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

RELATED TL1 MESSAGES

DLT - CRS

RTRV - CRS

RTRV - rr

OPR - LPBK

Lucent Technologies - Proprietary
See notice on first page

RLS - LPBK

CONN - TACC

DISC - TACC

RTRV - TACC

NAME

ENT-EQPT: Enter Equipment

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

INPUT FORMAT

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

DESCRIPTION

The **ENT-EQPT** command creates equipment objects in the system database.

The following are valid objects for the purpose of this command: Optical Interface Shelf (OIS), OXI slot.

The following restrictions apply to the **ENT-EQPT** command for an Optical Interface Shelf (OIS):

- In LambdaRouter AOS 256, the number of available SWIP blocks left for each SWIP Maintenance Group (SWMG) is defined as 14 minus the number of assigned SWIP blocks on the SWMG minus every reserved SWIP block on that SWMG beyond the first 2 reserved SWIP blocks. In LambdaRouter AOS 128, the number of available SWIP blocks left for each SWIP Maintenance Group (SWMG) is defined as 7 minus the number of assigned SWIP blocks on the SWMG minus every reserved SWIP block on that SWMG beyond the first reserved SWIP block. If more new SWIP block assignments are provisioned than the quantity of available SWIP blocks on either SWMG, then the command will be denied. {Note: a reserved SWIP block is defined as any unassigned SWIP block containing at least one SWIP that is in any of the following states: (IS-NR,), (OOS-MA,FLT&MEA), (OOS-MA,MT&BUSY), (OOS-MA,MT), (OOS-MA,UAS&MEA).}
- If the SWIP block assigned to a **SIDExBLKy** (where *x* = {0,1} and *y* = {1-8}) parameter is currently assigned or reserved, then the command will be denied.
- If SWMG-0 exists and no **SIDE0BLKy** (where *y* = {1-8}) parameters are specified, then the command will be denied. If SWMG-1 exists and no **SIDE1BLKy** (where *y* = {1-8}) parameters are specified, then the command will be denied.

- If both SWMG-0 and SWMG-1 exist and a ***SIDE0BLKy*** (where ***y*** = {1-8}) parameter is specified without specifying the ***SIDE1BLKz*** (where ***z*** = the value of ***y*** in ***SIDE0BLKy***) parameter, then the command will be denied. If both SWMG-0 and SWMG-1 exist and a ***SIDE1BLKy*** (where ***y*** = {1-8}) parameter is specified without specifying the ***SIDE0BLKz*** (where ***z*** = the value of ***y*** in ***SIDE1BLKy***) parameter, then the command will be denied.

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

INPUT PARAMETERS

The "ENT-EQPT Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ENT-EQPT** command.

Table 3-44. ENT-EQPT Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. This parameter is the AID of the equipment component to be created.	LambdaRouter 128: ois -{1-4} oxi -{1-4}-{1-32} LambdaRouter 256: ois -{1-7} oxi -{1-7}-{1-32}
<i>ctag</i>	Correlation Tag. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

Table 3-44. ENT - EQPT Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values	
type	Shelf Type. This parameter is mandatory. This parameter is only allowed when an ois aid is specified.	MX	Mixed (OC-192/STM-64 & OC-48/STM-16) OIS
		T	Transparent OIS
		2G	2G (OC-48/STM-16) OIS
		10G	10G (OC-192/STM-64) OIS
	Circuit Pack Type. If this parameter is not specified the appropriate default value is used. This parameter is only allowed when an oxi aid is specified.	For slots on T-type OIS shelves: OXI 4 Port Transparent OXI without Optical Amplifiers (default) OXI4A13 4 Port Transparent OXI with 1310 nm Optical Amplifiers OXI4A15 4 Port Transparent OXI with 1550 nm Optical Amplifiers For slots on 10G-type OIS shelves: OXI10GC 10G (OC-192/STM-64) Client OXI (default) For slots on 2G-type OIS shelves: OXI2GC 2.5G (OC-48/STM-16) Client OXI (default) For slots on MX-type OIS shelves: For slots 1-16: OXI2GC 2.5G (OC-48/STM-16) Client OXI (default) For slots 17-32: OXI10GC 10G (OC-192/STM-64) Client OXI (default)	
spec_block	Specific Block Parameters. See the table " ENT - EQPT Specific Block Parameters" for the detailed descriptions of these parameters.		

The "**ENT - EQPT** Specific Block Parameters" table contains the detailed descriptions and allowed values for the named input parameters of the **ENT - EQPT** command.

Table 3-45. ENT - EQPT Specific Block Input Parameters

Parameter Name	Description	Allowed Values
ID	Shelf Identifier. Physical Location of the equipment. This parameter is only allowed when an ois aid is specified.	ASCII string of up to 20 characters
SIDE0BLK1	First Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified.	LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
SIDE0BLK2	Second Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified.	LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
SIDE0BLK3	Third Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and type = T, 2G, or MX	LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
SIDE0BLK4	Fourth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and type = T or 2G	LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
SIDE0BLK5	Fifth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and type = T	LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
SIDE0BLK6	Sixth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and type = T	LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}

Table 3-45. ENT - EQPT Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>SIDE0BLK7</i>	Seventh Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and type = T	LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK8</i>	Eighth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is only allowed when an ois aid is specified and type = T	LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK1</i>	First Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified.	LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK2</i>	Second Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified.	LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK3</i>	Third Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and type = T, 2G, or MX	LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK4</i>	Fourth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and type = T or 2G	LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK5</i>	Fifth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and type = T	LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK6</i>	Sixth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and type = T	LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}

Table 3-45. ENT - EQPT Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
SIDE1BLK7	Seventh Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and type = T	LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
SIDE1BLK8	Eighth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is only allowed when an ois aid is specified and type = T	LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}

OUTPUT FORMAT

If the **ENT - EQPT** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example demonstrates the usage of the **ENT - EQPT** command for 10G-type OIS shelf creation.

```
ENT-EQPT:LT-0XC:ois-2:123455::10G:ID=ISLE4BAY5TOP,SIDE0BLK1=A1,
SIDE0BLK2=A2,SIDE1BLK1=B1,SIDE1BLK2=B2;

LT-0XC 00-08-01 08:11:01
M 123455 COMPLD
;
```

The following example demonstrates the usage of the **ENT-EQPT** command for T-type OIS shelf creation.

```
ENT-EQPT:LT-0XC:ois-3:123456::T:ID=ISLE4BAY4BOTTOM,SIDE0BLK1=A5,  
SIDE0BLK2=A3,SIDE0BLK3=A4,SIDE1BLK1=B3,SIDE1BLK2=B8,  
SIDE1BLK3=B7;  
  
LT-0XC 00-08-01 08:12:13  
M 123456 COMPLD  
;
```

The following example demonstrates the usage of the **ENT-EQPT** command for OXI slot creation.

```
ENT-EQPT:LT-0XC:oxi-3-21:123457::OXI4A13;  
  
LT-0XC 00-08-01 08:14:14  
M 123457 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ENT-EQPT** command. The following additional errors apply to the **ENT-EQPT** command as well.

If the network element receives an **ENT-EQPT** command that attempts to create an entity that already exists, then the following error response is returned.

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

If the network element receives an **ENT-EQPT** command for an optical cross-connect interface slot with a specified **ID** parameter, then the following error response is returned.

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

If the network element receives an **ENT-EQPT** command with an invalid **ID** input parameter value, then the following error response is returned.

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

If the network element receives an **ENT-EQPT** command with an invalid **type** input parameter value, then the following error response is returned.

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

If the network element receives an **ENT-EQPT** command with an invalid Specific Block input parameter name, then the following error response is returned.

```
sid date time
M ctag DENY
IPNV
/* Input, Parameter Not Valid */
;
```

If the network element receives an **ENT-EQPT** command that attempts to assign more SWIP blocks than are currently available on either SWIP Maintenance Group (SWMG), then the following error response is returned.

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

If the network element receives an **ENT-EQPT** command that attempts to enter an Optical Interface Shelf (OIS) without a **type** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
  /* Input, Parameter MiSsing, missing type */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE0BLK1** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid SIDE0BLK1 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE0BLK2** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid SIDE0BLK2 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE0BLK3** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE0BLK3 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE0BLK4** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE0BLK4 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE0BLK5** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE0BLK5 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE0BLK6** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE0BLK6 */
;
```


If the network element receives an **ENT-EQPT** command with an invalid **SIDE0BLK7** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE0BLK7 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE0BLK8** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE0BLK8 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE1BLK1** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK1 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE1BLK2** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK2 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE1BLK3** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK3 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE1BLK4** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK4 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE1BLK5** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK5 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE1BLK6** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK6 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE1BLK7** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK7 */
;
```

If the network element receives an **ENT-EQPT** command with an invalid **SIDE1BLK8** input parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SIDE1BLK8 */
;
```

If the network element receives an **ENT-EQPT** command for an OIS Shelf with **type = 10G** with any of the following parameters specified:

- **SIDE0BLK3**
- **SIDE0BLK4**
- **SIDE0BLK5**
- **SIDE0BLK6**
- **SIDE0BLK7**
- **SIDE0BLK8**
- **SIDE1BLK3**
- **SIDE1BLK4**
- **SIDE1BLK5**
- **SIDE1BLK6**
- **SIDE1BLK7**
- **SIDE1BLK8**

then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
  /* Input, Data Not Consistent, inconsistent type and SWIP block */
;
```

If the network element receives an **ENT-EQPT** command for an optical cross-connect interface slot with any of the following parameters specified:

- **SIDE0BLK1**
- **SIDE0BLK2**
- **SIDE0BLK3**
- **SIDE0BLK4**
- **SIDE0BLK5**
- **SIDE0BLK6**
- **SIDE0BLK7**
- **SIDE0BLK8**
- **SIDE1BLK1**
- **SIDE1BLK2**
- **SIDE1BLK3**
- **SIDE1BLK4**
- **SIDE1BLK5**
- **SIDE1BLK6**
- **SIDE1BLK7**
- **SIDE1BLK8**

then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
  /* Input, Data Not Consistent, inconsistent aid and SWIP block */
;
```

If the network element receives an **ENT-EQPT** command that attempts to enter an Optical Interface Shelf (OIS) with a **SIDExBLKy** (where $x = \{0,1\}$ and $y = \{1-8\}$) parameter equal to a SWIP block that is not free (unreserved, unassigned), then the following error response is returned.

```
sid date time
M ctag DENY
  SRQN
  /* Status, ReQuest Not valid, SWIP block is not free */
;
```

If the network element receives an **ENT-EQPT** command that attempts to provision any two or more **SIDExBLKy** (where $x = \{0,1\}$ and $y = \{1-8\}$) parameters to the same value, then the following error response is returned.

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

If the network element receives an **ENT-EQPT** command that attempts to provision any **SIDE0BLKy** (where $y = \{1-8\}$) parameters when SWIP Maintenance Group-0 (SWMG-0) does not exist or any **SIDE1BLKy** (where $y = \{1-8\}$) parameters when SWIP Maintenance Group-1 (SWMG-1) does not exist, then the following error response is returned.

```
sid date time
M ctag DENY
  IENE
  /* Input, Entity does Not Exist, SWMG does not exist */
;
```

If the network element receives an **ENT-EQPT** command that attempts to enter an Optical Interface Shelf (OIS) when SWIP Maintenance Group-0 (SWMG-0) exists

without specifying a ***SIDE0BLKy*** parameter (where ***y*** = {1-8}), then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing SIDE0BLK assignment */
;
```

If the network element receives an **ENT-EQPT** command that attempts to enter an Optical Interface Shelf (OIS) when SWIP Maintenance Group-1 (SWMG-1) exists without specifying a ***SIDE1BLKy*** parameter (where ***y*** = {1-8}), then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing SIDE1BLK assignment */
;
```

If the network element receives an **ENT-EQPT** command that attempts to enter an Optical Interface Shelf (OIS) while specifying a ***SIDE1BLKy*** parameter (where ***y*** = {1-8}) without specifying a ***SIDE0BLKz*** parameter (where ***z*** = the value of ***y*** in ***SIDE1BLKy***) when both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing SIDE0BLK assignment */
;
```

If the network element receives an **ENT-EQPT** command that attempts to enter an Optical Interface Shelf (OIS) while specifying a ***SIDE0BLKy*** parameter (where ***y*** = {1-8}) without specifying a ***SIDE1BLKz*** parameter (where ***z*** = the value of ***y*** in

SIDE0BLKy) when both SWIP Maintenance Groups (SWMG-0 & SWMG-1) exist, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing SIDE1BLK assignment */
;
```

If the network element receives an **ENT-EQPT** command for an OIS Shelf with **type = 2G** with any of the following parameters specified:

- ***SIDE0BLK5***
- ***SIDE0BLK6***
- ***SIDE0BLK7***
- ***SIDE0BLK8***
- ***SIDE1BLK5***
- ***SIDE1BLK6***
- ***SIDE1BLK7***
- ***SIDE1BLK8***

then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, inconsistent type and SWIP block */
;
```

If the network element receives an **ENT-EQPT** command for an OIS Shelf with **type = MX** with any of the following parameters specified:

- ***SIDE0BLK4***
- ***SIDE0BLK5***
- ***SIDE0BLK6***
- ***SIDE0BLK7***
- ***SIDE0BLK8***
- ***SIDE1BLK4***

- ***SIDE1BLK5***
- ***SIDE1BLK6***
- ***SIDE1BLK7***
- ***SIDE1BLK8***

then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, inconsistent type and SWIP block */
;
```

If the network element receives an **ENT-EQPT** command for an optical cross-connect interface slot on a T-type OIS with the ***type*** parameter specified as **OXI2GC** or **OXI10GC**, then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, inconsistent pack type and shelf type */
;
```

If the network element receives an **ENT-EQPT** command for an optical cross-connect interface slot on a 10G-type OIS with the ***type*** parameter specified as **OXI2GC**, **OXI**, **OXI4A13**, or **OXI4A15**, then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, inconsistent pack type and shelf type */
;
```

If the network element receives an **ENT-EQPT** command for an optical cross-connect interface slot on a 2G-type OIS with the ***type*** parameter specified as

OXI10GC, **OXI**, **OXI4A13**, or **OXI4A15**, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent pack type and shelf type */
;
```

If the network element receives an **ENT -EQPT** command for an optical cross-connect interface slot number 1 through 16 on a MX-type OIS with the **type** parameter specified as **OXI10GC**, **OXI**, **OXI4A13**, or **OXI4A15**, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent pack type and shelf type */
;
```

If the network element receives an **ENT -EQPT** command for an optical cross-connect interface slot number 17 through 32 on a MX-type OIS with the **type** parameter specified as **OXI2GC**, **OXI**, **OXI4A13**, or **OXI4A15**, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent pack type and shelf type */
;
```

RELATED TL1 MESSAGES

DLT -EQPT

ED -EQPT

Lucent Technologies - Proprietary
See notice on first page

RTRV-EQPT

NAME

ENT-PM-PROF: Enter PM Profile

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

INPUT FORMAT

ENT-PM-PROF: *tid::ctag::pftype,pfname;*

DESCRIPTION

The **ENT-PM-PROF** command allows the user to create a new Performance Monitoring (PM) profile name. The system supports a default set of profiles called DefaultS. When a new profile name is created, initial values are copied over from DefaultS profile.

General Description of the PM Profiles

The NE supports PM profiles for Physical, Section, Line Near-end, and Line Far-end for SONET PM monitoring and Physical, Regenerator Section (RS), Multiplex Section (MS) Near-end, and Multiplex Section Far-end for SDH PM monitoring. Each profile contains list of parameters to be monitored, an indication of whether PM monitoring of that parameter is required or not, the threshold values of 15-min and Day PM bins, and an indication of whether the TCA is to be reported or not. Each port can have, at most, one PM profile of a particular profile type (*pftype*) associated with it. The user may create/modify/delete a profile and retrieve its content and the ports that are associated with that profile. The NE maintains master default profiles, known as DefaultM profiles, which are copied over to create system default profiles known as DefaultS profiles. The contents of DefaultM profile are never overwritten.

The purpose of using profiles to store threshold values is to reduce the storage space of these values for individual ports.

When a new profile name is established by using the **ENT-PM-PROF** command, all parameters within that profile are set to their DefaultS values. The user may then apply the **ED-PM-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 DefaultS profile. It may not, however, change the name of the DefaultS profiles.

After a profile has been created, it can be assigned to a specific port by using the **ED-rr** command. Since there is a limited number of profiles that can exist on the system, the **DLT-PM-PROF** command may be used to delete a profile that is no longer needed.

The **RTRV-PMPROF** 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-PMASGNMT** command may be used to retrieve a list of all port AIDs that have been assigned (through **ED-rr** command) to a specific PM profile.

The **ENT-PM-PROF** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

The "ENT-PM-PROF Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ENT-PM-PROF** command.

Table 3-46. ENT-PM-PROF Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of <i>ctag</i> parameter.	
<i>pftype</i>	Profile Type. This indicates the type of PM profile for the selected facility.	PHY_SNT Physical SEC Section LNE Line Near-End LFE Line Far-End PHY_SDH Physical RS RS MSNE MS Near-End MSFE MS Far-End
<i>pfname</i>	Profile Name. This parameter indicates the name that is assigned to the PM profile. The name of the DefaultS or DefaultM profile cannot be changed. To see all the default values, refer to the RTRV-PMPROF command.	The name is an alphanumeric character string with a maximum of 24 characters.

OUTPUT FORMAT

If the **ENT-PM-PROF** command completes successfully, the following message is the normal response.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

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

```
ENT-PM-PROF:LT-OXC::123456::sec,gte;
LT-OXC 01-01-01 08:00:00
M 123456 COMPLD
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ENT-PM-PROF** command. The following additional errors apply to the **ENT-PM-PROF** command as well.

If the network element receives a **ENT-PM-PROF** command with a missing *pftype* parameter, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing pftype */
;
```

If the network element receives a **ENT-PM-PROF** command with a missing **pfname** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing pfname */
;
```

If the network element receives an **ENT-PM-PROF** command with an invalid **pftype** parameter value, then the following error response is returned.

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

If the network element receives an **ENT-PM-PROF** command with an invalid **pfname** parameter value, then the following error response is returned.

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

If the network element receives an **ENT-PM-PROF** command with a profile of the same type and name that already exists, then the following error response is returned.

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

If the network element receives an **ENT-PM-PROF** command with a profile name that matches the name of a DefaultM or DefaultS profile, then the following error response is returned.

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, DefaultM or DefaultS profile cannot
be created */
;
```

If the network element receives an **ENT-PM-PROF** command but the maximum number of profiles is exceeded, then the following error response is returned.

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

RELATED TL1 MESSAGES

DLT-PM-PROF

ED-rr

ED-PM-PROF

RTRV-PMASGNMT

RTRV-PMPROF

NAME

ENT-USER-SECU: Enter User Security

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

INPUT FORMAT

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 always has two preinstalled users with full privileges in all functional categories. These two users will be referred to as Superusers. The network element does not allow adding additional Superusers. It is not possible to remove either of the original Superuser login IDs. The network element allows addition of users who have S5 privilege code but are not Superusers.

An existing login ID (*uid*) cannot be renamed except for the Superuser login ID. It must be deleted and re-entered. A Superuser can change his/her own login ID.

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

The successful completion of an **ENT-USER-SECU** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "**ENT-USER-SECU** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **ENT-USER-SECU** command.

Table 3-47. ENT-USER-SECU Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>uid</i>	Specifies The User ID. Only users with a UCFC/UCAL of S5 can enter parameters of another user, otherwise the ENT-USER-SECU command is denied.	Case-sensitive alphanumeric string of 1 to 10 characters
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

Table 3-47. ENT - USER - SECU Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>pid</i>	Password Identifier. This required parameter is the confidential password authenticator for the given <i>uid</i> . Password strings are transmitted in unencrypted form in the ACT - USER command; are encrypted when stored in the network element; and are never transmitted from the network element.	Case-sensitive string of 6 to 10 alphabetic, numeric or special characters. Valid passwords consist of at least two non-alphabetic characters with at least one special character. The allowed special characters are: Apostrophe " ' ", Hyphen " - ", Left parenthesis " (", Right parenthesis ") ", Period " . ", Slash " / ", Plus sign " + ", Exclamation mark " ! ", Asterisk " * ", Left square bracket " [", Right square bracket "] ", Caret " ^ ", Grave accent " ` ", Left curly brace " { ", Right curly brace " } ", Vertical bar " ", Less than " < ", Greater than " > ", Tilde " ~ ", Percent sign " % ", Number sign " # ". The first character of a password must be a letter.

Table 3-47. ENT - USER - SECU Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<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 and security administration), T (Test access), M (Maintenance), P (Provisioning) and PM (Performance Monitoring). Within each functional category, there is an authorization level that restricts user access to certain commands within the category; a user 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 initial authorization levels are applied, that is, 1 for all functional categories. If some, but not all, of the functional categories are specified, the unspecified categories are set to their initial authorization levels.	An ampersand (&) separated list from the following set: Pi, PMi, Mi, Ti, Si where "i" is an integer which is the authorization level in that category. The value of "i" is 0 (low) to 5 (high), except for the S category, which only supports levels 1 to 5. If an authorization level is set to 0, the user will have no privileges for that functional category. In other words, an authorization level of 0 disables that functional category for that user. The initial authorization level is 1 for all functional categories.
<i>spec_block</i>	Specific Block Parameters. See the table " ENT - USER - SECU Specific Block Input Parameters" for the detailed descriptions of these parameters.	

The "**ENT-USER-SECU** Specific Block Input Parameters" table contains the detailed descriptions and allowed values for the named input parameters of the **ENT-USER-SECU** command.

Table 3-48. ENT-USER-SECU Specific Block Input Parameters

Parameter Name	Description	Allowed Values
UCPL	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 initial value of 1 (lowest priority). This parameter is not supported in the current release and is for implementation in the future release.	1-5
SCREEN	Screen. Message screening specifies the type of notifications and/or responses that are received by the <i>uid</i> . Any ampersand (&) separated combination of DBCHG , STCHG , PSCHG , and ALARMS may be specified. If the value is not specified, the parameter retains its initial value of OWN .	DBCHG Report creation of entities/report changes in user provisionable parameters/report deletion of entities. User receives REPT DBCHG messages. STCHG Report changes in non-user provisionable parameters (state changes). User receives REPT DBCHG messages. PSCHG Report protection switch changes. User receives REPT EVT and REPT SW messages. ALARMS Report alarms. User receives REPT ALM, and REPT EVT messages. ALL User receives all notifications. If ALL is one of the values specified, the NE will disregard other values. OWN User receives only responses to his/her commands, no other notifications are received.

Table 3-48. ENT - USER - SECU Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
PAGE	Password Aging Interval. 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. If the parameter is not specified it retains its current value.	0, 7 - 999 Initial value is 90 days.
TMOUT	Inactivity Timeout Period. This parameter specifies the time interval during which if there are no messages between the user and the NE, the session is logged out. A value of 0 disables the timeout function. If the parameter is not specified, it retains its current value.	0 - 999 minutes Initial value is 30 minutes.

OUTPUT FORMAT

If the **ENT - USER - SECU** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of 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-OXC-789:kjlee:123456::pass12+, ,P3&M3:UCPL=2,SCREEN=
DBCHG&STCHG&PSCHG,PAGE=10,TMOUT=20;

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

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **ENT-USER-SECU** command. The following additional errors apply to the **ENT-USER-SECU** command as well.

If the network element receives an **ENT-USER-SECU** command with an invalid *uid* parameter value or a *uid* parameter value that already exists, then the following error response is returned.

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

If the network element receives an **ENT-USER-SECU** command when it already has reached its maximum user logins (500), then the following error response is returned.

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

If the network element receives an **ENT-USER-SECU** command with an invalid **pid** parameter value, then the following error response is returned.

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

If the network element receives an **ENT-USER-SECU** command with a missing **pid** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing pid */
;
```

If the network element receives an **ENT-USER-SECU** command with **upc=P5&PM5&M5&T5&S5** or **upc=S0**, then the following error response is returned.

```
sid date time
M ctag DENY
PIUC
/* Privilege, Invalid User Code */
;
```

If the network element receives an **ENT-USER-SECU** command with a invalid **SCREEN** parameter value, then the following error response is returned.

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


If the network element receives an **ENT-USER-SECU** command with an invalid **PAGE** parameter value, then the following error response is returned.

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

If the network element receives an **ENT-USER-SECU** command with an invalid **TMOUT** parameter value, then the following error response is returned.

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

If the network element receives an **ENT-USER-SECU** command with an invalid Specific Block input parameter name, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNV
/* Input, Parameter Not Valid */
;
```

RELATED TL1 MESSAGES

DLT-USER-SECU

ED-USER-SECU

RTRV-USER-SECU

NAME

EX-DTHR : Exercise Dither

The **EX-DTHR** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

INPUT FORMAT

EX-DTHR: *tid:aid:ctag*[:*sw_fab*[:*spec_block*]];

DESCRIPTION

The **EX-DTHR** command performs optimization of the optical path through a network element fabric-side for an established cross-connection. The command is used after fabric replacement or as part of individual port-to-SWIP maintenance. The command default is that both fabric sides are to be optimized; however, the user may specify a single fabric-side as an option.

The **EX-DTHR** command runs as a background operation. The completion response is an indication that the command was received. If requested, a subsequent **REPT EVT** message is autonomously generated for each ***aid*** specified in the **EX-DTHR** command (assuming a port is equipped and has a cross-connection assigned). That **REPT EVT** message will indicate the success or failure of the **EX-DTHR** background operation.

The **EX-DTHR** command can affect transmission. Therefore, it should be used with care.

The **EX-DTHR** command does not generate a **REPT DBCHG** message.

The **EX-DTHR** command may generate one or more **REPT EVT** messages.

INPUT PARAMETERS

The "EX-DTHR Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the EX-DTHR command.

Table 3-49. EX-DTHR Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier (AID). This parameter identifies the output port of the cross-connection transmission path(s) for which the dither operation is being requested. Allowable AIDs include an individual output port, all output ports on an optical cross-connect interface circuit pack, and all output ports on an optical interface shelf.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4,all} och-{1-4}-{all} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4,all} och-{1-7}-{all}
<i>ctag</i>	Correlation Tag. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>sw_fab</i>	Switch fabric side to be optimized. This parameter is optional.	0 Switch fabric 0 (Simplex leg) 1 Switch fabric 1 (Simplex leg) BOTH Switch fabrics 0 and 1 (Duplex leg) (<i>Default</i>)
<i>spec_block</i>	Specific Block Parameters. See the table "EX-DTHR Specific Block Parameters" below for the detailed descriptions of these parameters.	

The "**EX-DTHR** Specific Block Input Parameters" table contains the detailed descriptions and allowed values for the Specific Block input parameters of the **EX-DTHR** command.

Table 3-50. EX-DTHR Specific Block Input Parameters

Parameter Name	Description	Allowed Values	
RESP	Response requested. The value specified indicates whether or not the user wishes to have a separate REPT EVT response returned for each aid specified within the EX-DTHR command. Each REPT EVT will indicate whether the dither operation was successful or failed for that particular aid .	NO YES	No REPT EVT message(s) will be returned. (<i>Default</i>) A REPT EVT message will be returned for each aid specified in the command.

OUTPUT FORMAT

If the **EX-DTHR** request completes successfully, then the following normal completion response is returned.

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

The **EX-DTHR** command runs as a background operation. The completion response is an indication that the command was received by the network element. If the user specifies in the command that a success or failure message is to be provided for the **EX-DTHR** operation, a subsequent **REPT EVT** message will be autonomously generated for each **aid** specified in the command (assuming a port is equipped and has a cross-connection assigned).

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful completion of the **EX-DTHR** command for fabric-side 0; no **REPT EVT** message will be generated (default).

```
EX-DTHR:LT-AOS-789:och-2-2-2:123456::0;
```

```
LT-AOS-789 00-12-01 08:00:00
M 123456 COMPLD
;
```

The following example shows a successful completion of the **EX-DTHR** command for both fabric sides (default), and **REPT EVT** message generation is requested to indicate operation success or failure.

```
EX-DTHR:LT-AOS-789:och-2-2-2:123456:::RESP=YES;
```

```
LT-AOS-789 00-12-01 08:00:00
M 123456 COMPLD
;
```

If the **EX-DTHR** background operation completes successfully, and if the user has requested operation status responses, then the following **REPT EVT** message is issued. (Note that each *aid* specified in the **EX-DTHR** command will cause a separate **REPT EVT** message to be issued to indicate either success or failure for that *aid*).

```
LT-AOS 01-04-11 08:19:00
A 003 REPT EVT EQPT
"och-2-2-2:EXCOMPLD,TC,04-11,08-19-00:\"Exercise Dither Completed\""
;
```

If the **EX-DTHR** background operation fails, or is denied for reasons of validation, and if the user has requested operation status responses, then the following **REPT EVT** message is issued. (Note that each *aid* specified in the **EX-DTHR** command will cause a separate **REPT EVT** message to be issued to indicate either success or failure for that *aid*).

```
LT-AOS 01-04-11 08:23:08
A 003 REPT EVT EQPT
"och-2-2-3:EXFAIL,TC,04-11,08-23-07:\"Exercise Dither Failed\""
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **EX-DTHR** command. The following additional errors apply to the **EX-DTHR** command as well.

If the network element receives an **EX-DTHR** command with an invalid **sw_fab** parameter value, then the following error response is returned.

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

If the network element receives an **EX-DTHR** command with an invalid **RESP** parameter value, then the following error response is returned.

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

If the network element receives an **EX-DTHR** command with an invalid Specific Block input parameter name, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNV
/* Input, Parameter Not Valid */
;
```

RELATED TL1 MESSAGES

ENT-CRS

DLT-CRS

RTRV-CRS

ED-EQPT

ENT-EQPT

Lucent Technologies - Proprietary
See notice on first page

RTRV-EQPT

RTRV-rr

CONN-TACC

DISC-TACC

NAME

INIT-EQPT: Initialize Equipment

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

- LambdaRouter All Optical Switch 128 & 256, Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

INPUT FORMAT

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

DESCRIPTION

The **INIT-EQPT** command initializes a specific slot/circuit pack or, in some cases, a set of slot/circuit packs. The initialization is equivalent to removing the circuit pack(s) and then reinserting (however this action will not cause a controller protection switch as with actual active controller circuit pack extractions). Any outstanding activities on the circuit pack(s) to be initialized are not executed.

The initialization of an RC pack will not cause the system to initialize. The initialization of the system via the **INIT-SYS** TL1 command will initialize all circuit packs in the system except for the RIP and Personality Module (PMOD) circuit packs.

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

The successful completion of an **INIT-EQPT** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "**INIT-EQPT** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **INIT-EQPT** command.

Table 3-51. INIT-EQPT Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. This is the entity identifier for the shelf or slot/circuit pack that is to be initialized. If rc-1-{0,1} is specified, it must correspond to the active RC, and not the standby RC, or the command will be denied.	dcc-1-{1,2} pmod-1-{1-4} rip-1-{1,2} rc-1-{0,1} LambdaRouter AOS 128: hvs-0 ois-{1-4} oxi-{1-4}-{1-32} LambdaRouter AOS 256: hvs-{0,1} ois-{1-7} oxi-{1-7}-{1-32}
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

For an Optical Interface Shelf AID both OSWIC shelf controllers shall be reset.

For a High-Voltage Shelf AID both HSWIC shelf controllers shall be reset.

For the **INIT-EQPT** command, the Switch Shelf AID is not applicable because there is no controller in it.

For the **INIT-EQPT** command, the System Controller Shelf AID is not applicable because the **INIT-SYS** command performs this operation.

For all Slot/Circuit Pack AIDs except for the RIP, only the addressed slot/circuit pack is reset. For a RIP AID, both the RIP and its associated Personality Modules will be reset.

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Personality Modules 1 and 2 are associated with RIP 1. Personality Modules 3 and 4 are associated with RIP 2.

The response to the **INIT-EQPT** command is returned after the slot/circuit pack(s) has(have) been reset, but before initialization is complete.

OUTPUT FORMAT

If the **INIT-EQPT** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **INIT-EQPT** command.

```
INIT-EQPT:LT-0XC:ois-1:123456;  
LT-0XC 00-07-31 09:07:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **INIT-EQPT** command. The following additional errors apply to the **INIT-EQPT** command as well.

If the network element receives an **INIT-EQPT** command for an object that does not exist, the following error response is returned.

```
sid date time
M ctag DENY
  IENE
/* Input, object Entity does Not Exist */
;
```

If the network element receives an **INIT-EQPT** command for a slot/circuit pack **aid** that is not equipped, the following error response is returned.

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

If the network element receives an **INIT-EQPT** command for a shelf **aid** on which both shelf controllers are not equipped, the following error response is returned.

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

If the network element receives an **INIT-EQPT** command where the **aid** parameter value corresponds to an RC pack that is in standby mode, that is, not in active mode, then the following error response is returned.

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

RELATED TL1 MESSAGES

INIT-SYS

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See notice on first page

NAME

INIT-REG: Initialize Register

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

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

The "**INIT-REG** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **INIT-REG** command.

Table 3-52. INIT-REG Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>modifier</i>	Modifier indicates the port type for init register command. OCH modifier is used to indicate any of the o/e/o port types, that is, OC-48, OC-192, STM-16, and STM-64	OCH
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter description and syntax of the <i>tid</i> parameter.	

Table 3-52. INIT - REG Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. This parameter is the AID of the port for which the registers are to be initialized.	och-{1-7}-{1-32}-{1-2} for OC-48 and STM-16 och-{1-7}-{1-32}-1 for OC-192 and STM-64
<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter description and syntax of the <i>ctag</i> parameter.	
<i>spec_block</i>	Specific Block Parameters. See the table " INIT - REG Specific Block Input Parameters" for the detailed descriptions of these parameters.	

The **INIT - REG** Specific Block Input Parameters" table contains the detailed descriptions and allowed values for the named input parameters **INIT - REG** command.

Table 3-53. INIT - REG Specific Block Input Parameters

Parameter Name	Description	Allowed Values
<i>PARM</i>	Parameter. This determines the type of PM registers that are requested to be initialized.	The following values are for SONET signals. SECTION LINE ALL (default) The following values are for SDH signals. RS MS ALL (default)

Table 3-53. INIT - REG Specific Block Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
LOCN	Location for which the PM data is monitored. This parameter may be omitted or have one of the values given in the next column.	NEND Near-end PM data is requested. FEND Far-end data is requested. This is not applicable to SONET section layers PM as well as SDH regenerator section layer PM. ALL All near-end and far-end data is requested. If this parameter is omitted, then the parameter defaults to NEND. By implication SONET Section and SDH RS are considered to have location of NEND.
DIRN	Direction of Monitoring.	IN IN refers to the ingress direction (towards the fabric). OUT OUT refers to the egress direction (away from the fabric). BOTH BOTH refers to IN and OUT (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.	15-MIN This requests that the current 15-min PM registers be initialized. 1-DAY This requests that the current daily PM registers be initialized. ALL This requests that both the current 15-min 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

The description and syntax of output parameters *sid*, *date*, *time*, and *ctag* are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command

EXAMPLE INPUT/OUTPUT

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

```
INIT-REG-OCH:LT-0XC:och-1-16-2:123456:::PARM=LINE, LOCN=NEND, DIRN=IN, T
MPER=1-DAY;

LT-0XC 01-01-01 08:00:00
M 123456 COMPLD
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **INIT-REG** command. The following additional errors apply to the **INIT-REG** command as well.

If the network element receives an **INIT-REG** command with an invalid *modifier* parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IICM
/* Input, Invalid CoMmand, invalid modifier */
;
```


If the network element receives a **INIT-REG** command with a missing **aid** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
/* Input, Parameter MiSsing, missing aid */
;
```

If the network element receives an **INIT-REG** command for a non-existent **aid** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  IENE
/* Input, object Entity does Not Exist */
```

If the network element receives an **INIT-REG** command with an invalid **PARM** parameter value, then the following error response is returned.

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

If the network element receives an **INIT-REG** command with a **LOCN** parameter value inconsistent for the specified **PARM**, then the following error response is returned.

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

If the network element receives an **INIT-REG** command with an invalid **LOCN** parameter value, then the following error response is returned.

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

If the network element receives a **INIT-REG** command with an invalid **DIRN** parameter value, then the following error response is returned.

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

If the network element receives an **INIT-REG** command with an invalid **TMPER** parameter value, then the following error response is returned.

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

If the network element receives an **INIT-REG** command with an missing **TMPER** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing TMPER */
;
```

If the network element receives an **INIT-REG** command for a port that is provisioned but not equipped, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, port not equipped */
;
```

If the network element receives an **INIT-REG** command for a **PARM** parameter value for which PM is disabled, then the following error response is returned.

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

If the network element receives an **INIT-REG** command when the port associated with a specified **aid** parameter value has been manually placed out of service, then the following error response is returned.

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

If the network element receives an **INIT-REG** command for a **PARM** parameter value that is SONET and the port is SDH or **PARM** parameter value that is SDH and the port is SONET, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNC
  /* Input, Parameter Not Consistent, inconsistent PARM for the port */
;
```

INIT-REG

TL1 Message Details

365-375-013

LambdaRouter™ All Optical Switch 128/256 R3.0

RELATED TL1 MESSAGES**RTRV - PM****Lucent Technologies - Proprietary**

See notice on first page

NAME

INIT-SYS: Initialize System

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

INPUT FORMAT

INIT-SYS: *tid* : : *ctag*;

DESCRIPTION

The **INIT-SYS** command initializes the system controller complexes, shelf controllers, and Data Communication Controllers (DCCs) that are in the system except for the RIP and Personality Module (PMOD) circuit packs. Initialization is equivalent to removing the controllers and reinserting them (however this action will not cause a controller protection switch as with actual active controller circuit pack extractions). During initialization, the database is reloaded from non-volatile memory. A completion response 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.

The successful completion of an **INIT-SYS** TL1 command is entered in the Security Activity Log and the User Session Activity Log.

INPUT PARAMETERS

The "**INIT-SYS** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **INIT-SYS** command.

Table 3-54. INIT-SYS Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **INIT-SYS** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **INIT-SYS** command.

```
INIT-SYS:LT-0XC::123456;

LT-0XC 99-01-01 08:00:00
M 123456 COMPLD
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **INIT-SYS** command.

RELATED TL1 MESSAGES

INIT-EQPT

NAME

OPR-ACO : Operate Alarm Cut-off

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

INPUT FORMAT

OPR-ACO: *tid*: : *ctag*;

DESCRIPTION

The **OPR-ACO** command cuts off the office audible alarms without changing the local visual alarm indications. The command does not have any effect on future generation of alarms at the network element, but rather should direct the network element to provide conditioning only on those alarms that are currently active. The network element remains able to transmit its current alarm condition if requested by the user.

The ACO operation does not clear any existing alarm. There is no need for a **RLS-ACO** command: Clearance of all existing alarms or generation of a new alarm clears the ACO condition from the system.

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

INPUT PARAMETERS

The “**OPR-ACO** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **OPR-ACO** command.

Table 3-55. OPR-ACO Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-55. OPR-ACO Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **OPR-ACO** request completes successfully, then the following normal completion response is returned.

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

If the network element receives an **OPR-ACO** command from a user when audible alarms have already been inhibited, the network element provides a normal completion response.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **OPR-ACO** command.

```
OPR-ACO:LT-0XC::123456;

LT-0XC 01-03-01 08:00:00
M 123456 COMPLD
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **OPR-ACO** command.

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RELATED TL1 MESSAGES

REPT ALM

RTRV-ALM

NAME

OPR-LINK-VERF: Operate Link Verification

The **OPR-LINK-VERF** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

INPUT FORMAT

OPR-LINK-VERF: *tid:aid:ctag;*

DESCRIPTION

The **OPR-LINK-VERF** command initiates the link verification process. Verification will be used to support fault sectionalization and link-repair in support of the ONN distributed restoration feature. A list of ports requiring immediate verification testing will be identified. Confirmation of a port neighbor is intended to validate that the link connection from an LambdaRouter AOS output port to an LambdaRouter AOS input port is still a viable path, and that the neighbor information is consistent with what was discovered earlier.

The **OPR-LINK-VERF** command may generate a **REPT DBCHG** message for use by associated operations systems to update their databases. The **REPT DBCHG** message shall be produced under the following conditions:

- the status of the link changed

The **OPR-LINK-VERF** command will generate a **REPT EVT** message to indicate the status of the link. This message will identify the AID of the output port and the status of the associated link.

INPUT PARAMETERS

The "**OPR-LINK-VERF** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameter of the **OPR-LINK-VERF** command.

Table 3-56. OPR-LINK-VERF Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the port to which the command is directed. The port specified must be a NNI port and the IFMT parameter has to be one of the following: OC48/STM1, OC192/STM64, or OC768/STM256	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **OPR-LINK-VERF** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example demonstrates the usage of the **OPR-LINK-VERF** command requesting link verification on a given port.

```
OPR-LINK-VERF:LT-OXC:och-1-1-3:123456;  
  
LT-OXC 00-08-01 08:01:28  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **OPR-LINK-VERF** command. The following additional errors apply to the **OPR-LINK-VERF** command as well.

If the network element receives an **OPR-LINK-VERF** command for an object that does not exist, then the following error response is returned.

```
sid date time  
M ctag DENY  
IENE  
/* Input, object Entity does Not Exist, port does not exist */  
;
```

If the network element receives an **OPR-LINK-VERF** command with an *aid* parameter specifying a non-NNI port (port USAGE attribute does not equal NNI), then the following error response is returned.

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

If the network element receives an **OPR-LINK-VERF** command and the system's ONN Configuration equipment parameter (ONNCFG) is currently equal to DISABLE, then the following error response is returned.

```
sid date time
M ctag DENY
  EFON
/* Equipage, Feature Option Not provided, ONNCFG=DISABLE */
;
```

If the network element receives an **OPR-LINK-VERF** command and the system's automatic port neighbor discovery process parameter (AUTDISC) is currently equal to DISABLE, then the following error response is returned.

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

If the network element receives an **OPR-LINK-VERF** command with an *aid* parameter specifying a port which has a port IFMT parameter equal to something

other than "OC48/STM16", "OC192/STM64", or "OC768/STM256", then the following error response is returned.

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

If the network element receives an **OPR-LINK-VERF** command and the port_link's DISCMODE parameter is currently equal to DISABLE, then the following error response is returned.

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

If the network element receives an **OPR-LINK-VERF** command and the link-probe port is not provisioned, then the following error response is returned.

```
sid date time
M ctag DENY
  SROF
/* Status, Requested Operation Failed, unavailable link-probe port */
;
```

If the network element receives an **OPR-LINK-VERF** command and the port is not available, then the following error response is returned.

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

RELATED TL1 MESSAGES

ED-PORT-LINK

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See notice on first page

RTRV-PORT-LINK

NAME

OPR-LPBK: Operate Loopback

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

INPUT FORMAT

OPR-LPBK: *tid:in_aid[,out_aid]:ctag[::,,[lpbktype][,sw_fab]*
];

DESCRIPTION

The **OPR-LPBK** command establishes a cross-connect loopback within the network element for a signal incoming to an input port. The loopback provides a cross-connection from the input port to either the default loopback output port or to another compatible output port specified in the command by the user. (Note that the **OPR-LPBK** command will be denied if the input port specified by the command is associated with a cross-connection that belongs to a network path that has been established for the Optical Network Navigator System (ONNS)).

For an input port with either no existing cross-connection or a 1-way cross-connection, the output port to be used for the loopback must be idle, which means the selected output port cannot have any existing cross-connections at the time the loopback is to be established. For these cases, the default loopback output port is the output port that has the same AID as the input port.

For a 2-way cross-connection, the default loopback output port is the output port being used for the transmission path in the opposite direction. Note that for a 2-way cross-connection, the default loopback output port may or may not have the same AID as the input port for which the loopback is to be established, because a 2-way cross-connection may involve up to four different ports, as described in the **ENT-CRS** command documentation.

There are two types of loopbacks. The difference is whether the input port for which a loopback is desired is currently being used for a cross-connection. A user of the **OPR-LPBK** command can determine whether an input port currently has a cross-connection by submitting the **RTRV-CRS** command. A user should be aware that establishing a loopback at a busy input port can be service-affecting.

If an input port has no existing cross-connections, a user may request a “normal” loopback. A normal loopback provides a cross-connection (duplex is the default)

from the input port to an idle output port. Thus, unless the switch fabric parameter in the command specifies otherwise, a request for a normal loopback will result in a transmission path being established through both of the switching fabrics to the default output port, assuming it is idle. A request for a normal loopback will be denied if any cross-connection currently exists for that input port. A request for a normal loopback will also be denied if the output port specified in the command is currently busy; if no output port is specified, the command will be denied if the default loopback output port is currently busy.

If an input port already has an existing cross-connection, a user must request a “forced” loopback. A user may request either a simplex or a duplex forced loopback to either the default loopback output port or another output port specified in the command. A command for either a forced or normal loopback will be denied if a forced protection switch exists for the output port that is to be used for the loopback.

Establishing a forced simplex loopback normally allows the incoming traffic to be essentially undisturbed, because only one switching fabric will be used to provide the loopback. The other switching fabric will continue to provide a simplex transmission path for the original cross-connection. For a forced simplex loopback command, a user must specify in the command which switch fabric is to be used for the loopback. When a forced protection switch is in effect at the output port associated with the existing cross-connection, a forced simplex loopback command will be denied if the **sw_fab** input parameter specifies the selected side.

When a user wishes to establish a forced simplex loopback, prior to submitting the **OPR-LPBK** command, the user should always submit the **RTRV-rr** command in order to know which switch fabric is not currently carrying the traffic in the forward direction and therefore can be used for the loopback. If a user arbitrarily specifies a particular switch fabric to be used for the loopback, the request may require the position of the output port selector being used for the outgoing traffic to be switched, which will cause a traffic disruption of up to 5 msec.

If a user requests that both switching fabrics shall be used for the loopback, a forced duplex loopback will result, which will totally disrupt the incoming traffic signal, because there is no transmission path available to reach the original output port.

For 1-way traffic, a forced loopback request will be denied if the default or specified output port is already being used for another cross-connection of any type. However, when the forced loopback request is for an input port that is part of a 2-way cross-connection, the selected output port may be either the default loopback output port (which is busy) or another output port, which must be idle.

When a forced simplex loopback is established for an input port that is part of a 2-way cross-connection, using the default loopback output port will impact the traffic signal that is being received in the opposite direction, because the selector at the default loopback output port must be set to carry the loopback signal instead of

this traffic signal. Note that a request to establish a forced simplex loopback request to the default loopback output port for a 2-way cross-connection will be denied when a protection switch is in effect that requires the output selector to be associated with a particular switch fabric. The protection switch must be released before the loopback can be established.

If the default loopback output port is used to establish a forced duplex loopback for an input port that is part of a 2-way cross-connection, the traffic flow will be stopped in the both directions.

A loopback request will be denied if an input port or output port specified by the command is currently being used for a test access cross-connection or for AIRP port discovery or link verification. A loopback request will also be denied if the specified input or output port has been provisioned as a LINK_PROBE port in order to reserve it for the AIRP operations. In addition, as mentioned previously, a loopback request will be denied if the cross-connection database indicates that the input port specified by the command is associated with a cross-connection that belongs to ONNS.

A loopback may be established to an idle output port that has been reserved for test access purposes by provisioning its **USAGE** parameter to TEST_ACC. A loopback may also be established to an output port that is provisioned as an NNI port, a CLIENT port, or a UNI port.

This command is based on the expectation that an input port equipped with an optical amplifier can supply the amount of gain requested by the output port in order to provide adequate signal power to the receiving equipment; this receiver may be an inherent part of an OEO output port or be external equipment connected to an OCHT port.

The required compatibility of input and output ports to ensure successful cross-connect loopbacks should be considered by users prior to making attempts to establish these cross-connections. In general, the input port and output port must be provisioned with compatible interface formats (**IFMT**). If a forced simplex loopback configuration is based on an input port that is equipped with optical amplification, the original output port and the loopback output port should have the same provisioned value for optics type (**IOPT**) and egress central office loss (**ECOLOSS**).

A cross-connect loopback shall remain established until released by the **RLS-LPBK** command. A cross-connection that was affected when a forced (simplex or duplex) loopback was established shall be automatically restored by the system when the loopback is released.

A facility loopback is not supported on the network element.

The **OPR-LPBK** command generates a **REPT DBCHG** message that can be used to update a cross-connection database. The general **REPT DBCHG** message

format is specified in the **OUTPUT FORMAT** section of the **REPT DBCHG** message. A subsequent section of this command description contains the format of the **REPT DBCHG** message *spec_block* that is generated as a result of the **OPR-LPBK** command.

The **OPR-LPBK** command will generate a **REPT EVT** message to indicate that a standing condition is in effect. This message will identify the type of loopback that has been established. The standing loopback condition will persist until it is removed with a **RLS-LPBK** command, which will generate another **REPT EVT** message indicating that the standing condition has been cleared.

INPUT PARAMETERS

The "OPR-LPBK Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **OPR-LPBK** command.

Table 3-57. OPR-LPBK Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier: Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>in_aid</i>	Input Access IDentifier (AID). This parameter identifies the input port for which the loopback is being requested.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}

Table 3-57. OPR - LPBK Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>out_aid</i>	Output Access IDentifier (AID). (<i>Optional</i>) This parameter identifies the output port to which the loopback cross-connection shall be made. When the input port is idle or being used for a 1-way cross-connection, the default value for this parameter is the AID specified for the input port. When the input port belongs to a 2-way cross-connection, the default value for this parameter is the AID for the output port being used for the transmission path in the opposite direction. This AID may be different from the AID of the input port for which the loopback is being established.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>ctag</i>	Correlation Tag: Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>lpbktype</i>	Loopback type. This parameter specifies the type of loopback being requested. A normal loopback cannot be established unless the specified input port has no existing cross-connections. A forced loopback cannot be established unless the specified input port is busy.	LPBKCC Normal cross-connect loopback (<i>Default</i>) LPBKFC Forced cross-connect loopback

Table 3-57. OPR - LPBK Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
sw_fab	Switch Fabric. This parameter allows a user to specify the switching fabric to be used to establish the loopback. A value for this parameter must be specified for a forced loopback. The RTRV-rr command can be used to determine the appropriate side to specify. The output from this command will indicate which fabric side is currently selected. For a forced simplex loopback, the other fabric side should be specified in the command to avoid service impact. Note that a forced duplex loopback will be service affecting.	0 Use Switch Fabric 0 1 Use Switch Fabric 1 2 Use both Switch Fabric 0 and 1 (<i>Default for Normal loopbacks</i>)

OUTPUT FORMAT

If the **OPR - LPBK** request completes successfully, then the following completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

REPT DBCHG MESSAGE FORMAT

Shown below is the **REPT DBCHG** message that is generated as a result of the **OPR - LPBK** command. This format is based on the general **REPT DBCHG** message

format that appears in the **OUTPUT FORMAT** section of the **REPT DBCHG** message description.

```
sid date time
A atag REPT DBCHG
  "TIME=ocrtm,DATE=ocrdat:OPR-LPBK::[spec_block]:"
;
```

The "*spec_block*" will contain one or more "add" name-defined parameters that precede a grouping of cross-connection parameters pertaining to the cross-connection leg(s) that have been established by the command. Each parameter contained in an "add" sequence is defined in the **RTRV-CRS** command.

Each "add=" that appears in the "*spec_block*" indicates that a new (duplex or simplex) loopback leg has been established. The information describing this new leg is contained in the sequence of cross-connection parameters identified by \ at its beginning and end as shown below.

```
add="\in_aid,out_aid,sw_fab,cct,,,000000,0"
```

Examples of the **REPT DBCHG** message that are generated for the **OPR-LPBK** command appear in the **EXAMPLE INPUT/OUTPUT** section of this document.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **OPR-LPBK** command for a normal loopback of an input port. Because no output port was specified in the command, the loopback was established to the output port that has the same AID as the input port.

```
OPR-LPBK:LT-AOS:och-1-4-3,:123456;
```

```
LT-AOS 01-04-06 08:11:01
M 123456 COMPLD
;
```

```
LT-AOS 01-04-16 08:11:02
A 006 REPT DBCHG
"TIME=08-11-02,DATE=01-04-16:OPR-LPBK:::add=\"och-1-4-3,och-1-4-3,2,LPBKCC,,000000,0\":"
;
```

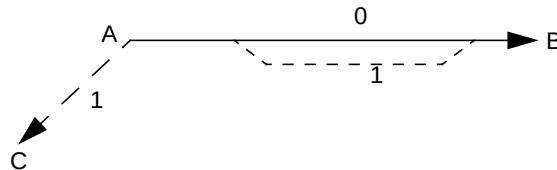
The following is a modification of the previous example. This case also shows a successful execution of the **OPR-LPBK** command for a normal loopback of an input port. However, for this case, an output port was specified in the command. Also, the command specifies that only switch fabric 0 shall be used for the loopback.

```
OPR-LPBK:LT-AOS:och-1-4-3,och-1-4-2:123456::,,LPBKCC,0;
```

```
LT-AOS 01-04-16 08:15:11
M 123456 COMPLD
;
```

```
LT-AOS 01-04-16 08:15:11
A 006 REPT DBCHG
"TIME=08-15-11,DATE=01-04-16:OPR-LPBK:::add=\"och-1-4-3,och-1-4-2,0,LPBKNORM,,000000,0\":"
;
```

The following example shows a successful execution of the **OPR-LPBK** command to establish a forced simplex loopback (shown as a dashed line) using Switch Fabric 1. An output port with an AID different from the input port has been used. Note that the network element retains a record of the original transmission path through switch fabric 1 (shown as a dotted line), but this path is unavailable for service until the loopback leg is released. At that time, the original path through switch fabric 1 will again become available for service.



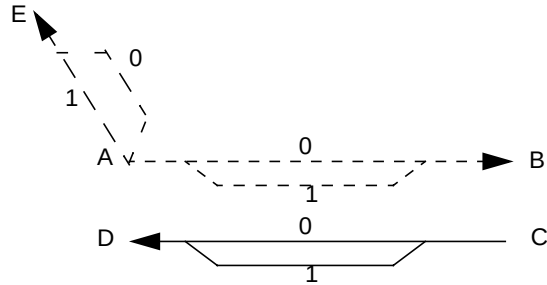
Port	AID
A	och-1-4-1
B	och-2-1-3
C	och-2-1-4

```
OPR-LPBK:LT-AOS:och-1-4-1,och-2-1-4,, :123456::,,LPBKFC,1;
```

```
LT-AOS 01-04-18 08:22:31
M 123456 COMPLD
;
```

```
LT-AOS 01-04-18 08:22:31
A 006 REPT DBCHG
"TIME=08-22-31,DATE=01-04-18:OPR-LPBK:::add=\"och-1-4-1,och-2-1-4,1,LPBKFC,,000000,0\"":
;
```

The following example shows a successful completion of the **OPR-LPBK** command to establish a forced duplex loopback on one of the input ports for a 2-way duplex cross-connection. Note that the network element retains a record of the original transmission paths through Switch Fabrics 0 and 1 (shown as dotted lines), but these paths are unavailable for service until the duplex loopback leg is released. At that time, the original paths through switch fabrics 0 and 1 will again become available for service.



Port	AID
A	och-2-4-1
B	och-2-6-1
C	och-2-8-1
D	och-2-10-1
E	och-2-12-1

OPR-LPBK:LT-AOS:och-2-4-1,och-2-12-1:123456::,,LPBKFC,2;

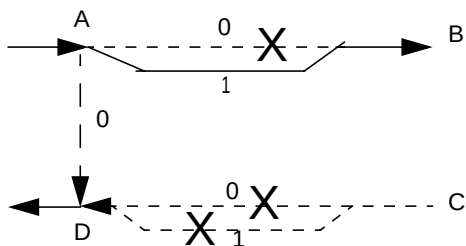
LT-AOS 01-04-18 08:29:23
M 123456 COMPLD
;

LT-AOS 01-04-16 08:29:23
A 006 REPT DBCHG
"TIME=08-29-23,DATE=01-04-18:OPR-LPBK:::add=\"och-2-4-1,och-2-12-1,2,LPBKFC,,000000,0\" :"
;

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See notice on first page

The following example, which is a modification of the previous example, shows a successful completion of the **OPR-LPBK** command to establish a forced simplex loopback on input port "A" of a 2-way duplex cross-connection. However, for this case, no output port is specified in the command, so the default loopback output port must be used, which is "D", the output port being used for transmission in the opposite direction. The user has specified the use of switch fabric "0" in the forward direction, which means this path is temporarily unavailable for the original traffic. As shown, establishing this loopback completely interrupts the transmission in the opposite direction until the loopback is released. At that time, the original paths through Switch Fabrics 0 and 1 in both directions will again become available for service.

A user could also have specified a forced duplex loopback at input port "A". This would have interrupted both paths in the forward direction, because both switch fabrics would be used for a duplex cross-connection to output port "D".



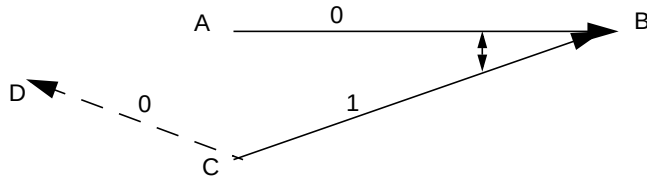
Port	AID
A	och-2-4-1
B	och-2-6-1
C	och-2-8-1
D	och-2-10-1

OPR-LPBK:LT-AOS:och-2-4-1:123456::,, ,LPBKFC,0;

LT-AOS 01-04-18 08:31:28
M 123456 COMPLD
;

LT-AOS 01-04-16 08:31:28
A 006 REPT DBCHG
"TIME=08-31-28, DATE=01-04-18:OPR-LPBK:::add=\"och-2-4-1, och-2-10-1, 0, LPBKFC,, ,000000,0\" :"
;

The following example shows a successful completion of the **OPR-LPBK** command to establish a forced simplex loopback (shown as a dashed line) on one of the input ports for a merge configuration using Switch Fabric 0. For this case, there is no impact on the existing configuration.



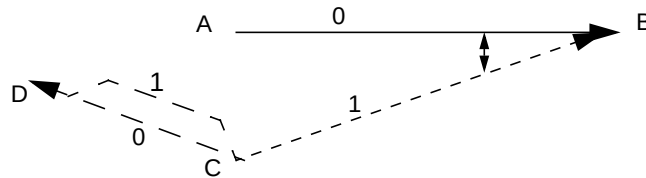
Port	AID
A	och-3-15-1
B	och-4-7-1
C	och-3-16-4
D	och-5-4-1

```
OPR-LPBK:LT-AOS:och-3-16-4,och-5-4-1:123456::,,LPBKFC,0;
```

```
LT-AOS 01-04-18 08:39:18
M 123456 COMPLD
;
```

```
LT-AOS 01-04-18 08:39:18
A 006 REPT DBCHG
"TIME=08-39-18,DATE=01-04-18:OPR-LPBK:::add=\"och-3-16-4,och-5-4-1,0,LPBKFC,,,000000,0\":"
;
```

The following example shows a successful completion of the **OPR-LPBK** command to establish a forced duplex loopback (shown as a dashed line) on one of the input ports for a merge configuration. For this case, the merge leg in the original configuration is retained in the database but is not available for service until the loopback has been released.



Port	AID
A	och-3-15-1
B	och-4-7-1
C	och-3-16-4
D	och-5-4-1

OPR-LPBK:LT-AOS:och-3-16-4,och-5-4-1:123456::,,LPBKFC,2;

LT-AOS 01-04-18 08:39:18
M 123456 COMPLD
;

LT-AOS 01-04-18 08:39:18
A 006 REPT DBCHG
"TIME=08-39-18,DATE=01-04-18:OPR-LPBK::add=\"och-3-16-4,och-5-4-1,2,LPBKFC,,000000,0\":"
;

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **OPR-LPBK** command. The following additional errors apply to the **OPR-LPBK** command as well.

If the network element receives an **OPR-LPBK** command with an invalid *lpbktype* parameter value, then the following error response is returned.

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

If the network element receives an **OPR-LPBK** command with an invalid *sw_fab* parameter value, then the following error response is returned.

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

If the network element receives an **OPR-LPBK** command with an invalid *in_aid* parameter value, then the following error response is returned.

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

If the network element receives an **OPR-LPBK** command with an invalid *out_aid* parameter value, then the following error response is returned.

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


If the network element receives an **OPR-LPBK** command when there is no optical cross-connect interface circuit pack associated with the port specified by the **in_aid** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, in_aid unequipped */
;
```

If the network element receives an **OPR-LPBK** command when there is no optical cross-connect interface circuit pack associated with the port specified by the **out_aid** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not EQuipped, out_aid unequipped */
;
```

If the network element receives an **OPR-LPBK** command, then the following error response is returned if either of the following conditions exist:

- For a duplex (normal or forced) loopback, no SWIPs have been assigned to at least one of the ports specified by an input AID parameter or an output AID parameter.
- For a simplex (normal or forced) cross-connection, at least one of the SWIPs that is required to establish the simplex loopback leg has not been assigned to the specified ports.

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

NOTE: For information concerning the case when one switch fabric has been removed, please see the NOTE following the corresponding Error Code in the **ENT-CRS** command description.

If the network element receives an **OPR-LPBK** command when the port specified by the *in_aid* already has a loopback established, then the following error response is returned.

```
sid date time
M ctag DENY
  SADS
  /* Status, Access unit in Diagnostic State, loopback exists */
;
```

If the network element receives an **OPR-LPBK** command for a forced loopback without a *sw_fab* parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
  /* Input, Parameter MiSsing, missing sw_fab */
;
```

If the network element receives an **OPR-LPBK** command for a forced simplex loopback when a forced protection switch is in effect at the output port associated with the existing cross-connection, then the following error response is returned if the *sw_fab* parameter specifies the selected side.

```
sid date time
M ctag DENY
  RCBY
  /* Resource, Circuit BusY, sw_fab busy */
;
```

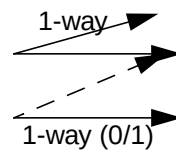
If the network element receives an **OPR-LPBK** command for either a forced or normal loopback when a forced protection switch is in effect at the output port to be used for the loopback, then the following error response is returned.

```
sid date time
M ctag DENY
  SAPR
  /* Status, Already in PRotection state, loopback output port */
;
```

If the network element receives an **OPR-LPBK** command specifying an output port AID that already has at least one cross-connection leg, then the following error response is returned.

```
sid date time
M ctag DENY
SAAS
/* Status, Already ASSigned, output port in use */
;
```

This command cannot be used to add a loopback cross-connection (as illustrated by the dotted line) to connect two existing 1-way configurations when either (or both) of the existing configurations is(are) duplex.



Note that this error message does not apply to a 2-way configuration for which the default loopback output port is used.

If the network element receives an **OPR-LPBK** command requesting a normal loopback when the input port specified in the command already has a cross-connection, then the following error response is returned.

```
sid date time
M ctag DENY
SAAS
/* Status, Already ASSigned, cross-connection exists */
;
```

If the network element receives an **OPR-LPBK** command specifying the AID of an input port or an output port that is reserved for AIRP use as a LINK_PROBE port, then the following error response is returned.

```
sid date time
M ctag DENY
SAAS
/* Status, Already ASSigned, port reserved for AIRP */
;
```

If the network element receives an **OPR-LPBK** command specifying an input port AID or an output port AID while the port is being used by AIRP for port discovery or link verification, then the following error response is returned.

```
sid date time
M ctag DENY
SADS
/* Status, Access unit in Diagnostic State, AIRP operation in progress */
;
```

If the network element receives an **OPR-LPBK** command specifying an input port AID or an output port AID while the port is being used for a test access cross-connection, then the following error response is returned.

```
sid date time
M ctag DENY
SADS
/* Status, Access unit in Diagnostic State, test access session in
progress */
;
```

If the network element receives an **OPR-LPBK** command specifying the AID of an output port that is reserved for ONNS use as a “REVERTIVE” path testing port, then the following error response is returned.

```
sid date time
M ctag DENY
SAAS
/* Status, Already ASSigned, port reserved for path testing by ONNS */
;
```

If the network element receives an **OPR-LPBK** command when the optical cross-connect interface circuit pack associated with a specified AID parameter value is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
SNIS
/* Status, Not In Service, OXI pack */
;
```

If the network element receives an **OPR-LPBK** command when the Switch Shelf that is required to establish a loopback leg is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, switch fabric shelf */
;
```

If the network element receives an **OPR-LPBK** command containing the AID value for an OCHT input port that has incompatible provisioned standards/rate attributes with respect to those of an OCHT output port specified by the associated output AID parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  SSPN
  /* Status, SPeed Not correct, incompatible transparent ports */
;
```

The documentation for the **ENT-CRS** command contains a table showing the allowed combinations of provisioned input and output OCHT port standards and rate attributes. These same combinations apply to the establishment of loopbacks.

If the network element receives an **OPR-LPBK** command specifying an OCHT input port that has incompatible standards/rate attributes with respect to those of the specified OEO (OCH10GC or OCH2GC) output port (or specifying an OEO input port that is incompatible with the standards/rate attributes of the specified OCHT output port), then the following error response is returned.

```
sid date time
M ctag DENY
  SSPN
  /* Status, SPeed Not correct, incompatible transparent and OEO ports */
;
```

The documentation for the **ENT-CRS** command contains a table showing the allowed combinations of OCHT and OEO input port and output port standards/rate attributes. These same combinations apply to the establishment of loopbacks.

If the network element receives an **OPR-LPBK** command containing the AID value for either an OCH10GC input port and the AID value for an OCH2GC output

port (or the AID value for an OCH2GC input port and the AID value for an OCH10GC output port), then the following error response is returned.

```
sid date time
M ctag DENY
  SSPN
  /* Status, SPeed Not correct, incompatible OE0 ports */
;
```

The documentation for the **ENT-CRS** command contains a table showing the allowed combinations of OCH2GC and OCH10GC input port and output port standards/rate attributes. These same combinations apply to the establishment of loopbacks.

If the network element receives an **OPR-LPBK** command containing the AID value for an input port that is associated with a cross-connection that belongs to an ONNS network path, then the following error response is returned.

```
sid date time
M ctag DENY
  SRQN
  /* Status, ReQuest Not valid, loopback not allowed on ONNS cross-
connection */
;
```

If the network element receives an **OPR-LPBK** command for which the requested operation cannot be successfully completed, then the following error response is returned.

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

RELATED TL1 MESSAGES

RLS-LPBK

DLT-CRS

RTRV-CRS

ENT-CRS

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See notice on first page

NAME

OPR-PROTNSW-FRCD: Operate Protection Switch - Forced

The **OPR-PROTNSW-FRCD** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

INPUT FORMAT

OPR-PROTNSW-FRCD: *tid:aid:ctag::dest;*

DESCRIPTION

The **OPR-PROTNSW-FRCD** command initiates a forced protection switch request on an output port 2:1 selector. The command applies to both optical cross-connect interface circuit packs. The command results in the 2:1 selector choosing the fabric side specified by the command. Each 2:1 selector is associated with a particular output port, and is addressable using that port AID. Unlike a manual protection switch, a forced protection switch cannot be reset by an autonomous failure, and is released by the **RLS-PROTNSW-FRCD** command. The **OPR-PROTNSW-FRCD** command is not used for controllers or controller complexes.

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

The **OPR-PROTNSW-FRCD** command generates a **REPT SW** message.

INPUT PARAMETERS

The “**OPR-PROTNSW-FRCD** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **OPR-PROTNSW-FRCD** command.

Table 3-58. OPR-PROTNSW-FRCD Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-58. OPR - PROTNSW - FRCD Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. Used to identify the output port 2:1 selector (associated with an output port) to be switched.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>dest</i>	Destination. This parameter defines the fabric side to which the output port selector is to switch.	0 1

OUTPUT FORMAT

If the **OPR - PROTNSW - FRCD** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

EXAMPLE OUTPUT

The following example shows the successful completion of an **OPR-PROTNSW-FRCD** command on an output port selector indicating a forced switch to fabric side 1.

```
OPR-PROTNSW-FRCD:LT-OXC:och-1-1-2:123456::1;  
  
LT-OXC 01-12-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **OPR-PROTNSW-FRCD** command. The following additional errors apply to the **OPR-PROTNSW-FRCD** command as well.

If the network element receives an **OPR-PROTNSW-FRCD** command when the optical cross-connect interface circuit pack(s) associated with the specified **aid** parameter value is not equipped, then the following error response is returned.

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

If the network element receives an **OPR-PROTNSW-FRCD** command when the optical cross-connect interface circuit pack(s) associated with the specified **aid** parameter value is not in service, then the following error response is returned.

```
sid date time  
M ctag DENY  
SNIS  
/* Status, Not In Service */  
;
```

If the network element receives an **OPR-PROTNSW-FRCD** command and the required **dest** parameter is not provided, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
/* Input, Parameter MiSsing, missing dest */
;
```

If the network element receives an **OPR-PROTNSW-FRCD** command and the value of the **dest** parameter is invalid, then the following error response is returned.

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

If the network element receives an **OPR-PROTNSW-FRCD** command, but the forced switch request already exists for the specified destination, then the following error response is returned.

```
sid date time
M ctag DENY
  SRCN
/* Status, Requested CoNdition already exists */
;
```

If the network element receives an **OPR-PROTNSW-FRCD** command, but the **aid** parameter value is an output port assigned to a simplex connection such as bridge cross-connection, forced simplex loopback, or simplex test access, then the following error response is returned.

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

RELATED TL1 MESSAGES

RLS-PROTNSW-FRCD

OPR-PROTNSW-MAN

RLS-PROTNSW-MAN

REPT SW

RTRV-LOG-PROTNSW

NAME

OPR-PROTNSW-MAN: Operate Protection Switch - Manual

The **OPR-PROTNSW-MAN** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

INPUT FORMAT

OPR-PROTNSW-MAN: *tid:aid:ctag::dest;*

DESCRIPTION

The **OPR-PROTNSW-MAN** command initiates a manual protection switch request for transmission or control system elements.

For transmission elements, the **OPR-PROTNSW-MAN** command initiates a manual protection switch request on an output port 2:1 optical selector. The command applies to optical cross-connect interface circuit packs. The command results in the 2:1 selector choosing the fabric side specified by the command. Each 2:1 selector is associated with a particular output port, and is addressable using that port AID.

For the control system elements, the **OPR-PROTNSW-MAN** command initiates a manual protection switch request on a controller protection group such as an OIS Switch Interface Controller (OSWIC) Protection Group (OICPG), HVS Switch Interface Controller (HSWIC) Protection group (HVCPG), or System Controller Complex Protection Group (SCCPG).

A manual protection switch can be released by an autonomous failure, or in the case of the 2:1 selector, can be also released by a **RLS-PROTNSW-MAN** command. For the controller protection groups, a manual protection switch can be issued against another manual protection switch without an intermediate release protection switch command. Also, in the case of the 2:1 selector, the **OPR-PROTNSW-FRCD** command has priority over the **OPR-PROTNSW-MAN** command (the **OPR-PROTNSW-FRCD** command does not apply to controller protection groups).

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

The **OPR-PROTNSW-MAN** command generates a **REPT SW** message.

INPUT PARAMETERS

The “**OPR - PROTNSW - MAN** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **OPR - PROTNSW - MAN** command.

Table 3-59. OPR - PROTNSW - MAN Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. Used to identify the output port 2:1 selector, or System Controller Complex protection group, or HVS controller protection group, or OIS controller protection group, to be switched.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4} LambdaRouter AOS 128 or LambdaRouter AOS 256: sccpg-1 LambdaRouter AOS 128: hvcpg-0 LambdaRouter AOS 256: hvcpg-{0,1} LambdaRouter AOS 128: oicpg-{1-4} LambdaRouter AOS 256: oicpg-{1-7}
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>dest</i>	Destination. This parameter defines the side of the protection group that is the object of the protection switch command.	0 1

OUTPUT FORMAT

If the **OPR-PROTNSW-MAN** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE OUTPUT

The following example shows the successful completion of an **OPR-PROTNSW-MAN** command on an output port selector indicating a manual switch to fabric side 1.

```
OPR-PROTNSW-MAN:LT-OXC:och-1-1-2:123456::1;  
  
LT-OXC 01-12-01 08:00:00  
M 123456 COMPLD  
;
```

This following example shows the successful completion of an **OPR-PROTNSW-MAN** command on a controller protection group indicating a manual switch to side 0.

```
OPR-PROTNSW-MAN:LT-OXC:oicpg-1:123456::0;  
  
LT-OXC 01-12-01 08:05:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **OPR-PROTNSW-MAN** command. The following additional errors apply to the **OPR-PROTNSW-MAN** command as well.

If the network element receives an **OPR-PROTNSW-MAN** command when the optical cross-connect interface circuit pack(s) associated with the specified port **aid** parameter value is not equipped, then the following error response is returned.

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

If the network element receives an **OPR-PROTNSW-MAN** command when the optical cross-connect interface circuit pack(s) associated with the specified port **aid** parameter value is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service */
;
```

If the network element receives an **OPR-PROTNSW-MAN** command when the port specified by the **aid** parameter value is out-of-service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service */
;
```

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See notice on first page

If the network element receives an **OPR-PROTNSW-MAN** command when the system controller protection group specified by the **aid** parameter value is out-of-service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service */
;
```

If the network element receives an **OPR-PROTNSW-MAN** command when the shelf controller protection group specified by the **aid** parameter value (HVS or OIS) is out-of-service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service */
;
```

If the network element receives an **OPR-PROTNSW-MAN** command and the **dest** parameter is not provided, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
  /* Input, Parameter MiSSing, missing dest */
;
```

If the network element receives an **OPR-PROTNSW-MAN** command and the value of the **dest** parameter is invalid, then the following error response is returned.

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

If the network element receives an **OPR-PROTNSW-MAN** command, but a manual switch request already exists for the specified output port, then the following error response is returned.

```

sid date time
M ctag DENY
SRCN
/* Status, Requested CoNDition already exists */
;

```

If the network element receives an **OPR-PROTNSW-MAN** command, but a higher priority switch request that is not allowed to co-exist with the manual switch already exists, that is, a forced switch exists at the port selector, or a lack of signal at one or both selector sides implies autonomous protection switch, then the following error response is returned.

```

sid date time
M ctag DENY
SSRD
/* Status, Switch Request Denied */
;

```

If the network element receives an **OPR-PROTNSW-MAN** command, but the **aid** parameter value is an output port assigned to a simplex connection such as bridge cross-connection, forced simplex loopback, or simplex test access, then the following error response is returned.

```

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

```

RELATED TL1 MESSAGES

RLS-PROTNSW-MAN

OPR-PROTNSW-FRCD

RLS-PROTNSW-FRCD

REPT SW

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See notice on first page

RTRV - LOG - PROTNSW

NAME

REPT ALM: Report Alarm

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

DESCRIPTION

The **REPT ALM** message is generated autonomously by the network element to report an alarm that requires immediate attention by the user.

If an alarm has an alarm severity level of Critical (CR), Major (MJ), or Minor (MN), then its occurrence will be reported in a **REPT ALM** message.

An alarm reported to the user 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:\"conddescr\"[,\"addtxt\"]"
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date* and *time* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The “**REPT ALM** Positional Output Parameters” table contains the detailed descriptions and allowed values for the additional output parameters of the **REPT ALM** message.

Table 3-60. REPT ALM Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>almcde</i>	Alarm Code. Indicates the severity of the message.	*C Critical alarm ** Major alarm *^ Minor alarm A^ Automatic message. This is used only to report a cleared alarm. The caret (^) character represents an ASCII space character.
<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.	000-999
<i>modifier</i>	Modifier. This parameter is a message modifier to the command.	COM Common. An event that applies to the overall network element, for example, a processing error. EQPT Equipment. This indicates equipment-related events. OCH Optical Channel. This indicates facility-related events at the optical channel signal level. SECU Security. This indicates security-related events such as unauthorized login. CCN Control Communications Network. This indicates events related to the control network used for lightpath operations and restoration. QoS Quality of Service. This indicates events related to performance monitoring of the signal overhead.

Table 3-60. REPT ALM Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. This is the identifier of the equipment component or facility for which an alarm condition is being reported.	Refer to Appendix A "LambdaRouter™ AOS 128 AID Parameter Tables" and "LambdaRouter™ AOS 256 AID Parameter Tables" for the valid set of output AID values.
<i>ntfncde</i>	Notification Code. This is the alarm level of the retrieved alarm.	CR Critical alarm MJ Major alarm MN Minor alarm CL Clear alarm
<i>condtype</i>	Condition Type. This parameter is a mnemonic description of the condition.	Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid condition types.
<i>srveff</i>	Service Effect. This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element.	NSA Non-Service Affecting SA Service Affecting
<i>ocrdat</i>	Occurrence Date. This indicates the date of the alarm being reported and has the format year-month-day.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31
<i>ocrtm</i>	Occurrence Time. This indicates the time of the alarm being reported and has the format hours-minutes-seconds.	HH-MM-SS where HH=0-23, MM=00-59, SS=00-59
<i>conddescr</i>	Condition Description.	ASCII text string. Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid condition descriptions.
<i>addtxt</i>	Additional Text.	ASCII text string. Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid additional text.

EXAMPLE INPUT/OUTPUT

The following shows the reporting of an alarmed condition via the **REPT ALM** message.

```
LT-OXC 01-12-31 07:30:00
*C 123 REPT ALM OCH
"och-1-2-3:CR,LOS,SA,01-12-31,07-29-00:\\"Incoming Loss of Signal\\""
;
```

This example shows the reporting of a cleared alarmed condition via the **REPT ALM** message.

```
LT-OXC 01-12-31 07:31:00
A 234 REPT ALM OCH
"och-1-2-3:CL,LOS,SA,01-12-31,07-32-00:\\"Incoming Loss of Signal-cleared\\""
;
```

RELATED TL1 MESSAGES

REPT EVT

RTRV-ALM

RTRV-ATTR-ALM

RTRV-COND

SET-ATTR-ALM

NAME

REPT DBCHG: Report Database Change

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

DESCRIPTION

The **REPT DBCHG** message reports any change in the system database. Changes can be caused by a manual command or by an autonomous internally generated state change.

Changes in user provisionable attributes are reported as the equivalent TL1 command that caused the change (except for the **ENT - CRS**, **DLT - CRS**, **CONN - TACC**, **DISC - TACC**, **OPR - LPBK**, and **RLS - LPBK** TL1 commands). Changes in non-user-provisionable attributes are reported using only the *aid*, *com_block*, *spec_block*, *pst*, and *sst* 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 (for example, och-1-26-all) is entered, then the system outputs separate **REPT DBCHG** messages for each affected AID (och-1-26-1, och-1-26-2, och-1-26-3, and och-1-26-4, for the example input AID).

If the database change occurs as a result of a TL1 command, then a **REPT DBCHG** message is transmitted to users provisioned to receive **REPT DBCHG** messages, including the user that issued the command. Therefore, a memory management OS must expect to receive database change messages for changes it caused.

The *pst* and *sst* parameters appear in the **REPT DBCHG** message just as entered in the TL1 command, except when reporting a port state change. If a port's primary state is provisioned by a TL1 command, the *pst* and *sst* parameters are returned in the **REPT DBCHG** message as the actual *pst* and *sst* parameters of the port object after the state change has occurred. If the input port and output port's primary state is provisioned in the same TL1 command, two **REPT DBCHG** messages are sent: one specifying the actual *pst* and *sst* parameters of the input port object after the state change has occurred, and the other specifying the actual *pst* and *sst* parameters of the output port object after the state change has occurred.

If an object's state changes autonomously or as a side effect to a TL1 command (state change not directly provisioned in the TL1 command line), the *pst* and *sst* parameters of the **REPT DBCHG** are the actual *pst* and *sst* parameters of the object after the state change has occurred.

Autonomous parameter changes causing **REPT DBCHG** messages are output without the *ccb* field.

If a port's state changes autonomously, the new state of the input and output ports is returned in separate **REPT DBCHG** messages. The *com_block* field always contains the direction (*dir*) parameter of the port.

If objects are created as a result of a TL1 command, only the object specified in the TL1 command is returned in a **REPT DBCHG** message. All of the supporting objects that are autonomously created due to the original object's creation are not reported in a **REPT DBCHG** message.

The same rule governs when the insertion of a circuit pack initiates the creation of the slot/circuit pack object and its dependent port objects. Only the creation of the circuit pack is reported in a **REPT DBCHG** message at that time.

The *spec_block* parameters of the following TL1 commands are not equivalent to the TL1 command that caused the change: **ENT - CRS**, **DLT - CRS**, **CONN - TACC**, **DISC - TACC**, **OPR - LPBK**, and **RLS - LPBK**. The specific *spec_block* parameter formats for the previous commands that are used in the **REPT DBCHG** message are listed in their respective TL1 command pages.

OUTPUT FORMAT

The general format of a **REPT DBCHG** message is as follows.

```
sid date time
A atag REPT DBCHG
  "TIME=ocrtm,DATE=ocrdat:[ccb]:[aid]:[com_block]:[spec_block]:[pst][,sst]"
  ...
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, and *time* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

The "**REPT DBCHG** Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **REPT DBCHG** command.

Table 3-61. REPT DBCHG Output Parameters

Parameter Name	Description	Allowed Values
<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.	000-999
<i>ocrtm</i>	Occurrence Time. Time when the change occurred.	HH-MM-SS where HH=0-23, MM=00-59, SS=00-59
<i>ocrdat</i>	Occurrence Date. Date when the change occurred.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31
<i>ccb</i>	Command Code Block. Represents the command causing the change. No value is specified when the change is not caused by a command.	<i>verb-modifier</i> [- <i>modifier</i>]
<i>aid</i>	Access Identifier. One or more AIDs, separated by a comma. The <i>aid</i> block can also contain a <i>uid</i> parameter; for example, to report a change made with ENT-USER-SECU .	Same as those in the command that is being reported. Refer to Appendix A "LambdaRouter™ AOS 128 AID Parameter Tables" and "LambdaRouter™ AOS 256 AID Parameter Tables" for the valid set of output AID values.
<i>com_block</i>	Common Block. This block contains the position-defined parameters except <i>pst</i> and <i>sst</i> . The direction (<i>dir</i>) parameter must be specified in the Common Block for port changes not caused by a command.	Same as those in the command that is being reported.
<i>spec_block</i>	Specific Block. This block contains the named-defined parameters.	Same as those in the command that is being reported, except for the ENT-CRS, DLT-CRS, CONN-TACC, DISC-TACC, OPR-LPBK, RLS-LPBK TL1 commands. See each exception TL1 command for the exact <i>spec_block</i> format.

Table 3-61. REPT DBCHG Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>pst</i>	Primary State.	When <i>ccb</i> appears and <i>aid</i> is not a port AID: IS In-Service OOS Out-Of-Service When <i>ccb</i> does not appear or <i>aid</i> is a port AID: IS-NR In-Service, Normal IS-ANR In-Service, Abnormal OOS-AU Out-Of-Service, Autonomous OOS-MA Out-Of-Service, Management
<i>sst</i>	Secondary State. Up to two of the allowed values are simultaneously permitted as a <i>sst</i> parameter. The two values must be separated by an ampersand ("&"). Example <i>sst</i>=FLT&MEA	AINS Automatic In-Service ACT Active BUSY Busy FLT Fault IDLE Idle MEA Mismatch of Equipment and Attributes MT Maintenance SGEO Supporting Entity Outage SGES Supporting Entity Swapped STBY Standby STBYI Standby Inhibited STBYS Standby Swapped SWDL Software Downloading UAS Unassigned UEQ Unequipped

EXAMPLE OUTPUT

The following is an example of the **REPT DBCHG** message for an input port-to-SWIP association change.

```
LT-0XC 99-01-01 08:00:00
A 001 REPT DBCHG
"TIME=07-59-59,DATE=99-01-01:ED-0CH:och-1-1-3:OCHT,IN:INSWIP0=
swip-0-in-A1-13:"
;
```

The following is an example of the **REPT DBCHG** message for an output port state change.

```
LT-OXC 99-01-01 08:00:45
A 002 REPT DBCHG
"TIME=08-00-43,DATE=99-01-01::och-1-1-3:OCHT,OUT::IS-NR,"
;
```

The following is an example of the **REPT DBCHG** message for an OXI slot/circuit pack state change.

```
LT-OXC 99-01-01 08:01:37
A 004 REPT DBCHG
"TIME=08-01-35,DATE=99-01-01::oxi-1-1:::00S-AU,UEQ"
;
```

The following is an example of the **REPT DBCHG** message for an OXI slot/circuit pack provisioned state change.

```
LT-OXC 99-01-01 08:02:05
A 005 REPT DBCHG
"TIME=08-02-04,DATE=99-01-01:ED-EQPT:oxi-1-1:::00S"
;
```

The following is an example of the **REPT DBCHG** message for a SWIP provisioned state change.

```
LT-OXC 99-01-01 08:02:47
A 006 REPT DBCHG
"TIME=08-02-46,DATE=99-01-01:ED-EQPT:swip-0-in-B1-9:::,UEQ"
;
```

RELATED TL1 MESSAGES

The following TL1 commands generate a **REPT DBCHG** message.

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See notice on first page

APPLY

CONN - TACC

CPY - MEM

CPY - NVM

DISC - TACC

DLT - CRS

DLT - EQPT

DLT - PM - PROF

DLT - USER - SECU

ED - DAT

ED - EQPT

ED - NE - SECU

ED - PID

ED - PM - PROF

ED - PORT - LINK

ED - rr

ED - ULSDCC - L3

ED - ULSDCN - L3

ED - USER - SECU

ENT - CRS

ENT - EQPT

ENT - PM - PROF

ENT - USER - SECU

INIT - EQPT

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See notice on first page

INIT - SYS

OPR - LPBK

RLS - LPBK

SET - ATTR - ALM

SET - PMDAY

SET - SID

NAME

REPT EVT: Report Event

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

DESCRIPTION

Alarms can have notification codes (levels) of Critical (CR), Major (MJ), Minor (MN), Not Alarmed (NA), and Not Reported (NR).

If condition is defined as “Not Alarmed” (NA), then the occurrence of that condition is reported in a **REPT EVT** message. Corresponding **REPT EVT** messages occur when any “Not Alarmed” standing conditions clear. **REPT EVT** messages also are used to report transient conditions.

A standing condition is an alarm event that has a set state and a clear state. When the event sets, the standing condition is declared via an autonomous message. When the event clears, an autonomous message is sent to indicate that the event cleared.

A transient condition only results in one autonomous message - a declaration that a specific transient condition occurred.

Autonomous Performance Monitoring (PM) Threshold Crossing Alert (TCA) messages are provided to management systems using standing and transient **REPT EVT** TL1 messages. The standing **REPT EVT** TL1 messages are used for the physical parameters. All other PM parameter TCA **REPT EVT** messages are transient.

The **REPT EVT** message does not report any autonomous messages that are reported by other **REPT** commands.

For example, **REPT DBCHG** autonomous messages report when provisioning changes are made. **REPT EVT** messages do not report them.

OUTPUT FORMAT

The general format of a **REPT EVT** message is as follows.

```
sid date time
A atag REPT EVT modifier
  "aid:condtype,condeff,ocrdat,ocrtm:\"conddescr\"[,\"addtxt\"][:spec_block]"
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, and *time* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The “**REPT EVT** Positional Output Parameters” table contains the detailed descriptions and allowed values for the additional output parameters of the **REPT EVT** message.

Table 3-62. REPT EVT Positional Output Parameters

Parameter Name	Description	Allowed Values	
<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.	000-999	
<i>modifier</i>	Modifier. This parameter is a message modifier to the command.	COM	Common. An event that applies to the overall network element, for example, a processing error.
		EQPT	Equipment. This indicates equipment-related events.
		OCH	Optical Channel. This indicates facility-related events at the optical channel signal level.
		SECU	Security. This indicates security-related events such as unauthorized login.
		CCN	Control Communications Network. This indicates events related to the control network used for lightpath operations and restoration.
		QoS	Quality of Service. This indicates events related to performance monitoring of the signal overhead.

Table 3-62. REPT EVT Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. This is the identifier of the equipment component or facility for which an alarm condition is being reported.	Refer to Appendix A "LambdaRouter™ AOS 128 AID Parameter Tables" and "LambdaRouter™ AOS 256 AID Parameter Tables" for the valid set of output AID values.
<i>condtype</i>	Condition Type. This parameter is a mnemonic description of the condition.	Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid condition types.
<i>condeff</i>	Condition Effect. This indicates the effect of the reported event on the network element.	CL Standing condition cleared SC Standing condition TC Transient condition
<i>ocrdat</i>	Occurrence Date. This indicates the date of the alarm being reported and has the format year-month-day.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31
<i>ocrtm</i>	Occurrence Time. This indicates the time of the alarm being reported and has the format hours-minutes-seconds.	HH-MM-SS where HH=0-23, MM=00-59, SS=00-59
<i>conddescr</i>	Description of the condition.	ASCII text string. Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid condition descriptions.
<i>addtxt</i>	Additional Text.	ASCII text string. Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid additional text.

The "REPT EVT Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the REPT EVT command.

Table 3-63. REPT EVT Specific Block Output Parameters

Parameter Name	Description	Allowed Values		
<i>THLEV</i>	Threshold Level. Only used for Performance Monitoring Threshold Crossing Alerts (TCAs)	Refer to Appendix A "Additional QoS Event Parameters" for a complete list of allowed values.		

Table 3-63. REPT EVT Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values		
<i>MONVAL</i>	Monitored Value. Only used for Performance Monitoring Threshold Crossing Alerts (TCAs)	Refer to Appendix A "Additional QoS Event Parameters" for a complete list of allowed values.		
<i>TMPER</i>	Time Period. Only used for Performance Monitoring Threshold Crossing Alerts (TCAs)	15-MIN 15 minute 1-DAY 1 Day		

EXAMPLE OUTPUT

The following shows a **REPT EVT** message to indicate that the **CPY-MEM** command has been invoked.

```
LT-OXC 99-01-01 08:00:00
A 003 REPT EVT EQPT
  "system:IP-CPY-MEM,SC,01-12-31,07-59-59:\\"Copy Memory in Progress \\""
;
```

The following shows a **REPT EVT** message to indicate an autonomous Threshold Crossing Alert (TCA) report for Severely Errored Seconds (SES) on an OC-192 port. Comments about specific parameters:

- *condeff*:Transient Conditions (TC)
- *THLEV*:The threshold is 240
- *MONVAL*:250 errors were detected
- *TMPER*:The TCA time period is 1 day

```
LT-OXC 02-01-10 08:00:00
A 009 REPT EVT QoS
  "och-1-1-2:SES-S,TC,02-01-10,07-59-59:\\"Svrly Error Sec Sect
TCA\","IN,OC192\":"THLEV=240,MONVAL=250,TMPER=1-DAY"
;
```

RELATED TL1 MESSAGES

REPT ALM

RTRV-ALM

RTRV-ATTR-ALM

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See notice on first page

RTRV - COND

SET - ATTR - ALM

NAME

REPT SW : Report Switch

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

DESCRIPTION

The **REPT SW** message applies to output port 2:1 selector switches, controller protection group side switches, and controller-complex protection group side switches.

REPT SW messages are generated autonomously to report automatic (autonomous) and command-driven equipment protection switches. In addition, **REPT SW** messages will be issued after port initialization to provide output port 2:1 selector fabric-side status; note that the switch type for this case will be "No Request" (NR).

OUTPUT FORMAT

The general format of a **REPT SW** message is as follows.

```
sid date time
A atag REPT SW
  "actid:DATE, TIME[, SwTYPE, OXF]"
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date* and *time* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The “**REPT SW** Output Parameters” table contains the detailed descriptions and allowed values for the additional output parameters of the **REPT SW** message.

Table 3-64. REPT SW Output Parameters

Parameter Name	Description	Allowed Values
<i>atag</i>	Automatic Tag. This is used for message sequencing. The number is incremented by one for each autonomous message.	000-999
<i>actid</i>	Active Identifier. This is the AID of the equipment that was placed in the active state: Port, System Controller Complex, HVS controller, or OIS controller.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4} LambdaRouter AOS 128 or LambdaRouter AOS 256: scc-1-{0,1} LambdaRouter AOS 128: hswic-0-{0,1} LambdaRouter AOS 256: hswic-{0,1}-{0,1} LambdaRouter AOS 128: oswic-{1-4}-{0,1} LambdaRouter AOS 256: oswic-{1-7}-{0,1}
<i>spec_block</i>	Specific Block Parameters. See the table “ REPT SW Specific Block Output Parameters” for the detailed descriptions of these parameters.	

The “**REPT SW** Specific Block Output Parameters” table contains the detailed descriptions and allowed values for the *spec_block* output parameters of the **REPT SW** command.

Table 3-65. REPT SW Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<i>DATE</i>	Occurrence Date. Refer to the “ RTRV-ALM Output Parameters” table for the output parameter syntax and description of the <i>ocrdat</i> parameter.	

Table 3-65. REPT SW Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>TIME</i>	Occurrence Time. Refer to the " RTRV-ALM Output Parameters" table for the output parameter syntax and description of the <i>ocrtm</i> parameter.		
<i>SWTYPE</i>	Optical Cross-Connect Output Port Protection Switch Type. Currently active switch type for the output port. This parameter is only allowed with <i>actid</i> = LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}	AUTO MAN FRCD NR	Autonomous Manual Forced No Request
<i>OXF</i>	Optical Cross-Connect Fabric Side Identifier. Fabric side currently selected by the output port 2:1 selector. This parameter is only allowed with <i>actid</i> = LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}	0 1	

EXAMPLE OUTPUT

The following example shows a **REPT SW** message for a controller complex protection group switch to side 1.

```
LT-OXC 01-01-01 08:00:00
A 001 REPT SW
"scc-1-1:DATE=00-01-01,TIME=07-59-59"
;
```

The following example shows a **REPT SW** message for an output port autonomous switch to side 0.

```
LT-OXC 01-01-01 08:05:00
A 002 REPT SW
"och-1-2-4:DATE=00-01-01, TIME=07-59-59, SWTYPE=AUTO, OXF=0"
;
```

The following example shows a **REPT SW** message for an output port as a result of a **OPR-PROTNSW-FRCD** command to side 0.

```
LT-OXC 00-01-01 08:10:00
A 003 REPT SW
"och-1-2-4:DATE=00-01-01, TIME=07-59-59, SWTYPE=FRCD, OXF=0"
;
```

The following example shows a **REPT SW** message for an output port as a result of a **RLS-PROTNSW-FRCD** command.

```
LT-OXC 00-01-01 08:15:00
A 004 REPT SW
"och-2-2-1:DATE=00-01-01, TIME=07-59-59, SWTYPE=AUTO, OXF=0"
;
```

RELATED TL1 MESSAGES

OPR-PROTNSW-FRCD

RLS-PROTNSW-FRCD

OPR-PROTNSW-MAN

RLS-PROTNSW-MAN

RTRV-LOG-PROTNSW

NAME

RLS-LPBK: Release Loopback

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

INPUT FORMAT

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

DESCRIPTION

The **RLS-LPBK** command removes an existing normal or forced cross-connect loopback that has been established in the network element on the specified input port. All cross-connections that were interrupted by a forced cross-connect loopback shall be restored following the release of the loopback.

The **RLS-LPBK** command generates a **REPT DBCHG** message that can be used to update a cross-connection database. The general **REPT DBCHG** message format is specified in the **OUTPUT FORMAT** section of the **REPT DBCHG** message. A subsequent section of this command description contains the format of the **REPT DBCHG** message *spec_block* that is generated as a result of the **RLS-LPBK** command.

The **RLS-LPBK** command will generate a **REPT EVT** message that clears the standing condition initiated by the **OPR-LPBK** command.

INPUT PARAMETERS

The "**RLS-LPBK** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RLS-LPBK** command..

Table 3-66. RLS-LPBK Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access IDentifier (AID). This parameter identifies the input port for which the loopback release is requested. The command will be denied if the <i>aid</i> identifies the output port for the loopback.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>lpbktype</i>	Loopback Type. This parameter indicates the type of loopback to be released.	LPBKCC Normal cross-connect loopback (<i>Default</i>) LPBKFC Forced cross-connect loopback

OUTPUT FORMAT

If the **RLS-LPBK** request completes successfully, then the following completion response is returned.

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

REPT DBCHG MESSAGE FORMAT

Shown below is the **REPT DBCHG** message that is generated as a result of the **RLS-LPBK** command. This format is based on the general **REPT DBCHG** message

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format that appears in the **OUTPUT FORMAT** section of the **REPT DBCHG** message description.

```
sid date time
A atag REPT DBCHG
  "TIME=ocrtm,DATE=ocrdat:RLS-LPBK::[spec_block]:"
;
```

The "*spec_block*" will contain one or more "del" name-defined parameters that precede a grouping of cross-connection parameters identified by "\" at its beginning and end as shown below. Each "del=" that appears in the "*spec_block*" indicates that a (duplex or simplex) loopback leg has been removed. Each parameter contained in an "del" sequence is defined in the **RTRV-CRS** command.

```
del="\in_aid,out_aid,sw_fab,cct,,000000,0"
```

Examples of the **REPT DBCHG** message that are generated for the **RLS-LPBK** command appear in the **EXAMPLE INPUT/OUTPUT** section of this document.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RLS-LPBK** command for a forced loopback. The cross-connection leg that was impacted by the forced loopback shall be restored as part of the command execution.

```
RLS-LPBK:LT-A0S:och-1-2-1:123456::,, ,LPBKFC;
```

```
LT-A0S 01-04-16 08:07:04
M 123456 COMPLD
;
```

```
LT-A0S 01-04-16 08:07:04
A 006 REPT DBCHG
  "TIME=08-07-04,DATE=01-04-16:RLS-LPBK::del="\och-1-2-1,och-1-2-1,0,LPBKFC,, ,000000,0\"": "
;
```

Note that a command to release a normal loopback does not require a value for the *lpbktype* parameter.

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RLS-LPBK** command. The following additional responses apply to the **RLS-LPBK** command as well.

If the network element receives a **RLS-LPBK** command with an invalid *lpbktype* parameter value, then the following error response is returned.

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

If the network element receives an **RLS-LPBK** command with an *aid* parameter value for a port that is not an input port at which a loopback is currently established, then the following error response is returned.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid ACcess identifier, not loopback input port */
;
```

Note that this error message will be generated if the *aid* parameter value in the command specifies the output port for an established loopback.

If the network element receives a **RLS-LPBK** command and no loopback exists on the specified AID interface, then the following error response is returned.

```
sid date time
M ctag DENY
  SNCC
/* Status, Not Cross-Connected, no loopback exists */
;
```

If the network element receives an **RLS-LPBK** command when the High Voltage Shelf that is required to release the loopback is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, high voltage shelf */
;
```

If the network element receives a **RLS-LPBK** command specifying a *forced* loopback but the loopback type in the network element is a *normal* loopback, then the following error response is returned.

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

If the network element receives a **RLS-LPBK** command specifying or implying a *normal* loopback but the loopback type in the network element is a *forced* loopback, then the following error response is returned.

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

If the network element receives a **RLS-LPBK** command for which the requested operation cannot be successfully completed, then the following error response is returned.

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

RELATED TL1 MESSAGES

OPR-LPBK

DLT-CRS

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RTRV - CRS

ENT - CRS

NAME

RLS-PROTNSW-FRCD: Release Protection Switch - Forced

The **RLS-PROTNSW-FRCD** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

INPUT FORMAT

RLS-PROTNSW-FRCD: *tid:aid:ctag*;

DESCRIPTION

The **RLS-PROTNSW-FRCD** command releases a forced protection switch on an output port 2:1 selector.

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

The **RLS-PROTNSW-FRCD** command generates a **REPT SW** message.

INPUT PARAMETERS

The “**RLS-PROTNSW-FRCD** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **RLS-PROTNSW-FRCD** command.

Table 3-67. RLS-PROTNSW-FRCD Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. Used to identify the output port 2:1 selector (associated with a port) to be released.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}

Table 3-67. RLS - PROTNSW - FRCD Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **RLS - PROTNSW - FRCD** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE OUTPUT

The following example shows the successful completion of a **RLS - PROTNSW - FRCD** command on an output port 2:1 selector.

```
RLS-PROTNSW-FRCD:LT-OXC:och-1-1-2:123456;  
  
LT-OXC 01-12-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RLS - PROTNSW - FRCD** command. The following additional errors apply to the **RLS - PROTNSW - FRCD** command as well.

If the network element receives a **RLS-PROTNSW-FRCD** command when the optical cross-connect interface circuit pack(s) associated with the port specified by the **aid** parameter value is not equipped, then the following error response is returned.

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

If the network element receives a **RLS-PROTNSW-FRCD** command when the optical cross-connect interface circuit pack(s) associated with the port specified by the **aid** parameter value is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
/* Status, Not In Service */
;
```

If the network element receives a **RLS-PROTNSW-FRCD** command, but no forced switch request exists for the specified port, then the following error response is returned.

```
sid date time
M ctag DENY
  SNSR
/* Status, No Switch Request outstanding */
;
```

If the network element receives a **RLS-PROTNSW-FRCD** command, but a manual switch request exists for the port specified by the **aid** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  SRQN
/* Status, ReQuest Not valid */
;
```

If the network element receives an **RLS-PROTNSW-FRCD** command, but the **aid** parameter value is an output port assigned to a simplex connection such as bridge cross-connection, forced simplex loopback, or simplex test access, then the following error response is returned.

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

RELATED TL1 MESSAGES

OPR-PROTNSW-FRCD

OPR-PROTNSW-MAN

RLS-PROTNSW-MAN

REPT SW

RTRV-LOG-PROTNSW

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NAME

RLS-PROTNSW-MAN: Release Protection Switch - Manual

The **RLS-PROTNSW-MAN** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

INPUT FORMAT

RLS-PROTNSW-MAN: *tid:aid:ctag*;

DESCRIPTION

The **RLS-PROTNSW-MAN** command releases a manual protection switch request on an output port 2:1 selector.

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

The **RLS-PROTNSW-MAN** command generates a **REPT SW** message.

INPUT PARAMETERS

The “**RLS-PROTNSW-MAN** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **RLS-PROTNSW-MAN** command.

Table 3-68. RLS-PROTNSW-MAN Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. Used to identify the output port 2:1 selector (associated with a port) to be released.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}

Table 3-68. RLS - PROTNSW - MAN Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **RLS - PROTNSW - MAN** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

EXAMPLE OUTPUT

The following example shows the successful completion of a **RLS - PROTNSW - MAN** command for a port selector.

```
RLS-PROTNSW-MAN:LT-0XC:och-1-1-2:123456;  
  
LT-0XC 01-12-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV - HDR** command **ERROR RESPONSES** section also apply to the **RLS - PROTNSW - MAN** command. The following additional errors apply to the **RLS - PROTNSW - MAN** command as well.

If the network element receives a **RLS - PROTNSW - MAN** command when the optical cross-connect interface circuit pack(s) associated with the port specified by the

aid parameter value is not equipped, then the following error response is returned.

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

If the network element receives a **RLS-PROTNSW-MAN** command when the optical cross-connect interface circuit pack(s) associated with the port specified by the **aid** parameter value is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
/* Status, Not In Service */
;
```

If the network element receives a **RLS-PROTNSW-MAN** command when the port specified by the **aid** parameter value is out-of-service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
/* Status, Not In Service */
;
```

If the network element receives a **RLS-PROTNSW-MAN** command, but no manual switch request exists for the port specified by the **aid** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  SNSR
/* Status, No Switch Request outstanding */
;
```

If the network element receives an **RLS-PROTNSW-MAN** command, but a forced switch request exists for the port specified by the **aid** parameter value, then the following error response is returned.

```

sid date time
M ctag DENY
SRQN
/* Status, ReQuest Not valid */
;

```

RELATED TL1 MESSAGES

OPR-PROTNSW-FRCD

RLS-PROTNSW-FRCD

OPR-PROTNSW-MAN

REPT SW

RTRV-LOG-PROTNSW

NAME

RTRV-ALM: Retrieve Alarm

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

INPUT FORMAT

```
RTRV-ALM[-modifier]:tid::ctag::[ntfcncde][,condtype][,srveff]];
```

DESCRIPTION

The **RTRV-ALM** command retrieves 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 retrieved by the **RTRV-COND** command.

The alarms are reported one line per condition, similar to the autonomous messages conveyed by the **REPT ALM** message.

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

INPUT PARAMETERS

The “**RTRV-ALM** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-ALM** command.

Table 3-69. RTRV - ALM Positional Input Parameters

Parameter Name	Description	Allowed Values	
<i>modifier</i>	Modifier. This parameter is a message modifier to the command.	ALL Request all modifiers. (default) COM Common. An event that applies to the overall network element, for example, a processing error. EQPT Equipment. This indicates equipment-related events. OCH Optical Channel. This indicates facility-related events at the optical channel signal level. SECU Security. This indicates security-related events such as unauthorized login. CCN Control Communications Network. This indicates events related to the control network used for lightpath operations and restoration. QOS Quality of Service. This indicates events related to performance monitoring of the signal overhead.	
<i>tid</i>	Target Identifier. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter		
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.		
<i>ntfcncde</i>	Notification Code. This is the alarm level for which the current alarms are requested.	ALL	Request all notification codes. (default)
<i>condtype</i>	Condition Type. This parameter is a mnemonic description of the condition.	ALL	Request all condition types. (default)

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Table 3-69. RTRV - ALM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values	
srveff	Service Effect. This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element.	ALL	Request alarms independent of service effect. (default)
		NSA	Nonservice-affecting alarm conditions.
		SA	Service-affecting alarm conditions.

OUTPUT FORMAT

If the **RTRV - ALM** request completes successfully, then the following normal completion response is returned.

```
sid date time
M ctag COMPLD
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm:"conddescr"[,\
  "addtxt"]"
  (0 or more of the above line)
;
```

Applicable output lines are ordered as follows:

1. Alarms are reported from highest to lowest severity (CR, MJ, MN).
2. For conditions with the same alarm severity, alarms are reported by the value of occurrence date (*ocrdat*) and occurrence time (*ocrtm*), with the most recent listed first.

Note that the above ordering is done within buffered blocks. That is, within a block of buffered content the above rules of order apply, but the rules do not span content of separate sequential buffered blocks. Each buffered block re-applies the rules of order for content within its own block only.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

The “**RTRV-ALM** Positional Output Parameters” table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV-ALM** command.

Table 3-70. RTRV-ALM Positional Output Parameters

Parameter Name	Description	Allowed Values	
<i>aid</i>	Access Identifier. This is the identifier of the equipment component or facility for which an alarm condition is being reported.	Refer to Appendix A “LambdaRouter™ AOS 128 AID Parameter Tables” and “LambdaRouter™ AOS 256 AID Parameter Tables” for a complete list of valid access identifiers.	
<i>aidtype</i>	Access Identifier Type. This parameter is equivalent to the modifier for the alarm.	COM	Common. An event that applies to the overall network element, for example, a processing error.
		EQPT	Equipment. This indicates equipment-related events.
		OCH	Optical Channel. This indicates facility-related events at the optical channel signal level.
		SECU	Security. This indicates security-related events such as unauthorized login.
		CCN	Control Communications Network. This indicates events related to the control network used for lightpath operations and restoration.
		QoS	Quality of Service. This indicates events related to performance monitoring of the signal overhead.
<i>ntfncnde</i>	Notification Code. This is the alarm level of the retrieved alarm.	CR	Critical alarm.
		MJ	Major alarm.
		MN	Minor alarm.
<i>condtype</i>	Condition Type. This parameter is a mnemonic description of the condition.	Refer to Appendix A “LambdaRouter™ AOS 128/256 Alarms/Events Table” for a complete list of valid condition types.	

Table 3-70. RTRV - ALM Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>srveff</i>	Service Effect. This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element.	NSA SA	Nonservice-affecting alarm conditions. Service-affecting alarm conditions.
<i>ocrdat</i>	Occurrence Date. This indicates the date of the alarm being reported and has the format year-month-day.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31	
<i>ocrtm</i>	Occurrence Time. This indicates the time of the alarm being reported and has the format hours-minutes-seconds.	HH-MM-SS where HH=00-23, MM=00-59, SS=00-59	
<i>conddescr</i>	Condition Description.	ASCII text string. Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid condition descriptions.	
<i>addtxt</i>	Additional Text.	ASCII text string. Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid additional text.	

EXAMPLE INPUT/OUTPUT

The following example shows a successful completion of the **RTRV - ALM** command when no alarms are active.

```
RTRV-ALM:LT-0XC::123456;  
  
LT-0XC 01-12-31 08:00:00  
M 123456 COMPLD  
;
```

The following example shows a successful completion of the **RTRV-ALM** command when specifying a modifier value.

```
RTRV-ALM-OCH:LT-OXC::123456;  
  
LT-OXC 01-12-31 08:07:00  
M 123456 COMPLD  
"och-1-2-3,OCH:CR,LOS,SA,01-12-31,07-29-13:"Incoming Loss Of  
Signal"  
"och-2-11-1,OCH:CR,LOF,SA,01-12-31,07-33-13:"Incoming Loss Of  
Frame"  
"och-2-12-1,OCH:MN,AIS-L,NSA,01-12-31,07-27-13:"Incoming AIS-L"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-ALM** command. The following additional errors apply to the **RTRV-ALM** command as well.

If a **RTRV-ALM** command is received with an invalid *modifier* parameter value, then the following error response is returned.

```
sid date time  
M ctag DENY  
IICM  
/* Input, Invalid CoMmand, invalid modifier */  
;
```

If a **RTRV-ALM** command is received with an invalid *ntfcncde* parameter value, then the following error response is returned.

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

If a **RTRV-ALM** command is received with an invalid *condtype* parameter value, then the following error response is returned.

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

If a **RTRV-ALM** command is received with an invalid **srveff** parameter value, then the following error response is returned.

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

RELATED TL1 MESSAGES

REPT ALM

REPT EVT

RTRV-ATTR-ALM

RTRV-COND

SET-ATTR-ALM

NAME

RTRV-ATTR-ALM: Retrieve Attribute Alarm

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

INPUT FORMAT

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

DESCRIPTION

The **RTRV-ATTR-ALM** command retrieves alarm delay and the alarm clear delay for two sets of alarms: facility alarms and other alarms. This command also retrieves the state of office audible alarms, whether they are enabled or disabled. This state can be changed by the **OPR-ACO** command.

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

INPUT PARAMETERS

The “**RTRV-ATTR-ALM** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-ATTR-ALM** command.

Table 3-71. RTRV-ATTR-ALM Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **RTRV-ATTR-ALM** request completes successfully, then the following normal completion response is returned.

```
sid date time
M ctag COMPLD
"ALMDELFCLT=ALMDELFCLT, CLRDELFCLT=CLRDELFCLT, ALMDELEQPT=ALMDELEQPT,
CLRDELEQPT=CLRDELEQPT, ALMENABLE=OFFAUDEN"
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The “**RTRV-ATTR-ALM** Specific Block Output Parameters” table contains the detailed descriptions and allowed values for the named output parameters of the **RTRV-ATTR-ALM** command.

Table 3-72. RTRV-ATTR-ALM Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<i>ALMDELFCLT</i>	Alarm Delay Facility. Time in seconds a facility event has to be continuously present before an alarm is set.	0,11-60 and <i>ALMDELFCLT</i> <= <i>CLRDELFCLT</i>
<i>CLRDELFCLT</i>	Clear Delay Facility. Time in seconds a facility event has to be continuously clear before an alarm is cleared.	0-60
<i>ALMDELEQPT</i>	Alarm Delay Equipment. Time in seconds an equipment event has to be continuously present before an alarm is set.	0-60 and <i>ALMDELEQPT</i> <= <i>CLRDELFCLT</i> and <i>ALMDELEQPT</i> <= <i>CLRDELEQPT</i>
<i>CLRDELEQPT</i>	Clear Delay Equipment. Time in seconds an equipment event has to be continuously clear before an alarm is cleared.	0-60
<i>ALMENABLE</i>	Office Audible Enable. Displays the enable/disable state of the audible alarms.	ENABLE DISABLE

EXAMPLE INPUT/OUTPUT

The following example shows a successful completion of the **RTRV-ATTR-ALM** command.

```
RTRV-ATTR-ALM:LT-0XC::123456;  
  
LT-0XC 99-01-01 08:00:00  
M 123456 COMPLD  
"ALMDELFCLT=12,CLRDELFCLT=12,ALMDELEQPT=10,CLRDELEQPT=10,ALMENABLE  
=ENABLE"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-ATTR-ALM** command.

RELATED TL1 MESSAGES

OPR-ACO

SET-ATTR-ALM

NAME

RTRV-COND: Retrieve Condition

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

INPUT FORMAT

RTRV-COND [*-modifier*] : *tid* : [*aid*] : *ctag* [:: *condtype*] ;

DESCRIPTION

Alarms can have notification codes of Critical (CR), Major (MJ), or Minor (MN), Not Alarmed (NA), and Not Reported (NR).

The **RTRV-COND** command retrieves all active alarms/events of any level from a network element.

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

INPUT PARAMETERS

The “**RTRV-COND** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-COND** command.

Table 3-73. RTRV-COND Positional Input Parameters

Parameter Name	Description	Allowed Values	
<i>modifier</i>	Modifier. This parameter is a message modifier to the command.	ALL Request all modifiers. (default) COM Common. An event that applies to the overall network element, for example, a processing error. EQPT Equipment. This indicates equipment-related events. OCH Optical Channel. This indicates facility-related events at the optical channel signal level. SECU Security. This indicates security-related events such as unauthorized login. CCN Control Communications Network. This indicates events related to the control network used for lightpath operations and restoration. QOS Quality of Service. This indicates events related to performance monitoring of the signal overhead.	
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.		
<i>aid</i>	Access Identifier. This is the address of the entity for which the current conditions are requested.	ALL	Request all access identifiers. (default)

Table 3-73. RTRV - COND Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>condtype</i>	Condition Type. This parameter is a mnemonic description of the condition.	ALL Request all condition types. (default)

OUTPUT FORMAT

If the **RTRV - COND** request completes successfully, then the following normal completion response is returned.

```
sid date time
M ctag COMPLD
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,,\"conddescr\"
  [,\"addtxt\"][[:spec_block]]
  (0 or more of the above line)
;
```

Applicable output lines are ordered as follows:

1. Alarms are reported from highest to lowest severity (CR, MJ, MN).
2. For conditions with the same alarm severity, alarms are reported by the value of occurrence date (*ocrdat*) and occurrence time (*ocrtm*), with the most recent listed first.

Note that the above ordering is done within buffered blocks. That is, within a block of buffered content the above rules of order apply, but the rules do not span content of separate sequential buffered blocks. Each buffered block re-applies the rules of order for content within its own block only.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

The “**RTRV-COND** Positional Output Parameters” table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV-COND** command.

Table 3-74. RTRV-COND Positional Output Parameters

Parameter Name	Description	Allowed Values	
<i>aid</i>	Access Identifier. This is the identifier of the equipment component or facility for which an alarm condition is being reported.	Refer to Appendix A “LambdaRouter™ AOS 128 AID Parameter Tables” and “LambdaRouter™ AOS 256 AID Parameter Tables” for a complete list of valid access identifiers.	
<i>aidtype</i>	Access Identifier Type. This parameter is equivalent to the modifier for the alarm.	COM	Common. An event that applies to the overall network element, for example, a processing error.
		EQPT	Equipment. This indicates equipment-related events.
		OCH	Optical Channel. This indicates facility-related events at the optical channel signal level.
		SECU	Security. This indicates security-related events such as unauthorized login.
		CCN	Control Communications Network. This indicates events related to the control network used for lightpath operations and restoration.
		QoS	Quality of Service. This indicates events related to performance monitoring of the signal overhead.
<i>ntfcncde</i>	Notification Code. This is the alarm level of the retrieved alarm.	CR	Critical alarm.
		MJ	Major alarm.
		MN	Minor alarm.
		NA	Not alarmed.
<i>condtype</i>	Condition Type. This parameter is a mnemonic description of the condition.	Refer to Appendix A “LambdaRouter™ AOS 128/256 Alarms/Events Table” for a complete list of valid condition types.	

Table 3-74. RTRV - COND Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>srveff</i>	Service Effect. This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element.	NSA SA	Non-Service-Affecting alarm conditions. Service-Affecting alarm conditions.
<i>ocrdat</i>	Occurrence Date. This indicates the date of the alarm being reported and has the format year-month-day.	YY-MM-DD where YY=0-99, MM=01-12, DD=01-31	
<i>ocrtm</i>	Occurrence Time. This indicates the time of the alarm being reported and has the format hours-minutes-seconds.	HH-MM-SS where HH=00-23, MM=00-59, SS=00-59	
<i>conddescr</i>	Condition Description.	ASCII text string. Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid condition descriptions.	
<i>addtxt</i>	Additional Text.	ASCII text string. Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid additional text.	

The "RTRV - COND Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the RTRV - COND command.

Table 3-75. RTRV - COND Specific Block Output Parameters

Parameter Name	Description	Allowed Values			
<i>THLEV</i>	Threshold Level. Only used for Performance Monitoring Threshold Crossing Alerts (TCAs)	Refer to Appendix A "Additional QoS Event Parameters" for a complete list of allowed values.			
<i>MONVAL</i>	Monitored Value. Only used for Performance Monitoring Threshold Crossing Alerts (TCAs)	Refer to Appendix A "Additional QoS Event Parameters" for a complete list of allowed values.			
<i>TMPER</i>	Time Period. Only used for Performance Monitoring Threshold Crossing Alerts (TCAs)	15-MIN 1-DAY	15 minute 1 Day		

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV-COND** command. When more than one item is reported, the most recent condition is listed first in the output.

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

```
LT-OXC 01-01-01 08:00:00
M 123456 COMPLD
"och-1-2-3,0CH:CR,LOS,SA,01-12-31,07-29-13,,,,\"Incoming Loss Of Signal\""
"och-2-23-1,0CH:CR,LOF,SA,01-12-31,07-33-13,,,,\"Incoming Loss Of Frame\""
"och-2-12-1,0CH:MN,AIS-L,NSA,01-12-31,07-27-13,,,,\"Incoming AIS-L/AIS-
MS\""
"och-1-12-4,0CH:NA,LPBKCRS,NSA,01-12-31,07-15-44,,,,\"Loopback
Crossconnect\""
"och-1-10-2,0CH:NA,LBC-IN,NSA,01-12-31,07-10-54,,,,\"Laser Bias Current
TCA\", \"IN,OC192\":THLEV=240,MONVAL=250,TMPER=1-DAY"
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the command. The following additional errors apply to the **RTRV-COND** command as well.

If a **RTRV-COND** command is received with an invalid *modifier* parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IICM
/* Input, Invalid CoMmand, invalid modifier */
;
```

If a **RTRV-COND** command is received with an invalid *condtype* parameter value, then the following error response is returned.

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

RELATED TL1 MESSAGES

REPT ALM

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REPT EVT

RTRV-ALM

RTRV-ATTR-ALM

SET-ATTR-ALM

NAME

RTRV-CRS: Retrieve Cross-Connection

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

INPUT FORMAT

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

DESCRIPTION

The purpose of the **RTRV-CRS** command is to retrieve information concerning the cross-connection legs and cross-connect loopbacks that have been established in the network element. The command allows a user to request this information by specifying either an input port AID or an output port AID. The AID specified may pertain to either a particular input port or output port, or the AID may pertain to a range of input or output ports, where a range can cover all of the ports associated with a particular circuit pack or all of the circuit packs on a particular shelf.

The retrieval output will list on a separate line each of the cross-connection legs associated with each port identified by the AID. For each input port, each leg originating at that port will appear in the retrieval output. For each output port, each leg terminating at that port will be listed. When a specified port is part of a 2-way configuration, the retrieval output will have a separate line for the leg existing in each direction.

Each line of output will specify whether the leg is part of a 1-way or 2-way configuration, the switch fabric(s) it is using, whether it is part of a merge configuration, the cross-connect number that was assigned to the leg when it was established, and the operations system (for example, the Optical Craft Interface or the Navis Optical EMS) by which it was established. (A non-zero cross-connect number and operations system identifier will appear in the output only if a non-zero value for each of these parameters was included in the **ENT-CRS** command when the cross-connections were established.) The operations system identifier value assigned to the LambdaRouter ONNS is "2"; the system will automatically associate this value with cross-connection requests received via the interface between the LambdaRouter AOS and the LambdaRouter ONNS.

All cross-connection requests received by the LambdaRouter AOS from the LambdaRouter ONNS, pertaining to either unidirectional or bidirectional LambdaRouter ONNS paths, will result in 1-way LambdaRouter AOS cross-

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connections. The LambdaRouter AOS will not retain information that associates the two 1-way cross-connections being used for a particular LambdaRouter ONNS bidirectional path. As a result, this associational information cannot be provided when cross-connect retrieval requests are submitted to the LambdaRouter AOS.

The information content provided in the retrieval output format has been designed to be consistent with the information provided in the **REPT DBCHG** messages generated as a result of submitting the **ENT-CRS** and **DLT-CRS** commands. (A **REPT DBCHG** message is also generated when the **OPR-LPBK** and **RLS-LPBK** commands as well as the **CONN-TACC** and **DISC-TACC** commands are submitted.)

When specifying an AID as a range, a user may retrieve all of the regular cross-connections (established with the **ENT-CRS** command), test access cross-connections (established with the **CONN-TACC** command), and loopbacks (established with the **OPR-LPBK** command) that currently exist for each port in this range. A user may limit the amount of retrieval output by using the **scope** input parameter. This parameter allows a user to request output for only a particular type of cross-connection. A listing of only 1-way or 2-way cross-connections may be obtained, including those that are temporarily suspended while an indicated loopback is in effect. A user may also obtain a listing of only currently existing loopbacks. By specifying the AID for a particular input port and the AID for a particular output port, a user may determine whether a cross-connection leg currently exists between these two ports.

Input ports at which normal or forced loopbacks currently exist can also be identified by specifying a particular condition type (LPBKCRS for normal loopbacks, LPBK-SX for forced simplex loopbacks, or LPBK-DX for forced duplex loopbacks) in the **RTRV-COND** command. The **RTRV-COND** command does not identify the output port or the switch fabric(s) being used for the loopback leg(s).

The retrieval output for one command entry containing a shelf AID will not contain duplicate lines for a particular cross-connection leg. However, duplicate lines may appear in the combined output when sequential retrieval commands, each containing a different shelf AID, are submitted. Duplicate lines pertaining to loopback legs or test access legs may also appear whenever a user submits a retrieval request that specifies a slot or shelf output port AID.

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

INPUT PARAMETERS

The "**RTRV-CRS** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-CRS** command.

Table 3-76. RTRV-CRS Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>in_aid</i>	Input Port Access Identifier (AID). An input port AID value identifies the origination point of a cross-connection leg within the network element. For each input port specified by the AID, the retrieval output will provide each of the legs associated with that port. As shown, the value of "all" can be used when specifying the AID for slots or ports. When "all" is used, no additional AID value may appear in the command to the right of "all". If "all" is used for the <i>out_aid</i> parameter value, then no <i>in_aid</i> value should appear in the command. If both an <i>in_aid</i> value and an <i>out_aid</i> value are submitted in the same command, the retrieval output will show only the cross-connection leg (if any) that currently exists between these two ports.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4,all} och-{1-4}-{all} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4,all} och-{1-7}-{all}

Table 3-76. RTRV - CRS Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>out_aid</i>	Output Port Access Identifier (AID). An output port AID value identifies the termination point of a cross-connection leg within the network element. As shown, the value of “all” can be used to specify the AID for slots or ports. When “all” is used, no additional AID value may appear in the command to the right of “all”. If “all” is used for the <i>in_aid</i> parameter value, then no <i>out_aid</i> value should appear in the command. If both an <i>out_aid</i> value and an <i>in_aid</i> value are submitted in the same command, the retrieval output will show only the cross-connection leg (if any) that currently exists between these two ports.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4,all} och-{1-4}-{all} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4,all} och-{1-7}-{all}
<i>ctag</i>	Correlation Tag. Refer to the “RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

Table 3-76. RTRV - CRS Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
scope	Cross-connection Retrieval Scope. When specifying a range of AID values by including "all" in the <i>in_aid</i> or <i>out_aid</i> parameter, a user may limit the amount of retrieval output by specifying a particular scope value; only cross-connections of that type (if any exist) will appear in the output list. If the scope value is set to "ALL" or left blank, all existing regular cross-connection, loopback, and test access cross-connection legs will be listed for each port covered by the specified input or output AID. A listing of only test access cross-connections can be obtained by using the RTRV - TACC command.	ALL All existing cross-connection and loopback legs. (This category includes existing test access cross-connections.) -- <i>Default</i> 1WAY All legs of established regular 1-way cross-connection configurations (including any loopbacks or test access cross-connections currently associated with these configurations). 2WAY All legs of established regular 2-way cross-connection configurations (including any loopbacks or test access cross-connections currently associated with these configurations). LPBK All normal or forced loopback legs existing on all configurations.

OUTPUT FORMAT

If the **RTRV - CRS** request completes successfully, then the following normal completion response is returned.

```

sid date time
M ctag COMPLD
  "in_aid,out_aid:sw_fab,cct,[merg_ind],[tw_link],ccnum,op_sys_id"
  "in_aid,out_aid:sw_fab,cct,[merg_ind],[tw_link],ccnum,op_sys_id"
  ...
  "in_aid,out_aid:sw_fab,cct,[merg_ind],[tw_link],ccnum,op_sys_id"
;
```

The retrieval output will list on a separate line each of the cross-connection legs associated with each port identified by either the *in_aid* or the *out_aid* input parameter. For each input port, each leg originating at that port will be listed. For each output port, each leg terminating at that port will be listed. For a 2-way

configuration, the retrieval output will provide information about the leg(s) in each direction.

When the *in_aid* or the *out_aid* input parameter specifies a valid range, the retrieval output will sequentially present the cross-connection legs associated with each port in the range.

When a loopback or a test access cross-connection has been established for the port identified by an AID parameter, the retrieval output will first list any cross-connection leg(s) that existed prior to the loopback or test access cross-connection. The next line will show the simplex or duplex cross-connection that has been added in order to provide the loopback or test access cross-connection. Note that test access cross-connections that have been established using idle input ports will not be associated with a regular cross-connection.

By setting the *scope* parameter to "LPBK", the retrieval output will list only the currently existing loopback cross-connections. Information pertaining specifically to test access cross-connections may be obtained by using the **RTRV-TACC** command.

No retrieval output will appear if cross-connection leg(s) do not currently exist for the particular port specified by the AID, within the specified range of input or output port(s), or if there are no existing cross-connection leg(s) of the type specified by the *scope* input parameter.

Note that this command is concerned only with whether or not cross-connections exist for the specified ports. Although the *in_aid* or *out_aid* input parameter must have a value that is allowed according to the **RTRV-CRS** Positional Input Parameters Table, a network element processing this command will not investigate whether the specified ports have actually been provisioned at that location. Therefore, this is another reason why the command can complete successfully with no retrieval output.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "**RTRV-CRS** Positional Output Parameters" table contains the detailed descriptions and allowed values for the output parameters of the **RTRV-CRS** command.

Table 3-77. RTRV-CRS Positional Output Parameters

Parameter Name	Description	Allowed Values	
<i>in_aid</i>	Input Port Access IDentifier (AID) #1. The <i>in_aid</i> parameter value identifies the input port for the cross-connection leg shown on the retrieval output line.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}	
<i>out_aid</i>	Output Port Access IDentifier (AID) #1. The <i>out_aid</i> parameter value specifies the output port to which the <i>in_aid</i> is connected.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}	
<i>sw_fab</i>	Switch fabric(s). This parameter identifies the switch fabric(s) being used by the cross-connection leg. (Note that this command will report a duplex-type cross-connection leg as being duplex even while one switch fabric is unavailable for use by the cross-connection.)	0 1 2	Switch fabric 0 (Simplex leg) Switch fabric 1 (Simplex leg) Switch fabrics 0 and 1 (Duplex leg)
<i>cct</i>	Cross-connection and Loopback Type. For cross-connections, this parameter identifies the topology of the configuration to which the leg belongs. Each leg in the configuration may be either duplex or simplex, as shown by the <i>sw_fab</i> parameter. For loopback legs, this parameter identifies the type of loopback. For test access cross-connections, this parameter identifies the type of test access session currently existing at the LambdaRouter AOS.	1WAY 2WAY LPBKCC LPBKFC MONE MONF MONEF	1-way (point-to-point, merge, etc.) 2-way (point-to-point, bridge and merge, etc.) Normal cross-connect loop-back Forced cross-connect loop-back A test access cross-connection established to monitor a 1-way signal or one direction of a 2-way signal. A test access cross-connection established to monitor one direction of a 2-way signal. One leg of the two test access cross-connections established to monitor simultaneously both directions of a 2-way signal.

Table 3-77. RTRV - CRS Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>merg_ind</i>	Merge Indicator. This parameter has a value only when the output port of the cross-connection leg specified on the line belongs to a merge configuration.	MERG	Merge configuration leg
<i>tw_link</i>	2-way linkage. This parameter contains an output port AID value that identifies a linkage between the two directions of a 2-way cross-connection. This AID can also identify the linkage at a common output port when two 2-way cross-connections are interconnected to form a bridge and merge. This parameter has a value only when the <i>cct</i> is "2way" or "MONEF".	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}	
<i>ccnum</i>	Cross-connect number. This parameter shows the cross-connect number that has been assigned to this cross-connection leg by a user. If no number or zero was assigned by a user, this parameter will contain six zeroes. If a number was assigned by a user with fewer than six digits, leading zeroes will be appended so that six digits will appear in the output. This parameter will also contain six zeroes for loopback legs.	Any six-digit number	
<i>op_sys_id</i>	Operations System Identifier. This parameter shows the identity of the operations system that entered the command to establish the cross-connection leg. If this identity was not supplied in the command, this parameter will have a value of zero.	0 1 2 3 4 5	No operations system identifier was provided when the cross-connection was established. Optical Craft Interface (OCI) LambdaRouter ONNS Navis Optical NMS Navis Optical EMS Other

EXAMPLE INPUT/OUTPUT

This section presents examples of the successful completion of the **RTRV - CRS** command by the network element.

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The following example shows the retrieval of all existing cross-connection legs associated with the input ports on a circuit pack.

RTRV-CRS:LT-AOS-789:och-1-1-all:123456;

```
LT-AOS-789 00-12-01 09:05:20
M 123456 COMPLD
"och-1-1-1,och-2-1-3:2,1WAY,,000000,0"
"och-1-1-2,och-2-3-1:0,2WAY,och-1-1-2,020301,1"
"och-1-1-2,och-4-2-1:1,MONEF,,000000,0"
"och-2-3-1,och-1-1-2:1,2WAY,och-2-3-1,020301,1"
"och-2-3-1,och-4-2-2:0,MONEF,,000000,0"
"och-1-1-3,och-3-4-1:0,1WAY,MERG,030401,3"
"och-1-1-4,och-2-2-1:0,2WAY,och-3-5-2,020201,1"
"och-2-2-1,och-3-5-2:1,2WAY,MERG,och-2-2-1,020201,1"
"och-1-1-4,och-4-2-1:1,2WAY,och-3-5-2,020201,1"
"och-2-4-1,och-3-5-2:0,2WAY,MERG,och-4-2-1,020201,1"
;
```

The following example shows the retrieval of all existing cross-connection legs associated with the input ports on another circuit pack. As shown, this case includes loopback and test access legs that have been established for the input ports included in the specified AID range.

RTRV-CRS:LT-AOS-789:och-1-4-all:123456;

```
LT-AOS-789 00-12-01 09:08:03
M 123456 COMPLD
"och-1-4-1,och-2-1-3:2,1WAY,,040932,1"
"och-1-4-1,och-2-1-4:1,LPBKFC,,000000,0"
"och-1-4-2,och-2-3-1:2,1WAY,,000000,1"
"och-1-4-2,och-1-1-2:2,MONEF,,000000,0"
"och-1-4-3,och-3-4-1:1,1WAY,MERG,030401,3"
"och-1-4-3,och-3-4-3:2,LPBKFC,,000000,0"
"och-1-4-4,och-2-2-1:0,2WAY,och-3-5-2,020201,1"
"och-1-4-4,och-2-2-4:0,LPBKFC,,000000,0"
"och-2-2-1,och-3-5-2:0,2WAY,MERG,och-2-2-1,020201,1"
"och-2-2-1,och-3-8-1:0,LPBKFC,,000000,0"
;
```

The following example shows the successful completion of a command to retrieve all loopbacks (normal or forced) that have been established on the input ports of a shelf.

```
RTRV-CRS:LT-AOS-789:och-6-all:123456::LPBK;
```

```
LT-AOS-789 00-12-11 10:08:05
M 123456 COMPLD
"och-3-1-1,och-1-1-1:2,LPBKCC,,000000,0"
"och-3-4-1,och-4-4-1:2,LPBKFC,,000000,0"
"och-3-6-1,och-4-7-1:1,LPBKFC,,000000,0"
"och-3-12-1,och-4-1-4:0,LPBKFC,,000000,0"
"och-3-18-1,och-4-20-1:0,LPBKFC,,000000,0"
;
```

The following example shows the successful completion of a command to retrieve the cross-connection legs associated with a particular output port. Note that this merge was established by LambdaRouter ONNS, as shown by the value "2" for the *op_sys_id* parameter. (Note that all cross-connections established for LambdaRouter ONNS will be identified in the retrieval output as "1WAY", even when the cross-connections pertain to a bidirectional LambdaRouter ONNS path.)

```
RTRV-CRS:LT-AOS-789:,och-3-3-3:123456;
```

```
LT-AOS-789 00-12-11 10:18:15
M 123456 COMPLD
"och-3-2-1,och-3-3-3:0,1WAY,MERG,,000000,2"
"och-3-3-1,och-3-3-3:1,1WAY,MERG,,000000,2"
;
```

The following example shows the successful completion of a command to retrieve the cross-connection legs associated with the input ports of a circuit pack. Two of these ports are being used for a bridge configuration. A forced simplex loopback has been established at one input port and a forced duplex loopback has been

established at the other. Two of these ports are being used for test access cross-connections.

```
RTRV-CRS:LT-AOS-789:och-7-3-all:123456;

LT-AOS-789 00-12-11 11:19:05
M 123456 COMPLD
"och-4-3-1,och-7-8-2:0,1WAY,,,070802,0"
"och-4-3-1,och-6-2-4:0,LPBKFC,,,000000,0"
"och-4-3-1,och-6-13-3:1,1WAY,,,061303,0"
"och-4-3-2,och-6-1-1:0,1WAY,,,060101,0"
"och-4-3-2,och-6-1-2:2,LPBKFC,,,000000,0"
"och-4-3-2,och-3-2-1:1,1WAY,,,030201,0"
"och-4-3-2,och-4-1-2:2,LPBKFC,,,000000,0"
"och-4-3-3,och-5-2-1:0,1WAY,,,042305,1"
"och-4-3-3,och-5-2-1:1,MONE,,,000000,0"
"och-4-3-4,och-5-1-1:2,MONE,,,000000,0"
;
```

The following example shows successful completion of the command when the parameter values for both an input port AID and an output port AID are specified. For this case, only the cross-connection leg (if any) between the specified input AID and output AID will appear in the output.

```
RTRV-CRS:LT-AOS-789:och-5-12-1,och-5-8-3:123456;

LT-AOS-789 00-12-11 08:09:07
M 123456 COMPLD
"och-5-12-1,och-5-8-3:2,2WAY,,,och-6-12-1,060803,3"
;
```

The following example shows the successful completion of the command when there is no cross-connection leg (including a loopback) between the ports specified by the *in_aid* and *out_aid* parameter values.

```
RTRV-CRS:LT-AOS-789:och-6-11-1,och-6-14-1:123456;

LT-AOS-789 00-12-15 09:10:00
M 123456 COMPLD
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-CRS** command. The following additional errors apply to the **RTRV-CRS** command as well.

If the network element receives a **RTRV-CRS** command with an invalid **scope** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-CRS** command with an invalid **in_aid** value, then the following error response is returned.

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

If the network element receives a **RTRV-CRS** command with an invalid **out_aid** value, then the following error response is returned.

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

If the network element receives a **RTRV-CRS** command with “all” as part of either the input AID or the output AID value and the other AID value is not blank, then the following error response is returned.

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


RELATED TL1 MESSAGES

DLT - CRS

ENT - CRS

OPR - LPBK

RLS - LPBK

CONN - TACC

DISC - TACC

RTRV - TACC

RTRV - COND (for Loopback Condition Types: LPBKCRS, LPBK-SX, and LPBK-DX)

NAME

RTRV-EQPT: Retrieve Equipment

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

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

The "**RTRV-EQPT** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-EQPT** command.

Table 3-78. RTRV-EQPT Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-78. RTRV - EQPT Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. This parameter is the AID of the equipment component to be retrieved.	system scs-1 scc-1-{0,1,all} rc-1-{0,1,all} sys50d-1-{0,1,all} ei-1-{0,1,all} rip-1-{1,2,all} pmod-1-{1-4,all} pri-1-{0,1,all} sec-1 dcc-1-{1,2,all} swmg-{0,1} LambdaRouter AOS 128: hvs-0 hvcpg-0 hswic-0-{0,1,all} hvdac-0-{1-16,all} ois-{1-4} oicpg-{1-4} oswic-{1-4}-{0,1,all} oxi-{1-4}-{1-32,all} sws-0 swip-0-{in,out,all}-{[A,B][1-8],all}-{1-16,all} LambdaRouter AOS 256: hvs-{0,1} hvcpg-{0,1} hswic-{0,1}-{0,1,all} hvdac-{0,1}-{1-16,all} ois-{1-7} oicpg-{1-7} oswic-{1-7}-{0,1,all} oxi-{1-7}-{1-32,all} sws-{0,1} swip-{0,1}-{in,out,all}-{[A,B][1-8],all}-{1-16,all}
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV - HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **RTRV-EQPT** request completes successfully, then the following normal completion response is returned.

```
sid date time
M ctag COMPLD
  "aid:[type]:[spec_block][:pst[,sst]]"
  ...
  ...
  "aid:[type]:[spec_block][:pst[,sst]]"
;
```

If the input **aid** represents the system, then the output format is as follows.

```
sid date time
M ctag COMPLD
  "system::SYSCFG=SYSCFG, IFDF=IFDF, ISTDDFLT=ISTDDFLT, USAGEDFLT=USAGEDFLT,
  ONNCFG=ONNCFG[, AUTOVINT=AUTOVINT, AUTOVTIME=AUTOVTIME, DCNSTAT=DCNSTAT,
  DISCTXTMR=DISCTXTMR, ONNSTAT=ONNSTAT, RETRYCTR=RETRYCTR, RETRYTMR=RETRYTMR,
  VRECVTMR=VRECVTMR, VRESPTMR=VRESPTMR, AUTODISC=AUTODISC]:pst[,sst]"
  "<shelf AID>:[type]:ID=ID[, LOSS=LOSS, ESWSSN=ESWSSN, SWSSN=SWSSN,
  RESVBLKS=RESVBLKS][, SIDE0BLK1=SIDE0BLK1, SIDE0BLK2=SIDE0BLK2,
  SIDE1BLK1=SIDE1BLK1, SIDE1BLK2=SIDE1BLK2[, SIDE0BLK3=SIDE0BLK3,
  SIDE1BLK3=SIDE1BLK3[, SIDE0BLK4=SIDE0BLK4, SIDE1BLK4=SIDE1BLK4
  [, SIDE0BLK5=SIDE0BLK5, SIDE0BLK6=SIDE0BLK6, SIDE0BLK7=SIDE0BLK7,
  SIDE0BLK8=SIDE0BLK8, SIDE1BLK5=SIDE1BLK5, SIDE1BLK6=SIDE1BLK6,
  SIDE1BLK7=SIDE1BLK7, SIDE1BLK8=SIDE1BLK8]]][:pst]"
  ...
  "<shelf AID>:[type]:ID=ID[, LOSS=LOSS, ESWSSN=ESWSSN, SWSSN=SWSSN,
  RESVBLKS=RESVBLKS][, SIDE0BLK1=SIDE0BLK1, SIDE0BLK2=SIDE0BLK2,
  SIDE1BLK1=SIDE1BLK1, SIDE1BLK2=SIDE1BLK2[, SIDE0BLK3=SIDE0BLK3,
  SIDE1BLK3=SIDE1BLK3[, SIDE0BLK4=SIDE0BLK4, SIDE1BLK4=SIDE1BLK4
  [, SIDE0BLK5=SIDE0BLK5, SIDE0BLK6=SIDE0BLK6, SIDE0BLK7=SIDE0BLK7,
  SIDE0BLK8=SIDE0BLK8, SIDE1BLK5=SIDE1BLK5, SIDE1BLK6=SIDE1BLK6,
  SIDE1BLK7=SIDE1BLK7, SIDE1BLK8=SIDE1BLK8]]][:pst]"
;
```

The shelf AID lines represent the shelves that make up the system.

If the input **aid** represents a shelf, then the output format is as follows.

```
sid date time
M ctag COMPLD
"<shelf AID>:[type]:ID=ID[,LOSS=LOSS,ESWSSN=ESWSSN,SWSSN=SWSSN,
RESVBLKS=RESVBLKS][,SIDE0BLK1=SIDE0BLK1,SIDE0BLK2=SIDE0BLK2,
SIDE1BLK1=SIDE1BLK1,SIDE1BLK2=SIDE1BLK2[,SIDE0BLK3=SIDE0BLK3,
SIDE1BLK3=SIDE1BLK3[,SIDE0BLK4=SIDE0BLK4,SIDE1BLK4=SIDE1BLK4
[,SIDE0BLK5=SIDE0BLK5,SIDE0BLK6=SIDE0BLK6,SIDE0BLK7=SIDE0BLK7,
SIDE0BLK8=SIDE0BLK8,SIDE1BLK5=SIDE1BLK5,SIDE1BLK6=SIDE1BLK6,
SIDE1BLK7=SIDE1BLK7,SIDE1BLK8=SIDE1BLK8]]][:pst]"
"<slot AID>:[type]:[APP=APP,SSN=SSN,CLEI=CLEI,ECI=ECI,SLN=SLN]
[,FLEQ=FLEQ,FLAV=FLAV]:pst[,sst]"
...
"<slot AID>:[type]:[APP=APP,SSN=SSN,CLEI=CLEI,ECI=ECI,SLN=SLN]
[,FLEQ=FLEQ,FLAV=FLAV]:pst[,sst]"
;
```

The slot AID lines represent the slots that make up the shelf.

If the input **aid** represents a SWIP Maintenance Group (SWMG), then the output format is as follows.

```
sid date time
M ctag COMPLD
"<SWIP Maintenance Group AID>:::pst"
;
```

If the input **aid** represents a System Controller Complex (SCC), then the output format is as follows.

```
sid date time
M ctag COMPLD
"<controller complex AID>:::pst[,sst]"
"<slot AID>:[APP=APP,SSN=SSN,CLEI=CLEI,ECI=ECI,SLN=SLN]:pst[,sst]"
...
"<slot AID>:[APP=APP,SSN=SSN,CLEI=CLEI,ECI=ECI,SLN=SLN]:pst[,sst]"
...
;
```

The slot AID lines represent the slots that make up the SCC. Up to two SCCs can be output at one time.

If the input **aid** represents a Shelf Controller Protection Group, then the output format is as follows.

```
sid date time
M ctag COMPLD
  "<shelf controller protection group AID>::pst[,sst]"
  "<slot AID>::[APP=APP,SSN=SSN,CLEI=CLEI,ECI=ECI,SLN=SLN]:pst[,sst]"
  "<slot AID>::[APP=APP,SSN=SSN,CLEI=CLEI,ECI=ECI,SLN=SLN]:pst[,sst]"
;
```

The slot AID lines represent the slots that make up the protection group.

If the input **aid** represents a slot/circuit pack, then the output format is as follows.

```
sid date time
M ctag COMPLD
  "<slot AID>:[type]:[APP=APP,SSN=SSN,CLEI=CLEI,ECI=ECI,SLN=SLN]
  [,FLEQ=FLEQ,FLAV=FLAV]:pst[,sst]"
  ...
  "<slot AID>:[type]:[APP=APP,SSN=SSN,CLEI=CLEI,ECI=ECI,SLN=SLN]
  [,FLEQ=FLEQ,FLAV=FLAV]:pst[,sst]"
;
```

If the input **aid** represents a Switch Interface Point (SWIP), then the output format is as follows.

```
sid date time
M ctag COMPLD
  "<SWIP AID>::APORT=APORT:pst[,sst]"
  ...
  "<SWIP AID>::APORT=APORT:pst[,sst]"
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "**RTRV-EQPT** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV-EQPT** command.

Table 3-79. RTRV - EQPT Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. This parameter is the address of the equipment component to be retrieved.	system scs-1 scc-1-{0,1} rc-1-{0,1} sys50d-1-{0,1} ei-1-{0,1} rip-1-{1,2} pmod-1-{1-4} pri-1-{0,1} sec-1 dcc-1-{1,2} swmg-{0,1} LambdaRouter AOS 128: hvs-0 hvcpg-0 hswic-0-{0,1} hvdac-0-{1-16} ois-{1-4} oicpg-{1-4} oswic-{1-4}-{0,1} oxi-{1-4}-{1-32} sws-0 swip-0-{in,out}-{[A,B][1-8]}-{1-16} LambdaRouter AOS 256: hvs-{0,1} hvcpg-{0,1} hswic-{0,1}-{0,1} hvdac-{0,1}-{1-16} ois-{1-7} oicpg-{1-7} oswic-{1-7}-{0,1} oxi-{1-7}-{1-32} sws-{0,1} swip-{0,1}-{in,out}-{[A,B][1-8]}-{1-16}

Table 3-79. RTRV - EQPT Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>type</i>	Type. Description of circuit pack or shelf. This parameter is returned for an ois or oxi <i>aid</i> .	Allowed with an ois <i>aid</i>: T Transparent OIS 2G 2G (OC-48/STM-16) OIS 10G 10G (OC-192/STM-64) OIS MX Mixed (OC-192/STM-64 & OC-48/STM-16) OIS Allowed with an oxi <i>aid</i>: OXI 4 Port Transparent OXI without Optical Amplifiers OXI4A13 4 Port Transparent OXI with 1310 nm Optical Amplifiers OXI4A15 4 Port Transparent OXI with 1550 nm Optical Amplifiers OXI2GC 2G (OC-48/STM-16) Client OXI OXI10GC 10G (OC-192/STM-64) Client OXI
<i>spec_block</i>	Specific Block Parameters. See the table " RTRV - EQPT Specific Block Output Parameters" for the detailed descriptions of these parameters.	
<i>pst</i>	Primary State Not returned with <i>aid</i> =scs-1	IS-NR In-Service, Normal IS-ANR In-Service, Abnormal NA Not Available (cannot retrieve state information) OOS-AU Out-Of-Service, Autonomous OOS-MA Out-Of-Service, Management

Table 3-79. RTRV -EQPT Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>sst</i>	Secondary State. Up to two of the allowed values are simultaneously permitted as a <i>sst</i> parameter. The two values must be separated by an ampersand ("&"). Example <i>sst=FLT&MEA</i> Not returned with <i>aid =scs-1</i>	AINS Automatic In-Service ACT Active BUSY Busy - SWIP is involved in maintenance cross-connection FLT Fault MEA Mismatch of Equipment and Attributes MT Maintenance NA Not Available (cannot retrieve state information) SGEO Supporting Entity Outage SGES Supporting Entity Swapped STBY Standby STBYI Standby Inhibited STBYS Standby Swapped SWDL Software Downloading UAS Unassigned UEQ Unequipped

The "RTRV -EQPT Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the RTRV -EQPT command.

Table 3-80. RTRV -EQPT Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<i>APORT</i>	Associated Port. This parameter is returned for a swip <i>aid</i> .	NONE LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}

Table 3-80. RTRV-EQPT Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>APP</i>	Apparatus Code. This parameter uniquely identifies the specific function provided by the circuit pack. This parameter is returned for a slot/circuit pack (sys50d, ei, rc, rip, pmod, pri, sec, dcc, hswic, hvdac, oswic, or oxi) <i>aid</i> only if the slot is equipped.	Alphanumeric string of up to 9 characters. NA Not Available (cannot retrieve parameter) Note: The value NA will always be sent for an equipped standby controller circuit pack (rc, sys50d, ei, hswic, and oswic <i>aids</i>).
<i>AUTODISC</i>	Automatic Port Neighbor Discovery and Link Verification Process Status. This parameter returns whether the automatic port neighbor discovery and link verification process is enabled. This parameter is only valid when the system's <i>ONNCFG</i> is currently equal to ENABLE. This parameter is returned for a system <i>aid</i> .	ENABLE Automatic port neighbor discovery and link verification process is enabled DISABLE Automatic port neighbor discovery and link verification process is disabled
<i>AUTOVINT</i>	Automatic Link Verification Interval. This parameter specifies the interval, in hours, between the execution of the background automatic link verification process. This parameter is only valid when the system's <i>ONNCFG</i> is currently equal to ENABLE. This parameter is returned for a system <i>aid</i> .	1, 2, 3, 4, 6, 8, 12, 24
<i>AUTOVTIME</i>	Automatic Link Verification Start Time. This parameter specifies the start time for the execution of the background automatic link verification process, in hour-of-day format. This parameter is only valid when the system's <i>ONNCFG</i> is currently equal to ENABLE. This parameter is returned for a system <i>aid</i> .	0-23

Table 3-80. RTRV-EQPT Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>CLEI</i>	Common Language Equipment Identifier. This parameter is returned for a slot/circuit pack (sys50d, ei, rc, rip, pmod, pri, sec, dcc, hswic, hvdac, oswic, or oxi) <i>aid</i> only if the slot is equipped.	10-character alphanumeric code. NA Not Available (cannot retrieve parameter) Note: The value NA will always be sent for an equipped standby controller circuit pack (rc, sys50d, ei, hswic, and oswic <i>aids</i>).
<i>DCNSTAT</i>	Data Communications Network (DCN) Status. This parameter returns the status of the DCN application. This parameter is only valid when the system's <i>ONNCFG</i> is currently equal to ENABLE. This parameter is returned for a system <i>aid</i> . Autonomous changes of this parameter's value will not generate a REPT DBCHG message.	IS-NR In-Service, Normal OOS-AU Out-of-Service, Autonomous
<i>DISCTXTMR</i>	Discovery Signal Transmit Timer. This parameter specifies the interval, in seconds, that the discovery signal will be transmitted per discovery attempt. This parameter is only valid when the system's <i>ONNCFG</i> is currently equal to ENABLE. This parameter is returned for a system <i>aid</i> .	1-60
<i>ECI</i>	Equipment Catalog Item. This parameter is returned for a slot/circuit pack (sys50d, ei, rc, rip, pmod, pri, sec, dcc, hswic, hvdac, oswic, or oxi) <i>aid</i> only if the slot is equipped.	6-digit numeric code identifying each circuit pack type. NA Not Available (cannot retrieve parameter) Note: The value NA will always be sent for an equipped standby controller circuit pack (rc, sys50d, ei, hswic, and oswic <i>aids</i>).

Table 3-80. RTRV-EQPT Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>ESWSSN</i>	Expected SWitch Shelf Serial Number. This parameter is equal to the value of the SWS serial number stored in Non-Volatile Memory. This parameter is returned for a sws <i>aid</i> .	A string of 4 hexadecimal characters followed immediately by the decimal equivalent in parentheses. [0000-FFFF]([0-65535]). NA	Not Available (parameter has not been stored in the database)
<i>FLAV</i>	Flashdisk Availability. This parameter is returned for a pri or sec <i>aid</i> .	IS-NR OOS-AU	In-Service, Normal Out-of-Service, Autonomous
<i>FLEQ</i>	Flashdisk Equipage. This parameter is returned for a pri or sec <i>aid</i> .	EQP UEQ	Equipped Unequipped
<i>ID</i>	Physical Location of the equipment. This parameter is returned for a shelf (scs, ois, hvs, or sws) <i>aid</i> .	ASCII string of up to 20 characters	
<i>IFDF</i>	Interface Format Default. This parameter is returned for a system <i>aid</i> .	OC48/STM16 OC192/STM64 OC768/STM256 GBELX HSBB OTHER	SONET OC-48 or SDH STM-16 SONET OC-192 or SDH STM-64 SONET OC-768 or SDH STM-256 Gigabit Ethernet High-speed Broadband Unknown
<i>ISTDDFLT</i>	Interface Standard Default. This parameter is returned for a system <i>aid</i> .	SDH SONET	SDH interface standard SONET interface standard
<i>LOSS</i>	Maximum Switch Fabric Insertion Loss. This parameter is returned for a sws <i>aid</i> .	Real number between 0.0 and 20.0	
<i>ONNCFG</i>	ONN Configuration. This parameter specifies whether the system is to support the ONN (Optical Network Navigator) features. This parameter is returned for a system <i>aid</i> .	ENABLE DISABLE	Enable ONN Features Disable ONN Features

Table 3-80. RTRV-EQPT Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ONNSTAT</i>	Optical Network Navigator (ONN) Status. This parameter returns the status of the ONN application. This parameter is only valid when the system's <i>ONNCFG</i> is currently equal to ENABLE. This parameter is returned for a system <i>aid</i> . Autonomous changes of this parameter's value will not generate a REPT DBCHG message.	INIT Initializing IS-NR In-Service, Normal OOS-AU Out-of-Service, Autonomous
<i>RESVBLKS</i>	Reserved SWIP Blocks. These SWIP blocks cannot currently be assigned to an OIS shelf. This parameter is returned for a sws <i>aid</i> .	LambdaRouter AOS 128: {A,B}{1-8} LambdaRouter AOS 256: {A,B}{1-8} Multiple values are allowed separated by a space (ex: "A2 B4 B7"). NONE No reserved SWIP blocks
<i>RETRYCTR</i>	Neighbor Discovery and Verification Retry Counter. This parameter specifies the number of times port neighbor discovery or link verification is re-tried before issuing a notification. This parameter is only valid when the system's <i>ONNCFG</i> is currently equal to ENABLE. This parameter is returned for a system <i>aid</i> .	0-20
<i>RETRYTMR</i>	Neighbor Discovery and Verification Retry Interval Timer. This parameter specifies the waiting time, in seconds, between retries of port neighbor discovery or link verification. This parameter is only valid when the system's <i>ONNCFG</i> is currently equal to ENABLE. This parameter is returned for a system <i>aid</i> .	1-30

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Table 3-80. RTRV-EQPT Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>SIDE0BLK1</i>	First Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is returned for an ois <i>aid</i> .	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK2</i>	Second Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is returned for an ois <i>aid</i> .	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK3</i>	Third Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is returned for an ois <i>aid</i> with type = T, 2G, or MX	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK4</i>	Fourth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is returned for an ois <i>aid</i> with type = T or 2G	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK5</i>	Fifth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is returned for an ois <i>aid</i> with type = T	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK6</i>	Sixth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is returned for an ois <i>aid</i> with type = T	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}

Table 3-80. RTRV-EQPT Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>SIDE0BLK7</i>	Seventh Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is returned for an ois <i>aid</i> with type = T	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE0BLK8</i>	Eighth Assigned SWIP Block from SWIP Maintenance Group 0 (SWMG-0). This parameter is returned for an ois <i>aid</i> with type = T	UAS Unassigned LambdaRouter AOS 128: A{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK1</i>	First Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is returned for an ois <i>aid</i> .	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK2</i>	Second Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is returned for an ois <i>aid</i> .	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK3</i>	Third Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is returned for an ois <i>aid</i> with type = T, 2G, or MX	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK4</i>	Fourth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is returned for an ois <i>aid</i> with type = T or 2G	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}

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Table 3-80. RTRV-EQPT Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>SIDE1BLK5</i>	Fifth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is returned for an ois <i>aid</i> with type = T	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK6</i>	Sixth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is returned for an ois <i>aid</i> with type = T	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK7</i>	Seventh Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is returned for an ois <i>aid</i> with type = T	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SIDE1BLK8</i>	Eighth Assigned SWIP Block from SWIP Maintenance Group 1 (SWMG-1). This parameter is returned for an ois <i>aid</i> with type = T	UAS Unassigned LambdaRouter AOS 128: B{1-8} LambdaRouter AOS 256: {A,B}{1-8}
<i>SLN</i>	Serial Number. This parameter uniquely identifies each circuit pack and indicates the date and place of manufacturing. This parameter is returned for a slot/circuit pack (sys50d, ei, rc, rip, pmod, pri, sec, dcc, hswic, hvdac, oswic, or oxi) <i>aid</i> only if the slot is equipped.	12-character alphanumeric code. NA Not Available (cannot retrieve parameter) Note: The value NA will always be sent for an equipped standby controller circuit pack (rc, sys50d, ei, hswic, and oswic <i>aids</i>).

Table 3-80. RTRV-EQPT Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>SSN</i>	Series Number. This parameter is returned for a slot/circuit pack (sys50d, ei, rc, rip, pmod, pri, sec, dcc, hswic, hvdac, oswic, or oxi) <i>aid</i> only if the slot is equipped.	4-character code with format Sn-n, where n is a numeric digit. For example, S1-1. 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. NA Not Available (cannot retrieve parameter) Note: The value NA will always be sent for an equipped standby controller circuit pack (rc, sys50d, ei, hswic, and oswic <i>aids</i>).	
<i>SWSSN</i>	SWitch Shelf Serial Number. This parameter is equal to the value of the SWS serial number read from the actual SWS hardware. This parameter is returned for a sws <i>aid</i> .	A string of 4 hexadecimal characters followed immediately by the decimal equivalent in parentheses. [0000-FFFF]([0-65535]). NA Not Available (cannot retrieve parameter)	
<i>SYSCFG</i>	System Configuration. This parameter is returned for a system <i>aid</i> .	CD2	LambdaRouter AOS 128 (Compact Duplex 2)
		DD2	LambdaRouter AOS 256 (Diverse Duplex 2)
		UN	Unknown
<i>USAGEDFLT</i>	Port Usage Default. This parameter is returned for a system <i>aid</i> .	CLIENT	Client interface port
		NNI	Network-to-Network Interface port
		UNI	User-to-Network Interface port
<i>VRECVTMR</i>	Verification Receive Timer. This parameter specifies the waiting time, in seconds, at the target NE for appearance of the J0 in-band probe signal after receiving verification notification from the source NE. This parameter is only valid when the system's <i>ONNCFG</i> is currently equal to ENABLE. This parameter is returned for a system <i>aid</i> .	1-59	

Table 3-80. RTRV-EQPT Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>VRESPTMR</i>	Verification Response Timer. This parameter specifies the waiting time, in seconds, at the verification source for an out-of-band response from the target NE. This parameter is only valid when the system's <i>ONNCFG</i> is currently equal to ENABLE. This parameter is returned for a system <i>aid</i> .	2-60

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV-EQPT** command for a System Controller Complex.

RTRV-EQPT:LT-0XC:scc-1-all:123455;

```
LT-0XC 00-08-02 10:09:24
M 123455 COMPLD
"scc-1-0::IS-NR,ACT"
"rc-1-0::APP=LEZ2AE,SSN=S1-1,CLEI=WMC8SM0DAA,ECI=276584,
SLN=RC00N1674321:IS-NR,ACT"
"sys50d-1-0::APP=LEY20,SSN=S3-7,CLEI=SNU1BYYGAA,ECI=247569,
SLN=99MV10627435:IS-NR,ACT"
"ei-1-0::APP=LCZ1,SSN=S3-4,CLEI=SNU1TZHGAB,ECI=241806,
SLN=98MV05594552:IS-NR,ACT"
"scc-1-1::IS-NR,STBY"
"rc-1-1::APP=NA,SSN=NA,CLEI=NA,ECI=NA,SLN=NA:IS-NR,STBY"
"sys50d-1-1::APP=NA,SSN=NA,CLEI=NA,ECI=NA,SLN=NA:IS-NR,STBY"
"ei-1-1::APP=NA,SSN=NA,CLEI=NA,ECI=NA,SLN=NA:IS-NR,STBY"
;
```

The following example shows a successful execution of the **RTRV-EQPT** command for the system with **ONNCFG = ENABLE**.

```
RTRV-EQPT:LT-0XC:system:123456;  
  
LT-0XC 00-08-02 10:10:07  
M 123456 COMPLD  
"system::SYSCFG=DD2, IFDF=0C48/STM16, ISTDDFLT=SONET, USAGEDFLT=CLIENT,  
ONNCFG=ENABLE, AUTOVINT=24, AUTOVTIME=0, DCNSTAT=IS-NR, DISCTXTIME=20,  
ONNSTAT=IS-NR, RETRYCTR=5, RETRYTMR=5, VRECVTMR=4, VRESPTMR=5,  
AUTODISC=ENABLE:IS-NR"  
"scs-1::ID=BAY4MIDDLE"  
"ois-1:T:ID=BAY3TOP, SIDE0BLK1=A1, SIDE0BLK2=UAS, SIDE0BLK3=A8,  
SIDE0BLK4=A6, SIDE0BLK5=B5, SIDE0BLK6=A4, SIDE0BLK7=UAS, SIDE0BLK8=A7,  
SIDE1BLK1=A2, SIDE1BLK2=UAS, SIDE1BLK3=A8, SIDE1BLK4=A6, SIDE1BLK5=A7,  
SIDE1BLK6=B6, SIDE1BLK7=UAS, SIDE1BLK8=B7:IS-NR"  
"ois-2:2G:ID=BAY5TOP, SIDE0BLK1=B1, SIDE0BLK2=B4, SIDE0BLK3=B3,  
SIDE0BLK4=B2, SIDE1BLK1=A1, SIDE1BLK2=B2, SIDE1BLK3=B3, SIDE1BLK4=B1:IS-NR"  
"ois-3:MX:ID=BAY4BOTTOM, SIDE0BLK1=A2, SIDE0BLK2=A3, SIDE0BLK3=A5,  
SIDE1BLK1=A4, SIDE1BLK2=A5, SIDE1BLK3=A3:IS-NR"  
"ois-4:10G:ID=BAY4TOP, SIDE0BLK1=B8, SIDE0BLK2=UAS, SIDE1BLK1=B4,  
SIDE1BLK2=UAS:IS-NR"  
"hvs-0::ID=BAY3MIDDLE:00S-AU"  
"hvs-1::ID=BAY5MIDDLE:IS-NR"  
"sws-0::ID=BAY3BOTTOM, LOSS=3.2, ESWSSN=0AC1(2753), SWSSN=0AC1(2753),  
RESVBLKS=NONE:IS-NR"  
"sws-1::ID=BAY5BOTTOM, LOSS=2.9, ESWSSN=09C3(2499), SWSSN=09C3(2499),  
RESVBLKS=NONE:IS-NR"  
;
```

The following example shows a successful execution of the **RTRV-EQPT** command for a shelf.

```
RTRV-EQPT:LT-OXC:scs-1:123457;  
  
LT-OXC 00-08-02 10:11:12  
M 123457 COMPLD  
"scs-1::ID=BAY4MIDDLE"  
"rc-1-0::APP=LEZ2AE,SSN=S1-1,CLEI=WMC8SM0DAA,ECI=276584,  
SLN=RC00N1674321:IS-NR,ACT"  
"rc-1-1::APP=NA,SSN=NA,CLEI=NA,ECI=NA,SLN=NA:IS-NR,STBY"  
"sys50d-1-0::APP=LEY20,SSN=S3-7,CLEI=SNU1BYYGAA,ECI=247569,  
SLN=99MV10627435:IS-NR,ACT"  
"sys50d-1-1::APP=NA,SSN=NA,CLEI=NA,ECI=NA,SLN=NA:IS-NR,STBY"  
"ei-1-0::APP=LCZ1,SSN=S3-4,CLEI=SNU1TZHGAB,ECI=241806,  
SLN=98MV05594552:IS-NR,ACT"  
"ei-1-1::APP=NA,SSN=NA,CLEI=NA,ECI=NA,SLN=NA:IS-NR,STBY"  
"pri-1-0::APP=LCY2,SSN=S3-8,CLEI=SNPQCB8AAA,ECI=239291,  
SLN=99MV10633428,FLEQ=EQP,FLAV=IS-NR:IS-NR,ACT"  
"pri-1-1::APP=LCY2,SSN=S3-8,CLEI=SNPQCB8AAA,ECI=239291,  
SLN=99MV10642436,FLEQ=EQP,FLAV=IS-NR:IS-NR,STBY"  
"sec-1::APP=LCY2,SSN=S3-8,CLEI=SNPQCB8AAA,ECI=239291,  
SLN=99MV10742519,FLEQ=EQP,FLAV=IS-NR:IS-NR"  
"dcc-1-1::APP=LEY2,SSN=S1-9,CLEI=SNPQCC5AAA,ECI=251464,  
SLN=99MV10620331:IS-NR"  
"dcc-1-2::APP=LEY2,SSN=S1-9,CLEI=SNPQCC5AAA,ECI=251464,  
SLN=99MV10240331:IS-NR"  
"rip-1-1:::00S-AU,UEQ"  
"rip-1-2:::00S-AU,UEQ"  
"pmod-1-1:::00S-AU,UEQ"  
"pmod-1-2:::00S-AU,UEQ"  
"pmod-1-3:::00S-AU,UEQ"  
"pmod-1-4:::00S-AU,UEQ"  
;
```

The following example shows a successful execution of the **RTRV-EQPT** command for a slot/circuit pack.

```
RTRV-EQPT:LT-OXC:oxi-2-22:123458;  
  
LT-OXC 00-08-02 10:13:21  
M 123458 COMPLD  
"oxi-2-22:OXI:APP=LGK2,SSN=S1-1,CLEI=WMIUMT0DAA,ECI=253419,  
SLN=00MV00984556:IS-NR"  
;
```

The following example shows a successful execution of the **RTRV-EQPT** command for a SWIP.

```
RTRV-EQPT:LT-0XC:swip-0-in-A1-14:123459;  
  
LT-0XC 00-08-02 10:15:13  
M 123459 COMPLD  
"swip-0-in-A1-14::APORT=och-3-6-2:IS-NR"  
;
```

The following example shows a successful execution of the **RTRV-EQPT** command for a Shelf Controller Protection Group.

```
RTRV-EQPT:LT-0XC:oicpg-2:123461;  
  
LT-0XC 00-08-02 10:18:24  
M 123461 COMPLD  
"oicpg-2::IS-NR"  
"oswic-2-0::APP=LGH1,SSN=S1-1,CLEI=WMPQAA3CAA,ECI=253470,  
SLN=00MV00974413:IS-NR,ACT"  
"oswic-2-1::APP=NA,SSN=NA,CLEI=NA,ECI=NA,SLN=NA:IS-NR,STBY"  
;
```

The following example shows a successful execution of the **RTRV-EQPT** command for a SWIP Maintenance Group.

```
RTRV-EQPT:LT-0XC:swmg-0:123462;  
  
LT-0XC 00-08-02 10:20:01  
M 123462 COMPLD  
"swmg-0::IS-NR"  
;
```

The following example shows a successful execution of the **RTRV-EQPT** command for the system with **ONNCFG = DISABLE**.

```
RTRV-EQPT:LT-OXC:system:123463;

LT-OXC 00-08-02 10:23:17
M 123463 COMPLD
"system::SYSCFG=DD2, IFDF=0C48/STM16, ISTDDFLT=SONET, USAGEDFLT=CLIENT,
ONNCFG=DISABLE:IS-NR"
"scs-1::ID=BAY4MIDDLE"
"ois-1:T:ID=BAY3TOP, SIDE0BLK1=A1, SIDE0BLK2=UAS, SIDE0BLK3=A8,
SIDE0BLK4=A6, SIDE0BLK5=B5, SIDE0BLK6=A4, SIDE0BLK7=UAS, SIDE0BLK8=A7,
SIDE1BLK1=A2, SIDE1BLK2=UAS, SIDE1BLK3=A8, SIDE1BLK4=A6, SIDE1BLK5=A7,
SIDE1BLK6=B6, SIDE1BLK7=UAS, SIDE1BLK8=B7:IS-NR"
"ois-2:2G:ID=BAY5TOP, SIDE0BLK1=B1, SIDE0BLK2=B4, SIDE0BLK3=B3,
SIDE0BLK4=B2, SIDE1BLK1=A1, SIDE1BLK2=B2, SIDE1BLK3=B3, SIDE1BLK4=B1:IS-NR"
"ois-3:MX:ID=BAY4BOTTOM, SIDE0BLK1=A2, SIDE0BLK2=A3, SIDE0BLK3=A5,
SIDE1BLK1=A4, SIDE1BLK2=A5, SIDE1BLK3=A3:IS-NR"
"ois-4:10G:ID=BAY4TOP, SIDE0BLK1=B8, SIDE0BLK2=UAS, SIDE1BLK1=B4,
SIDE1BLK2=UAS:IS-NR"
"hvs-0::ID=BAY3MIDDLE:00S-AU"
"hvs-1::ID=BAY5MIDDLE:IS-NR"
"sws-0::ID=BAY3BOTTOM, LOSS=3.2, ESWSSN=0AC1(2753), SWSSN=0AC1(2753),
RESVBLKS=NONE:IS-NR"
"sws-1::ID=BAY5BOTTOM, LOSS=2.9, ESWSSN=09C3(2499), SWSSN=09C3(2499),
RESVBLKS=NONE:IS-NR"
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-EQPT** command. The following additional errors apply to the **RTRV-EQPT** command as well.

If the network element receives a **RTRV-EQPT** command for an object that does not exist, then the following error response is returned.

```
sid date time
M ctag DENY
IENE
/* Input, object Entity does Not Exist */
;
```

RELATED TL1 MESSAGES

DLT-EQPT

Lucent Technologies - Proprietary
See notice on first page

ED - EQPT

ENT - EQPT

NAME

RTRV-HDR: Retrieve Header

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

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

DESCRIPTION

The **RTRV-HDR** command requests that the network element return a normal completion response.

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

INPUT PARAMETERS

The "RTRV-HDR Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-HDR** command.

Table 3-81. RTRV-HDR Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. The <i>tid</i> parameter is the currently active name of the network element to which the command is addressed.	The <i>tid</i> parameter is a case insensitive ASCII character string of up to 20 characters. The allowed ASCII characters are the letters "A" through "Z" and "a" through "z", the numbers "0" through "9", and the special characters "-" (hyphen) and "/" (slash). The string must not begin with a hyphen or end with a hyphen.

Table 3-81. RTRV - HDR Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
ctag	Correlation Tag. The ctag parameter 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.	The ctag parameter is a character strings of up to 6 ASCII characters. The allowed ASCII character string is comprised of alphanumeric characters beginning with a letter, or decimal numerals (a decimal numeral is a string of decimal digits with an optional non-trailing ".").

OUTPUT FORMAT

If the **RTRV - HDR** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The "**RTRV - HDR** Positional Output Parameters" table contains the detailed descriptions and allowed values for the output parameters of the **RTRV - HDR** command.

Table 3-82. RTRV - HDR Positional Output Parameters

Parameter Name	Description	Allowed Values
sid	Source Identifier. The sid parameter is the currently active name of the network element to which the command is addressed.	See the tid parameter allowed values in the " RTRV - HDR Positional Input Parameters" table.
date	Date. The date parameter is set to the date when the output message is generated.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31
time	Time. The time parameter is set to the time when the output message is generated.	HH:MM:SS where HH=00-23, MM=00-59, SS=00-59

Table 3-82. RTRV - HDR Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. The <i>ctag</i> parameter 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.	See the <i>ctag</i> parameter allowed values in the "RTRV - HDR Positional Input Parameters" table.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV - HDR** command.

```
RTRV-HDR:LT-OXC::123456;  
  
LT-OXC 00-07-01 08:01:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The following error codes apply to the **RTRV - HDR** command as well as all other TL1 commands received by the system.

If an unrecognized or unsupported command is received, then the following error response is returned.

```
LT-OXC 99-12-16 08:21:15  
M 123456 DENY  
IICM  
/* Input, Invalid CoMmand */  
;
```

If a command is received that contains incorrect syntax or punctuation, then the following error response is returned.

```
LT-0XC 99-12-16 08:21:15
M 123456 DENY
IISP
/* Input, Invalid Syntax or Punctuation */
;
```

If a command is received with an invalid Target Identifier, then the following error response is returned.

```
LT_0XC 99-12-16 08:21:15
M 123456 DENY
IITA
/* Input, Invalid TArget identifier */
;
```

The **RTRV - HDR** command does not support the use of Access Identifiers (AIDs) in the command syntax. Use of an AID will generate an error response.

If a command is received with an invalid Access Identifier, then the following error response is returned.

```
LT-0XC 99-12-16 08:21:15
M 123456 DENY
IIAC
/* Input, Invalid ACcess identifier */
;
```

If a command is received with an invalid Correlation Tag, then the following error response is returned.

```
LT_0XC 99-12-16 08:21:15
M 0 DENY
  IICT
/* Input, Invalid Correlation Tag */
;
```

Note that the Correlation Tag is set to zero in the response when its input value is invalid.

If a command is received where the user privilege level is lower than the required command execution privilege level, then the following error response is returned.

```
LT-0XC 99-12-16 08:21:15
M 123456 DENY
  PICC
/* Privilege, Invalid Command Code */
;
```

If a command can not be completed due to insufficient processing resources to complete the command, then the following error response is returned.

```
LT-0XC 99-12-16 08:21:15
M 123456 DENY
  SARB
/* Status, All Resources Busy */
;
```

If a command can not be completed due an internal hardware or software failure,
then the following error response is returned.

```
LT-0XC 99-12-16 08:21:15
M 123456 DENY
SR0F
/* Status, Requested Operation Failed */
;
```

RELATED TL1 MESSAGES

None.

NAME

RTRV-LOG-ALM: Retrieve Log Alarm

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

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 of the most recent anomalous equipment or facility behavior detected by the system.

The alarm log is a circular buffer that can hold up to 512 entries.

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

INPUT PARAMETERS

The “**RTRV-LOG-ALM** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-LOG-ALM** command.

Table 3-83. RTRV-LOG-ALM Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

Table 3-83. RTRV - LOG - ALM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>startdate</i>	Start Date. The <i>startdate</i> parameter represents the requested starting date for the report. If both the <i>startdate</i> and the <i>starttime</i> parameters are omitted, the entire log is retrieved. The <i>startdate</i> and the <i>starttime</i> parameters must both be specified, or must both be omitted.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31
<i>starttime</i>	Start Time. The <i>starttime</i> parameter represents the requested starting time for the report. If both the <i>startdate</i> and the <i>starttime</i> parameters are omitted, the entire log is retrieved. The <i>startdate</i> and the <i>starttime</i> parameters must both be specified, or must both be omitted.	HH-MM-SS where HH=00-23, MM=00-59, SS=00-59

Table 3-83. RTRV - LOG - ALM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>replytype</i>	Reply Type. The <i>replytype</i> parameter controls the mode for searching log entries.	BROWSE BROWSE mode (default). If an entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, that entry and any subsequent log entries are returned. If no entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, the first log entry with a time-stamp later than the <i>startdate</i> and <i>starttime</i> parameters and any subsequent log entries will be returned. DBSYNC DBSYNC mode. If an entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, those entries and any subsequent log entries are returned. If the requested <i>startdate</i> and <i>starttime</i> are NOT in the log and are not omitted, an SNVS error response is returned.

OUTPUT FORMAT

If the **RTRV - LOG - ALM** request completes successfully, then the following normal completion response is returned.

```

sid date time
M ctag COMPLD
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,condeff:\"condd
  escr\"[,,\"addtxt\"][:spec_block]"
  ...
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,condeff:\"condd
  escr\"[,,\"addtxt\"][:spec_block]"
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The “**RTRV - LOG - ALM** Positional Output Parameters” table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV - LOG - ALM** command.

Table 3-84. RTRV - LOG - ALM Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. This is the identifier of the equipment component or facility for which an alarm condition is being reported.	Refer to Appendix A “LambdaRouter™ AOS 128 AID Parameter Tables” and “LambdaRouter™ AOS 256 AID Parameter Tables” for the valid set of output AID values.

Table 3-84. RTRV - LOG - ALM Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>modifier</i>	Modifier. This parameter is a message modifier to the command.	COM EQPT OCH SECU CCN QoS	Common. An event that applies to the overall network element, for example, a processing error. Equipment. This indicates equipment-related events. Optical Channel. This indicates facility-related events at the optical channel signal level. Security. This indicates security-related events such as unauthorized login. Control Communications Network. This indicates events related to the control network used for lightpath operations and restoration. Quality of Service. This indicates events related to performance monitoring of the signal overhead.
<i>ntfncde</i>	Notification Code. This is the alarm level of the retrieved alarm.	CR MJ MN	Critical alarm. Major alarm. Minor alarm.
<i>condtype</i>	Condition Type. This parameter is a mnemonic description of the condition.	Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid condition types.	
<i>srveff</i>	Service Effect. This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element.	NSA SA	Non-service-affecting alarm conditions. Service-affecting alarm conditions.
<i>ocrdat</i>	Occurrence Date. This indicates the date of the alarm being reported and has the format year-month-day.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31	
<i>ocrtm</i>	Occurrence Time. This indicates the time of the alarm being reported and has the format hours-minutes-seconds.	HH-MM-SS where HH=00-23, MM=00-59, SS=00-59	

Table 3-84. RTRV - LOG - ALM Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>condeff</i>	Condition Effect. This indicates the effect of the reported event on the network element.	CL SC TC	Standing condition cleared Standing condition Transient condition
<i>conddescr</i>	Condition Description.	ASCII text string. Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid condition descriptions.	
<i>addtxt</i>	Additional Text.	ASCII text string. Refer to Appendix A "LambdaRouter™ AOS 128/256 Alarms/Events Table" for a complete list of valid additional text.	

The "RTRV - LOG - ALM Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the RTRV - LOG - ALM command.

Table 3-85. RTRV - LOG - ALM Specific Block Output Parameters

Parameter Name	Description	Allowed Values	
<i>THLEV</i>	Threshold Level. Only used for Performance Monitoring Threshold Crossing Alerts (TCAs)	Refer to Appendix A "Additional QoS Event Parameters" for a complete list of allowed values.	
<i>MONVAL</i>	Monitored Value. Only used for Performance Monitoring Threshold Crossing Alerts (TCAs)	Refer to Appendix A "Additional QoS Event Parameters" for a complete list of allowed values.	
<i>TMPER</i>	Time Period. Only used for Performance Monitoring Threshold Crossing Alerts (TCAs)	15-MIN 1-DAY	15 minute 1 Day

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV-LOG-ALM** command.

```
RTRV-LOG-ALM:LT-0XC::123456::;  
  
LT-0XC 01-01-01 08:00:00  
M 123456 COMPLD  
"och-1-1-1, OCH:CR, LOS, SA, 01-12-31, 07-29-13:\\"Incoming Loss Of Signal  
(Optical)\\""  
"och-1-10-2, OCH:NA, LBC-IN, NSA, 01-12-31, 07-25-54:\\"Laser Bias Current  
TCA\","IN, OC192\":"THLEV=240, MONVAL=250, TMPER=1-DAY"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-LOG-ALM** command. The following additional errors apply to the **RTRV-LOG-ALM** command as well.

If the network element receives a **RTRV-LOG-ALM** command with an invalid **startdate** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-ALM** command with an invalid **starttime** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-ALM** command with an invalid **replytype** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-ALM** command with the **replytype** parameter value equal to **DBSYNC** and no log entry can be found that matches the timestamp specified by the **startdate** and the **starttime** parameter values, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-ALM** command with the **startdate** parameter omitted and the **starttime** parameter specified, or the **starttime** parameter omitted and the **startdate** parameter specified, then the following error response is returned.

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

RELATED TL1 MESSAGES

REPT ALM

REPT EVT

RTRV-ALM

RTRV-COND

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See notice on first page

RTRV-LOG-NTFCN

RTRV-LOG-PROTNSW

RTRV-LOG-USER

NAME

RTRV-LOG-NTFCN: Retrieve Log Notification

The **RTRV-LOG-NTFCN** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV-LOG-NTFCN: *tid::ctag::[startdate],[starttime],[replytype]*;

DESCRIPTION

The **RTRV-LOG-NTFCN** command retrieves the notification log. This log contains 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 after a communications outage in the operations interface. The log contains updates caused by user actions and by system actions (state changes).

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 *com-block*, *spec-block*, *state-block* parameters.

The notification log is a circular buffer in which the first entry and each subsequent entry is overwritten once the capacity of the log file has been exceeded.

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

INPUT PARAMETERS

The "**RTRV-LOG-NTFCN** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-LOG-NTFCN** command.

Table 3-86. RTRV-LOG-NTFCN Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>startdate</i>	Start Date. The <i>startdate</i> parameter represents the requested starting date for the report. If both the <i>startdate</i> and the <i>starttime</i> parameters are omitted, the entire log is retrieved. The <i>startdate</i> and the <i>starttime</i> parameters must both be specified, or must both be omitted.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31
<i>starttime</i>	Start Time. The <i>starttime</i> parameter represents the requested starting time for the report. If both the <i>startdate</i> and the <i>starttime</i> parameters are omitted, the entire log is retrieved. The <i>startdate</i> and the <i>starttime</i> parameters must both be specified, or must both be omitted.	HH-MM-SS where HH=00-23, MM=00-59, SS=00-59

Table 3-86. RTRV - LOG - NTFCN Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>replytype</i>	Reply Type. The <i>replytype</i> parameter controls the mode for searching log entries.	BROWSE BROWSE mode (default). If an entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, that entry and any subsequent log entries are returned. If no entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, the first log entry with a time-stamp later than the <i>startdate</i> and <i>starttime</i> parameters and any subsequent log entries will be returned. DBSYNC DBSYNC mode. If an entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, those entries and any subsequent log entries are returned. If the requested <i>startdate</i> and <i>starttime</i> are NOT in the log and are not omitted, an SNVS error response is returned.

OUTPUT FORMAT

If the **RTRV - LOG - NTFCN** request completes successfully, then 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 *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "RTRV-LOG-NTFCN Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV-LOG-NTFCN** command.

Table 3-87. RTRV-LOG-NTFCN Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>umb</i>	Update Management Block. The parameters within this block are positionally independent and are specified using a name-defined construct (parameter=value) in a comma-separated list. The parameters are DATE and TIME.	DATE= YY-MM-DD where YY=00-99, MM=01-12, DD=01-31 TIME= HH-MM-SS where HH=00-23, MM=00-59, SS=00-59
<i>ccb</i>	Command Code Block. The name of the TL1 command that caused the change in the user-provisionable parameter.	Legal TL1 Commands, for example: ED-EQPT
<i>aid</i>	Access Identifier. The <i>aid</i> parameter specifies the entity that was modified. Refer to the TL1 command specified by the <i>ccb</i> parameter value for information regarding the <i>aid</i> parameter.	
<i>com_block</i>	Common Block. The positional input parameters of the TL1 command that caused the change in the user-provisionable parameter. Refer to the TL1 command specified by the <i>ccb</i> parameter value for information regarding the <i>com_block</i> parameters.	
<i>spec_block</i>	Specific Block. The name-value parameters of the TL1 command that caused the change in the user-provisionable parameter. Refer to the TL1 command specified by the <i>ccb</i> parameter value for information regarding the <i>spec_block</i> parameters.	

Table 3-87. RTRV - LOG - NTFCN Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>state_block</i>	State Block. The positional input state parameters of the TL1 command that caused the change in the user-provisionable parameter. Refer to the TL1 command specified by the <i>ccb</i> parameter value for information regarding the <i>state_block</i> parameters.	

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV - LOG - NTFCN** command.

```
RTRV-LOG-NTFCN:LT-0XC::123456::;  
  
LT-0XC 98-01-01 08:00:00  
M 123456 COMPLD  
"DATE=98-01-01, TIME=07-59-59:ED-EQPT:system:::IS"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV - HDR** command **ERROR RESPONSES** section also apply to the **RTRV - LOG - NTFCN** command. The following additional errors apply to the **RTRV - LOG - NTFCN** command as well.

If the network element receives a **RTRV - LOG - NTFCN** command with an invalid **startdate** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-NTFCN** command with an invalid **starttime** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-NTFCN** command with an invalid **replytype** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-NTFCN** command with the **replytype** parameter value equal to **DBSYNC** and no log entry can be found that matches the timestamp specified by the **startdate** and the **starttime** parameter values, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-NTFCN** command with the **startdate** parameter omitted and the **starttime** parameter specified, or the **starttime** parameter omitted and the **startdate** parameter specified, then the following error response is returned.

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

RELATED TL1 MESSAGES

REPT DBCHG

RTRV-LOG-ALM

RTRV-LOG-PROTSW

RTRV-LOG-USER

NAME

RTRV-LOG-PROTNSW: Retrieve Log Protection Switch

The **RTRV-LOG-PROTNSW** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV-LOG-PROTNSW: *tid::ctag::[startdate],[starttime][,replyt
ype];*

DESCRIPTION

The **RTRV-LOG-PROTNSW** command retrieves the protection switch log. This log contains a time-ordered list of switching activity which has occurred at the network element due to equipment or facility conditions, or manual activity. This log is very useful in determining what equipment and facilities were carrying traffic at any particular time.

INPUT PARAMETERS

The "RTRV-LOG-PROTNSW Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-LOG-PROTNSW** command.

Table 3-88. RTRV-LOG-PROTNSW Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

Table 3-88. RTRV - LOG - PROTNSW Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>startdate</i>	Start Date. The <i>startdate</i> parameter represents the requested starting date for the report. If both the <i>startdate</i> and the <i>starttime</i> parameters are omitted, the entire log is retrieved. The <i>startdate</i> and the <i>starttime</i> parameters must both be specified, or must both be omitted.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31
<i>starttime</i>	Start Time. The <i>starttime</i> parameter represents the requested starting time for the report. If both the <i>startdate</i> and the <i>starttime</i> parameters are omitted, the entire log is retrieved. The <i>startdate</i> and the <i>starttime</i> parameters must both be specified, or must both be omitted.	HH-MM-SS where HH=00-23, MM=00-59, SS=00-59

Table 3-88. RTRV - LOG - PROTNSW Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>replytype</i>	Reply Type. The <i>replytype</i> parameter controls the mode for searching log entries.	BROWSE BROWSE mode (default). If an entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, that entry and any subsequent log entries are returned. If no entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, the first log entry with a time-stamp later than the <i>startdate</i> and <i>starttime</i> parameters and any subsequent log entries will be returned. DBSYNC DBSYNC mode. If an entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, those entries and any subsequent log entries are returned. If the requested <i>startdate</i> and <i>starttime</i> are NOT in the log and are not omitted, an SNVS error response is returned.

OUTPUT FORMAT

If the **RTRV - LOG - PROTNSW** request completes successfully, then the following normal completion response is returned.

```

sid date time
M ctag COMPLD
  "actid:DATE=date,TIME=time[,SWTYPE=swtype,OXF=oxf]"
  ...
  "actid:DATE=date,TIME=time[,SWTYPE=swtype,OXF=oxf]"
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "**RTRV-LOG-PROTNSW** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV-LOG-PROTNSW** command.

Table 3-89. RTRV-LOG-PROTNSW Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>actid</i>	Active Identifier. This is the AID of the equipment that was placed in the active state: Port, System Controller Complex, HVS controller, or OIS controller.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4} LambdaRouter AOS 128 or LambdaRouter AOS 256: scc-1-{0,1} LambdaRouter AOS 128: hswic-0-{0,1} LambdaRouter AOS 256: hswic-{0,1}-{0,1} LambdaRouter AOS 128: oswic-{1-4}-{0,1} LambdaRouter AOS 256: oswic-{1-7}-{0,1}
<i>spec_block</i>	Specific Block Parameters. See the table " RTRV-LOG-PROTNSW Specific Block Output Parameters" for the detailed descriptions of these parameters.	

The "**RTRV-LOG-PROTNSW** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the *spec_block* output parameters of the **RTRV-LOG-PROTNSW** command.

Table 3-90. RTRV-LOG-PROTNSW Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<i>DATE</i>	Occurrence Date. This indicates the date of the alarm being reported and has the format year-month-day.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31

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See notice on first page

Table 3-90. RTRV - LOG - PROTNSW Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>TIME</i>	Occurrence Time. This indicates the time of the alarm being reported and has the format hours-minutes-seconds.	HH-MM-SS where HH=00-23, MM=00-59, SS=00-59
<i>SWTYPE</i>	Protection Switch Type. Currently active switch type for the output port or controller. This parameter is only allowed with <i>actid</i> = LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}	AUTO Autonomous MAN Manual FRCD Forced NR No Request
<i>OXF</i>	Optical Cross-Connect Fabric Side Identifier. Fabric side currently selected by the output port 2:1 selector. This parameter is only allowed with <i>actid</i> = LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}	0 1

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV - LOG - PROTNSW** command where the response includes an OIS controller side switch and an output port 2:1 selector forced switch.

```
RTRV-LOG-PROTNSW:LT-OXC::123456::;

LT-OXC 01-01-01 08:00:00
M 123456 COMPLD
"oswic-1-1:DATE=01-01-01, TIME=07-50-59"
"och-1-2-3:DATE=01-01-01, TIME=07-57-59, SWTYPE=FRCD, OXF=0"

;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-LOG-PROTNSW** command. The following additional errors apply to the **RTRV-LOG-PROTNSW** command as well.

If the network element receives a **RTRV-LOG-PROTNSW** command with an invalid **startdate** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-PROTNSW** command with an invalid **starttime** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-PROTNSW** command with an invalid **replytype** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-PROTNSW** command with the **replytype** parameter value equal to **DBSYNC** and no log entry can be found that

matches the timestamp specified by the **startdate** and the **starttime** parameter values, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-PROTNSW** command with the **startdate** parameter omitted and the **starttime** parameter specified, or the **starttime** parameter omitted and the **startdate** parameter specified, then the following error response is returned.

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

RELATED TL1 MESSAGES

REPT SW

OPR-PROTNSW-FRCD

RLS-PROTNSW-FRCD

OPR-PROTNSW-MAN

RLS-PROTNSW-MAN

NAME

RTRV-LOG-SECU: Retrieve Log Security

The **RTRV-LOG-SECU** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

INPUT FORMAT

RTRV-LOG-SECU: *tid::ctag::[startdate],[starttime],[replytype];*

DESCRIPTION

The **RTRV-LOG-SECU** command can be initiated by a user to retrieve the security information log activity from the 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 up to 512 entries.

The following table lists the security-related commands that get logged into the Security Information Log.

Table 3-91. Commands in Security Information Log (cont 1 of 2)

Security-Related Event	Status
ACT - USER	COMPLD or DENY
APPLY	COMPLD or DENY
CANC - USER	COMPLD or DENY
CANC - USER - SECU	COMPLD or DENY
CPY - MEM	COMPLD or DENY
CPY - NVM	COMPLD or DENY
DLT - USER - SECU	COMPLD or DENY
ED - DAT	COMPLD or DENY
ED - NE - SECU	COMPLD or DENY

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Table 3-91. 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 - EQPT	COMPLD or DENY
INIT - SYS	COMPLD or DENY

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

INPUT PARAMETERS

The "**RTRV - LOG - SECU** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV - LOG - SECU** command.

Table 3-92. **RTRV - LOG - SECU** Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>startdate</i>	Start Date. The <i>startdate</i> parameter represents the requested starting date for the report. If both the <i>startdate</i> and the <i>starttime</i> parameters are omitted, the entire log is retrieved. The <i>startdate</i> and the <i>starttime</i> parameters must both be specified, or must both be omitted.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31

Table 3-92. RTRV - LOG - SECU Positional Input Parameters *(continued)*

Parameter Name	Description	Allowed Values
<i>starttime</i>	Start Time. The <i>starttime</i> parameter represents the requested starting time for the report. If both the <i>startdate</i> and the <i>starttime</i> parameters are omitted, the entire log is retrieved. The <i>startdate</i> and the <i>starttime</i> parameters must both be specified, or must both be omitted.	HH-MM-SS where HH=00-23, MM=00-59, SS=00-59
<i>replytype</i>	Reply Type. The <i>replytype</i> parameter controls the mode for searching log entries.	BROWSE BROWSE mode (default). If an entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, that entry and any subsequent log entries are returned. If no entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, the first log entry with a timestamp later than the <i>startdate</i> and <i>starttime</i> parameters and any subsequent log entries will be returned. DBSYNC DBSYNC mode. If an entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found 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 and is not omitted, an SNVS error response is returned.

OUTPUT FORMAT

After receiving this command, the following system response is returned.

```

sid date time
M ctag COMPLD
"login_id:umb:action:ccb:[aid]:[com_block]:[spec_block]:[state_block]:cc
de"
...
"login_id:umb:action:ccb:[aid]:[com_block]:[spec_block]:[state_block]:cc
de"
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "**RTRV-LOG-SECU** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional positional output parameters of the **RTRV-LOG-SECU** command.

Table 3-93. RTRV-LOG-SECU Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>login_id</i>	Login ID. The login identification of the user.	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.	Date Format: YY-MM-DD. where YY=00-99, MM=01-12, and DD=01-31 Time Format: HH-MM-SS where HH=00-23, MM=00-59, and SS=00-59

Table 3-93. RTRV - LOG - SECU Positional Output Parameters *(continued)*

Parameter Name	Description	Allowed Values
<i>action</i>	This parameter indicates the reason for the log entry. These are given in the next column. Indication of whether logout was due to inactivity timeout, forced logout, or self logout. or Reason for login failure (expired passwd, invalid uid or passwd, lockout. or Indication of user or system security variable change.	Reasons for logout commands like CANC - USER and CANC - USER - SECU: ■ Inactivity Timeout ■ forced logout ■ self logout Reasons for login commands like ACT - USER and ED - PID: ■ expired password ■ invalid uid ■ invalid password ■ locked out uid ■ user login ■ change password Reasons for add/remove login entry comands such as ENT - USER - SECU and DLT - USER - SECU: ■ add user login ■ remove user login Reasons for NE software generic and data install, backup, restore, and download commans such as APPLY, CPY - MEM, and CPY - NVM ■ install new softwatre ■ copy files between PRI NVM and external file storage (EMS/OCI) ■ copy files between PRI NVM and SEC NVM.

Table 3-93. RTRV - LOG - SECU Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>action</i> (cont.)		Reasons for reset of system and equipment commands such as ED - DAT, INIT - EQPT, and INIT - SYS: ■ edit date and time ■ initialize equipment ■ initialize system Reasons for NE and user security variable change commands such as ED - NE - SECU, and ED - USER - SECU: ■ NE security variable change ■ user security variable change Other reasons: ■ others
<i>ccb</i>	Command Code Block. Represents the command causing the change. No value is specified when the change is not caused by a command.	<i>verb-modifier</i> [- <i>modifier</i>]
<i>aid</i>	Access Identifier. The <i>aid</i> parameter specifies the entity that was the object of the command that was logged. Refer to the positional input parameters table of the TL1 command specified by the <i>ccb</i> parameter value for information regarding the <i>aid</i> parameter.	
<i>com_block</i>	Common Block. This block contains the position-defined parameters except <i>pst</i> and <i>sst</i> . The direction (<i>dir</i>) parameter must be specified in the Common Block for port changes not caused by a command.	Same as those in the command which is being reported.
<i>spec_block</i>	Specific Block. This block contains the named-defined parameters.	Same as those in the command which is being reported, except for the CONN - TACC , DISC - TACC , DLT - CRS , ENT - CRS , OPR - LPBK , RLS - LPBK TL1 commands. See each exception TL1 command for the exact <i>spec_block</i> format.
<i>state_block</i>	State Block of the Command.	
<i>ccde</i>	Completion Code.	COMPLD or 4-character error code.

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EXAMPLE INPUT/OUTPUT

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

```
RTRV-LOG-SECU:LT-0XC-789::123456;  
  
LT-0XC 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:mv234+::::IDNV"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-LOG-SECU** command. The following additional errors apply to the **RTRV-LOG-SECU** command as well.

If the network element receives a **RTRV-LOG-SECU** command with an invalid **startdate** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-SECU** command with an invalid **starttime** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-SECU** command with an invalid **replytype** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-SECU** command with the **replytype** parameter value equal to **DBSYNC** and no log entry can be found that matches the timestamp specified by the **startdate** and the **starttime** parameter values, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-SECU** command with the **startdate** parameter omitted and the **starttime** parameter specified, or the **starttime** parameter omitted and the **startdate** parameter specified, then the following error response is returned.

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

RELATED TL1 MESSAGES

ACT-USER

APPLY

CANC-USER

CANC-USER-SECU

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DLT-USER-SECU

ED-DAT

ED-NE-SECU

ED-PID

ED-USER-SECU

ENT-USER-SECU

INIT-EQPT

INIT-SYS

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:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV-LOG-USER: *tid::ctag::[startdate],[starttime],[replytype]*;

DESCRIPTION

The **RTRV-LOG-USER** command retrieves the user session log, which is a single log of the activity of all users. For security purposes, the log can be read to obtain the source login for any user-initiated network activity. The data about any unsuccessful attempts to gain access to, or provision the system can also be obtained. The reply is not stored in a log; only the success/denial code is stored.

The user session log is a circular buffer that can hold up to 1,280 entries.

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

INPUT PARAMETERS

The "**RTRV-LOG-USER** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-LOG-USER** command.

Table 3-94. RTRV-LOG-USER Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-94. RTRV - LOG - USER Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the "RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>startdate</i>	Start Date. The <i>startdate</i> parameter represents the requested starting date for the report. If both the <i>startdate</i> and the <i>starttime</i> parameters are omitted, the entire log is retrieved. The <i>startdate</i> and the <i>starttime</i> parameters must both be specified, or must both be omitted.	YY-MM-DD where YY=00-99, MM=01-12, DD=01-31
<i>starttime</i>	Start Time. The <i>starttime</i> parameter represents the requested starting time for the report. If both the <i>startdate</i> and the <i>starttime</i> parameters are omitted, the entire log is retrieved. The <i>startdate</i> and the <i>starttime</i> parameters must both be specified, or must both be omitted.	HH-MM-SS where HH=00-23, MM=00-59, SS=00-59

Table 3-94. RTRV - LOG - USER Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>replytype</i>	Reply Type. The <i>replytype</i> parameter controls the mode for searching log entries.	BROWSE BROWSE mode (default). If an entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, that entry and any subsequent log entries are returned. If no entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, the first log entry with a time-stamp later than the <i>startdate</i> and <i>starttime</i> parameters and any subsequent log entries will be returned. DBSYNC DBSYNC mode. If an entry matching the requested <i>startdate</i> and <i>starttime</i> parameters is found in the log, those entries and any subsequent log entries are returned. If the requested <i>startdate</i> and <i>starttime</i> are NOT in the log and are not omitted, an SNVS error response is returned.

OUTPUT FORMAT

If the **RTRV - LOG - USER** request completes successfully, then 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 *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "**RTRV-LOG-USER** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV-LOG-USER** command.

Table 3-95. RTRV-LOG-USER Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>uid</i>	User Identifier. Refer to the " ACT-USER Positional Input Parameters" table for the input parameter syntax and description of the <i>uid</i> parameter.	
<i>umb</i>	Update Management Block. The parameters within this block are positionally independent and are specified using a name-defined construct (parameter=value) in a comma separated list. The parameters are DATE and TIME.	DATE= YY-MM-DD where YY=00-99, MM=01-12, DD=01-31 TIME= HH-MM-SS where HH=00-23, MM=00-59, SS=00-59
<i>ccb</i>	Command Code Block. The name of the TL1 command that was logged.	Legal TL1 Commands, such as: ED-USER-SECU
<i>aid</i>	Access Identifier. The <i>aid</i> parameter specifies the entity that was the object of the command that was logged. Refer to the positional input parameters table of the TL1 command specified by the <i>ccb</i> parameter value for information regarding the <i>aid</i> parameter.	
<i>com_block</i>	Common Block. The positional input parameters of the TL1 command that was logged. Refer to the positional input parameters table of the TL1 command specified by the <i>ccb</i> parameter value for information regarding the <i>com_block</i> parameters.	

Table 3-95. RTRV - LOG - USER Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>spec_block</i>	Specific Block. The name-value parameters of the TL1 command that was logged. Refer to the positional input parameters table of the TL1 command specified by the <i>ccb</i> parameter value for information regarding the <i>spec_block</i> parameters.		
<i>state_block</i>	State Block. The positional input state parameters of the TL1 command that was logged. Refer to the positional input parameters table of the TL1 command specified by the <i>ccb</i> parameter value for information regarding the <i>state_block</i> parameters.		
<i>ccde</i>	Completion Code.	COMPLD DENY	Completed. Command completed successfully. Denied. Command failed to complete successfully.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV - LOG - USER** command.

```
RTRV-LOG-USER:LT-0XC::123456::;  
  
LT-0XC 99-03-01 08:00:00  
M 123456 COMPLD  
"user1:DATE=99-02-26,TIME=14-30-55:ED-EQPT:system:::IS:COMPLD"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV - HDR** command **ERROR RESPONSES** section also apply to the **RTRV - LOG - USER** command. The following additional errors apply to the **RTRV - LOG - USER** command as well.

If the network element receives a **RTRV-LOG-USER** command with an invalid **startdate** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-USER** command with an invalid **starttime** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-USER** command with an invalid **replytype** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-USER** command with the **replytype** parameter value equal to **DBSYNC** and no log entry can be found that matches the timestamp specified by the **startdate** and the **starttime** parameter values, then the following error response is returned.

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

If the network element receives a **RTRV-LOG-USER** command with the **startdate** parameter omitted and the **starttime** parameter specified, or the **starttime**

parameter omitted and the **startdate** parameter specified, then the following error response is returned.

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

RELATED TL1 MESSAGES

RTRV-LOG-ALM

RTRV-LOG-NTFCN

RTRV-LOG-PROTNSW

NAME

RTRV-LSA: Retrieve Link State Advertisement

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV-LSA: *tid:aid:ctag;*

DESCRIPTION

The **RTRV-LSA** command retrieves the Router IDs corresponding to the Open Shortest Path First (OSPF) neighbors of the specified Internet Protocol (IP) port.

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

INPUT PARAMETERS

The "**RTRV-LSA** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-LSA** command.

Table 3-96. RTRV-LSA Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the port to which the command is directed.	ripip-1-{1,2}-1 Internal 100 Base-T
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **RTRV - LSA** command request completes successfully, then the following normal completion response is returned.

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

One line of output is reported for each OSPF neighbor for the input **aid** specified.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

The "RTRV - LSA Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV - LSA** command.

Table 3-97. RTRV - LSA Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the entity to which the command is directed.	ripip-1-{1,2}-1 Internal 100 Base-T
<i>spec_block</i>	Specific Block Parameters. See the "RTRV - LSA Specific Block Output Parameters" table for the detailed descriptions of these parameters.	

The "**RTRV-LSA** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the **RTRV-LSA** command.

Table 3-98. RTRV-LSA Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<i>RT_ADDR</i>	IP Address. The <i>RT_ADDR</i> parameter represents the Router IDs.	w.x.y.z where w, x, y, and z are integers in the range 0-255

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV-LSA** command.

```
RTRV-LSA:LT-OXC:ripip-1-1-1:123456;
```

```
LT-OXC 01-01-01 08:00:00  
M 123456 COMPLD  
"ripip-1-1-1"  
"RT_ADDR=132.19.79.231"  
"RT_ADDR=132.19.79.218"  
"RT_ADDR=132.19.79.202"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-LSA** command. The following additional errors apply to the **RTRV-LSA** command as well.

If the network element receives a **RTRV-LSA** command and the system's ONN Configuration equipment parameter (ONNCFG) is currently equal to DISABLE, then the following error response is returned.

```
sid date time
M ctag DENY
EFON
/* Equipage, Feature Option Not provided, ONNCFG=DISABLE */
;
```

If the network element receives a **RTRV-LSA** command when the RIP circuit pack associated with the specified **aid** parameter value is not equipped, then the following error response is returned.

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

If the network element receives a **RTRV-LSA** command when the RIP circuit pack associated with the specified **aid** parameter value is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
SNIS
/* Status, Not In Service */
;
```

RELATED TL1 MESSAGES

RTRV-LSP

RTRV-TRACERT

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NAME

RTRV - LSP: Retrieve Label Switch Path

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV - LSP: *tid:aid:ctag::dest_id;*

DESCRIPTION

The **RTRV - LSP** command retrieves the list of Internet Protocol (IP) addresses that constitute a Label Switched Path (LSP). Each LSP originates and terminates at a Restoration Interface Processor (RIP) circuit pack IP port.

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

INPUT PARAMETERS

The "**RTRV - LSP** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV - LSP** command.

Table 3-99. RTRV - LSP Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the pack to which the command is directed.	rip-1-{1,2} RIP pack

Table 3-99. RTRV - LSP Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
ctag	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the ctag parameter.	
dest_id	Destination RC IP address (corresponds to the IP Address of destination RC internal 100 Base-T port). The dest_id parameter represents the 32-bit Internet Protocol Version 4 address.	w.x.y.z where w , x , y , and z are integers in the range 0-255

OUTPUT FORMAT

If the **RTRV - LSP** command request completes successfully, then the following normal completion response is returned.

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

One line of output is reported for each network node on the LSP defined by the input **aid** and **dest_id** specified in the command.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

The "**RTRV - LSP** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV - LSP** command.

Table 3-100.RTRV - LSP Positional Output Parameters

Parameter Name	Description	Allowed Values	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the entity to which the command is directed, in this case a RIP pack on the near-end of the LSPs to be retrieved.	rip-1-{1,2}	RIP pack
<i>dest_id</i>	Destination RC IP address (corresponds to the IP Address of destination RC internal 100 Base-T port). The <i>dest_id</i> parameter represents the 32-bit Internet Protocol Version 4 address.	w.x.y.z	where w, x, y, and z are integers in the range 0-255
<i>spec_block</i>	Specific Block Parameters. See the " RTRV - LSP Specific Block Output Parameters" table for the detailed descriptions of these parameters.		

The "**RTRV - LSP** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the **RTRV - LSP** command.

Table 3-101.RTRV - LSP Specific Block Output Parameters

Parameter Name	Description	Allowed Values	
<i>IP_ADDR</i>	IP Address of each node composing the LSP. The <i>IP_ADDR</i> parameter represents the 32-bit Internet Protocol Version 4 address.	w.x.y.z	where w, x, y, and z are integers in the range 0-255

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV-LSP** command.

```
RTRV-LSP:LT-OXC:rip-1-1:123456::132.19.79.212;  
  
LT-OXC 01-01-01 08:00:00  
M 123456 COMPLD  
"rip-1-1,132.19.79.212"  
"IP_ADDR=132.19.79.231"  
"IP_ADDR=132.19.79.218"  
"IP_ADDR=132.19.79.202"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-LSP** command. The following additional errors apply to the **RTRV-LSP** command as well.

If the network element receives a **RTRV-LSP** command and the system's ONN Configuration equipment parameter (ONNCFG) is currently equal to DISABLE, then the following error response is returned.

```
sid date time  
M ctag DENY  
EFON  
/* Equipage, Feature Option Not provided, ONNCFG=DISABLE */  
;
```

If the network element receives a **RTRV-LSP** command with an invalid **dest_id** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-LSP** command without a **dest_id** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing dest_id */
;
```

If the network element receives a **RTRV-LSP** command when the RIP circuit pack associated with the specified **aid** parameter value is not equipped, then the following error response is returned.

```
sid date time
M ctag DENY
ENEQ
/* Equipage, Not EQuipped, rip pack */
;
```

If the network element receives a **RTRV-LSP** command when the RIP circuit pack associated with the specified **aid** parameter value is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
SNIS
/* Status, Not In Service, rip pack */
;
```

RELATED TL1 MESSAGES

RTRV-LSA

RTRV-TRACERT

NAME

RTRV-NE-SECU: Retrieve Network Element Security

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV-NE-SECU: *tid*: : *ctag*;

DESCRIPTION

The **RTRV-NE-SECU** command retrieves global security information in the network element. The current login sessions in the network element identified by the *uid* parameter value will also be retrieved using the **RTRV-NE-SECU** command.

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

INPUT PARAMETERS

The "RTRV-NE-SECU Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-NE-SECU** command.

Table 3-102.RTRV-NE-SECU Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the "RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **RTRV-NE-SECU** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "RTRV-NE-SECU Positional Output Parameters" table contains the detailed descriptions and allowed values for the positional output parameters of the **RTRV-NE-SECU** command.

Table 3-103.RTRV-NE-SECU Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>uid</i>	User ID of the user that initiated the RTRV-NE-SECU command. Listed below this <i>uid</i> are <i>uids</i> of all additional current login sessions (if any). If a user is logged in multiple times, the RTRV-NE-SECU command will display all instances of those sessions.	Case-sensitive alphanumeric string of 1 to 10 characters
<i>spec_block</i>	Specific Block Parameters. See the table "RTRV-NE-SECU Specific Block Output Parameters" for the detailed descriptions of these parameters.	

The "**RTRV-NE-SECU** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the **RTRV-NE-SECU** command.

Table 3-104.RTRV-NE-SECU Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<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.	2-9 (attempts)
<i>INTRVL</i>	Lockout Period. 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.	0-99 (minutes)
<i>AGE</i>	Lockout Aging Period. Refer to the " ED-NE-SECU Positional Input Parameters" table for the input parameter syntax and description of the <i>age</i> parameter.	
<i>USRAGE</i>	User Id Aging Period. Refer to the " ED-NE-SECU Positional Input Parameters" table for the input parameter syntax and description of the <i>usrage</i> parameter.	

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **RTRV-NE-SECU** command by the network element.

```
RTRV-NE-SECU:LT-0XC-789::123456;  
  
LT-0XC-789 98-01-01 08:00:00  
M 123456 COMPLD  
"kjlee:THRSHLD=3,INTRVL=1,AGE=10,USRAGE=5"  
"njsmith"  
"mvjok"  
"airmail"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also 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:

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM1

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** Positional 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

The "RTRV-PM Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-PM** command.

Table 3-105.RTRV-PM Positional Input Parameters

Parameter Name	Description	Allowed Values
modifier	Modifier indicates the cross-connection rate on which the RTRV-PM command is to act on.	OC48 OC192 STM16 STM64

Table 3-105.RTRV - PM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the "RTRV - HDR Positional Input Parameters" table for the input parameter description and syntax of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. This parameter can be used to specify all ports on a shelf, all ports on a pack, or a specific port on a pack for which PM data is to be retrieved. PM data is returned only for those ports that are qualified by the modifier given in the command.	LambdaRouter AOS 128: och-{1-4}-{1-32, all}-{1-2, all} for OC-48 and STM-16 och-{1-4}-{1-32, all}-1 for OC-192 and STM-64 LambdaRouter AOS 256: och-{1-7}-{1-32, all}-{1-2, all} for OC-48 and STM-16 och-{1-7}-{1-32, all}-1 for OC-192 and STM-64
<i>ctag</i>	Correlation Tag. Refer to the "RTRV - HDR Positional Input Parameters" table for the input parameter description and syntax of the <i>ctag</i> 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 .	The following values apply to SONET signals: CV-S Coding Violations - Section for OC-48 and OC-192 ES-S Errored Seconds - Section for OC-48/OC-192

Table 3-105.RTRV - PM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>montype</i> (cont.)		SES-S Severely Errored Seconds - Section for OC-48/OC-192
		SEFS-S Severely Errored Frame second - Section for OC-48/OC-192
		CV-L Coding Violations - Line Near-End for OC-48 and OC-192
		CV-LFE Coding Violations - Line Far-End for OC-48 and OC-192
		ES-L Errored Seconds - Line Near End for OC-48/OC-192
		ES-LFE Errored Seconds - Line Far End for OC-48/OC-192
		SES-L Severely Errored Seconds - Line Near End for OC-48/OC-192
		SES-LFE Severely Errored Seconds - Line Far End for OC-48/OC-192
		UAS-L Unavailable Seconds - Line Near-End for OC-48/OC-192
		UAS-LFE Unavailable Seconds - Line Far-End for OC-48/OC-192
		LBC Laser Bias Current
		OPT Optical Power Transmitted
		OPR Optical Power Received
		ALL (returns the PM data for all the SONET parameters being monitored when the port is a SONET port.)
		The following values apply to SDH signals: RS_N_BBE RS Near-End Background Block Errors for STM-16/STM-64
		RS_N_ES RS Near-End Errored Seconds for STM-16/STM-64
		RS_N_SES RS Near-End Severely Errored Seconds for STM-16/STM-64
		RS_N_UAS RS Near-End Unavailable Seconds for STM-16/STM-64
		MS_N_BBE MS Near-End Background Block Errors for STM-16 and STM-64

Table 3-105.RTRV - PM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values	
montype (cont.)		MS_F_BBE MS Far-End Background Block Errors for STM-16 and STM-64 MS_N_ES MS Near-End Errored Seconds for STM-16/STM64 MS_F_ES MS Far-End Errored Seconds for STM-16/STM-64 MS_N_SES MS Near-End Severely Errored Seconds for STM-16/STM-64 MS_F_SES MS Far-End Errored Seconds for STM-16/STM-64 MS_N_UAS MS Near-End Unavailable Seconds for STM-16/STM-64 MS_F_UAS MS Far-End Unavailable Seconds for STM-16/STM-64 LBC Laser Bias Current OPT Optical Power Transmitted OPR Optical Power Received ALL (returns the data for all the SDH parameters being monitored when the port is an SDH port)	
monlev	This provides the level for the monitored PM parameter. This parameter may be omitted or have one of the following values.	1-UP Means the NE will report non-zero data only. 0-UP Means the NE will report zero and all positive values If the value is omitted, this parameter defaults to 1-UP .	
locn	Location for which the PM data is monitored. This parameter may be omitted or have one of the values given in the next column.	NEND Near-end PM data is requested. NEND does not apply to Line Far-end or MS Far-end parameters. FEND Far-end data is requested. This is not applicable to SONET physical and section layers PM as well as SDH physical and regenerator section layer PM. FEND does not apply Line Near-end or MS Near-end parameters. ALL All near-end and far-end data is requested. If this parameter is omitted, then the parameter defaults to FEND if montype is Line Far-end or MS Far-end, otherwise it defaults to NEND .	

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Table 3-105.RTRV - PM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>dirn</i>	Direction of Monitoring. This parameter specifies the direction for which the PM data is requested.	IN OUT BOTH If the value is omitted, this parameter defaults to IN .	IN refers to the ingress direction (towards the fabric). OUT refers to the egress direction (away from the fabric). Both refers to IN and OUT .
<i>tmper</i>	Time Period. This requests PM data for a specified time interval.	15-MIN 1-DAY	This requests PM data in 15-minute intervals. This requests daily PM data.
<i>mondat</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.	MM-DD ALL If the value is omitted, the default value is used.	Month-Day of the current year. Current date is the default value. Current and previous day.

Table 3-105.RTRV - PM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
montm	Monitored Time. 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: 08-15&&04-00). 2) A single time interval (i.e., the hour and minutes for the appropriate 15 minute data: 08-15). 3) All applicable beginning times for the given mondatt value (i.e., ALL).	HOD-MOH This specifies the beginning time of day 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. As only the current 15-MIN and previous 8 hours of PM data can be retrieved, the HOD-MOH value specified should not be earlier than 8 hours prior to the beginning of the current period. For example, if the current time is 11:35 then the user cannot specify HOD-MOH prior to 3:30. If this parameter is omitted, the PM period for the current time will be reported. THOD-TMOH To Hour Of day - To Minute Of Hour, where THOD ranges from 0 to 23 and TMOH is 0, 15, 30, and 45. A leading zero is optional. For example, 00 means 0. Parameter grouping shall be used when specifying THOD-TMOH. For example, 08-15&&04-00 specifies the HOD-MOH and THOD-TMOH of 08-15 and 09-00 respectively. The upper limit for THOD-TMOH value is the end of the current period. For example, if the current time is 11:35 then the user cannot specify THOD-TMOH later than 11:45. ALL All applicable beginning times for the given mondatt value. If the montm value provided does not correspond exactly to the network element PM reporting boundary, the value will be rounded up to the beginning of the current boundary (for example, 09-06 for a 15-MIN PM data is rounded up to 09-00). If the tmper value is 1-DAY, the montm parameter will not be used. If the tmper is 15-MIN and mondatt value is ALL, then montm value ALL is to 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],tmper,[mondatt],
  [montm]"
  . . . . .
  . . . . .
  . . . . .
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "**RTRV-PM** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional positional output parameters of the **RTRV-PM** command.

Table 3-106.RTRV-PM Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. Refer to RTRV-PM Input Parameter table.	
<i>montype</i>	Monitored Parameter Type. Refer to RTRV-PM Input Parameter table.	
<i>monval</i>	Monitored Value. This contains the measured value of the parameter specified in <i>montype</i> . For physical parameters LBC, OPT, and OPR a value of 0, 1, or 2 is returned, where 0 means good, 1 means bad, and 2 means EEPROM is not provisioned with values for the parameter or the provisioned value is invalid.	"GOOD" if 0 is returned "BAD" if 1 is returned "NA" if 2 is returned Note: The value of "NA" indicates that the pack's EEPROM is not provisioned for the parameter or the provisioned value is invalid.

Table 3-106.RTRV - PM Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>validity</i>	This indicates the validity of the PM data for SONET. It may be omitted or have one of values given in the next column. This indicates the validity of the PM data for SDH. It may be omitted or have one of the values given in the next column.	For SONET the values are: I-01 Time/date change to shorter interval. I-02 Time/date change to a longer interval. I-09 Far-end parameters inhibited due to near-end defects I-11 PM start change to shorter interval I-12 PM start change to longer interval I-13 Register Initialization If validity is omitted, data is valid for that parameter For SDH the values are: I-01 Time/date change to shorter interval. I-02 Time/date change to a longer interval. I-03 PM enable/disable or MON/NMON I-09 Far-end parameters inhibited due to near-end defects I-11 PM start change to shorter interval I-12 PM start change to longer interval I-13 Register Initialization I-17 A change in (SDH) SES declaration threshold If validity is omitted, data is valid for that parameter
<i>tca</i>	Threshold Crossing Alert.	TCA Indicates the threshold has been exceeded If the value is omitted, it indicates the value is below the threshold level for that parameter.
<i>locn</i>	Location for which the PM data is monitored. This is not applicable to Physical, SONET section or SDH RS layer parameters.	NEND Near-end PM data is displayed. FEND Far-end PM data is displayed.

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Table 3-106.RTRV - PM Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>dirn</i>	Direction of Monitoring.	IN OUT	IN refers to the ingress direction (towards the fabric). OUT refers to the egress direction (away from the fabric).
<i>tmper</i>	Time Period. This displays PM data for a specified time interval.	15-MIN 1-DAY	This displays PM data in 15-minute intervals. 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 values indicated in the next column.	MM-DD	Month-Day
<i>montm</i>	Monitored Time.	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. 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).

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RTRV-PM** command by the network element. The data retrieved is for a specific time for today's date (11-07).

```
RTRV-PM-OC48:LT-OXC:och-1-1-1:123456::ses-l,,fend,in,15-min,,07-45;

LT-OXC 01-11-07 08:00:00
M 123456 COMPLD
"och-1-1-1:SES-L,15,I-13,TCA,,15-MIN,11-07,07-45"
;
```

The following shows another example of the successful completion of **RTRV-PM** command by the network element. The data retrieved is for a specified time interval for today's date (11-07).

```
RTRV-PM-OC48:LT-OXC:och-1-1-1:123456::es-l,1-up,nend,in,15-min,,00-00
&&08-00;

LT-OXC 01-11-07 08:00:00
M 123456 COMPLD
"och-1-1-1:ES-L,17,I-13,TCA,,15-MIN,11-07,00-00"
"och-1-1-1:ES-L,10,I-13,TCA,,15-MIN,11-07,00-15"
...
...
"och-1-1-1:ES-L,115,I-13,TCA,,15-MIN,11-07,08-00"
;
```

The following shows another example of the successful completion of **RTRV-PM** command by the network element. The data retrieved is for 1-Day in which case *montm* is not specified.

```
RTRV-PM-OC48:LT-OXC:och-1-1-1:123456::es-l,1-up,nend,in,1-day,11-07;

LT-OXC 01-11-07 08:00:00
M 123456 COMPLD
"och-1-1-1:ES-L,260,I-13,TCA,,1-DAY,11-07"
;
```

The following shows another example of the successful completion of **RTRV-PM** command by the network element. In this example the current 15-minute data for *montype* LBC is retrieved. The current date is 11-07 and current time is 08-45.

```
RTRV-PM-OC192:LT-OXC:och-1-1-1:123456::lbc,0-up,nend,in,15-min;  
  
LT-OXC 01-11-07 08:00:00  
M 123456 COMPLD  
"och-1-1-1:LBC,0,I-13,TCA,,15-MIN,11-07,08-45"  
;
```

The following shows another example of the successful completion of **RTRV-PM** command by the network element. In this example the current data for *montype* LBC is retrieved for today (11-07).

```
RTRV-PM-STM16:LT-OXC:och-1-1-1:123456::lbc,0-up,nend,in,1-day;  
  
LT-OXC 01-11-07 08:00:00  
M 123456 COMPLD  
"och-1-1-1:LBC,0,I-13,TCA,,1-DAY,11-07"  
;
```

The following shows another example of the successful completion of **RTRV-PM** command by the network element. The data retrieved is for previous 1-Day (11-06) in which case *montm* is not specified.

```
RTRV-PM-STM64:LT-OXC:och-1-1-1:123456::ms_n_es,1-up,nend,in,1-day,11-06;  
  
LT-OXC 11-01-07 08:00:00  
M 123456 COMPLD  
"och-1-1-1:MS_N_ES,160,I-13,TCA,,1-DAY,11-06"
```

The following shows another example of the successful completion of **RTRV-PM** command by the network element. In this example the previous 15-minute data for *montype* LBC is retrieved. The current time is 09-00.

```
RTRV-PM-0CH:LT-0XC:och-1-1-1:123456::lbc,0-up,nend,in,15-min,,08-45;  
  
LT-0XC 01-11-07 08:00:00  
M 123456 COMPLD  
"och-1-1-1:LBC,0,,,,,15-MIN,,08-45"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-PM** command. The following additional error responses are also applicable to the **RTRV-PM** command.

If the network element receives a **RTRV-PM** command with a missing *tmper* parameter, then the following error response is returned.

```
sid date time  
M ctag DENY  
IPMS  
/* Input, Parameter MiSsing, missing tmper */  
;
```

If the network element receives a **RTRV-PM** command with an invalid *montype* parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-PM** command with an invalid *monlev* parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-PM** command with an invalid *locn* parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-PM** command with an invalid *dirn* parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-PM** command with an invalid *tmper* parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-PM** command with an invalid **mondatt** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-PM** command with an invalid **montm** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-PM** command for a non-existent **aid** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
IENE
/* Input, object Entity does Not Exist */
;
```

If the network element receives a **RTRV-PM** command with an inconsistent **montype** parameter value for the port specified, then the following error response is returned.

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

If the network element receives a **RTRV-PM** command with an invalid **modifier** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IICM
/* Input, Invalid CoMmand, invalid modifier */
;
```

If the network element receives a **RTRV-PM** command with **locn** parameter value specified for SONET physical and section layer parameters as well as SDH physical and regenerator section layer parameters, then the following error response is returned.

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

If the network element receives a **RTRV-PM** command with **tmper** value of **1-DAY** and a **montm** value specified, then the following error response is returned.

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

If the network element receives a **RTRV-PM** command with **mondatt** value **ALL** for **tmper** value **15-MIN**, and **montm** value specified other than **ALL**, then the following error response is returned.

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, inconsistent mondatt, tmper, and montm */
;
```

RELATED TL1 MESSAGES

DLT-PM-PROF

ED-PM-PROF

ENT-PM-PROF

RTRV-PM-ASGNMT

RTRV-PM-PROF

INIT-REG

NAME

RTRV-PMASGNMT: Retrieve PM Assignment

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM1

INPUT FORMAT

RTRV-PMASGNMT: *tid:aid:ctag::pftype,pfname;*

DESCRIPTION

The **RTRV-PMASGNMT** 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 PM profiles, refer to the **ENT-PM-PROF** command.

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

INPUT PARAMETERS

The “**RTRV-PMASGNMT** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-PMASGNMT** command.

Table 3-107.RTRV-PMASGNMT Positional Input Parameters

Parameter Name	Description	Allowed values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. This identifies the shelf containing the AIDs to which a specified profile name has been assigned.	LambdaRouter AOS 128: ois-{1-4} LambdaRouter AOS 256: ois-{1-7}
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of <i>ctag</i> parameter.	

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Table 3-107.RTRV -PMASGNMT Positional Input Parameters(*continued*)

Parameter Name	Description	Allowed values
<i>pftype</i>	Profile Type. This indicates the type of PM profile for the selected facility.	For SONET: PHY_SNT Physical SEC Section LNE Line Near-End LFE Line Far-End For SDH: PHY_SDH Physical RS RS MSNE MS Near-End MSFE MS Far-End
<i>pfname</i>	Profile Name. This parameter indicates the name that is assigned to the PM profile.	The name is an alphanumeric character string with a maximum of 24 characters.

OUTPUT FORMAT

If the **RTRV -PMASGNMT** command completes successfully, this is the normal response.

```

sid date time
M ctag COMPLD
  "pftype,pfname:aid,dirn"
  .      .      .
  .      .      .
;

```

OUTPUT PARAMETERS

The description of output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV -HDR** command.

The “**RTRV-PMASGNMT** Positional Output Parameters” table contains the detailed descriptions and allowed values for the additional positional output parameters of the **RTRV-PMASGNMT** command.

Table 3-108.RTRV -PMASGNMT Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. This is the address of the ports for which there is an assigned PM profile.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-2} for OC-48 and STM-16 ports och-{1-4}-{1-32}-1 for OC-192 and STM-64 ports LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-2} for OC-48 and STM-16 ports och-{1-7}-{1-32}-1 for OC-192 and STM-64 ports
<i>dirn</i>	Direction. This parameter indicates whether PM monitoring is in the direction towards the fabric or away from the fabric.	IN IN refers to the ingress direction (towards the fabric). OUT OUT refers to the egress direction (away from the fabric).
<i>pftype</i>	Profile Type. This indicates the type of PM profile for the selected facility.	For SONET: PHY-SNT SEC LNE LFE For SDH: PHY-SDH RS MSNE MSFE
<i>pfname</i>	Profile Name. This parameter indicates the name that is assigned to the PM profile.	The name is an alphanumeric character string with a maximum of 24 characters.

EXAMPLE INPUT/OUTPUT

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

```
RTRV-PMASGNMT:LT-OXC:ois-1:123456::lne,sprint;  
  
LT-OXC 98-01-01 08:00:00  
M 123456 COMPLD  
"LNE,SPRINT:och-1-2-1,IN"  
"LNE,SPRINT:och-1-2-2,OUT"  
"LNE,SPRINT:och-1-12-1,IN"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-PMASGNMT** command. The following additional errors apply to the **RTRV-PMASGNMT** command as well.

If the network element receives a **RTRV-PMASGNMT** command with a missing **aid** parameter then the following error response is returned.

```
sid date time  
M ctag DENY  
IPMS  
/* Input, Parameter MiSsing, missing aid */  
;
```

If the network element receives a **RTRV-PMASGNMT** command with a missing **pftype** parameter then the following error response is returned.

```
sid date time  
M ctag DENY  
IPMS  
/* Input, Parameter MiSsing, missing pftype */  
;
```

If the network element receives a **RTRV-PMASGNMT** command with a missing **pfname** parameter then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing pfname */
;
```

If the network element receives a **RTRV-PMASGNMT** command with a invalid **pftype** parameter then the following error response is returned.

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

If the network element receives a **RTRV-PMASGNMT** command with a invalid **pfname** parameter then the following error response is returned.

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

If the network element receives a **RTRV-PMASGNMT** command for a non-existent **aid** parameter, then the following error response is returned.

```
sid date time
M ctag DENY
IENE
/* Input, object Entity does Not Exist */
;
```

RELATED TL1 MESSAGES

DLT-PM-PROF

ED-rr

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ED - PM - PROF

ENT - PM - PROF

RTRV - PMPROF

NAME

RTRV - PMDAY: Retrieve Performance Monitoring Day

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM1

INPUT FORMAT

RTRV - PMDAY: *tid* : : *ctag*;

DESCRIPTION

Allows retrieval of the start time of a NE's daily performance monitoring data collection period. The current start time of the daily data collection period is set by using the **SET - PMDAY** command.

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

INPUT PARAMETERS

The "**RTRV - PMDAY** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV - PMDAY** command.

Table 3-109.RTRV - PMDAY Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameters syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameters syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

The description and syntax of output parameters *sid*, *date*, *time*, and *ctag* are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "**RTRV-PMDAY** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional positional output parameters of the **RTRV-PMDAY** command.

Table 3-110.RTRV -PMPDAY Positional Output Parameters

Parameter Name	Description	Allowed values
<i>pm_day_start</i>	Performance Day Start. Identifies the start time of the daily data collection period. The format is HOD. HOD stands for Hour-Of-Day.	0 to 23

EXAMPLE INPUT/OUTPUT

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

```
RTRV-PMDAY:LT-OXC: :123456;

LT-OXC 98-01-01 08:00:00
M 123456 COMPLD
  "22"
;
```


ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-PMDAY** command.

RELATED TL1 MESSAGES

SET-PMDAY

NAME

RTRV-PMPROF: Retrieve PM Profile

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM1

INPUT FORMAT

RTRV-PMPROF: *tid::ctag::pftype* [, *pfname*];

DESCRIPTION

The **RTRV-PMPROF** 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 PM profiles, refer to the **ENT-PM-PROF** command.

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

INPUT PARAMETERS

The “**RTRV-PMPROF** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-PMPROF** command.

Table 3-111.RTRV-PMPROF Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of <i>ctag</i> parameter.	

Table 3-111.RTRV -PMPROF Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>pftype</i>	Profile Type. This indicates the type of PM profile for the selected facility.	For SONET signals the values are: PHY_SNT Physical SEC Section LNE Line Near-End LFE Line Far-End For SDH signals the values are: PHY_SDH Physical RS RS MSNE MS Near-End MSFE MS Far-End
<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 a default set of profiles called DefaultS and DefaultM.	The name is an alphanumeric character string with a maximum of 24 characters.

OUTPUT FORMAT

If **RTRV - PMPROF** request, with a NULL profile name, completes successfully, then the following response is returned.

```

sid date time
M ctag COMPLD
  "pftype:DefaultS"
  "pftype:pfname"
  "pftype:pfname"
  .      .      .      .      .      .
  .      .      .      .      .      .
;
```

If **RTRV-PMPROF** request, with a valid profile name, completes successfully, then the following response is returned.

```
sid date time
M ctag COMPLD
  "pftype,pfname:spec_block"
;
```

OUTPUT PARAMETERS

The description and syntax of output parameters *sid*, *date*, *time*, and *ctag* are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The “**RTRV-PMPROF** Positional Output Parameters” table contains the detailed descriptions and allowed values for the additional positional output parameters of the **RTRV-PMPROF** command.

Table 3-112.RTRV -PMPROF Positional Output Parameters

Parameter Name	Description	Allowed values
<i>pftype</i>	Profile Type. This indicates the type of PM profile for the selected facility.	For SONET signal the values are: PHY_SNT Physical SEC Section LNE Line Near-End LFE Line Far-End For SDH signal the values are: PHY_SDH Physical RS RS MSNE MS Near-End MSFE MS Far-End
<i>pfname</i>	Profile Name. This indicates the name(s) of the PM profile.	The name is an alphanumeric character string with a maximum of 24 characters.
<i>spec_block</i>	Specific Block Parameters. See the table “ RTRV-PMPROF Specific Block Output Parameters” for the detailed descriptions of these parameters.	

The “**RTRV - PMPROF** Specific Block Output Parameters” table contains the detailed descriptions and allowed values for the additional positional output parameters of the **RTRV - PMPROF** command

Table 3-113.RTRV - PMPROF Specific Block Output Parameters

Parameter Name	Description	Allowed Values
PARM	PM Parameter. This lists the parameter of the PM profile	For SONET Physical profile, the parameters are:
		LBC Laser Bias Current
		OPT Optical Transmitter
		OPR Optical Receiver
		For SONET Section profile, the parameters are:
		CV-S-OC48 Coding Violations - Section for OC-48
		CV-S-OC192 Coding Violations - Section for OC-192
		ES-S Errored Seconds - Section for OC-48/OC-192
		SES-S Severely Errored Seconds - Section for OC-49/OC-192
		SEFS-S Severely Errored Frame second - Section for OC-48/OC-192
		For SONET Line Near-End profile, the parameters are:
		CV-L-OC48 Coding Violations - Line Near-End for OC-48
		CV-L-OC192 Coding Violations - Line Near-End for OC-192
		ES-L Errored Seconds - Line Near End for OC-48/OC192
		SES-L Severely Errored Seconds - Line Near End for OC-48/OC-192
		UAS-L Unavailable Seconds - Line Near-End for OC-48/OC192
		For SONET Line Far-End profile, the parameters are:
		CV-LFE-OC48 Coding Violations - Line Far-End for OC-48
		CV-LFE-OC192 Coding Violations - Line Far-End for OC-192
		ES-LFE Errored Seconds - Line Far End for OC-48/OC-192
SES-LFE Severely Errored Seconds - Line Far End for OC-48/OC192		
UAS-LFE Unavailable Seconds - Line for Line Far End for OC-48/OC-192		

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Table 3-113.RTRV -PMPROF Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values	
<i>PARM</i> (cont.)		For SDH Physical profile, the parameters are: LBC Laser Bias Current OPT Optical Transmitter OPR Optical Receiver For SDH RS profile, the parameters are: RS_N_BBE RS Near-End Background Block Errors for STM-16/STM-64 RS_N_ES RS Near-End Errored Seconds for STM-16/STM-64 RS_N_SES RS Near-End Severely Errored Seconds for STM-16/STM-64 RS_N_UAS RS Near-End Unavailable Seconds for STM-16/STM-64 For SDH MS Near-End profile, the parameters are: MS_N_BBE-STM16 MS Near-End Background Block Errors for STM-16 MS_N_BBE-STM64 MS Near-End Background Block Errors for STM-64 MS_N_ES MS Near-End Errored Seconds for STM-16/STM-64 MS_N_SES MS Near-End Severely Errored Seconds for STM-16/STM-64 MS_N_UAS MS Near-End Unavailable For SDH MS Far-End profile, the parameters are: MS_F_BBE-STM16 MS Far-End Background Block Errors for STM-16 MS_F_BBE-STM64 MS Far-End Background Block Errors for STM-64 MS_F_ES MS Far-End Errored Seconds for STM-16/STM-64 MS_F_SES MS Far-End Errored Seconds for STM-16/STM-64 MS_F_UAS MS Far-End Unavailable Seconds for STM-16/STM-64	
<i>PM</i>	Performance Monitoring Status. This parameter indicates whether performance monitoring is being performed on the specific parameter listed in the profile or not.	1	Means PM is being done for this specific parameter in the profile
		0	Means PM is not being done for this specific parameter in the profile

Table 3-113.RTRV-PMPROF Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>TH15</i>	Specifies threshold for 15-minute bin for the selected profile parameter. As Physical parameters are not binned, <i>TH15</i> does not apply to Physical profile parameters. The next column shows the range of values allowed.	The following threshold value ranges and default values apply to SONET Section profile parameters. 15-min CV-S-OC48 bin for OC-48 Range: 0-16777215 (Default=2240) 15-min CV-S-OC192 bin for OC-192 Range: 0-16777215 (Default=8960) 15-min ES-S bin for OC-48/C-192 Range: 0-900 (Default=25) 15-min SES-S bin for OC-48/OC-192 Range: 0-810 (Default=10)) 15-min SEFS-S bin for OC-48/OC-192 Range: 0-900 (Default=5) The following threshold value ranges and default values apply to SONET Line Near-End and Far-End profile parameters. 15-min CV-L-OC48 and CV-LFE-OC48 bins for OC-48 Range: 0-16777215 (Default=2240) 15-min CV-L-OC192 and CV-LFE-OC192 bins for OC-192 Range: 0-16777215 (Default=8960) 15-min ES-L and ES-LFE bins for OC-48/OC-192 Range: 0-900 (Default=25) 15-min SES-L and SES-LFE bins for OC-48/OC-192 Range: 0-810 (Default=10) 15-min UAS-L and UAS-LFE bins for OC-48/OC-192 Range: 0-900 (Default=10) The following threshold value ranges and default values apply to SDH RS profile parameters. The default values are given in parenthesis. 15-min RS_N_ES bins for STM-16/STM-64 Range: 0-900 (Default=180) 15-min RS_N_SES bins for STM-16/STM-64 Range: 0-810 (default=15) 15-min RS_N_BBE bins for STM-16/STM-64 Range: 0-7200000 (Default=9000) 15-min RS_N_UAS bins for STM-16/STM-64 Range: 0-900 (Default=15)

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Table 3-113.RTRV -PMPROF Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
TH15 (cont.)		The following threshold value ranges and default values apply to SDH MS Near_End and Far-End profile parameters. The default values are given in parenthesis. 15-min MS_N_BBE-STM16 and MS_F_BBE-STM16 bins for STM-16 Range:0-16777215 (Default=3648000) 15-min MS_N_BBE-STM64 and MS_F_BBE-STM64 bins for STM-64 Range:0-16777215 (Default=14592000) 15-min MS_N_ES and MS_F_ES bins for STM-16/STM-64 Range: 0-900 (Default=50) 15-min MS_N_SES and MS_F_SES bins for STM-16/STM-64 Range: 0-810 (Default=10) 15-min MS_N_UAS and MS_F_UAS bins for STM-16/STM-64 Range: 0-900 (Default=15)

Table 3-113.RTRV-PMPROF Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>THDAY</i>	Specifies threshold for Day bin for the selected profile parameter. As Physical parameters are not binned, <i>THDAY</i> does not apply to Physical profile parameters. The next column shows the range of values allowed and the default values.	The following threshold value ranges and default values apply to SONET Section profile parameters. The default values are given in parenthesis. Day CV-S-OC48 bin for OC-48 Range: 0-2147483647 (Default=21504) Day CV-S-OC192 bin for OC-192 Range: 0-2147483647 (Default=86016) Day ES-S bins for OC-48/OC-192 Range: 0-86400 (Default=250) Day SES-S bins for OC-48/OC-192 Range: 0-77760 (Default=40) Day SEFS-S bins for OC-48/OC-192 Range: 0-86400 (Default=10) The following threshold value ranges and default values apply to SONET Line Near-End and Far-End profile parameters. The default values are given in parenthesis. Day CV-L-OC48 and CV-LFE-OC48 bins for OC-48 Range: 0-2147483647 (Default=21504) Day CV-L-OC192 and CV-LFE-OC192 bins for OC-192 Range: 0-2147483647 (Default=86016)

Table 3-113.RTRV -PMPROF Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>THDAY</i> (cont.)		Day ES-L and ES-LFE bins for OC-48/OC192 Range: 0-86400 (Default=250) Day SES-L and SES-LFE bins for OC-48/OC192 Range: 0-77760 (Default=40) Day UAS-L and UAS-LFE bins for OC-48/OC192 Range: 0-86400 (Default=10) The following threshold value ranges and default values apply to SDH RS profile parameters. The default values are given in parenthesis. Day RS_N_ES bins for STM-16/STM-64 Range: 0-86400 (Default=1500) Day RS_N_SES bins for STM-16/STM-64 Range: 0-77760 (Default=20) Day RS_N_BBE bin for STM-16/STM-64 Range: 0-691200000 (Default=48000) Day RS_N_UAS bins for STM-16/STM-64 Range: 0-86400 (Default=20) The following threshold value ranges and default values apply to SDH MS Near-End and Far-End profile parameters. The default values are given in parenthesis. Day MS_N_BBE-STM16 and MS_F_BBE-STM16 bins for STM-16 Range: 0-2147483647 (Default=6912000) Day MS_N_BBE-STM64 and MS_F_BBE-STM64 bins for STM-64 Range: 0-2147483647 (Default=27648000) Day MS_N_ES and MS_F_ES bins for STM-16/STM-64 Range: 0-86400 (Default=150) Day MS_N_UAS and MS_F_UAS bins for STM-16/STM-64 Range: 0-86400 (Default=20)
<i>TCA</i>	TCA Reporting Status. This indicates whether the TCAs for parameters in the profile are to be generated or inhibited.	1 Means TCA generation is on for the specific parameter in the profile. 0 Means TCA are inhibited for the specific parameter in the profile.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RTRV - PMPROF** command.

```
RTRV-PMPROF:LT-OXC::123456::SEC;  
  
LT-OXC 98-01-01 08:00:00  
M 123456 COMPLD  
"SEC:DEFAULTS"  
"SEC:ATT"  
"SEC:MCI"  
"SEC:SPRINT"  
"SEC:GTE"  
;
```

The following is another example for the **RTRV - PMPROF** command.

```
RTRV-PMPROF:LT-OXC::123456::SEC,att;  
  
LT-OXC 98-01-01 08:00:00  
M 123456 COMPLD  
"SEC,ATT:PARM=CV-S-OC48,PM=1,TH15=387,THDAY=3500,TCA=1,"  
"SEC,ATT:PARM=ES-S,PM=1,TH15=4,THDAY=33,TCA=0,"  
"SEC,ATT:PARM=SEFS-S,PM=1,TH15=25,THDAY=210,TCA=1"  
;
```

The following example shows the **RTRV - PMPROF** command response for a physical profile.

```
RTRV-PMPROF:LT-OXC::123456::PHY_SNT,att;  
  
LT-OXC 98-01-01 08:00:00  
M 123456 COMPLD  
"PHY-SNT,ATT:PARM=LBC,PM=1,TCA=1,"  
"PHY-SNT,ATT:PARM=OPT,PM=1,TCA=0,"  
"PHY-SNT,ATT:PARM=OPR,PM=1,TCA=1"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-PMPROF** command. The following additional errors apply to the **RTRV-PMPROF** command as well.

If the network element receives a **RTRV-PMPROF** command with an invalid **pftype** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-PMPROF** command with an invalid **pfname** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-PMPROF** command with a missing **pftype** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
IPMS
/* Input, Parameter MiSsing, missing pftype */
;
```

If the network element receives a **RTRV-PMPROF** command for a non-existent profile name, then the following error response is returned.

```
sid date time
M ctag DENY
IENE
/* Input, object Entity does Not Exist */
;
```

RELATED TL1 MESSAGES

DLT-PM-PROF

ED-PM-PROF

ENT-PM-PROF

RTRV-PMASGNMT

NAME

RTRV-PORT-LINK: Retrieve Port Link association information

The **RTRV-PORT-LINK** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV-PORT-LINK: *tid:aid:ctag[:dir];*

DESCRIPTION

The **RTRV-PORT-LINK** command retrieves information about whether NNI ports have been discovered (or manually entered/provisioned) or not by indicating what the port's neighbor is if discovered or NONE if not discovered. It also retrieves all link parameters and link status indicating: "NA" for a link which status is not known, "GOOD" for the status of a link known to be good, "BAD" for the status of a link known to be bad and "MAN" for the status of a link which was manually provisioned and the connectivity was not confirmed. This command can only be executed if the system ONNCFG parameter is enabled. The port information is only returned for ports which have the USAGE parameter set to NNI and the IFMT parameter is one of the following: OC48/STM16, OC192/STM64, or OC768/STM256.

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

INPUT PARAMETERS

The "**RTRV-PORT-LINK** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameter of the **RTRV-PORT-LINK** command.

Table 3-114.RTRV-PORT-LINK Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the entity to which the command is directed.	LambdaRouter AOS 128: och-{1-4}-all och-{1-4}-{1-32}-{1-4,all} LambdaRouter AOS 256: och-{1-7}-all och-{1-7}-{1-32}-{1-4,all}
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>dir</i>	Directional Qualifier.	IN Input Port OUT Output Port BOTH Both Input and Output Ports (default)

OUTPUT FORMAT

If the **RTRV-PORT-LINK** request completes successfully, then the following normal completion response is returned.

```

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


OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "**RTRV-PORT-LINK** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional positional output parameters of the **RTRV-PORT-LINK** command.

Table 3-115.RTRV-PORT-LINK Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. The aid parameter represents the entity to which the command is directed.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>dir</i>	Directional Qualifier. When <i>dir</i>=BOTH , two output lines will be used for the same <i>aid</i> , one with <i>dir</i> =IN and the other with <i>dir</i> =OUT.	IN Input OUT Output
<i>spec_block</i>	Specific Block Parameters. See the " RTRV-PORT-LINK Specific Block Output Parameters" table for the detailed descriptions of these parameters.	

The "**RTRV-PORT-LINK** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV-PORT-LINK** command.

Table 3-116.RTRV-PORT-LINK Specific Block Output Parameters

Parameter Name	Description	Allowed Values	
<i>COST</i>	Administrative cost of the port connection.	Values in the range: [1,255]	
<i>DISCMODE</i>	Discovery mode. This parameter sets the automatic discovery/link verification process in motion.	ENABLE	Automatic discovery
		DISABLE	Manual provisioning
<i>IPADDR</i>	The RC IP Address of the LambdaRouter AOS that is a neighbor to the port specified in the <i>aid</i> parameter.	w.x.y.z where w, x, y, z = {0-255} or NONE	
<i>LINK_STAT</i>	Link Status	GOOD	Good standing
		BAD	Failed
		MAN	Manually provisioned
		NA	Not Available
<i>NAID</i>	Neighbor Access Identifier. Represents the entity (i.e., the port) which is neighbor to the port specified in the <i>aid</i> parameter.	och-{1-99}-{1-99}-{1-99} or NONE	
<i>PROPDELAY</i>	Propagation delay through the link between the pair of ports. The time in milliseconds needed for a signal to traverse from this node to the neighbor node.	Values in the range: [0,255]	
<i>SRLG1</i>	Shared Risk Link Group identifiers used to exclude links from the connection path(s) being created. Three different shared risk link groups are allowed.	Values in the range: [0,65535]	
<i>SRLG2</i>	Shared Risk Link Group identifiers used to exclude links from the connection path(s) being created. Three different shared risk link groups are allowed.	Values in the range: [0,65535]	

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Table 3-116.RTRV - PORT - LINK Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<i>COST</i>	Administrative cost of the port connection.	Values in the range: [1,255]
<i>DISCMODE</i>	Discovery mode. This parameter sets the automatic discovery/link verification process in motion.	ENABLE Automatic discovery DISABLE Manual provisioning
<i>SRLG3</i>	Shared Risk Link Group identifiers used to exclude links from the connection path(s) being created. Three different shared risk link groups are allowed.	Values in the range: [0,65535]
<i>VPNID</i>	Virtual Private Network identifier used to include links in the path being created.	Values in the range: [0,65535]

EXAMPLE INPUT/OUTPUT

The following example demonstrates the usage of the **RTRV - PORT - LINK** command for retrieving the port neighbor/link information of a given port.

```
RTRV - PORT - LINK: LT-OXC: och-1-1-4: 123459: : BOTH;

LT-OXC 00-08-01 08:04:19
M 123459 COMPLD
"och-1-1-
4: OUT: COST=200, DISCMODE=ENABLE, IPADDR=192.133.1.4, LINK_STAT=GOOD, NAID=och-
1-4-4, PROPDELAY=25, SRLG1=3, SRLG2=13, SRLG3=23, VPNID=13"
"och-1-1-
4: IN: COST=200, DISCMODE=ENABLE, IPADDR=192.133.1.4, LINK_STAT=GOOD, NAID=och-
1-4-4, PROPDELAY=25, SRLG1=3, SRLG2=13, SRLG3=23, VPNID=13"
;
```

The following example demonstrates the usage of the **RTRV-PORT-LINK** command for retrieving the port neighbor/link information for a given port, where only the COST, SRLG, PROPDELAY and VPNID parameters are provisioned.

```
RTRV-PORT-LINK:LT-OXC:och-1-1-3:123459::BOTH;

LT-OXC 00-08-01 08:24:49
M 123459 COMPLD
"och-1-1-
3:OUT:COST=200, DISCMODE=DISABLE, IPADDR=NONE, LINK_STAT=NA, NAID=NONE, PROPDE
LAY=25, SRLG1=3, SRLG2=13, SRLG3=23, VPNID=13"
"och-1-1-
3:IN:COST=200, DISCMODE=DISABLE, IPADDR=NONE, LINK_STAT=NA, NAID=NONE, PROPDEL
AY=25, SRLG1=3, SRLG2=13, SRLG3=23, VPNID=13"
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-PORT-LINK** command. The following additional errors apply to the **RTRV-PORT-LINK** command as well.

If the network element receives an **RTRV-PORT-LINK** command for a port object that does not exist, then the following error response is returned.

```
sid date time
M ctag DENY
IENE
/* Input, object Entity does Not Exist */
;
```

If the Network Element receives a **RTRV-PORT-LINK** command with an invalid **dir** parameter value, then the following error response is returned.

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

If the network element receives an **RTRV-PORT-LINK** command and the system's ONN Configuration equipment parameter (ONNCFG) is currently equal to DISABLE, then the following error response is returned.

```
sid date time
M ctag DENY
  EFON
/* Equipage, Feature Option Not provided, ONNCFG=DISABLE */
;
```

RELATED TL1 MESSAGES

ED-PORT-LINK

OPR-LINK-VERF

ED-rr

RTRV-rr

NAME

RTRV-PRMTR-DATA: Retrieve Parameter Data

The **RTRV-PRMTR-DATA** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

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 (NVM). The information retrieved includes the release number, database size, backup and restoral history information, and state of the database.

The NVM has two areas, one is for the generic. The generic area has two partitions: one usually contains the previous generic and the other the current generic. Installation via the **APPLY** command causes the contents of previous NVM partition to be installed. Following installation, a "pointer" is changed so that what is identified as current NVM partition contains the currently executing generic and previous NVM partition contains the previous generic.

For the database, there are also two partitions: current and previous. The **BACKUP** option of the **CPY-MEM** command is used to copy the database that is in the current partition to a remote file store. The **RESTORE** option copies a database from a remote file store and places it into previous NVM partition and then installs it as the working database.

The **CPY-NVM** command is used to backup/restore the database and/or generic between local file stores.

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

INPUT PARAMETERS

The "**RTRV-PRMTR-DATA** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-PRMTR-DATA** command.

Table 3-117.RTRV-PRMTR-DATA Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>amount</i>	Amount Of Data To Return.	ALL Current, previous and secondary Default is " ALL "

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

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "**RTRV-PRMTR-DATA** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV-PRMTR-DATA** command.

Table 3-118.RTRV-PRMTR-DATA Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>nvm</i>	Non-Volatile Memory identifier	CURRENT Current NVM Data PREVIOUS Previous NVM Data SECONDARY Secondary NVM Data
<i>spec_block</i>	Specific Block Parameters. See the " RTRV-PRMTR-DATA Specific Block Output Parameters" table for the detailed descriptions of these parameters.	

The "**RTRV-PRMTR-DATA** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the **RTRV-PRMTR-DATA** command.

Table 3-119.RTRV-PRMTR-DATA Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<i>RELEASE</i>	Release Number. The release parameter represents the software release contained in the file.	xx.yy.zz where xx=1-99, yy=0-99, zz=0-99
<i>SIZE</i>	NVM Size. The parameter indicates the allocated NVM size in bytes. It is not dynamically updated within the generic until data migration or software upgrade which may change the budget of NVM space used for database files.	2000000-220000000

Table 3-119.RTRV - PRMTR - DATA Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>BACKUP-TIME</i>	Back-up Time. This parameter gives the time and date when the last backup to a remote filestore (for example, CIT) finished. (Omitted if never backed up).The network element will update <i>BACKUP-TIME</i> just before file transfer starts, and then update the value of the current NVM <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 database. <i>BACKUPTIME</i> will be updated whether or not the file transfer was successful.	YY-MM-DD HH-MM-SS where YY=0-99, MM=1-12, DD=1-31, and HH=0-23, MM=0-59, SS=0-59
<i>RESTORE-TIME</i>	Restore Time. This parameter reflects the time and date when the last restore from a remote file store finished.(Omitted if never restored). Only database files at the current or previous NVM will have values for <i>RESTORETIME</i> . <i>RESTORETIME</i> will be updated whether or not the file transfer was successful.	Refer to the <i>BACKUPTIME</i> parameter allowed values for the allowed values of this parameter.
<i>BACKUP-FILE</i>	Back-up File. 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 backupfile. <i>BACKUPFILE</i> will be updated whether or not the file transfer was successful.	ASCII character string with the format "{CIT,EMS},filename" where <i>filename</i> has a format consistent with the file system where the file is located (for example, a DOS filename would contain backslashes (\), whereas a UNIX filename would contain slashes (/)). Because a (\) is interpreted as an escape character in TL1, it will be represented in the output as a double backslash (\\).

Table 3-119.RTRV - PRMTR - DATA Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>RESTORE-FILE</i>	Restore File. 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.	Refer to the <i>BACKUPFILE</i> parameter allowed values for the allowed values of this parameter.
<i>PRIOR-BACKUP-TIME</i>	Prior Back-up Time. This parameter gives the time and date when the next-to-last backup to a remote file store finished.	Refer to the <i>BACKUPTIME</i> parameter allowed values for the allowed values of this parameter.
<i>PRIORRESTORETIME</i>	Prior Restore Time. This parameter reflects the time and date when the next-to-last restore from a remote file store finished.	Refer to the <i>RESTORETIME</i> parameter allowed values for the allowed values of this parameter.
<i>PRIOR-BACKUP-FILE</i>	Prior Back-up File. This parameter indicates the remote location where the next-to-last backup is stored. The value reported for secondary NVM will be omitted.	Refer to the <i>BACKUPFILE</i> parameter allowed values for the allowed values of this parameter.
<i>PRIORRESTOREFILE</i>	Prior Restore File. This parameter reflects the remote location from where the next-to-last restore came.	Refer to the <i>RESTOREFILE</i> parameter allowed values for the allowed values of this parameter.
<i>LOCAL-BACKUP-TIME</i>	Local Back-up Time. This parameter gives the time and date when the last backup to the local file store (SEC NVM) started (Omitted if never backed up). When the backup is finished, the network element will write the same value for <i>BACKUPTIME</i> to both the current and secondary NVM.	Refer to the <i>BACKUPTIME</i> parameter allowed values for the allowed values of this parameter.
<i>LOCALRESTORE-TIME</i>	Local Restore Time. This parameter reflects the time and date when the last restore from a local file store finished (Omitted if never restored).	Refer to the <i>RESTORETIME</i> parameter allowed values for the allowed values of this parameter.
<i>STATE</i>	State of the database.	Refer to the table "Values of the <i>STATE</i> Output Parameter" for the allowed values.

Table 3-119.RTRV - PRMTR - DATA Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>TID</i>	Target Identifier. Indicates the TID that was stored in this NVM. Normally this will be the same as the network element TID, but inserting an NVM from another network element could produce discrepancies.	Refer to the table " RTRV - HDR Positional Input Parameters" for the allowed <i>tid</i> values.

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.

The *STATE* output parameter describes the state of the database. The following table gives the allowable values for the *STATE* output parameter.

Table 3-120.Values of the *STATE* Output Parameter

<i>STATE</i>	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	NVM is failed or missing.
INITIAL	current	Nothing in NVM.
INITIAL	previous	Nothing in previous partition of NVM.
INITIAL	secondary	Nothing in NVM. Database 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	Previously active database.
RUNNING	current	Currently active generic.

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The *normal* (as contrasted with CORRUPT or FAILED) database states of current NVM are: RUNNING and INPROGRESS. Most of the time its *STATE* parameter 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 the previous partition of the PRI are: PREVIOUS and INPROGRESS. Most of the time its *STATE* parameter 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 the SEC are: BACKUP, INPROGRESS, and INITIAL. Most of the time, its *STATE* parameter 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 initial database for the generic, its *STATE* parameter is equal to INITIAL.

If an NVM does not contain a database file, then the **RTRV-PRMTR-DATA** response for that NVM will consist of "STATE=INITIAL".

If an NVM is failed or missing, then the **RTRV-PRMTR-DATA** command will report only the *STATE* output parameter for that NVM. The *STATE* parameter will have the value FAILED.

When software is installed, the *BACKUPTIME*, *RESTORETIME*, *BACKUPFILE*, *RESTOREFILE*, *PRIORBACKUPTIME*, *PRIORBACKUPFILE*, *PRIORRESTORETIME*, *PRIORRESTOREFILE*, *LOCALBACKUPTIME*, *LOCALRESTORETIME* parameters will be omitted (initialized to a blank field) for current NVM which indicates the active NVM data running with installed software.

When software is downloaded to previous NVM, the database parameters for previous NVM do not need initialization because they still reflect information pertaining to the currently executing generic.

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-OXC::123456;
```

```
LT-OXC 98-01-14 09:45:28
M 123456 COMPLD
"CURRENT:RELEASE=02.02.04,SIZE=8234567,BACKUPTIME=98-01-14 09-00-00,
RESTORETIME=,BACKUPFILE=\"CIT,\\DATA\\98_01_01B\",RESTOREFILE=,
PRIORBACKUPTIME=98-01-14 08-00-00,PRIORRESTORETIME=,
PRIORBACKUPFILE=\"CIT,\\data\\98_01_01A\",PRIORRESTOREFILE=,LOCALBACKUPTIME=
98-01-13 08-30-00,LOCALRESTORETIME=,STATE=RUNNING,TID=LT-OXC"
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-PRMTR-DATA** command. The following additional errors apply to the **RTRV-PRMTR-DATA** command as well.

If the **RTRV-PRMTR-DATA** command is received with an invalid **amount** parameter value, then the following error response is returned.

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

RELATED TL1 MESSAGES

APPLY

CPY-MEM

CPY-NVM

RTRV-PRMTR-SFTWR

RTRV-SYSID

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NAME

RTRV-PRMTR-SFTWR: Retrieve Parameter Software

The **RTRV-PRMTR-SFTWR** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

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.

The **RTRV-PRMTR-SFTWR** command can be used to determine what generic is currently executing. It can also be used to determine what generic was previously executing.

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

INPUT PARAMETERS

The "**RTRV-PRMTR-SFTWR** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-PRMTR-SFTWR** command.

Table 3-121.RTRV-PRMTR-SFTWR Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-121.RTRV - PRMTR - SFTWR Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>amount</i>	Amount Of Data To Return.	ALL Current, previous, and secondary Default is ALL

OUTPUT FORMAT

If the **RTRV - PRMTR - SFTWR** 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

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

The "**RTRV - PRMTR - SFTWR** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV - PRMTR - SFTWR** command.

Table 3-122.RTRV - PRMTR - SFTWR Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>nvm</i>	Non-Volatile Memory identifier.	CURRENT Current NVM Software PREVIOUS Previous NVM Software SECONDARY Secondary NVM Software

Table 3-122.RTRV - PRMTR - SFTWR Positional Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>spec_block</i>	Specific Block Parameters. See the "RTRV - PRMTR - DATA Specific Block Output Parameters" table for the detailed descriptions of these parameters.	

The "RTRV - PRMTR - SFTWR Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the RTRV - PRMTR - SFTWR command.

Table 3-123.RTRV - PRMTR - SFTWR Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<i>RELEASE</i>	Release. The software release contained in the file.	xx.yy.zz where xx=1-99, yy=0-99, zz=0-99
<i>SIZE</i>	Size. Program size in bytes.	0-220000000
<i>SUPPLIER</i>	Supplier. Supplier of generic.	LUCENT
<i>TYPE</i>	Type. Product type. This field shall be identical to the systype parameter of the ACT-USER outputs.	LambdaRouter_AOS_128 LambdaRouter_AOS_256
<i>BUILDLABEL</i>	This is the build label of the build that makes up this release. The build label uniquely identifies all the source files and MRs included.	ASCII character string of up to 30 printable characters.
<i>DELIVERED</i>	Delivered. Date and time when the download finished.	YY-MM-DD HH-MM-SS. where YY=00-99, MM=01-12, DD=01-31, HH=0-23, MM=00-59, SS=00-59
<i>INSTALLED</i>	Installed. Date and time when the installation started. (This parameter is always omitted for secondary NVM).	YY-MM-DD HH-MM-SS. where YY=00-99, MM=01-12, DD=01-31, HH=0-23, MM=00-59, SS=00-59
<i>SCHEDULED</i>	Date and time when the download is scheduled as set by APPLY command.	YY-MM-DD HH-MM-SS. where YY=00-99, MM=01-12, DD=01-31, HH=0-23, MM=00-59, SS=00-59

Table 3-123.RTRV - PRMTR - SFTWR Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>PATH</i>	Path. The source of the generic	SEC LUCENT (indicates generic was factory delivered from Lucent)
<i>STATE</i>	State. State of the program.	Refer to the table "Values of the <i>STATE</i> Output Parameter" for valid values.

If an NVM has never contained a software generic, then the **RTRV - PRMTR - SFTWR** response for that NVM will consist of "*RELEASE=INITIAL*."

If an NVM is failed or missing, the **RTRV - PRMTR - SFTWR** response for that NVM will consist of "*STATE=FAILED*."

If an NVM is corrupt, then the **RTRV - PRMTR - SFTWR** response for that NVM will consist of "*STATE=CORRUPT*."

Even if some of the information in NVM is available, 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 *STATE* output parameter describes the state of the generic. The following table gives the allowable values for *STATE*.

Table 3-124.Values of the *STATE* Output Parameter

<i>STATE</i>	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	NVM is failed or missing.
INITIAL	previous	Nothing in previous partition of NVM.
INITIAL	secondary	Nothing in NVM. Generic distributed by Lucent.

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Table 3-124.Values of the *STATE* Output Parameter (*continued*)

<i>STATE</i>	<i>NVM</i>	<i>Description</i>
INPROGRESS	current	Installation is in progress. Software backup in progress.
INPROGRESS	previous	Download is in progress.
INPROGRESS	secondary	Local software download/restore in progress. Software backup in progress.
PREVIOUS	previous	Previously executing generic. Available for installation.
DOWNLOADED	previous	Just downloaded 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 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.

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. Note the CIT is MS-DOS based and the SNMS is UNIX based. This illustrates the different formats for *PATH* output parameter. 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-OXC:123456::ALL;
```

```
LT-OXC 98-01-14 09:35:28
M 123456 COMPLD
"CURRENT:RELEASE=02.02.04,SIZE=11423175,SUPPLIER=LUCENT,
TYPE=WaveStar_LambdaRouter_256,DELIVERED=98-01-13 08-00-10,
INSTALLED=98-01-13 08-45-30,
PATH=\"CIT,207.34.52.6,\\OXC\\generic\\1_2_04.pgm\",STATE=RUNNING"
"PREVIOUS:RELEASE=02.02.03,SIZE=11343236,SUPPLIER=LUCENT,
TYPE=WaveStar_LambdaRouter_256,DELIVERED=98-01-09 18-30-10,
INSTALLED=98-01-09 22-45-30,
PATH=\"EMS,207.34.52.9,/OXC/generic/1_2_03.pgm\",STATE=PREVIOUS"
"SECONDARY:RELEASE=02.02.05,SIZE=11623175,SUPPLIER=LUCENT,
TYPE=WaveStar_LambdaRouter_256,DELIVERED=98-01-16 12-25-50,INSTALLED=,
PATH=\"LUCENT\",STATE=INITIAL"
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-PRMTR-SFTWR** command. The following additional errors apply to the **RTRV-PRMTR-SFTWR** command as well.

If the **RTRV-PRMTR-SFTWR** command is received with an invalid **amount** parameter value, then the following error response is returned.

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

RELATED TL1 MESSAGES

APPLY

CPY-MEM

CPY-NVM

RTRV-PRMTR-DATA

RTRV-SYSID

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NAME

RTRV-rr : Retrieve Facility

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

INPUT FORMAT

RTRV-rr:tid:aid:ctag[:[:dir][:spec_block]];

DESCRIPTION

The **RTRV-rr** command retrieves all parameters related to optical ports.

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

INPUT PARAMETERS

The "**RTRV-rr** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-rr** command. The **Port Type** column identifies the parameter's allowable port types. If the **Port Type** field is blank then the row applies to all port types.

Table 3-125.RTRV-rr Positional Input Parameters

Port Type	Parameter Name	Description	Allowed Values
	<i>rr</i>	Port Modifier.	OCH
	<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-125.RTRV - rr Positional Input Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCHT OCHA13 OCHA15	<i>aid</i>	Access Identifier. This parameter is the address of the port to be retrieved.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4,all} och-{1-4}-all
OCH2GC			LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4,all} och-{1-7}-all
OCH10GC			LambdaRouter AOS 128: och-{1-4}-{1-32}-1 och-{1-4}-all
			LambdaRouter AOS 256: och-{1-7}-{1-32}-1 och-{1-7}-all
	<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
	<i>dir</i>	Directional Qualifier.	IN Input Port OUT Output Port BOTH Both Input and Output Ports (default)
	<i>spec_block</i>	Specific Block Parameters. See the table " RTRV - rr Specific Block Parameters" for the detailed descriptions of these parameters.	

The "**RTRV - rr** Specific Block Input Parameters" table contains the detailed descriptions and allowed values for the named input parameters of the **RTRV - rr**

command. The **Port Type** column identifies the parameter's allowable port types. If the **Port Type** field is blank then the row applies to all port types.

Table 3-126.RTRV - rr Specific Block Input Parameters

Port Type	Parameter Name	Description	Allowed Values
	RQUSAGE	Requested Port Usage. This is the port usage (<i>USAGE</i>) for which the retrieval is requested. For example, if TEST_ACC is specified, only ports with <i>USAGE</i> = TEST_ACC will be returned. If no ports exist within the input <i>aid</i> range specified with the requested port <i>USAGE</i> , the command will complete successfully without returning any port information.	ALL Request ports regardless of <i>USAGE</i> value. (default) CLIENT Request only ports with <i>USAGE</i> = CLIENT LINK_PROBE Request only ports with <i>USAGE</i> = LINK_PROBE NNI Request only ports with <i>USAGE</i> = NNI REVERTIVE Request only ports with <i>USAGE</i> = REVERTIVE TEST_ACC Request only ports with <i>USAGE</i> = TEST_ACC UNI Request only ports with <i>USAGE</i> = UNI

OUTPUT FORMAT

If the **RTRV-rr** request completes successfully, then the following normal completion response is returned.

```
[  sid date time
M  ctag COMPLD
  "aid:dir,type:spec_block:[pstin],[sstin][,pstout,sstout]"
[  "aid:dir,type:spec_block:[pstin],[sstin][,pstout,sstout]"
>
]
...
[  sid date time
M  ctag COMPLD
  "aid:dir,type:spec_block:[pstin],[sstin][,pstout,sstout]"
[  "aid:dir,type:spec_block:[pstin],[sstin][,pstout,sstout]"
>
]
  sid date time
M  ctag COMPLD
[  "aid:dir,type:spec_block:[pstin],[sstin][,pstout,sstout]"
[  "aid:dir,type:spec_block:[pstin],[sstin][,pstout,sstout]"
;
;
```

One output segment will be sent for each port AID. If **dir** is **BOTH**, then each output segment will contain two output lines: one for the input port and one for the output port. If **dir** is **IN** or **OUT** only one output line will be sent for each output segment.

If **RQUSAGE** is specified as a value other than **ALL**, the returned output lines will only be for the ports specified by the input **aid** parameter with the requested port **USAGE**. If the last existing port within the retrieved range specified by the input **aid** does not match the specified **RQUSAGE** than an additional output segment will be sent with no port output lines.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "RTRV-rr Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional positional output parameters of the **RTRV-rr** command. The **Port Type** column identifies the parameter's

allowable port types. If the **Port Type** field is blank then the row applies to all port types.

Table 3-127.RTRV - rr Positional Output Parameters

Port Type	Parameter Name	Description	Allowed Values	
	<i>aid</i>	Access Identifier. This parameter is the AID of the port to be retrieved.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}	
	<i>dir</i>	Directional Qualifier. When dir=BOTH , two output lines will be used for the same <i>aid</i> , one with <i>dir</i> =IN and the other with <i>dir</i> =OUT.	IN OUT	Input Output
	<i>type</i>	Port Type. The values OCHA13 and OCHA15 can be returned only with <i>dir</i> = IN.	OCHT OCHA13 OCHA15 OCH2GC OCH10GC	Transparent port Transparent port with 1310 nm Optical Amplifier Transparent port with 1550 nm Optical Amplifier 2G (OC-48/ STM-16) Client port 10G (OC-192/ STM-64) Client port
	<i>spec_block</i>	Specific Block Parameters. See the " RTRV - rr Specific Block Output Parameters" table for the detailed descriptions of these parameters.		
	<i>pstin</i>	Primary State of Input Port. Returned only with <i>dir</i> =IN.	IS-NR NA OOS-AU OOS-MA	In-Service, Normal Not Available (cannot retrieve state information) Out-Of-Service, Autonomous Out-Of-Service, Management

Table 3-127.RTRV-rr Positional Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values	
	<i>sstin</i>	Secondary State of Input Port. Returned only with <i>dir</i> =IN.	FLT NA UEQ	Fault Not Available (cannot retrieve state information) Unequipped
	<i>pstout</i>	Primary State of Output Port. Returned only with <i>dir</i> =OUT.	IS-NR NA OOS-AU OOS-MA	In-Service, Normal Not Available (cannot retrieve state information) Out-Of-Service, Autonomous Out-Of-Service, Management
	<i>sstout</i>	Secondary State of Output Port. Returned only with <i>dir</i> =OUT.	FLT NA UEQ	Fault Not Available (cannot retrieve state information) Unequipped

The "**RTRV-rr** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV-rr** command. The **Port Type** column identifies the parameter's allowable port types. If the **Port Type** field is blank then the row applies to all port types.

Table 3-128.RTRV-rr Specific Block Output Parameters

Port Type	Parameter Name	Description	Allowed Values	
	<i>ACTSIDE</i>	Current active selector side. Returned with <i>dir</i> =OUT. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	0 1 NA	Side 0 active Side 1 active Not Available (parent slot is unequipped or cannot retrieve parameter)

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Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	<i>AISLSW</i>	AIS-L Protection Switch enable. This parameter indicates whether to perform a protection switch at the output port selector based upon the detection of an AIS-L signal. Returned with <i>dir</i> =OUT.	ENABLE Enable protection switching for AIS-L signal detection DISABLE Disable protection switching for AIS-L signal detection
OCH2GC OCH10GC	<i>ALSO</i>	Automatic Laser Shut-off. This parameter indicates whether to automatically turn off the port laser upon detection of loss of signal (LOS), loss of frame (LOF), or excessive bit error rate (EBER) { <i>DEXCTHR</i> when <i>ISTD</i> =SDH or <i>SFTHR</i> when <i>ISTD</i> =SONET}.	ENABLE Turn off laser upon detection of LOS, LOF, or EBER DISABLE Laser unaffected by detection of LOS, LOF, or EBER
OCH2GC OCH10GC	<i>AUTOLOCK</i>	Output Port Selector Autolock. This parameter indicates whether to monitor the frequency of SONET/SDH triggered protection switch requests. If the frequency exceeds 3 triggers within 3 seconds, all SONET/SDH triggered protection switch requests will be suppressed for a period of 5 minutes. Returned with <i>dir</i> =OUT.	ENABLE Enable output port selector autolock DISABLE Disable output port selector autolock

Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
	<i>AUTOMODE</i>	Auto-enable port alarm monitoring. This parameter displays whether the alarm monitoring on a cross-connected input port will start automatically upon the detection of signal. When <i>AUTOMODE</i> = ENABLE, loss of signal alarm monitoring is disengaged. Upon detection of signal, <i>AUTOMODE</i> will autonomously be provisioned as DISABLE. Normal port alarm monitoring is engaged when <i>AUTOMODE</i> = DISABLE. Returned with <i>dir</i> =IN.	ENABLE Auto Mode Enabled DISABLE Auto Mode Disabled NA Not Available (cannot retrieve parameter)
OCH2GC OCH10GC	<i>BERSW</i>	BER Protection Switch enable. This parameter indicates whether to perform a protection switch at the output port selector based upon the detection of <i>DEGTHR</i> when <i>ISTD</i> =SDH or the detection of <i>SDTHR</i> when <i>ISTD</i> =SONET. Returned with <i>dir</i> =OUT.	ENABLE Enable protection switching for BER detection DISABLE Disable protection switching for BER detection
OCH2GC OCH10GC	<i>DEGTHR</i>	Degrade Threshold. This parameter indicates the bit error rate threshold for the optical signal. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	Values are specified as exponents of 10. -5 -6 -7 -8 -9
OCH2GC OCH10GC	<i>DEXCTHR</i>	Excessive Degrade Threshold. This parameter indicates the excessive bit error rate threshold for the optical signal. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	Values are specified as exponents of 10. -3 -4 -5

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Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	<i>EBERSW</i>	EBER Protection Switch enable. This parameter indicates whether to perform a protection switch at the output port selector based upon the detection of <i>DEXCTHR</i> when <i>ISTD</i> =SDH or the detection of <i>SFTHR</i> when <i>ISTD</i> =SONET. Returned with <i>dir</i> =OUT.	ENABLE Enable protection switching for EBER detection DISABLE Disable protection switching for EBER detection
OCHA13 OCHA15	<i>ICOLOSS</i>	Ingress Central Office Loss. Returned with <i>dir</i> =IN.	Integer values in the range: 0 to 3.
OCHT OCHA13 OCHA15	<i>IDOSTHR</i>	Input port Detection of Signal Threshold. This parameter displays the signal threshold level at which DOS (detection of signal) is declared for the input port. Returned with <i>dir</i> =IN.	Numbers from -45.0 to 25.0 with one decimal place.
OCHT OCHA13 OCHA15	<i>IFMT</i>	Interface Format.	OC48/STM16 SONET OC-48 or SDH STM-16 OC192/STM64 SONET OC-192 or SDH STM-64 OC768/STM256 SONET OC-768 or SDH STM-256 GBELX Gigabit Ethernet HSBB High-speed Broadband OTHER Unknown
OCHT OCHA13 OCHA15	<i>ILOSTHR</i>	Input port Loss of Signal Threshold. This parameter displays the signal threshold level at which LOS (loss of signal) is declared for the input port. Returned with <i>dir</i> =IN.	Numbers from -45.0 to 25.0 with one decimal place.

Table 3-128.RTRV - rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCHT OCHA13 OCHA15	<i>INPWR</i>	Input power monitor reading, rounded to the nearest dBm. Returned with <i>dir</i>=IN. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	For OCHT-type ports residing on OXI circuit packs with apparatus code LGK1: Values in the range: [-22.6, -0.5] ABOVE -0.5 Signal power is above the monitor threshold BELOW -22.6 Signal power is below the monitor threshold For OCHA13 and OCHA15-type ports, as well as OCHT-type ports residing on OXI circuit packs with apparatus code LGK2: Values in the range: [-45.0, +25.0] ABOVE +25.0 Signal power is above the monitor threshold BELOW -45.0 Signal power is below the monitor threshold NA Not Available (parent slot is unequipped or cannot retrieve parameter)

Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCHA13 OCHA15	<i>INPWR2</i>	Second (after optical amplifier) Input power monitor reading, rounded to the nearest dBm. Returned with <i>dir</i> =IN. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	Values in the range: [-45.0, +25.0] ABOVE +25.0 Signal power is above the monitor threshold BELOW -45.0 Signal power is below the monitor threshold NA Not Available (parent slot is unequipped or cannot retrieve parameter)
	<i>INSTATUS</i>	Input signal status. Returned with <i>dir</i> =IN. Autonomous changes to this parameter will not be returned in a REPT DBCHG message.	DOS Detection Of Signal LOS Loss Of Signal NA Not Available (parent slot is unequipped or cannot retrieve parameter)
	<i>INSWIP0</i>	Input SWIP on Fabric 0. Returned with <i>dir</i> =IN.	UAS Unassigned LambdaRouter AOS 128: swip-0-in-A{1-8}-{1-16} LambdaRouter AOS 256: swip-0-in-{[A,B][1-8]}-{1-16}
	<i>INSWIP1</i>	Input SWIP on Fabric 1. Returned with <i>dir</i> =IN.	UAS Unassigned LambdaRouter AOS 128: swip-0-in-B{1-8}-{1-16} LambdaRouter AOS 256: swip-1-in-{[A,B][1-8]}-{1-16}

Table 3-128.RTRV - rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values	
OCHT OCHA13 OCHA15	<i>IOPT</i>	Interface Optics.	SR IR LAMBDAXTREME LR VSR600-2M1 VSR600-2M2 VSR600-2R1 VSR2000-2L2 VSR2000-2R1 OTHER	Short Reach Intermediate Reach LambdaXtreme Long Reach Very Short Reach with 12 dB Budget (1310 nm) Very Short Reach with 12 dB Budget (1550 nm) Very Short Reach with 4 dB Budget Very Short Reach with 6 dB Budget Very Short Reach with 4 dB Budget Unknown
OCH2GC OCH10GC	<i>ISTD</i>	Interface Standard.	SONET SDH	SONET inter- face standard SDH interface standard
OCH2GC OCH10GC	<i>KA</i>	Keep Alive. This parameter enables/disables the generation of an AIS-L signal for an idle (non-cross-connected) output port. Returned with <i>dir</i> =OUT.	ENABLE DISABLE	Enable keep alive signal Disable keep alive signal

Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values	
	<i>KAALM</i>	Keep Alive Alarm. This parameter enables/disables a non-service affecting alarm upon detection of loss of signal (after original detection of signal), loss of frame, BER, or EBER for an idle (non-cross-connected) input port. Returned with <i>dir</i> =IN.	ENABLE DISABLE	Enable keep alive alarm Disable keep alive alarm
OCH2GC OCH10GC	<i>LFEPM</i>	Line Far-End PM. Enables/Disables Line Far-End PM. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SONET.	ENABLE DISABLE	Enable Line Far-End PM Disable Line Far-End PM
OCH2GC OCH10GC	<i>LFEPROF</i>	Line Far-End PM Profile. This parameter points to a Line Far-End PM profile name for the designated <i>aid</i> . This parameter is valid only when the port's <i>ISTD</i> is currently equal to SONET.	Alphanumeric string up to a maximum of 24 characters.	
OCH2GC OCH10GC	<i>LNEPM</i>	Line Near-End PM. Enables/Disables Line Near-End PM. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SONET.	ENABLE DISABLE	Enable Line Near-End PM Disable Line Near-End PM
OCH2GC OCH10GC	<i>LNEPROF</i>	Line Near-End PM Profile. This parameter points to a Line Near-End PM profile name for the designated <i>aid</i> . This parameter is valid only when the port's <i>ISTD</i> is currently equal to SONET.	Alphanumeric string up to a maximum of 24 characters.	
OCH2GC OCH10GC	<i>MSFEPM</i>	Enables/Disables Multiplex Section Far-End PM. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	ENABLE DISABLE	Enable Multiplex Section Far-End PM Disable Multiplex Section Far-End PM

Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	<i>MSFEPROF</i>	Multiplex Section Far-End PM Profile. This parameter points to a Multiplex Section Far-End PM profile name for the designated <i>aid</i> . This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	Alphanumeric string up to a maximum of 24 characters.
OCH2GC OCH10GC	<i>MSNEPM</i>	Enables/Disables Multiplex Section Near-End PM This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	ENABLE Enable Multiplex Section Near-End PM DISABLE Disable Multiplex Section Near-End PM
OCH2GC OCH10GC	<i>MSNEPROF</i>	Multiplex Section Near-End PM Profile. This parameter points to a Multiplex Section Near-End PM profile name for the designated <i>aid</i> . This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	Alphanumeric string up to a maximum of 24 characters.
OCHA13	<i>OAPWR</i>	Optical Amplifier Output Power. This parameter indicates the optical amplifier output power, in dBm, when either the input port's <i>IFMT</i> parameter or <i>IOPT</i> parameter is equal to OTHER. If <i>IFMT</i> and <i>IOPT</i> both have values other than OTHER, the appropriate optical amplifier output power is determined by the system and the current value of <i>OAPWR</i> is ignored. Returned with <i>dir</i> =IN.	Values (up to one decimal place) in the range: [1.0,4.0]
OCHA15			Values (up to one decimal place) in the range: [0.0,6.0]
	<i>ODOSTHR0</i>	Output port selector side 0 Detection of Signal Threshold. This parameter displays the signal threshold level at which DOS (detection of signal) is declared for the output port selector side 0. Returned with <i>dir</i> =OUT.	Numbers from -45.0 to 25.0 with one decimal place.

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Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
	<i>ODOSTHR1</i>	Output port selector side 1 Detection of Signal Threshold. This parameter displays the signal threshold level at which DOS (detection of signal) is declared for the output port selector side 1. Returned with <i>dir</i> =OUT.	Numbers from -45.0 to 25.0 with one decimal place.
	<i>OLOSTHR0</i>	Output port selector side 0 Loss of Signal Threshold. This parameter displays the signal threshold level at which LOS (loss of signal) is declared for the output port selector side 0. Returned with <i>dir</i> =OUT.	Numbers from -45.0 to 25.0 with one decimal place.
	<i>OLOSTHR1</i>	Output port selector side 1 Loss of Signal Threshold. This parameter displays the signal threshold level at which LOS (loss of signal) is declared for the output port selector side 1. Returned with <i>dir</i> =OUT.	Numbers from -45.0 to 25.0 with one decimal place.
	<i>OUTSWIP0</i>	Output SWIP on Fabric 0. Returned with <i>dir</i> =OUT.	UAS Unassigned LambdaRouter AOS 128: swip-0-out-A{1-8}-{1-16} LambdaRouter AOS 256: swip-0-out-{{A,B}[1-8]}-{1-16}
	<i>OUTSWIP1</i>	Output SWIP on Fabric 1. Returned with <i>dir</i> =OUT.	UAS Unassigned LambdaRouter AOS 128: swip-0-out-B{1-8}-{1-16} LambdaRouter AOS 256: swip-1-out-{{A,B}[1-8]}-{1-16}
OCH2GC OCH10GC	<i>PHYPM_SDH</i>	Enables/Disables Physical PM. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	ENABLE Enable Physical PM DISABLE Disable Physical PM

Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	<i>PHYPM_SNT</i>	Enables/Disables Physical PM. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SONET.	ENABLE Enable Physical PM DISABLE Disable Physical PM
OCH2GC OCH10GC	<i>PHYPROF_SDH</i>	Physical PM Profile. This parameter points to a Physical PM profile name for the designated <i>aid</i> . This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	Alphanumeric string up to a maximum of 24 characters.
OCH2GC OCH10GC	<i>PHYPROF_SNT</i>	Physical PM Profile. This parameter points to a Physical PM profile name for the designated <i>aid</i> . This parameter is valid only when the port's <i>ISTD</i> is currently equal to SONET.	Alphanumeric string up to a maximum of 24 characters.
OCH2GC OCH10GC	<i>PMMSFESES</i>	PM Multiplex Section Far-End SES Threshold. The values are a percentage of the maximum number of bit errors. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	1, 5-100 (in increments of 5)
OCH2GC OCH10GC	<i>PMMSNESES</i>	PM Multiplex Section Near-End SES Threshold. The values are a percentage of the maximum number of bit errors. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	1, 5-100 (in increments of 5)
OCH2GC OCH10GC	<i>PMRSNESES</i>	PM Regenerator Section Near-End SES Threshold. The values are a percentage of the maximum number of errored frames. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	1, 5-100 (in increments of 5)

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Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
	<i>PSWTYPE</i>	Current protection switch type. Returned with <i>dir</i> =OUT. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	AUTO Autonomous protection switch FORCED Forced protection switch MANUAL Manual protection switch NA Not Available (parent slot is unequipped or cannot retrieve parameter)
OCHT	<i>PWRMDF</i>	Power Monitor Default. This parameter indicates the ingress power level when either the input port's <i>IFMT</i> parameter or <i>IOPT</i> parameter is equal to OTHER. Returned with <i>dir</i> =IN.	Integer values in the range: [-25,+25]
OCHA13 OCHA15			Integer values in the range: [-10,+8]
OCH2GC OCH10GC	<i>RSPM</i>	Enables/Disables Regenerator Section PM. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	ENABLE Enable Regenerator Section PM DISABLE Disable Regenerator Section PM
OCH2GC OCH10GC	<i>RSPROF</i>	Regenerator Section PM Profile. This parameter points to a Regenerator Section PM profile name for the designated <i>aid</i> . This parameter is valid only when the port's <i>ISTD</i> is currently equal to SDH.	Alphanumeric string up to a maximum of 24 characters.
OCH2GC OCH10GC	<i>SDTHR</i>	Signal Degrade Threshold. This parameter indicates the bit error rate threshold for the optical signal. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SONET.	Values are specified as exponents of 10. -5 -6 -7 -8 -9

Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC OCH10GC	<i>SECPM</i>	Enables/Disables Section PM. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SONET.	ENABLE Enable Section PM DISABLE Disable Section PM
OCH2GC OCH10GC	<i>SECPROF</i>	Section PM Profile. This parameter points to a Section PM profile name for the designated <i>aid</i> . This parameter is valid only when the port's <i>ISTD</i> is currently equal to SONET.	Alphanumeric string up to a maximum of 24 characters.
OCH2GC OCH10GC	<i>SFTHR</i>	Signal Failure Threshold. This parameter indicates the excessive bit error rate threshold for the optical signal. This parameter is valid only when the port's <i>ISTD</i> is currently equal to SONET.	Values are specified as exponents of 10. -3 -4 -5
	<i>SIDE0</i>	Selector side 0 signal status. Returned with <i>dir</i> =OUT. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	DOS Detection Of Signal LOS Loss Of Signal NA Not Available (parent slot is unequipped or cannot retrieve parameter)

Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCHT	<i>SIDE0PWR</i>	Output selector side 0 power monitor reading, rounded to the nearest tenth of a dBm. Returned with <i>dir</i>=OUT. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	For ports residing on OXI circuit packs with apparatus code LGK1: Values in the range: [-33.9, -11.7] ABOVE -11.7 Signal power is above the monitor threshold BELOW -33.9 Signal power is below the monitor threshold For ports not residing on OXI circuit packs with apparatus code LGK2: Values in the range: [-45.0, +25.0] ABOVE +25.0 Signal power is above the monitor threshold BELOW -45.0 Signal power is below the monitor threshold NA Not Available (parent slot is unequipped or cannot retrieve parameter)

Table 3-128.RTRV - rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC	<i>SIDE0PWR</i>	Output selector side 0 power monitor reading, rounded to the nearest tenth of a dBm. Returned with <i>dir</i> =OUT. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	Values in the range: [-23.2, -1.1] ABOVE -1.1 Signal power is above the monitor threshold BELOW -23.2 Signal power is below the monitor threshold NA Not Available (parent slot is unequipped or cannot retrieve parameter)
OCH10GC	<i>SIDE0PWR</i>	Output selector side 0 power monitor reading, rounded to the nearest tenth of a dBm. Returned with <i>dir</i> =OUT. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	Values in the range: [-20.7, +1.4] ABOVE +1.4 Signal power is above the monitor threshold BELOW -20.7 Signal power is below the monitor threshold NA Not Available (parent slot is unequipped or cannot retrieve parameter)
	<i>SIDE1</i>	Selector side 1 signal status. Returned with <i>dir</i> =OUT. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	DOS Detection Of Signal LOS Loss Of Signal NA Not Available (parent slot is unequipped or cannot retrieve parameter)

Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCHT	<i>SIDE1PWR</i>	Output selector side 1 power monitor reading, rounded to the nearest tenth of a dBm. Returned with <i>dir</i>=OUT. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	For ports residing on OXI circuit packs with apparatus code LGK1: Values in the range: [-33.9, -11.7] ABOVE -11.7 Signal power is above the monitor threshold BELOW -33.9 Signal power is below the monitor threshold For ports not residing on OXI circuit packs with apparatus code LGK2: Values in the range: [-45.0, +25.0] ABOVE +25.0 Signal power is above the monitor threshold BELOW -45.0 Signal power is below the monitor threshold NA Not Available (parent slot is unequipped or cannot retrieve parameter)

Table 3-128.RTRV - rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
OCH2GC	<i>SIDE1PWR</i>	Output selector side 1 power monitor reading, rounded to the nearest tenth of a dBm. Returned with <i>dir</i> =OUT. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	Values in the range: [-23.2, -1.1] ABOVE -1.1 Signal power is above the monitor threshold BELOW -23.2 Signal power is below the monitor threshold NA Not Available (parent slot is unequipped or cannot retrieve parameter)
OCH10GC	<i>SIDE1PWR</i>	Output selector side 1 power monitor reading, rounded to the nearest tenth of a dBm. Returned with <i>dir</i> =OUT. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	Values in the range: [-20.7, +1.4] ABOVE +1.4 Signal power is above the monitor threshold BELOW -20.7 Signal power is below the monitor threshold NA Not Available (parent slot is unequipped or cannot retrieve parameter)
OCH2GC OCH10GC	<i>STRC</i>	Section Trace. This parameter shows the value of the Section Trace Identifier on the incoming section overhead J0 byte. Autonomous changes to the value of this parameter will not be indicated in a REPT DBCHG message.	32 Hexadecimal digits (representing 16 bytes; each byte is expressed as two hexadecimal digits. An example of a byte is 6D) NA Not Available (parent slot is unequipped or cannot retrieve parameter)
OCH2GC OCH10GC	<i>TCARPT</i>	TCA Report. Enables/Disables TCA reporting.	ENABLE Enable TCA reporting DISABLE Disable TCA reporting

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See notice on first page

Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
	USAGE	Port Usage.	CLIENT Client interface port (a non-NNI port without a UNI interface) NNI Network-to-Network Interface port TEST_ACC Port dedicated for test access signal monitoring or injection (not necessarily a "Test Access (TA) port") UNI User-to-Network Interface port (a non-NNI port with a UNI interface)
OCH2GC OCH10GC			LINK_PROBE Dedicated port for link discovery and verification REVERTIVE Dedicated port for revertive restoration {Can only be returned when <i>dir</i>=OUT}

Table 3-128.RTRV-rr Specific Block Output Parameters (*continued*)

Port Type	Parameter Name	Description	Allowed Values
	<i>XCONN</i>	Port Cross-connection status.	AIRP_RSV BUSYBOTH BUSYSIDE0 BUSYSIDE1 IDLE Port is involved in the neighbor discovery or link verification process Port is involved in a cross-connect and/or loopback using both fabric sides Port is involved in a cross-connect and/or loopback through fabric side-0 but fabric side-1 is Idle Port is involved in a cross-connect and/or loopback through fabric side-1 but fabric side-0 is Idle Port is not involved in a cross-connect or loopback

EXAMPLE INPUT/OUTPUT

The following examples are valid for the LambdaRouter AOS 256 R3 system. All parameters indicated below are valid for the LambdaRouter AOS 128 R3 system but the indicated values may vary slightly.

The following example shows a successful execution of the **RTRV-rr** command applied to an OCHT-type input port.

```
RTRV-UCH:LT-OXC:och-1-1-4:123456::IN;
```

```
LT-OXC 00-08-01 11:59:33
M 123456 COMPLD
"och-1-1-4:IN, OCHT:INSWIP0=swip-0-in-A1-1, INSWIP1=swip-1-in-A1-3,
IFMT=OC192/STM64, IOPT=LR, PWRMDF=-10, INSTATUS=DOS, INPWR=-2.7,
USAGE=NNI, AUTOMODE=DISABLE, XCONN=IDLE, IDOSTHR=-3.0, ILOSTHR=-8.0,
KAALM=ENABLE:IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to an OCHT-type output port.

```
RTRV-UCH:LT-OXC:och-1-1-4:123457::OUT;
```

```
LT-OXC 00-08-01 12:11:58
M 123457 COMPLD
"och-1-1-4:OUT, OCHT:OUTSWIP0=swip-0-out-A1-11,
OUTSWIP1=swip-1-out-B3-10, PSWTYPE=AUTO, ACTSIDE=0, SIDE0=DOS,
SIDE1=DOS, IFMT=OC192/STM64, IOPT=IR, SIDE0PWR=-20.1, SIDE1PWR=-20.0,
USAGE=CLIENT, XCONN=BUSYBOTH, ODOSTHR0=-21.0, ODOSTHR1=-21.0,
OLOSTHR0=-25.0, OLOSTHR1=-25.0:, , IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to both an input and output OCHT-type port.

```
RTRV-UCH:LT-0XC:och-1-1-4:123458::BOTH;

LT-0XC 00-08-01 12:23:47
M 123458 COMPLD
"och-1-1-4:IN, OCHT:INSWIP0=swip-0-in-A1-1, INSWIP1=swip-1-in-A1-3,
IFMT=OC192/STM64, IOPT=LR, PWRMDF=-10, INSTATUS=DOS, INPWR=-2.7,
USAGE=NNI, AUTOMODE=DISABLE, XCONN=IDLE, IDOSTHR=-3.0, ILOSTHR=-8.0,
KAALM=ENABLE:IS-NR, "
"och-1-1-4:OUT, OCHT:OUTSWIP0=swip-0-out-A1-11,
OUTSWIP1=swip-1-out-B3-10, PSWTYPE=AUTO, ACTSIDE=0, SIDE0=DOS,
SIDE1=DOS, IFMT=OC192/STM64, IOPT=IR, SIDE0PWR=-20.1, SIDE1PWR=-20.0,
USAGE=CLIENT, XCONN=BUSYBOTH, ODOSTHR0=-21.0, ODOSTHR1=-21.0,
OLOSTHR0=-25.0, OLOSTHR1=-25.0::, IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to a SONET OCH10GC-type input port.

```
RTRV-UCH:LT-0XC:och-2-3-1:123459::IN;

LT-0XC 00-08-01 12:25:33
M 123459 COMPLD
"och-2-3-1:IN, OCH10GC:INSWIP0=swip-0-in-A2-3,
INSWIP1=swip-1-in-A2-8, INSTATUS=DOS, ISTD=SONET, SDTHR=-6, SFTHR=-3,
USAGE=CLIENT, AUTOMODE=DISABLE, XCONN=BUSYBOTH,
ALSO=ENABLE, KAALM=DISABLE, PHYPM_SNT=DISABLE,
PHYPROF_SNT=DEFAULTS, STRC=0AB256CD798FE3C10AB2432D79FEE3C1,
LFEPM=DISABLE, LFEPROF=DEFAULTS, LNEPM=DISABLE, LNEPROF=DEFAULTS,
SECPM=DISABLE, SECPROF=DEFAULTS, TCARPT=ENABLE:IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to a SONET OCH10GC-type output port.

```
RTRV- OCH:LT- OXC: och-2-3-1:123460::OUT;
```

```
LT-OXC 00-08-01 12:28:58
M 123460 COMPLD
"och-2-3-1:OUT, OCH10GC:OUTSWIP0=swip-0-out-A3-14,
OUTSWIP1=swip-1-out-B8-9, PSWTYPE=AUTO, ACTSIDE=1, SIDE0=DOS, SIDE1=DOS,
SIDE0PWR=-20.4, SIDE1PWR=-19.8, ISTD=SONET, SDTHR=-7, SFTHR=-4,
USAGE=NNI, AISLSW=ENABLE, BERSW=DISABLE, EBERSW=ENABLE, AUTOLOCK=DISABLE,
XCONN=BUSYBOTH, KA=ENABLE, ODOSTHR0=-21.0, ODOSTHR1=-21.0,
OLOSTHR0=-25.0, OLOSTHR1=-25.0, PHYPM_SNT=DISABLE, PHYPROF_SNT=DEFAULTS,
STRC=0CB4561D7A8FB3C10AB2432D79F123C1, LFEPM=DISABLE, LFEPROF=DEFAULTS,
LNEPM=DISABLE, LNEPROF=DEFAULTS, SECPM=DISABLE, SECPROF=DEFAULTS,
TCARPT=ENABLE, ALSO=DISABLE: , IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to both an input and output SONET OCH10GC-type port.

```
RTRV- OCH:LT- OXC: och-2-3-1:123461;
```

```
LT-OXC 00-08-01 12:31:47
M 123461 COMPLD
"och-2-3-1:IN, OCH10GC:INSWIP0=swip-0-in-A2-3,
INSWIP1=swip-1-in-A2-8, INSTATUS=DOS, ISTD=SONET, SDTHR=-6, SFTHR=-3,
USAGE=CLIENT, AUTOMODE=DISABLE, XCONN=BUSYBOTH,
ALSO=ENABLE, KAALM=DISABLE, PHYPM_SNT=DISABLE,
PHYPROF_SNT=DEFAULTS, STRC=0AB256CD798FE3C10AB2432D79FEE3C1,
LFEPM=DISABLE, LFEPROF=DEFAULTS, LNEPM=DISABLE, LNEPROF=DEFAULTS,
SECPM=DISABLE, SECPROF=DEFAULTS, TCARPT=ENABLE: IS-NR, "
"och-2-3-1:OUT, OCH10GC:OUTSWIP0=swip-0-out-A3-14,
OUTSWIP1=swip-1-out-B8-9, PSWTYPE=AUTO, ACTSIDE=1, SIDE0=DOS, SIDE1=DOS,
SIDE0PWR=-20.4, SIDE1PWR=-19.8, ISTD=SONET, SDTHR=-7, SFTHR=-4,
USAGE=NNI, AISLSW=ENABLE, BERSW=DISABLE, EBERSW=ENABLE, AUTOLOCK=DISABLE,
XCONN=BUSYBOTH, KA=ENABLE, ODOSTHR0=-21.0, ODOSTHR1=-21.0,
OLOSTHR0=-25.0, OLOSTHR1=-25.0, PHYPM_SNT=DISABLE, PHYPROF_SNT=DEFAULTS,
STRC=0CB4561D7A8FB3C10AB2432D79F123C1, LFEPM=DISABLE, LFEPROF=DEFAULTS,
LNEPM=DISABLE, LNEPROF=DEFAULTS, SECPM=DISABLE, SECPROF=DEFAULTS,
TCARPT=ENABLE, ALSO=DISABLE: , IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to a SDH OCH10GC-type input port.

```
RTRV- OCH: LT- OXC: och-2-7-1:123462::IN;
```

```
LT-OXC 00-08-01 12:34:27
M 123462 COMPLD
"och-2-7-1:IN, OCH10GC:INSWIP0=swip-0-in-B7-6,
INSWIP1=swip-1-in-A5-15, INSTATUS=DOS, ISTD=SDH, DEGTHR=-6, DEXCTHR=-3,
USAGE=NNI, AUTOMODE=ENABLE, XCONN=BUSYBOTH, ALSO=DISABLE,
KAALM=DISABLE, PHYPM_SDH=DISABLE, PHYPROF_SDH=DEFAULTS,
STRC=0AB256CD198FA3C19AB2432D79FEE3C1, MSFEPM=DISABLE, MSFEPROF=DEFAULTS,
MSNEPM=DISABLE, MSNEPROF=DEFAULTS, RSPM=DISABLE, RSPROF=DEFAULTS,
TCARPT=ENABLE, PMMSFESES=15, PMMSNESES=15, PMRSNESES=30:IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to a SDH OCH10GC-type output port.

```
RTRV- OCH: LT- OXC: och-2-7-1:123463::OUT;
```

```
LT-OXC 00-08-01 12:35:53
M 123463 COMPLD
"och-2-7-1:OUT, OCH10GC:OUTSWIP0=swip-0-out-B6-4,
OUTSWIP1=swip-1-out-B5-16, PSWTYPE=AUTO, ACTSIDE=0, SIDE0=LOS,
SIDE1=LOS, SIDE0PWR=BELOW -22.5, SIDE1PWR=BELOW -22.5, ISTD=SDH,
DEGTHR=-8, DEXCTHR=-5, USAGE=NNI, AISLSW=DISABLE, BERSW=ENABLE,
EBERSW=ENABLE, AUTOLOCK=ENABLE, XCONN=IDLE, KA=ENABLE,
ODOSTHR0=-17, ODOSTHR1=-17, OLOSTHR0=-21, OLOSTHR1=-21, PHYPM_SDH=DISABLE,
PHYPROF_SDH=DEFAULTS, STRC=0AB254CD191FA3C29AB2432D79FEE3C1,
MSFEPM=DISABLE, MSFEPROF=DEFAULTS, MSNEPM=DISABLE, MSNEPROF=DEFAULTS,
RSPM=DISABLE, RSPROF=DEFAULTS, TCARPT=ENABLE, PMMSFESES=15, PMMSNESES=15,
PMRSNESES=30, ALSO=DISABLE:, , IS-NR, "
;
```


The following example shows a successful execution of the **RTRV-rr** command applied to both an input and output SDH OCH10GC-type port.

```
RTRV-och:LT-oxc:och-2-7-1:123464::BOTH;

LT-oxc 00-08-01 12:38:17
M 123464 COMPLD
"och-2-7-1:IN, OCH10GC:INSWIP0=swip-0-in-B7-6,
INSWIP1=swip-1-in-A5-15, INSTATUS=DOS, ISTD=SDH, DEGTHR=-6, DEXCTHR=-3,
USAGE=NNI, AUTOMODE=ENABLE, XCONN=BUSYBOTH, ALSO=DISABLE,
KAALM=DISABLE, PHYPM_SDH=DISABLE, PHYPROF_SDH=DEFAULTS,
STRC=0AB256CD198FA3C19AB2432D79FEE3C1, MSFEPM=DISABLE, MSFEPROF=DEFAULTS,
MSNEPM=DISABLE, MSNEPROF=DEFAULTS, RSPM=DISABLE, RSPROF=DEFAULTS,
TCARPT=ENABLE, PMMSFESES=15, PMMSNESES=15, PMRSNESES=30:IS-NR, "
"och-2-7-1:OUT, OCH10GC:OUTSWIP0=swip-0-out-B6-4,
OUTSWIP1=swip-1-out-B5-16, PSWTYPE=AUTO, ACTSIDE=0, SIDE0=LOS,
SIDE1=LOS, SIDE0PWR=BELOW -22.5, SIDE1PWR=BELOW -22.5, ISTD=SDH,
DEGTHR=-8, DEXCTHR=-5, USAGE=NNI, AISLSW=DISABLE, BERSW=ENABLE,
EBERSW=ENABLE, AUTOLOCK=ENABLE, XCONN=IDLE, KA=ENABLE,
ODOSTHR0=-17, ODOSTHR1=-17, OLOSTHR0=-21, OLOSTHR1=-21, PHYPM_SDH=DISABLE,
PHYPROF_SDH=DEFAULTS, STRC=0AB254CD191FA3C29AB2432D79FEE3C1,
MSFEPM=DISABLE, MSFEPROF=DEFAULTS, MSNEPM=DISABLE, MSNEPROF=DEFAULTS,
RSPM=DISABLE, RSPROF=DEFAULTS, TCARPT=ENABLE, PMMSFESES=15, PMMSNESES=15,
PMRSNESES=30, ALSO=DISABLE:, , IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to a SONET OCH2GC-type input port.

```
RTRV-och:LT-oxc:och-3-3-1:123465::IN;

LT-oxc 00-08-01 12:39:33
M 123465 COMPLD
"och-3-3-1:IN, OCH2GC:INSWIP0=swip-0-in-A5-10,
INSWIP1=swip-1-in-A7-8, INSTATUS=DOS, ISTD=SONET, SDTHR=-6, SFTHR=-3,
USAGE=CLIENT, AUTOMODE=DISABLE, XCONN=BUSYBOTH, ALSO=DISABLE,
KAALM=DISABLE, PHYPM_SNT=DISABLE, PHYPROF_SNT=DEFAULTS,
STRC=0AB256CD798FE3C10AB2432D79FEE3C1, LFEPM=DISABLE, LFEPROF=DEFAULTS,
LNEPM=DISABLE, LNEPROF=DEFAULTS, SECPM=DISABLE, SECPROF=DEFAULTS,
TCARPT=ENABLE:IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to a SONET OCH2GC-type output port.

RTRV-och:LT-oxc:och-3-3-1:123466::OUT;

```
LT-oxc 00-08-01 12:42:33
M 123466 COMPLD
"och-3-3-1:OUT, OCH2GC:OUTSWIP0=swip-0-out-A3-14,
OUTSWIP1=swip-1-out-B7-9, PSWTYPE=AUTO, ACTSIDE=1, SIDE0=DOS, SIDE1=DOS,
SIDE0PWR=-20.4, SIDE1PWR=-19.8, ISTD=SONET, SDTHR=-7, SFTHR=-4,
USAGE=NNI, AISLSW=ENABLE, BERSW=DISABLE, EBERSW=ENABLE, AUTOLOCK=DISABLE,
XCONN=BUSYBOTH, KA=ENABLE, ODOSTHR0=-21.0, ODOSTHR1=-21.0, OLOSTHR0=-25.0,
OLOSTHR1=-25.0, PHYPM_SNT=DISABLE, PHYPROF_SNT=DEFAULTS, LFEPM=DISABLE,
LFEPROF=DEFAULTS, STRC=0CB4561D7A8FB3C10AB2432D79F123C1, LNEPM=DISABLE,
LNEPROF=DEFAULTS, SECPM=DISABLE, SECPROF=DEFAULTS, TCARPT=ENABLE,
ALSO=DISABLE:, , IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to both an input and output SONET OCH2GC-type port.

RTRV-och:LT-oxc:och-3-3-1:123467;

```
LT-oxc 00-08-01 12:44:13
M 123467 COMPLD
"och-3-3-1:IN, OCH2GC:INSWIP0=swip-0-in-A5-10,
INSWIP1=swip-1-in-A7-8, INSTATUS=DOS, ISTD=SONET, SDTHR=-6, SFTHR=-3,
USAGE=CLIENT, AUTOMODE=DISABLE, XCONN=BUSYBOTH, ALSO=DISABLE,
KAALM=DISABLE, PHYPM_SNT=DISABLE, PHYPROF_SNT=DEFAULTS,
STRC=0AB256CD79FE3C10AB2432D79FEE3C1, LFEPM=DISABLE, LFEPROF=DEFAULTS,
LNEPM=DISABLE, LNEPROF=DEFAULTS, SECPM=DISABLE, SECPROF=DEFAULTS,
TCARPT=ENABLE:IS-NR, "
"och-3-3-1:OUT, OCH2GC:OUTSWIP0=swip-0-out-A3-14,
OUTSWIP1=swip-1-out-B7-9, PSWTYPE=AUTO, ACTSIDE=1, SIDE0=DOS, SIDE1=DOS,
SIDE0PWR=-20.4, SIDE1PWR=-19.8, ISTD=SONET, SDTHR=-7, SFTHR=-4,
USAGE=NNI, AISLSW=ENABLE, BERSW=DISABLE, EBERSW=ENABLE, AUTOLOCK=DISABLE,
XCONN=BUSYBOTH, KA=ENABLE, ODOSTHR0=-21.0, ODOSTHR1=-21.0, OLOSTHR0=-25.0,
OLOSTHR1=-25.0, PHYPM_SNT=DISABLE, PHYPROF_SNT=DEFAULTS, LFEPM=DISABLE,
LFEPROF=DEFAULTS, STRC=0CB4561D7A8FB3C10AB2432D79F123C1, LNEPM=DISABLE,
LNEPROF=DEFAULTS, SECPM=DISABLE, SECPROF=DEFAULTS, TCARPT=ENABLE,
ALSO=DISABLE:, , IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to a SDH OCH2GC-type input port.

```
RTRV- OCH:LT-OXC:och-3-7-1:123468::IN;
```

```
LT-OXC 00-08-01 12:45:57
M 123468 COMPLD
"och-3-7-1:IN,OCH2GC:INSWIP0=swip-0-in-B3-6,
INSWIP1=swip-1-in-A1-15,INSTATUS=L0S,ISTD=SDH,DEGTHR=-6,DEXCTHR=-3,
USAGE=NNI,AUTOMODE=ENABLE,XCONN=BUSYBOTH,ALSO=ENABLE,KAALM=DISABLE,
PHYPM_SDH=DISABLE,PHYPROF_SDH=DEFAULTS,MSFEPM=DISABLE,
STRC=0AB156AD198FA3C19AB4432D79FEE3C1,MSFEPROF=DEFAULTS,
MSNEPM=DISABLE,MSNEPROF=DEFAULTS,RSPM=DISABLE,RSPROF=DEFAULTS,
TCARPT=ENABLE,PMMSFESES=15,PMMSNESES=15,PMRSNESES=30:IS-NR,"
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to a SDH OCH2GC-type output port.

```
RTRV- OCH:LT-OXC:och-3-7-1:123469::OUT;
```

```
LT-OXC 00-08-01 12:48:47
M 123469 COMPLD
"och-3-7-1:OUT,OCH2GC:OUTSWIP0=swip-0-out-B2-4,
OUTSWIP1=swip-1-out-B6-12,PSWTYPE=AUTO,ACTSIDE=0,SIDE0=L0S,
SIDE1=L0S,SIDE0PWR=BELOW -22.5,SIDE1PWR=BELOW -22.5,ISTD=SDH,
DEGTHR=-8,DEXCTHR=-5,USAGE=NNI,AISLSW=DISABLE,BERSW=ENABLE,
EBERSW=ENABLE,AUTOLOCK=ENABLE,XCONN=IDLE,KA=ENABLE,ODOSTHR0=-17,
ODOSTHR1=-17,LOSTHR0=-21,LOSTHR1=-21,PHYPM_SDH=DISABLE,
PHYPROF_SDH=DEFAULTS,STRC=0AB254CD191FA3C29AB2432D79FEE3C1,
MSFEPM=DISABLE,MSFEPROF=DEFAULTS,MSNEPM=DISABLE,MSNEPROF=DEFAULTS,
RSPM=DISABLE,RSPROF=DEFAULTS,TCARPT=ENABLE,PMMSFESES=15,PMMSNESES=15,
PMRSNESES=30,ALSO=DISABLE::,IS-NR,"
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to both an input and output SDH OCH2GC-type port.

RTRV-och:LT-oxc:och-3-7-1:123470::BOTH;

```
LT-oxc 00-08-01 12:49:59
M 123470 COMPLD
"och-3-7-1:IN, OCH2GC:INSWIP0=swip-0-in-B3-6,
INSWIP1=swip-1-in-A1-15, INSTATUS=LOS, ISTD=SDH, DEGTHR=-6, DEXCTHR=-3,
USAGE=NNI, AUTOMODE=ENABLE, XCONN=BUSYBOTH, ALSO=ENABLE, KAALM=DISABLE,
PHYPM_SDH=DISABLE, PHYPROF_SDH=DEFAULTS, MSFEPM=DISABLE,
STRC=0AB156AD198FA3C19AB4432D79FEE3C1, MSFEPROF=DEFAULTS,
MSNEPM=DISABLE, MSNEPROF=DEFAULTS, RSPM=DISABLE, RSPROF=DEFAULTS,
TCARPT=ENABLE, PMMSFESES=15, PMMSNESES=15, PMRSNESES=30:IS-NR, "
"och-3-7-1:OUT, OCH2GC:OUTSWIP0=swip-0-out-B2-4,
OUTSWIP1=swip-1-out-B6-12, PSWTYPE=AUTO, ACTSIDE=0, SIDE0=LOS,
SIDE1=LOS, SIDE0PWR=BELOW -22.5, SIDE1PWR=BELOW -22.5, ISTD=SDH,
DEGTHR=-8, DEXCTHR=-5, USAGE=NNI, AISLSW=DISABLE, BERSW=ENABLE,
EBERSW=ENABLE, AUTOLOCK=ENABLE, XCONN=IDLE, KA=ENABLE, ODOSTHR0=-17,
ODOSTHR1=-17, OLOSTHR0=-21, OLOSTHR1=-21, PHYPM_SDH=DISABLE,
PHYPROF_SDH=DEFAULTS, STRC=0AB254CD191FA3C29AB2432D79FEE3C1,
MSFEPM=DISABLE, MSFEPROF=DEFAULTS, MSNEPM=DISABLE, MSNEPROF=DEFAULTS,
RSPM=DISABLE, RSPROF=DEFAULTS, TCARPT=ENABLE, PMMSFESES=15, PMMSNESES=15,
PMRSNESES=30, ALSO=DISABLE:, , IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to both an input and output OCHT-type port when the parent slot is unequipped.

RTRV-och:LT-oxc:och-1-1-4:123471;

```
LT-oxc 00-08-01 12:52:33
M 123471 COMPLD
"och-1-1-4:IN, OCHT:INSWIP0=swip-0-in-A1-1, INSWIP1=swip-1-in-A1-3,
IFMT=OC192/STM64, IOPT=LR, PWRMDF=-10, INSTATUS=NA, INPWR=NA,
USAGE=NNI, AUTOMODE=DISABLE, XCONN=IDLE, IDOSTHR=-3.0, ILOSTHR=-8.0,
KAALM=ENABLE:OOS-AU, UEQ"
"och-1-1-4:OUT, OCHT:OUTSWIP0=swip-0-out-A1-11,
OUTSWIP1=swip-1-out-B3-10, PSWTYPE=NA, ACTSIDE=NA, SIDE0=NA,
SIDE1=NA, IFMT=OC192/STM64, IOPT=IR, SIDE0PWR=NA, SIDE1PWR=NA,
USAGE=CLIENT, XCONN=BUSYBOTH, ODOSTHR0=-21.0, ODOSTHR1=-21.0,
OLOSTHR0=-25.0, OLOSTHR1=-25.0:, , OOS-AU, UEQ"
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to both an input and output OCHT-type port when communication has been lost to the parent Optical Interface Shelf.

```
RTRV- OCH:LT-OXC:och-1-1-4:123472;
```

```
LT-OXC 00-08-01 12:54:41
M 123472 COMPLD
"och-1-1-4:IN, OCHT:INSWIP0=swip-0-in-A1-1, INSWIP1=swip-1-in-A1-3,
IFMT=OC192/STM64, IOPT=LR, PWRMDF=-10, INSTATUS=NA, INPWR=NA,
USAGE=NNI, AUTOMODE=NA, XCONN=IDLE, IDOSTHR=-3.0, ILOSTHR=-8.0,
KAALM=ENABLE:NA, NA"
"och-1-1-4:OUT, OCHT:OUTSWIP0=swip-0-out-A1-11,
OUTSWIP1=swip-1-out-B3-10, PSWTYPE=NA, ACTSIDE=NA, SIDE0=NA,
SIDE1=NA, IFMT=OC192/STM64, IOPT=IR, SIDE0PWR=NA, SIDE1PWR=NA,
USAGE=CLIENT, XCONN=BUSYBOTH, ODOSTHR0=-21.0, ODOSTHR1=-21.0,
OLOSTHR0=-25.0, OLOSTHR1=-25.0:,, NA, NA"
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to an OCHA13-type input port.

```
RTRV- OCH:LT-OXC:och-1-5-3:123473::IN;
```

```
LT-OXC 00-08-01 12:56:33
M 123473 COMPLD
"och-1-5-3:IN, OCHA13:INSWIP0=swip-0-in-A1-1, INSWIP1=swip-1-in-A1-3,
IFMT=OC192/STM64, IOPT=LR, PWRMDF=-10, INSTATUS=DOS, INPWR=-2.7,
USAGE=NNI, AUTOMODE=DISABLE, XCONN=IDLE, IDOSTHR=-3.0, ILOSTHR=-8.0,
KAALM=ENABLE, ICOLOSS=0, INPWR2=3.4, OAPWR=1.0:IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command applied to both an OCHA13-type input port and an OCHT-type output port.

```
RTRV-0CH:LT-0XC:och-1-5-3:123474::BOTH;
```

```
LT-0XC 00-08-01 12:58:47
M 123474 COMPLD
"och-1-5-3:IN, OCHA13:INSWIP0=swip-0-in-A1-1, INSWIP1=swip-1-in-A1-3,
IFMT=OC192/STM64, IOPT=LR, PWRMDF=-10, INSTATUS=DOS, INPWR=-2.7,
USAGE=NNI, AUTOMODE=DISABLE, XCONN=IDLE, IDOSTHR=-3.0, ILOSTHR=-8.0,
KAALM=ENABLE, ICOLOSS=0, INPWR2=3.4, OAPWR=1.0:IS-NR, "
"och-1-5-3:OUT, OCHT:OUTSWIP0=swip-0-out-A1-12,
OUTSWIP1=swip-1-out-B3-14, PSWTYPE=AUTO, ACTSIDE=0, SIDE0=DOS,
SIDE1=DOS, IFMT=OC192/STM64, IOPT=IR, SIDE0PWR=-20.1, SIDE1PWR=-20.0,
USAGE=CLIENT, XCONN=BUSYBOTH, ODOSTHR0=-21.0, ODOSTHR1=-21.0,
OLOSTHR0=-25.0, OLOSTHR1=-25.0::, IS-NR, "
;
```

The following example shows a successful execution of the **RTRV-rr** command for all the ports with *USAGE* = *TEST_ACC* on a shelf.

```
RTRV-OCH:LT-OXC:och-1-all:123475:::RQUSAGE=TEST_ACC;

LT-OXC 00-08-01 12:59:10
M 123475 COMPLD
"och-1-2-2:IN, OCHT:INSWIP0=swip-0-in-A3-13, INSWIP1=swip-1-in-A6-8,
IFMT=OC192/STM64, IOPT=LR, PWRMDF=-10, INSTATUS=DOS, INPWR=-2.7,
USAGE=TEST_ACC, AUTOMODE=DISABLE, XCONN=IDLE, IDOSTHR=-3.0, ILOSTHR=-8.0,
KAALM=ENABLE:IS-NR,"
"och-1-2-2:OUT, OCHT:OUTSWIP0=swip-0-out-A6-10,
OUTSWIP1=swip-1-out-B2-9, PSWTYPE=AUTO, ACTSIDE=0, SIDE0=DOS,
SIDE1=DOS, IFMT=OC192/STM64, IOPT=IR, SIDE0PWR=-20.1, SIDE1PWR=-20.0,
USAGE=TEST_ACC, XCONN=BUSYBOTH, ODOSTHR0=-21.0, ODOSTHR1=-21.0,
OLOSTHR0=-25.0, OLOSTHR1=-25.0::, IS-NR,"
>

LT-OXC 00-08-01 12:59:10
M 123475 COMPLD
"och-1-2-4:IN, OCHT:INSWIP0=swip-0-in-A3-14, INSWIP1=swip-1-in-A6-7,
IFMT=OC192/STM64, IOPT=LR, PWRMDF=-10, INSTATUS=DOS, INPWR=-2.7,
USAGE=TEST_ACC, AUTOMODE=DISABLE, XCONN=IDLE, IDOSTHR=-3.0, ILOSTHR=-8.0,
KAALM=ENABLE:IS-NR,"
>

LT-OXC 00-08-01 12:59:10
M 123475 COMPLD
"och-1-31-3:OUT, OCHT:OUTSWIP0=swip-0-out-A5-16,
OUTSWIP1=swip-1-out-B8-8, PSWTYPE=AUTO, ACTSIDE=0, SIDE0=DOS,
SIDE1=DOS, IFMT=OC192/STM64, IOPT=IR, SIDE0PWR=-20.1, SIDE1PWR=-20.0,
USAGE=TEST_ACC, XCONN=BUSYBOTH, ODOSTHR0=-21.0, ODOSTHR1=-21.0,
OLOSTHR0=-25.0, OLOSTHR1=-25.0::, IS-NR,"
>

LT-OXC 00-08-01 12:59:10
M 123475 COMPLD
;
```

The following example shows a successful execution of the **RTRV-rr** command when no ports have the requested *USAGE* value.

```
RTRV-OCH:LT-OXC:och-1-all:123476:::RQUSAGE=LINK_PROBE;

LT-OXC 00-08-01 12:59:58
M 123476 COMPLD
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-rr** command. The following additional errors apply to the **RTRV-rr** command as well.

If the network element receives a **RTRV-rr** command for an object that does not exist, then the following error response is returned.

```
sid date time
M ctag DENY
  IENE
/* Input, object Entity does Not Exist */
;
```

If the network element receives a **RTRV-rr** command with an invalid **dir** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV-rr** command with an invalid **RQUSAGE** parameter value, then the following error response is returned.

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

RELATED TL1 MESSAGES

ED-rr

NAME

RTRV-SYSID: Retrieve System Identification

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

- LambdaRouter All Optical Switch 128 & 256, Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV-SYSID: *tid*: : *ctag*;

DESCRIPTION

The **RTRV-SYSID** command retrieves system program and database information stored in the current and previous partitions of the non-volatile memory (NVM) in the network element (NE). The command retrieves data from all equipped NVM devices, including the primary (PRI) and the secondary (SEC) NVM, not just those that are restored. It is therefore possible to examine the contents of the PRI and SEC NVM drives without booting or restoring.

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

INPUT PARAMETERS

The "**RTRV-SYSID** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-SYSID** command.

Table 3-129.RTRV-SYSID Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-129.RTRV -SYSID Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
ctag	Correlation Tag. Refer to the " RTRV -HDR Positional Input Parameters" table for the input parameter syntax and description of the ctag parameter.	

OUTPUT FORMAT

If the **RTRV -SYSID** request completes successfully, then the following normal completion response is returned.

```

sid date time
M ctag COMPLD
"spec_block" for current software
"spec_block" for current data
"spec_block" for previous software
"spec_block" for previous data
"spec_block" for secondary software
"spec_block" for secondary data
;
```

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV -HDR** command.

The "**RTRV -SYSID** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the Specific Block output parameters of the **RTRV -SYSID** command.

Table 3-130.RTRV -SYSID Specific Block Output Parameters

Parameter Name	Description	Allowed Values	
MEMTYPE	Memory Type: Specifies memory partition.	CURRENT	The partition in use.
		PREVIOUS	The standby partition in the Primary NVM.
		SECONDARY	The Secondary NVM.

Table 3-130.RTRV - SYSID Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>FILETYPE</i>	File Type: Specifies file type.	SFTWR The Software partition. DATA The Data Partition. NOT AVAILABLE
<i>STATUS</i>	Status: Specifies the condition of the contents stored in the partition.	RUNNING PREVIOUS DOWNLOADED BACKUP CORRUPT FAILED INITIAL NOT FOUND
<i>NETYPE</i>	NE Type: Specifies the NE type stored in the ID Block. This field shall be identical to the <i>systype</i> field in the output of ACT-USER	WaveStar_LambdaRouter_256 NOT FOUND
<i>RELEASE</i>	Software Release: Specifies Version Number stored in the Software Generic ID Block. Note: The release number includes the patch identification.	xx.yy.zz where xx=1-99, yy=0-99, zz=0-99 NOT FOUND
<i>DATE</i>	This is the last modified Date and time: For Current Data, this is the date of last modification. For Previous and Secondary Data, this is the date the data is copied. For Software, this is date installed.	YY-MM-DD HH-MM-SS where YY=00-99, MM=01-12, DD=01-31, HH=0-23, MM=00-59, SS=00-59 NOT FOUND
<i>SIZE</i>	This is the size that this software or data occupies on the media. Unit is in bytes.	0-220000000 NOT FOUND

EXAMPLE INPUT/OUTPUT

The following example shows a successful completion of the **RTRV-SYSID** command.

```
RTRV-SYSID:LT-0XC-789::123456;
```

```
LT-0XC-789 00-12-01 08:00:00
M 123456 COMPLD
"MEMTYPE=CURRENT, FILETYPE=SFTWR, STATE=RUNNING,
NETYPE=WaveStar_LambdaRouter_256, RELEASE=2.1.456, DATE=01-10-12 23-45-15,
SIZE=86000000"
"MEMTYPE=CURRENT, FILETYPE=DATA, STATE=RUNNING,
NETYPE=WaveStar_LambdaRouter_256, RELEASE=2.1.456, DATE=01-12-05 14-13-07,
SIZE=40003000"
"MEMTYPE=PREVIOUS, FILETYPE=SFTWR, STATE=PREVIOUS,
NETYPE=WaveStar_LambdaRouter_256, RELEASE=2.1.394, DATE=01-08-22 22-21-14,
SIZE=72000000"
"MEMTYPE=PREVIOUS, FILETYPE=DATA, STATE=PREVIOUS,
NETYPE=WaveStar_LambdaRouter_256, RELEASE=2.1.394, DATE=01-11-01 09-14-53,
SIZE=38768000"
"MEMTYPE=SECONDARY, FILETYPE=SFTWR, STATE=INITIAL,
NETYPE=WaveStar_LambdaRouter_256, RELEASE=2.0.64, DATE=01-06-12 20-12-14,
SIZE=56000000"
"MEMTYPE=SECONDARY, FILETYPE=DATA, STATE=PREVIOUS,
NETYPE=WaveStar_LambdaRouter_256, RELEASE=2.1.456, DATE=01-12-04 23-55-55,
SIZE=38965000"
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-SYSID** command. The following additional errors apply to the **RTRV-SYSID** command as well.

If the network element receives an **RTRV-SYSID** command when the SEC is unavailable, then an error message shall be included in the response.

A drive is not available if it is not readable for any reason; for example, Out of Service, Not Equipped.

```
sid date time
M ctag COMPLD
  "MEMTYPE=CURRENT, FILETYPE=SFTWR, STATE=RUNNING,
  NETYPE=WaveStar_LambdaRouter_256, RELEASE=2.1.456, DATE=01-10-12 23-45-15,
  SIZE=86000000"
  "MEMTYPE=CURRENT, FILETYPE=DATA, STATE=RUNNING,
  NETYPE=WaveStar_LambdaRouter_256, RELEASE=2.1.456, DATE=01-12-05 14-13-07,
  SIZE=400030000"
  "MEMTYPE=PREVIOUS, FILETYPE=SFTWR, STATE=PREVIOUS,
  NETYPE=WaveStar_LambdaRouter_256, RELEASE=2.1.394, DATE=01-08-22 22-21-14,
  SIZE=72000000"
  "MEMTYPE=PREVIOUS, FILETYPE=DATA, STATE=PREVIOUS,
  NETYPE=WaveStar_LambdaRouter_256, RELEASE=2.1.394, DATE=01-11-01 09-14-53,
  SIZE=387680000"
  "MEMTYPE=SECONDARY, FILETYPE=NOT AVAILABLE
;
```

RELATED TL1 MESSAGES

RTRV-PRMTR-SFTWR

RTRV-PRMTR-DATA

NAME

RTRV-TACC: Retrieve Test Access Cross-Connections

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T1

INPUT FORMAT

RTRV-TACC: tid: [aid] : ctag: : [show_J0] ;

DESCRIPTION

The **RTRV-TACC** command provides the capability for a user to retrieve information pertaining to test access (TA) cross-connections that are currently existing in a particular LambdaRouter AOS. A user has the following options for the retrieval output:

- List all currently existing TA cross-connections.
- List all TA cross-connections currently existing on a particular shelf or associated with a particular circuit pack.
- Identify only the TA cross-connection associated with a particular TAM port. (The output port of a TA cross-connection will be referred to as a TA Monitoring (TAM) port.)

In addition to establishing a TA cross-connection between an eport and a specified TAM, the **CONN-TACC** command allows a user to inject a 1-way test signal at an OEO port.

When a **CONN-TACC** command user requests that a test signal be injected at an OEO port, the test signal will include a sequence of 16 J0 bytes. The user may request that these bytes contain the hexadecimal representation of the IP v4 address of the LambdaRouter AOS as well as the AID of the OEO eport or fport that is generating the J0 sequence. If the command user requests that this information not be included in the test signal, the J0 sequence will consist of zeroes except for the framing byte. The **RTRV-TACC** command can be used to retrieve information concerning the test signal and the associated J0 byte sequence that is being sent by a particular input port and being received by a particular output port.

When the **RTRV-TACC** command is submitted at the LambdaRouter AOS where a test signal is being generated, if requested by the user, the sequence of J0 bytes that is being generated will appear in the retrieval output as 32 hexadecimal digits.

When the **RTRV-TACC** command is submitted at a LambdaRouter AOS, a user may request that the retrieval output show whatever J0 sequence is being received by an OEO TAM. If a 16-byte sequence is being inserted upstream from the TAM port, the retrieval output will show 32 hexadecimal digits in which the IP address and Port AID are encoded. If a sequence of zeroes is being inserted for the J0 sequence, the retrieval output will show the framing byte followed by zeroes. If an external signal is being monitored by the TAM port, the retrieval output will show the J0 in that signal.

A OEO TAM that is reading the J0 sequence may be located at the same LambdaRouter AOS where the J0 sequence is being inserted, or the TAM can be located at a downstream LambdaRouter AOS.

Comparing the J0 sequence that is received by a TAM with the J0 sequence that is being generated can help investigate cross-connection integrity at a particular LambdaRouter AOS or help confirm the availability and proper functionality of a new or existing network transmission path involving multiple LambdaRouter AOSs.

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

INPUT PARAMETERS

The “**RTRV-TACC** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-TACC** command.

Table 3-131.RTRV-TACC Positional Input Parameters

Parameter Name	Description	Allowed Values
<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 (AID). The <i>aid</i> parameter specifies the TAM port, that is, the output port of the TA cross-connection for which information is to be retrieved. The value of this parameter ranges from a particular TAM port to all TAM ports currently existing in the network element.	LambdaRouter AOS 128: och-all (Default) och-{1-4}-{all} och-{1-4}-{1-32}-{1-4,all} LambdaRouter AOS 256: och-all (Default) och-{1-7}-{all} och-{1-7,all}-{1-32}-{1-4,all}

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See notice on first page

Table 3-131.RTRV - TACC Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values	
ctag	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.		
show_J0	The show_J0 parameter provides the user a means of specifying whether or not the retrieval output shall contain the J0 byte sequence information.	Y N	Yes (<i>Default</i>) No

OUTPUT FORMAT

If the **RTRV - TACC** command completes successfully, the following normal completion response is returned.

```
sid date time
M ctag COMPLD
  "taport1, rate, tstmd: spec_block"
  .
  .
  "taport1, rate, tstmd: spec_block"
;
```

For the MONE, MONF, and MONEF test modes, the retrieval output consists of one line of information (which may wrap-around) for each TA Monitoring (TAM) port specified by (or included in) the **aid** input parameter.

If no TA cross-connections currently exist, the following normal completion response is returned for a successful **RTRV - TACC** command.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

If TA cross-connections currently exist, the following additional parameters will appear in the output message.

The “**RTRV - TACC** Positional Output Parameters” table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV - TACC** command .

Table 3-132.RTRV - TACC Positional Output Parameters

Parameter Name	Description	Allowed Values	
<i>taport1</i>	Access Identifier of TAM Port #1. This parameter identifies the output port of the TA cross-connection that currently exists between an eport or an fport and this output port. The MONE or MONF value of the <i>tstmde</i> parameter indicates whether the TA cross-connection involves an eport or an fport, respectively. If the value of the <i>tstmde</i> parameter is MONEF, the <i>taport1</i> will always be associated with the eport, and <i>TAPORT2</i> will always be associated with the fport.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}	
<i>rate</i>	Test Access Port Transmission Rate. This parameter specifies the type of output port that is being used for the <i>taport1</i> or the <i>TAPORT2</i> .	2G 10G OPT	2.5G TAM port 10G TAM port Transparent TAM port
<i>tstmde</i>	Test Access Mode. This parameter specifies the type of TA session for which the <i>taport1</i> (and possibly the <i>TAPORT2</i>) is currently being used.	MONE MONF MONEF	Monitoring the eport Monitoring the fport Monitoring the eport and fport simultaneously

The “**RTRV - TACC** Specific Block Output Parameters” table contains the descriptions and allowed values for the named output parameters of the **RTRV - TACC** command .

Table 3-133.RTRV - TACC Specific Block Output Parameters

spec_block Output Parameter Name	Description	Allowed Values
<i>EPORT</i>	Eport Access Identifier (AID). This parameter identifies the eport that is associated with the TAM port that is identified by <i>taport1</i> . When <i>SIG_INJTE</i> has a value, this parameter identifies the eport at which a signal is being injected.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}

Table 3-133.RTRV - TACC Specific Block Output Parameters (*continued*)

spec_block Output Parameter Name	Description	Allowed Values	
<i>SW_FABE</i>	Switch fabric. This parameter identifies the switch fabric being used for the TA cross-connection between the eport and the associated TAM port.	0 1 2	Switch Fabric 0 Switch Fabric 1 Both Switch Fabrics (Valid only if an eport is idle when the TA cross-connection is being established.)
<i>SIG_INJTE</i>	Signal being injected at the OEO eport. (This parameter will not appear unless a signal is being injected at the eport.)	0 1	RDI-L and UNEQ-P - - All zeroes in the payload AIS-L and AIS-P -- All ones in the payload
<i>J0_INSRTE</i>	J0 byte sequence being inserted at an OEO eport. This parameter will appear only if the output includes a value for the <i>SIG_INJTE</i> parameter. The 16-byte J0 sequence will consist of the framing byte followed by either a sequence of zeroes or the IP v4 address of the network element and the AID of the OEO eport that is generating the test signal. The nature of the J0 sequence being generated by a particular network element is controlled by the CONN-TACC J0_insrte parameter value that was submitted at the network element.	32 Hexadecimal digits (representing 16 bytes; each byte is expressed as two hexadecimal digits. An example of a byte is 6D.)	
<i>SIG_INJTF</i>	Signal being injected at an OEO fport. (This parameter will appear only if the command pertains to a 2-way cross-connection and a signal is being injected at the fport.).	0 1	RDI-L and UNEQ-P - - (All zeroes in the payload) AIS-L and AIS-P -- (All ones in the payload)

Table 3-133.RTRV - TACC Specific Block Output Parameters (*continued*)

spec_block Output Parameter Name	Description	Allowed Values
<i>J0_INSRTF</i>	J0 byte sequence being inserted at an OEO fport. This parameter will appear only if the output includes a value for the <i>SIG_INJTF</i> parameter and the command pertains to a 2-way TA cross-connection. The 16-byte J0 sequence will consist of the framing byte followed by either a sequence of zeroes or the IP v4 address of the network element and the AID of the OEO fport that is generating the test signal. The nature of the J0 sequence being generated by a particular network element is controlled by the CONN-TACC J0_insrtf parameter value that was submitted at the network element.	32 Hexadecimal digits (representing 16 bytes; each byte is expressed as two hexadecimal digits. An example of a byte is 6D.)
<i>FPORT</i>	Fport Access Identifier (AID). When the <i>tstmde</i> parameter has a value of MONEF, this parameter identifies the fport associated with the TAM port identified by <i>taport1</i> . When the <i>tstmde</i> parameter has a value of MONEF, this parameter identifies the fport associated with the TA port identified by <i>TAPORT2</i> . When <i>SIG_INJTF</i> has a value, this parameter identifies the fport at which a signal is being injected.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}
<i>SW_FABF</i>	Switch fabric. This parameter identifies the switch fabric being used for the TA cross-connection between the <i>FPORT</i> and the associated TAM port.	0 Switch Fabric 0 1 Switch Fabric 1
<i>TAPORT2</i>	Access Identifier of TAM Port #2. This parameter identifies the output port of the TA cross-connection that currently exists between an fport and this TAM. This parameter will have a value only when the output parameter <i>tstmde</i> has the value MONEF.	LambdaRouter AOS 128: och-{1-4}-{1-32}-{1-4} LambdaRouter AOS 256: och-{1-7}-{1-32}-{1-4}

Table 3-133.RTRV - TACC Specific Block Output Parameters (*continued*)

spec_block Output Parameter Name	Description	Allowed Values
<i>J0_RCVD1</i>	J0 byte sequence received at the OEO TAM identified by the <i>taport1</i> parameter. The J0 sequence being received by the TAM Port #1 will be reported by this parameter.	32 Hexadecimal digits (representing 16 bytes; each byte is expressed as two hexadecimal digits. An example of a byte is 6D or 00.) NA J0 sequence is not available. This may be caused by the TAM port slot being unequipped.
<i>J0_RCVD2</i>	J0 byte sequence received at the OEO TAM identified by the <i>TAPORT2</i> parameter. This parameter will report the contents of the J0 bytes that are included in any incoming signal being received by the TAM Port #2.	32 Hexadecimal digits (representing 16 bytes; each byte is expressed as two hexadecimal digits. An example of a byte is 6D or 00.) NA J0 sequence is not available. This may be caused by the TAM port slot being unequipped.

EXAMPLE INPUT/OUTPUT

This section presents examples of output for successful completion of the **RTRV-TACC** command by the network element.

The following example shows the retrieval output for all currently existing TA cross-connections at a particular LambdaRouter AOS.

RTRV-TACC:LT-AOS-78::123456;

```
LT-AOS-78 01-09-10 14:21:33
M 123456 COMPLD
"och-1-2-1,OPT,MONE:EPORT=och-1-2-2,SW_FABE=0"
"och-1-4-1,10G,MONF:FPORT=och-1-3-
1,SW_FABF=1,J0_RCDV1=80000000000000000000000000000000"
"och-1-6-2,2G,MONE:EPORT=och-2-2-
4,SW_FABE=0,SIG_INJTE=0,J0_INSRTE=8002256C7D4824000040202021000000,J0_
RCVD1=8002256C7D4824000040202021000000"
"och-2-2-1,10G,MONEF:EPORT=och-1-2-4,SW_FABE=0,FPORT=och-1-5-
2,SW_FABF=0,TAPORT2=och-2-4-
1,J0_RCDV1=80000000000000000000000000000000,J0_RCDV2=800000000000000000
0000000000000000"
"och-2-3-1,OPT,MONEF:EPORT=och-3-2-3,SW_FABE=1,FPORT=och-3-4-
2,SW_FABF=0,TAPORT2=och-2-5-1"
"och-2-8-1,2G,MONE:EPORT=och-1-12-
1,SW_FABE=2,J0_RCDV1=800264563C7974000020301021000000"
"och-3-4-1,10G,MONE:EPORT=och-3-3-
1,SW_FABE=1,J0_RCDV1=800242565F793C0000005021021000000"
"och-4-5-1,10G,MONEF:EPORT=och-2-2-4,SW_FABE=0,FPORT=och-3-5-
1,SW_FABF=0,TAPORT2=och-3-6-
1,J0_RCDV1=80022634496B24000002051021000000,J0_RCDV2=80025548795A30000
002064021000000"
"och-4-6-1,10G,MONE:EPORT=och-1-2-
2,SW_FABE=0,J0_RCDV1=80000000000000000000000000000000"
;
```

The following example shows the TA cross-connection information for a particular TAM port.

RTRV-TACC:LT-AOS-78:och-4-1-2:123456;

```
LT-AOS-78 01-09-10 14:48:49
M 123456 COMPLD
"och-4-1-2,2G,MONF:FPORT=och-4-2-
1,SW_FABF=1,J0_RCDV1=800260300000060000100101021000000"
;
```

As shown in the above examples, a valid J0 sequence will always begin with "80". If the sequence contains information that identifies the node and the OEO port that is generating the sequence, it will begin with "8002". (This node will be identified by the IP Version 4 address of its Restoration Controller (RC) circuit pack Internal 100 Base-T port; this port is used for signaling over the

LambdaRouter AOS Control Communications Network (CCN).) The node and port address information is encoded in hexadecimal values within the next 20 characters of the sequence. For example, the sequence characters of "60300000600001001010" represents the IP address of "192.192.0.12" and the input port identity of "4-1-2". The remaining four bytes of a valid sequence will always be "21000000".

The following example shows the retrieval output if currently there is no TA cross-connection associated with the specified TAM.

```
RTRV-TACC:LT-AOS-78:och-4-1-3:123456;
```

```
LT-AOS-78 01-09-10 14:48:49  
M 123456 COMPLD  
;
```

The following example shows the retrieval output if currently the requested J0 information cannot be obtained because the TAM port slot is unequipped or there is some hardware malfunction.

```
RTRV-TACC:LT-AOS-78:och-4-1-3:123456;
```

```
LT-AOS-78 01-09-10 14:48:49  
M 123456 COMPLD  
"och-4-4-2, 2G, MONE:EPOR=och-4-3-1, SW_FABE=1, J0_RCVD1=NA"  
;
```

Although the **aid** input parameter must have a value that is allowed according to the **RTRV-TACC** Positional Input Parameters Table, a network element processing this command will not investigate whether the specified output port has actually been provisioned at that location. This is one reason why this command can complete successfully without showing any retrieval output.

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-TACC** command. The following additional error applies to the **RTRV-TACC** command as well.

If the network element receives a **RTRV-TACC** command with an invalid **show_J0** value, then the following error response is returned.

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, invalid show_J0 */  
;
```

RELATED TL1 MESSAGES

CONN - TACC

DISC - TACC

RTRV - CRS

NAME

RTRV - TRACERT : Retrieve Trace Route

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

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV - TRACERT : *tid:aid:ctag::dest_addr;*

DESCRIPTION

The **RTRV - TRACERT** command returns a list of Internet Protocol (IP) addresses corresponding to a route found between the specified origination *aid* and the specified destination IP address. Note that two successive executions of the command specifying the same origination *aid* and destination IP address can return different route composition information.

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

INPUT PARAMETERS

The "**RTRV - TRACERT** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV - TRACERT** command.

Table 3-134.RTRV - TRACERT Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	

Table 3-134.RTRV - TRACERT Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the port to which the command is directed.	rcip-1-{0,1}-1 Internal 100 Base-T rc10-1-{0,1}-1 External 10 Base-T rc100-1-{0,1}-1 External 100 Base-T ripip-1-{1,2}-1 Internal 100 Base-T rip10-1-{1,2}-1 External 10 Base-T rip100-1-{1,2}-1 External 100 Base-T pmoch-1-{1-4}-{1,2} 2.5 Gb/s PM port
<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>dest_addr</i>	IP Address of the destination network node. The <i>dest_addr</i> parameter represents the 32-bit Internet Protocol Version 4 address.	w.x.y.z where w , x , y , and z are integers in the range 0-255

OUTPUT FORMAT

If the **RTRV - TRACERT** command request completes successfully, then the following normal completion response is returned.

```

sid date time
M ctag COMPLD
  "aid,dest_addr,ping"
  "spec_block"
  "spec_block"
  ...
  "spec_block"
;
```

One line of output is reported for each IP node in the route.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

The "**RTRV - TRACERT** Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV - TRACERT** command.

Table 3-135.RTRV - TRACERT Positional Output Parameters

Parameter Name	Description	Allowed Values	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the entity to which the command is directed.	rcip-1-{0,1}-1 rc10-1-{0,1}-1 rc100-1-{0,1}-1 ripip-1-{1,2}-1 rip10-1-{1,2}-1 rip100-1-{1,2}-1 pmoch-1-{1-4}-{1,2}	Internal 100 Base-T External 10 Base-T External 100 Base-T Internal 100 Base-T External 10 Base-T External 100 Base-T 2.5 Gb/s PM port
<i>dest_addr</i>	IP Address of the destination network node. The <i>dest_addr</i> parameter represents the 32-bit Internet Protocol Version 4 address.	w.x.y.z	where w, x, y, and z are integers in the range 0-255
<i>ping</i>	The <i>ping</i> parameter indicates whether the destination is reachable from at least one IP port on the pack corresponding to the specified <i>aid</i> .	REACHABLE UNREACHABLE	the destination can seen the destination cannot be seen
<i>spec_block</i>	Specific Block Parameters. See the " RTRV - TRACERT Specific Block Output Parameters" table for the detailed descriptions of these parameters.		

The "**RTRV-TRACERT** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the **RTRV-TRACERT** command.

Table 3-136.RTRV - TRACERT Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<i>IP_ADDR</i>	IP Address of network nodes in the retrieved path. The <i>IP_ADDR</i> parameter represents the 32-bit Internet Protocol Version 4 address. Note that a partial list may mean some network nodes do not support responses to a trace route request. No elements in the list may mean the specified port does not have connectivity to the destination, even if the PING parameter indicates the destination is reachable.	w.x.y.z where w, x, y, and z are integers in the range 0-255

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV-TRACERT** command.

```
RTRV-TRACERT:LT-0XC:rip100-1-1-1:123456::132.19.79.212;  
  
LT-0XC 01-01-01 08:00:00  
M 123456 COMPLD  
"rip100-1-1-1,132.19.79.212,REACHABLE"  
"IP_ADDR=132.19.79.231"  
"IP_ADDR=132.19.79.218"  
"IP_ADDR=132.19.79.202"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-TRACERT** command. The following additional errors apply to the **RTRV-TRACERT** command as well.

If the network element receives a **RTRV-TRACERT** command and the system's ONN Configuration equipment parameter (ONNCFG) is currently equal to DISABLE, then the following error response is returned.

```
sid date time
M ctag DENY
  EFON
/* Equipage, Feature Option Not provided, ONNCFG=DISABLE */
;
```

If the network element receives a **RTRV-TRACERT** command and the requested **aid** has a STAT parameter that is currently set to INACTIVE, then the following error response is returned.

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

If the network element receives a **RTRV-TRACERT** command with an invalid **dest_addr** parameter value, then the following error response is returned.

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

If the network element receives a **RTRV - TRACERT** command where the **aid** parameter value corresponds to an RC pack that is in standby mode, that is, not in active mode, then the following error response is returned.

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

If the network element receives a **RTRV - TRACERT** command when the RIP circuit pack associated with the specified **aid** parameter value is not equipped, or if both RIP packs are unequipped independent of the specified **aid** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
ENEQ
/* Equipage, Not EQuipped, rip pack */
;
```

If the network element receives a **RTRV - TRACERT** command when the RIP circuit pack associated with the specified **aid** parameter value is not in service, or if both RIP packs are out-of-service independent of the specified **aid** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
SNIS
/* Status, Not In Service, rip pack */
;
```

If the network element receives an **RTRV - TRACERT** command where the **aid** parameter value corresponds to a personality module that does not exist, then the following error response is returned.

```
sid date time
M ctag DENY
  IENE
  /* Input, object Entity does Not Exist, pmod */
;
```

If the network element receives a **RTRV - TRACERT** command without a **dest_addr** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
  /* Input, Parameter MiSSing, missing dest_addr */
;
```

If the network element receives a **RTRV - TRACERT** command when the Personality Module (PMOD) associated with the specified **aid** parameter value is not equipped, then the following error response is returned.

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

If the network element receives a **RTRV - TRACERT** command when the Personality Module (PMOD) associated with the specified **aid** parameter value is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
  /* Status, Not In Service, pmod */
;
```

If the network element receives a **RTRV - TRACERT** command when the Personality Module (PMOD) IP port (pmoch) associated with the specified **aid** parameter value is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
/* Status, Not In Service, pmoch */
;
```

RELATED TL1 MESSAGES

RTRV - LSP

RTRV - LSA

NAME

RTRV-ULSDCC-L3: Retrieve Upper Layer Stack DCC Layer 3

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV-ULSDCC-L3: *tid:aid:ctag*;

DESCRIPTION

The **RTRV-ULSDCC-L3** command retrieves the parameters in Layer 3 of the Network Communications stack for the DCC network interface. These parameters include the IP Address, IP Subnet Mask, and the Default Router IP Address.

The **RTRV-ULSDCC-L3** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

The "**RTRV-ULSDCC-L3** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-ULSDCC-L3** command.

Table 3-137.RTRV-ULSDCC-L3 Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the entity to which the command is directed.	dcc-1-{1,2,all}

Table 3-137.RTRV - ULSDCC - L3 Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the "RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **RTRV - ULSDCC - L3** command request completes successfully, then the following normal completion response is returned.

```

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

One line of output is reported for each *aid* value requested.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command.

The "RTRV - ULSDCC - L3 Positional Output Parameters" table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV - ULSDCC - L3** command.

Table 3-138.RTRV - ULSDCC - L3 Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the entity to which the command is directed.	dcc-1-{1,2}
<i>spec_block</i>	Specific Block Parameters. See the "RTRV - ULSDCC - L3 Specific Block Output Parameters" table for the detailed descriptions of these parameters.	

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The "**RTRV-ULSDCC-L3** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the **RTRV-ULSDCC-L3** command.

Table 3-139.RTRV-ULSDCC-L3 Specific Block Output Parameters

Parameter Name	Description	Allowed Values
<i>IP_AD</i>	IP Address. The <i>IP_AD</i> parameter represents the 32-bit Internet Protocol Version 4 address of the DCC circuit pack.	w.x.y.z where w, x, y, and z are integers in the range 0-255
<i>IP_SNM</i>	IP Subnet Mask. The <i>IP_SNM</i> parameter represents the 32-bit Internet Protocol Version 4 subnet mask of the DCC circuit pack.	w.x.y.z where w, x, y, and z are integers in the range 0-255
<i>IP_DRAD</i>	IP Default Router Address. The <i>IP_DRAD</i> parameter represents the 32-bit Internet Protocol Version 4 default router address of the DCC circuit pack.	w.x.y.z where w, x, y, and z are integers in the range 0-255

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV-ULSDCC-L3** command.

```
RTRV-ULSDCC-L3:LT-0XC:dcc-1-1:123456;  
  
LT-0XC 98-01-01 08:00:00  
M 123456 COMPLD  
"dcc-1-1:IP_AD=132.19.79.231,IP_SNM=255.255.255.0,IP_DRAD=132.19.79.1"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-ULSDCC-L3** command.

RELATED TL1 MESSAGES

ED-ULSDCC-L3

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See notice on first page

NAME

RTRV-ULSDCN-L3: Retrieve Upper Layer Stack Layer 3 Data Communication Network Parameters

The **RTRV-ULSDCN-L3** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

INPUT FORMAT

RTRV-ULSDCN-L3: *tid:aid:ctag;*

DESCRIPTION

The **RTRV-ULSDCN-L3** command retrieves the network communications stack Layer 3 parameters for the Restoration Controller (RC) circuit pack, Restoration Interface Processor (RIP) circuit pack, and 2.5 Gb/s Personality Modules residing in the RIP. Relevant Layer 3 parameters include: IP (Internet Protocol) Address, IP Subnetwork Mask, active or inactive status (port is usable or not), OSPF (Open Shortest Path First) enable or disable (port participates in the OSPF domain or not), standards format for IP over SONET/SDH, and Gateway Identifier (IP address) for operations messaging.

Note that settings for RC circuit pack IP ports are common to both active and standby RC circuit packs, independent of the particular RC circuit pack *aid* specified in the command. One set of provisionable parameters applies to both RC circuit packs because only one of the two RC circuit packs is active at any one time.

The **RTRV-ULSDCN-L3** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

The “**RTRV-ULSDCN-L3** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-ULSDCN-L3** command.

Table 3-140.RTRV-ULSDCN-L3 Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the port to which the command is directed. If the aid is either rc-1-{0,1} or rip-1-{1,2} , information pertaining to all DCN ports on that pack will be displayed.	rc-1-{0,1} RC pack rip-1-{1,2} RIP pack rcip-1-{0,1}-1 Internal 100 Base-T ripip-1-{1,2}-1 Internal 100 Base-T rc10-1-{0,1}-1 External 10 Base-T rc100-1-{0,1}-1 External 100 Base-T rip10-1-{1,2}-1 External 10 Base-T rip100-1-{1,2}-1 External 100 Base-T pmoch-1-{1-4}-{1,2} 2.5 Gb/s PM port
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **RTRV-ULSDCN-L3** command request completes successfully, then the following normal completion response is returned.

```

sid date time
M ctag COMPLD
  "aid:spec_block:pstate[,sstate]"
  ...
;
```

One line of output is reported for each *aid* value reported.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The “**RTRV-ULSDCN-L3** Positional Output Parameters” table contains the detailed descriptions and allowed values for the additional output parameters of the **RTRV-ULSDCN-L3** command.

Table 3-141.RTRV-ULSDCN-L3 Positional Output Parameters

Parameter Name	Description	Allowed Values	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter represents the entity to which the command is directed.	rcip-1-{0,1}-1 ripip-1-{1,2}-1 rc10-1-{0,1}-1 rc100-1-{0,1}-1 rip10-1-{1,2}-1 rip100-1-{1,2}-1 pmoch-1-{1-4}-{1,2}	Internal 100 Base-T Internal 100 Base-T External 10 Base-T External 100 Base-T External 10 Base-T External 100 Base-T 2.5 Gb/s PM port
<i>spec_block</i>	Specific Block Parameters. See the “ RTRV-ULSDCN-L3 Specific Block Output Parameters” table for the detailed descriptions of these parameters.		
<i>pstate</i>	Primary State of Port.	IS-NR OOS-AU NA	In-Service-Normal Out-of-Service-Autonomous Not Available (Primary State cannot be retrieved)
<i>sstate</i>	Secondary State of Port. This parameter applies to the OOS-AU primary port state to distinguish between fault and unequipped. When <i>pstate</i> = IS-NR, no <i>sstate</i> is provided. During circuit pack initialization, when IP port information is unavailable, the <i>sstate</i> will be “NA.”	FLT UEQ NA	Fault Unequipped Not Available (Secondary State cannot be retrieved)

The “**RTRV-ULSDCN-L3** Specific Block Output Parameters” table contains the detailed descriptions and allowed values for the named output parameters of the **RTRV-ULSDCN-L3** command.

Table 3-142.RTRV-ULSDCN-L3 Specific Block Output Parameters

Parameter Name	Description	Allowed Values	
<i>IP_ADDR</i>	IP Address. The <i>IP_ADDR</i> parameter represents the 32-bit Internet Protocol Version 4 address of the IP port.	w.x.y.z	where w, x, y, and z are integers in the range 0-255
		Not Provisioned	Indicates no value has yet been provisioned for this parameter
<i>IP_SNM</i>	IP Subnet Mask. The <i>IP_SNM</i> parameter represents the 32-bit Internet Protocol Version 4 subnet mask of the port.	w.x.y.z	where w, x, y, and z are integers in the range 0-255
		Not Provisioned	Indicates no value has yet been provisioned for this parameter
<i>IP_DRAD</i>	IP Default Router Address. The <i>IP_DRAD</i> parameter represents the 32-bit Internet Protocol Version 4 default router address of the RIP circuit pack. This value is not user-provisionable, and corresponds to the IP address of the RIP ripip-1-{1,2}-1. This parameter is returned only with <i>aid</i> = ripip-1-{1,2}-1 rip10-1-{1,2}-1 rip100-1-{1,2}-1 pmoch-1-{1-4}-{1,2}	w.x.y.z	where w, x, y, and z are integers in the range 0-255

Table 3-142.RTRV - ULSDCN - L3 Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>STAT</i>	DCN Status Indicator. The <i>STAT</i> parameter indicates whether the port is active (usable in the DCN). If inactive, no session can be established to that port. This parameter is returned only with <i>aid</i> = rip10-1-{1,2}-1 rip100-1-{1,2}-1 pmoch-1-{1-4}-{1,2} The initial value for this parameter is ACTIVE. The internal RIP 100 Base-T port (ripip-1-{1,2}-1) must be active. All RC DCN ports must be active.	ACTIVE INACTIVE
<i>OSPF</i>	DCN OSPF domain member indicator. The <i>OSPF</i> parameter indicates whether the port is a member of the DCN OSPF domain (participates in OSPF messages). This parameter is only returned with <i>aid</i> = rip10-1-{1,2}-1, rip100-1-{1,2}-1 pmoch-1-{1-4}-{1,2} The initial value of this parameter for all allowed <i>aids</i> is ENABLE. The internal RIP 100 Base-T port (ripip-1-{1,2}-1) must participate in OSPF. No RC DCN ports participate in OSPF.	ENABLE DISABLE
<i>FORMAT</i>	Format standard indicator. The <i>FORMAT</i> parameter indicates whether a 2.5 gb/s port is to adhere to SONET format or SDH format. This parameter is only returned with <i>aid</i> = pmoch-1-{1-4}-{1,2} The initial value of this parameter for allowed <i>aids</i> is SONET.	SONET SDH

Table 3-142.RTRV - ULSDCN - L3 Specific Block Output Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>GTWAY_ID</i>	IP Address for the operations messaging gateway. The <i>GTWAY_ID</i> parameter represents the 32-bit Internet Protocol Version 4 address of a gateway for connected to the RC pack for operations messaging. This parameter is returned only with <i>aid</i> = rc10-1-{0,1}-1,	w.x.y.z where w, x, y, and z are integers in the range 0-255

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **RTRV - ULSDCN - L3** command specifying a DCN port as the target.

```
RTRV-ULSDCN-L3:LT-0XC:rip100-1-1-1:123456;
```

```
LT-0XC 01-01-01 08:00:00
M 123456 COMPLD
"rip100-1-1-1:IP_AD=132.19.79.231,IP_SNM=255.255.255.0,
IP_DRAD=132.19.79.231,STAT=ACTIVE,OSPF=ENABLE:OOS-AU,FLT"
;
```

The following example shows a successful execution of the **RTRV - ULSDCN - L3** command specifying a RC pack as the target.

```
RTRV-ULSDCN-L3:LT-0XC:rc-1-0:123456;
```

```
LT-0XC 01-01-01 08:00:00
M 123456 COMPLD
"rcip-1-0-1:IP_AD=132.19.79.221,IP_SNM=255.255.255.0:IS-NR"
"rc10-1-0-1:IP_AD=132.19.79.231,IP_SNM=255.255.255.0:IS-NR"
"rc100-1-0-1:IP_AD=132.19.79.241,IP_SNM=255.255.255.0:IS-NR"
;
```

The following example shows a successful execution of the **RTRV-ULSDCN-L3** command specifying a RIP pack as the target.

```
RTRV-ULSDCN-L3:LT-OXC:rip-1-1:123456;

LT-OXC 01-01-01 08:10:00
M 123456 COMPLD
"ripip-1-1-1:IP_AD=132.19.79.211,IP_SNM=255.255.255.0,
IP_DRAD=132.19.79.211:IS-NR"
"rip10-1-1-1:IP_AD=132.19.79.210,IP_SNM=255.255.255.0,
IP_DRAD=132.19.79.211,STAT=INACTIVE,OSPF=DISABLE:IS-NR"
"rip100-1-1-1:IP_AD=132.19.79.209,IP_SNM=255.255.255.0,
IP_DRAD=132.19.79.211,STAT=ACTIVE,OSPF=ENABLE:IS-NR"
"pmoch-1-1-1:IP_AD=132.19.79.207,IP_SNM=255.255.255.0,
IP_DRAD=132.19.79.211,STAT=ACTIVE,OSPF=ENABLE,FORMAT=SDH:IS-NR"
"pmoch-1-1-2:IP_AD=132.19.79.217,IP_SNM=255.255.255.0,
IP_DRAD=132.19.79.211,STAT=ACTIVE,OSPF=ENABLE,FORMAT=SDH:IS-NR"
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-ULSDCN-L3** command. The following additional errors apply to the **RTRV-ULSDCN-L3** command as well.

If the network element receives a **RTRV-ULSDCN-L3** command where the *aid* is **rip-1-{1,2}**, **ripip-1-{1,2}-1**, **rip10-1-{1,2}-1**, **rip100-1-{1,2}-1**, or **pmoch-1-{1-4}-**

{1,2} and the system's ONN Configuration equipment parameter (ONNCFG) is currently equal to DISABLE, then the following error response is returned.

```
sid date time
M ctag DENY
EFON
/* Equipage, Feature Option Not provided, ONNCFG=DISABLE */
;
```

If the network element receives an **RTRV-ULSDCN-L3** command where the **aid** parameter value corresponds to an RC pack that is in standby mode, that is, not in active mode, then the following error response is returned.

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

If the network element receives an **RTRV-ULSDCN-L3** command where the **aid** parameter value corresponds to a personality module that does not exist, then the following error response is returned.

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

RELATED TL1 MESSAGES

ED-ULSDCN-L3

NAME

RTRV-USER-SECU: Retrieve User Security

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

INPUT FORMAT

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

DESCRIPTION

The **RTRV-USER-SECU** command retrieves user security information for one or all of the users who have a login on the network element.

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

INPUT PARAMETERS

The "**RTRV-USER-SECU** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **RTRV-USER-SECU** command.

Table 3-143.RTRV-USER-SECU Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>uid</i>	User Identifier. If this parameter is omitted, all <i>uids</i> are retrieved	Case-sensitive alphanumeric string of 1 to 10 characters
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

OUTPUT FORMAT

If the **RTRV-USER-SECU** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

The "RTRV-USER-SECU Positional Output Parameters" table contains the detailed descriptions and allowed values for the positional output parameters of the **RTRV-USER-SECU** command.

Table 3-144.RTRV-USER-SECU Positional Output Parameters

Parameter Name	Description	Allowed Values
<i>uid</i>	User Identifier. User ID whose security parameters are to be retrieved.	Case-sensitive alphanumeric string of 1 to 10 characters
<i>spec_block</i>	Specific Block Parameters. See the table "RTRV-USER-SECU Specific Block Output Parameters" for the detailed descriptions of these parameters.	

The "**RTRV-USER-SECU** Specific Block Output Parameters" table contains the detailed descriptions and allowed values for the named output parameters of the **RTRV-USER-SECU** command.

Table 3-145.RTRV-USER-SECU Specific Block Output Parameters

Parameter Name	Description	Allowed Values	
<i>UPC</i>	User Privilege Code. Specifies the user privilege code UCFC/UCAL pair. Multiple UCFC/UCALs can be specified separated by ampersands (&).	Si, Pi, PMi, Ti, Mi where i varies from 0-5 for P, PM, T, and M. i varies from 1-5 for S.	
<i>UCPL</i>	User Community Priority Level (UCPL). Input commands from users with higher priority are executed before commands from users with lower priority. Note: This parameter is for future implementation and is not available in this release.	1-5	
<i>SCREEN</i>	Message Screening. Specifies what output messages are associated with the <i>uid</i> . The value OWN is displayed if the <i>SCREEN</i> parameter has none of the other <i>SCREEN</i> values. Any combination of DBCHG, STCHG, PSCHG, and ALARMS may be displayed separated by ampersands (&).	DBCHG STCHG PSCHG ALARMS ALL	Database change messages State change messages Protection switch messages Alarm messages All messages
<i>PAGE</i>	Password Aging Interval. Refer to the "ENT-USER-SECU Positional Input Parameters" table for the input parameter syntax and description of the <i>page</i> parameter.		
<i>TMOUT</i>	Inactivity Timeout Period. Refer to the "ENT-USER-SECU Positional Input Parameters" table for the input parameter syntax and description of the <i>tmout</i> parameter.		
<i>ALW_LOGIN</i>	Allow login. This parameter displays the enable/disable state of a User ID.	YES NO	User ID is enabled User ID is disabled

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 by the **uid** parameter value.

```
RTRV-USER-SECU:LT-0XC-789:kj lee:123456;
```

```
LT-0XC-789 98-01-01 08:00:00  
M 123456 COMPLD  
"kj lee::UPC=P3&M3, UCPL=3, SCREEN=DBCHG&ALARMS, PAGE=10, TMOUT=20, ALW_  
LOGIN=Yes"
```

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-0XC-789::123456;
```

```
LT-0XC-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, UCPL=1, SCREEN=PSCHG&STCHG"  
"vma::UPC=T2, UCPL=2, SCREEN=DBCHG&STCHG&PSCHG&ALARMS"  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **RTRV-USER-SECU** command. The following additional errors apply to the **RTRV-USER-SECU** command as well.

If the network element receives a **RTRV-USER-SECU** command with an invalid *uid* parameter value, then the following error response is returned.

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

RELATED TL1 MESSAGES

CANC-USER-SECU

DLT-USER-SECU

ED-USER-SECU

ENT-USER-SECU

NAME

SET-ATTR-ALM: Set Attribute Alarm

The **SET-ATTR-ALM** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

INPUT FORMAT

SET-ATTR-ALM: *tid::ctag[:::spec_block];*

DESCRIPTION

The **SET-ATTR-ALM** command provisions the alarm delay time and the alarm clear delay time 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.

The **SET-ATTR-ALM** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

The “**SET-ATTR-ALM** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **SET-ATTR-ALM** command.

Table 3-146.SET-ATTR-ALM Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>ctag</i> parameter.	

Table 3-146.SET -ATTR -ALM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>spec_block</i>	Specific Block Parameters. See the table “ SET -ATTR -ALM Specific Block Parameters” for the detailed descriptions of these parameters.	

The “**SET -ATTR -ALM** Specific Block Parameters” table contains the detailed descriptions and allowed values for the named input parameters of the **SET -ATTR -ALM** command.

Table 3-147.SET -ATTR -ALM Specific Block Input Parameters

Parameter Name	Description	Allowed Values
<i>ALMDELFCLT</i>	Alarm Delay Facility. Time in seconds a facility event has to be continuously present before an alarm is set.	0,11-60 and <i>ALMDELFCLT</i> <= <i>CLRDELFCLT</i>
<i>CLRDELFCLT</i>	Clear Delay Facility. Time in seconds a facility event has to be continuously absent before an alarm is cleared.	0-60
<i>ALMDELEQPT</i>	Alarm Delay Equipment. Time in seconds an equipment event has to be continuously present before an alarm is set.	0-60 and <i>ALMDELEQPT</i> <= <i>CLRDELFCLT</i> and <i>ALMDELEQPT</i> <= <i>CLRDELEQPT</i>
<i>CLRDELEQPT</i>	Clear Delay Equipment. Time in seconds an equipment event has to be continuously absent before an alarm is cleared.	0-60

OUTPUT FORMAT

If the **SET -ATTR -ALM** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **SET-ATTR-ALM** command.

```
SET-ATTR-ALM:LT-0XC::123456:::ALMDELFCLT=12,CLRDELFCLT=12;  
  
LT-0XC 99-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **SET-ATTR-ALM** command. The following additional errors apply to the **SET-ATTR-ALM** command as well.

If a **SET-ATTR-ALM** command is received with an invalid **ALMDELFCLT** parameter value, then the following error response is returned.

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

If a **SET-ATTR-ALM** command is received with an invalid **CLRDELFCLT** parameter value, then the following error response is returned.

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

If a **SET-ATTR-ALM** command is received with an invalid **ALMDELEQPT** parameter value, then the following error response is returned.

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

If a **SET-ATTR-ALM** command is received with an invalid **CLRDELEQPT** parameter value, then the following error response is returned.

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

If a **SET-ATTR-ALM** command is received with an **ALMDELFCFLT** parameter value greater than the **CLRDELFCFLT** parameter value, then the following error response is returned.

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

If a **SET-ATTR-ALM** command is received with an **ALMDELEQPT** parameter value greater than the **CLRDELFCFLT** parameter value, then the following error response is returned.

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

If a **SET-ATTR-ALM** command is received with an **ALMDELEQPT** parameter value greater than the **CLRDELEQPT** parameter value, then the following error response is returned.

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

If a **SET-ATTR-ALM** command is received with an invalid Specific Block input parameter name, then the following error response is returned.

```
sid date time
M ctag DENY
  IPNV
/* Input, Parameter Not Valid */
;
```

RELATED TL1 MESSAGES

RTRV-ATTR-ALM

NAME

SET -PMDAY: Set Performance Monitoring Day

The **SET -PMDAY** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

INPUT FORMAT

SET -PMDAY: *tid* : : *ctag* : : *pm_day_start*;

DESCRIPTION

The **SET -PMDAY** command allows the start time of the daily performance monitoring data collection period to begin at any hour of the day. The current start time of the daily data collection period may be retrieved using the **RTRV -PMDAY** command.

The **SET -PMDAY** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

The "**SET -PMDAY** Positional Input Parameters" contains the detailed descriptions and allowed values for the positional input parameters of the **SET -PMDAY** command.

Table 3-148.SET -PMDAY Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV -HDR Positional Input Parameters" table for input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV -HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>pm_day_start</i>	Performance Day Start. It identifies the start time of the daily data collection period. The format is HOD. HOD stands for Hour-Of-Day.	0 to 23

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

The description and syntax of output parameters *sid*, *date*, *time*, and *ctag* are included in the **OUTPUT PARAMETERS** section of the **RTRV -HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **SET -PMDAY** command by the network element.

```
SET-PMDAY:LT-0XC::123456::22;  
  
LT-0XC 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

The error codes defined in the **RTRV -HDR** command **ERROR RESPONSES** section also apply to the **SET -PMDAY** command. The following additional errors apply to the **SET -PMDAY** command as well.

If the network element receives a valid **SET -PMDAY** command with missing ***pm_day_start*** parameter, then following error response is returned.

```
sid date time  
M ctag DENY  
IPMS  
/* Input, Parameter MiSsing, missing pm_day_start */  
;
```

If the network element receives a valid **SET -PMDAY** command with an invalid ***pm_day_start*** parameter value, the following error response is returned.

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

RELATED TL1 MESSAGES

RTRV - PMDAY

NAME

SET-SID : Set Target/Source Identification

The **SET-SID** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

INPUT FORMAT

SET-SID: *tid*: : *ctag*: : *newsid*;

DESCRIPTION

The **SET-SID** command changes the target/source identification of the network element. The **SET-SID** command is denied if the system is not in the OOS-MA state. The new value of the target/source identification of the network element will become valid after a system reboot.

The **SET-SID** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

The "**SET-SID** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **SET-SID** command.

Table 3-149.SET-SID Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	

Table 3-149.SET -SID Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>newsid</i>	Target/Source Identification. This is the new name of the network element. Future commands (after a system reboot) must use this name instead of the current name. That is, the <i>newsid</i> parameter value replaces the <i>tid</i> parameter value.	The <i>newsid</i> parameter is a case-insensitive ASCII character string of up to 20 characters. The allowed ASCII characters are the letters "A" through "Z" and "a" through "z", the numbers "0" through "9", and the special characters "-" (hyphen) and "/" (slash). The string must not begin with a hyphen or end with a hyphen.

OUTPUT FORMAT

If the **SET -SID** request completes successfully, then the following normal completion response is returned.

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV -HDR** command.

The output *sid* parameter value is equal to the value of the ***tid*** input parameter, not the ***newsid*** input parameter. The ***newsid*** value takes effect only after a system reboot.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **SET -SID** command.

```
SET-SID:LT-OXC::123456::CHICAGO-2;

LT-OXC 00-07-01 08:01:00
M 123456 COMPLD
;
```

ERROR RESPONSE

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **SET-SID** command. The following additional errors apply to the **SET-SID** command as well.

If the network element receives a **SET-SID** command when the system is not in the OOS-MA state, then the following error response is returned.

```
sid date time
M ctag DENY
  SNOS
/* Status, Not manually Out of Service */
;
```

If the network element receives a **SET-SID** command with an invalid *newsid* parameter value, then the following error response is returned.

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

If the network element receives a **SET-SID** command without a *newsid* parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IPMS
/* Input, Parameter MiSsing, missing newsid */
;
```

RELATED TL1 MESSAGES

None

NAME

TEST-ALM: Test Alarm

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

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

INPUT FORMAT

TEST-ALM: *tid:aid:ctag[:repeat];*

DESCRIPTION

The **TEST-ALM** command tests system alarm reporting.

The **TEST-ALM** command controls the Critical (CR), Major (MJ), or Minor (MN) audible office alarm outputs and the corresponding LED indicators (CR, MJ, MN) on the user panels.

Execution of the **TEST-ALM** command can be repeated up to 10 times as set by the *repeat* parameter. If the *repeat* parameter value is **1**, execution of the **TEST-ALM** command causes the following:

- CRITICAL, MAJOR, MINOR simultaneously set to off for 5 seconds
- CRITICAL set to on for 5 seconds, then set to off
- MAJOR set to on for 5 seconds, then set to off
- MINOR set to on for 5 seconds, then set to off
- CRITICAL, MAJOR, MINOR remain off for 5 seconds
- Return to normal alarm status display.

The above takes 25 seconds.

If the *repeat* parameter value is *n*, where *n* is greater than 1, then the following steps (steps b, c, and d from above) are repeated *n* times after step a, and before step e:

- CRITICAL set to on for 5 seconds, then set to off
- MAJOR set to on for 5 seconds, then set to off
- MINOR set to on for 5 seconds, then set to off.

Because the **TEST-ALM** command 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.

After the alarm test is complete, the alarms will be reset to reflect the actual system status.

The following interactions occur between the **TEST -ALM** command and ACO function (See **OPR-ACO**).

- Transition to a test phase which has all indicators off, clears the ACO condition and pushing the ACO button or invoking the **OPR-ACO** command has no effect.
- During a test phase when an indicator is on (e.g., CRITICAL is on), pushing the ACO button or invoking the **OPR-ACO** command silences the audible alarm.
- If the ACO condition was set when the test began and if the alarm state of the system is unchanged when the test ends, then the ACO condition remain set.

If ACO is used to silence the audible alarm during a test phase when an indicator is on (for example, CRITICAL), the effect 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.

The **TEST -ALM** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

The “**TEST -ALM** Positional Input Parameters” table contains the detailed descriptions and allowed values for the positional input parameters of the **TEST -ALM** command.

Table 3-150. TEST -ALM Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the “ RTRV-HDR Positional Input Parameters” table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. Identifies the shelf where the office alarms are to be tested.	scs-1 LambdaRouter AOS 128: hvs-0 LambdaRouter AOS 256: hvs-{0,1} LambdaRouter AOS 128: ois-{1-4} LambdaRouter AOS 256: ois-{1-7}

Table 3-150.TEST -ALM Positional Input Parameters (*continued*)

Parameter Name	Description	Allowed Values
<i>ctag</i>	Correlation Tag. Refer to the " RTRV-HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>repeat</i>	Repeat. Number of times the test should be repeated.	1-10 (default = 1)

OUTPUT FORMAT

If the **TEST -ALM** request completes successfully, then the following normal completion response is returned.

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

The COMPLD response will be returned when the test is finished. The completion time depends on the value of the ***repeat*** parameter.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command. The output does not indicate acceptance or failure. It is up to the observer to interpret the success or failure of the test.

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **TEST -ALM** command.

```
TEST-ALM:LT-0XC:ois-1:123456::2;

LT-0XC 99-01-01 08:00:00
M 123456 COMPLD
;
```

This test takes approximately 40 seconds to return a COMPLD response.

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **TEST-ALM** command. The following additional errors apply to the **TEST-ALM** command as well.

If a **TEST-ALM** command is received with a valid but non-existent **aid** parameter value, then the following error response is returned.

```
sid date time
M ctag DENY
  IENE
/* Input, object Entity does Not Exist */
;
```

If a **TEST-ALM** command is received with an invalid **repeat** parameter value, then the following error response is returned.

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

If the network element receives a **TEST-ALM** command with a valid **aid** parameter for which the target shelf is not in service, then the following error response is returned.

```
sid date time
M ctag DENY
  SNIS
/* Status, Not in Service */
;
```

RELATED TL1 MESSAGES

OPR-ACO

TEST-LED

NAME

TEST-LED: Test LED

The **TEST-LED** command is available beginning in:

- LambdaRouter All Optical Switch 128 & 256, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

INPUT FORMAT

TEST-LED: *tid:aid:ctag[:repeat];*

DESCRIPTION

The **TEST-LED** command tests the LEDs in the specified shelf and the LEDs in the associated shelf User Panel.

The test operates all LEDs on the shelf (except the Power On LED) including the User Panel and the circuit pack LEDs. During one cycle of the test, the LEDs are turned on 2 seconds, off 2 seconds, on 2 seconds, off 2 seconds, and so on, for a total of 3 iterations. They are then restored to normal operation.

One cycle of the test takes 12 seconds.

The **repeat** parameter allows the test to be repeated for a specified number of cycles up to 60.

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 the shelf circuit packs 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

The "**TEST - LED** Positional Input Parameters" table contains the detailed descriptions and allowed values for the positional input parameters of the **TEST - LED** command.

Table 3-151. TEST - LED Positional Input Parameters

Parameter Name	Description	Allowed Values
<i>tid</i>	Target Identifier. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>tid</i> parameter.	
<i>aid</i>	Access Identifier. Identifies the shelf where the LEDs are to be tested.	scs-1 LambdaRouter AOS 128: hvs-0 LambdaRouter AOS 256: hvs-{0,1} LambdaRouter AOS 128: ois-{1-4} LambdaRouter AOS 256: ois-{1-7}
<i>ctag</i>	Correlation Tag. Refer to the " RTRV - HDR Positional Input Parameters" table for the input parameter syntax and description of the <i>ctag</i> parameter.	
<i>repeat</i>	Repeat. Number of times the test should be repeated.	1-60 (default = 1)

OUTPUT FORMAT

If the **TEST - LED** request completes successfully, then the following normal completion response is returned.

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

The COMPLD response will be returned when the test is finished. The completion time depends on the value of the *repeat* parameter.

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* and their syntax are included in the **OUTPUT PARAMETERS** section of the **RTRV - HDR** command. The output does not indicate acceptance or failure. It is up to the observer to interpret the success or failure of the test.

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See notice on first page

EXAMPLE INPUT/OUTPUT

The following example shows a successful execution of the **TEST - LED** command.

```
TEST-LED:LT-0XC:ois-1:123456::2;  
  
LT-0XC 99-01-01 08:00:00  
M 123456 COMPLD  
;
```

This test takes approximately 24 seconds to return a COMPLD response.

ERROR RESPONSES

The error codes defined in the **RTRV-HDR** command **ERROR RESPONSES** section also apply to the **TEST - LED** command. The following additional errors apply to the **TEST - LED** command as well.

If a **TEST - LED** command is received with a valid but non-existent **aid** parameter value, then the following error response is returned.

```
sid date time  
M ctag DENY  
IENE  
/* Input, object Entity does Not Exist */  
;
```

If a **TEST - LED** command is received with an invalid **repeat** parameter value, then the following error response is returned.

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

If the network element receives a **TEST - LED** command with a valid **aid** parameter for which the target shelf is not in service, then the following error response is returned.

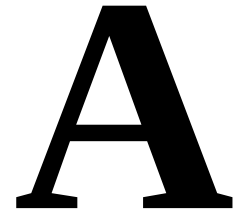
```
sid date time  
M ctag DENY  
SNIS  
/* Status, Not in Service */  
;
```

RELATED TL1 MESSAGES

TEST - ALM

LambdaRouter™ All Optical Switch

TL1 Parameter Tables



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Appendix Overview

Introduction

Appendix A contains the following types of LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0 parameters used by the TL1 commands/messages:

- External user access identifiers (AIDs) specified as parameters
 - Alarms/events parameters
 - Error codes
-

AID Overview

Introduction

The term access identifier (AID) is a TL1 standard parameter for explicitly naming entities of a system using ASCII text, keywords, and grammar rules. Entities or objects within the LambdaRouter™ All Optical Switch (AOS) 128/256 (such as circuit packs, ports, slots) that are visible to users are addressed by using AIDs; logical entities are also addressed by using AIDs.

This appendix specifies the AID parameter details for TL1 commands/messages. Several of the LambdaRouter™ AOS 128/256 TL1 commands 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.

AID Hierarchical Order

The following assumed hierarchy exists for AID entities:

- Entity Type
- Shelf Number
- Slot Number or I/O Identifier
- Block Identifier
- Entity Identifier

AID General Format

The general format/structure for an AID, which consists of up to five fields separated by dashes (-), is:

Field 1	Field 2	Field 3	Field 4	Field 5
{ENTITY TYPE}	[[- {SHELF #}	[- {SLOT # I/O IDENTIFIER}	[- {BLOCK IDENTIFIER}]]]	- {ENTITY IDENTIFIER}



NOTE:

Items enclosed in curly brackets { } are variables. Square bracketed items [] are optional depending on the Entity Type. Items separated by a pipe (|) character represent a choice of items, where any of the pipe-separated items may be selected.

AID Hierarchy Table

The following table shows the format of each individual entity. The Entity Identifier in this table represents an instance of an entity (for example a shelf number, a slot number, or a port number) depending on the Entity Type.

Table A-1. AID Hierarchy Table

Generic Entity	Hierarchy
System	{Entity Type}
Shelf	{Entity Type} - {Entity Identifier}
Slot/Circuit Pack	{Entity Type} - {Shelf Number} - {Entity Identifier}
Port	{Entity Type} - {Shelf Number} - {Slot Number} - {Entity Identifier}
Switch Interface Point (SWIP)	{Entity Type} - {Shelf Number} - {I/O Identifier} - {Block Identifier} - {Entity Identifier}
Protection/Maintenance Groups	{Entity Type} - {Entity Identifier}
Fan	{Entity Type} - {Entity Identifier}

AID Format Example

The following table contains examples for specifying AIDs.

Table A-2. AID Examples

To identify the ...	Specify:
Second Optical Interface Shelf (OIS)	ois-2
Seventh optical cross-connect interface slot/ circuit pack within the second OIS	oxi-2-7
Third Optical Channel port within the seventh optical cross-connect interface circuit pack of the second OIS	och-2-7-3

Using the AID Field Value “all”

The AID definitions allow the use of the term “**all**” in one of the AID fields within a compound AID definition. The use of the “**all**” value is the only form of parameter ranging supported by the LambdaRouter™ AOS 128/256.

Table A-3. Using the AID Value “all”

The AID value “all” ...	
can be used to identify the following AID entities:	can NOT be used to identify the following AID entities:
Slot Number	Shelf Number
I/O Identifier	
Entity Identifier	
Block Identifier	

If the AID value “all” is used in the Slot Number or Block Identifier fields, then the Entity Identifier field is omitted. If the AID value “all” is used in the Input/Output Identifier field, then the Block Identifier and the Entity Identifier fields are omitted.

Examples Using the AID Value “all”

The following table shows how to select entities using the value “all” within the AID.

Table A-4. AID Examples Using the AID Value “all”

To select all ...	Specify:
HVDAC slots of the side 0 High-Voltage Shelf	hvdac-0-all
Switch interface points (SWIPs) of the side 0 fabric	swip-0-all
Input switch interface points on the side 0 fabric	swip-0-in-all
Ports on the second OIS shelf	och-2-all
Ports on the third OXI circuit pack of the first OIS-T shelf	och-1-3-all

**Shelf Numbering
Conventions**

In a protected shelf configuration, {0,1}, shelves 0 and 1 provide duplex operation, providing backup to each other.

In an unprotected shelf configuration, {1[-N]}, all shelves are active at the same time and have no associated protection shelf. There is no backup if a shelf fails.

**Slot/Circuit Pack
Numbering
Conventions**

In a protected slot/circuit pack configuration, {0,1}, slots/circuit packs 0 and 1 provide duplex operation, providing backup to each other.

In an unprotected slot/circuit pack configuration, {1[-N]}, all slots/circuit packs are active at the same time and have no associated protection slot/circuit pack. There is no backup if a slot/circuit pack fails.

**Note on Input and
Output AIDs**

In general, the input and output AIDs are identical; however, the following two cases allow them to be different.

1. The value “**all**” may be used in one of the fields of several AID entities in order to allow a selection of all entities within that field. The output AID never contains the “**all**” value in an entity field. Each entity must be explicitly identified in any output message.
 2. Some entities cannot be queried or addressed directly; they provide only output information, for example, entities that are defined only for alarming purposes.
-

LambdaRouter™ AOS 128 AID Parameter Tables

Introduction The following tables specify LambdaRouter™ All Optical Switch (AOS) 128, Release 3.0 AID details for TL1 commands/messages.

System AID **Table A-5. External User AID for the System**

Entity	Input AID	Output AID
System	system	system

LambdaRouter™ AOS 128 Shelf AIDs **Table A-6. External User AIDs for Shelves**

Entity	Input AID	Output AID
High-Voltage Shelf (HVS)	hvs-0	hvs-0
Optical Interface Shelf (OIS)	ois-{1-4}	ois-{1-4}
System Controller Shelf (SCS)	scs-1	scs-1
Switch Shelf (SWS)	sws-0	sws-0

Protection Group AIDs **Table A-7. External User AIDs for Switch Interface Points (SWIPs)**

Entity	Input AID	Output AID
Switch Interface Point (SWIP)	swip-0-{in,out,all}- {[A,B][1-8],all}-{1-16,all}	swip-0-{in,out}-{[A,B][1- 8]}-{1-16}

**Slot/Circuit Pack
AIDs**

Table A-8. External User AIDs for Slots/Circuit Packs

Entity	Input AID	Output AID
DCC Slot	dcc-1-{1,2,all}	dcc-1-{1,2}
EI Slot	ei-1-{0,1,all}	ei-1-{0,1}
SWIC Slot (High-Voltage Shelf)	hswic-0-{0,1,all}	hswic-0-{0,1}
HVDAC Slot	hvdac-0-{1-16,all}	hvdac-0-{1-16}
SWIC Slot (Optical Interface Shelf)	oswic-{1-4}-{0,1,all}	oswic-{1-4}-{0,1}
OXI Slot	oxi-{1-4}-{1-32,all}	oxi-{1-4}-{1-32}
Personality Module Slot	pmod-1-{1-4,all}	pmod-1-{1-4}
Primary MEM Slot	pri-1-{0,1,all}	pri-1-{0,1}
RC Slot	rc-1-{0,1,all}	rc-1-{0,1}
RIP Slot	rip-1-{1,2,all}	rip-1-{1,2}
Secondary MEM Slot	sec-1	sec-1
SYS50D Slot	sys50d-1-{0,1,all}	sys50d-1-{0,1}

Port AIDs

Table A-9. External User AIDs for Ports

Entity	Input AID	Output AID
Optical Channels	och-{1-4}-{1-32,all}-{1-4,all}	och-{1-4}-{1-32}-{1-4}
2.5G (OC-48/STM-16) CCN Port	pmoch-1-{1-4}-{1,2,all}	pmoch-1-{1-4}-{1,2}
10Base-T hub on RC Pack	rc10-1-{0,1}-1	rc10-1-{0,1}-1
100Base-T hub on RC Pack	rc100-1-{0,1}-1	rc100-1-{0,1}-1
Internal 100Base-T hub on RC Pack	rcip-1-{0,1}-1	rcip-1-{0,1}-1

Entity	Input AID	Output AID
10Base-T hub on RIP Pack	rip10-1-{0,1}-1	rip10-1-{0,1}-1
100Base-T hub on RIP Pack	rip100-1-{0,1}-1	rip100-1-{0,1}-1
Internal 100Base-T hub on RIP Pack	ripip-1-{0,1}-1	ripip-1-{0,1}-1

System Controller Complex AIDs

Table A-10. External User AIDs for System Controller Complex

Entity	Input AID	Output AID
System Controller Complex	scc-1-{0,1,all}	scc-1-{0,1}

**Protection/
Maintenance Group
AIDs**

Table A-11. External User AIDs for Protection/Maintenance Groups

Entity	Input AID	Output AID
SWIP Maintenance Group	swmg-{0,1}	swmg-{0,1}
System Controller Complex Protection Group	sccpg-1	sccpg-1
HVS Controller Protection Group	hvcpg-0	hvcpg-0
OIS Controller Protection Group	oicpg-{1-4}	oicpg-{1-4}

Fan AIDs

Table A-12. External User AIDs for Shelf Fans

Entity	Input AID	Output AID
SCS Fan	Not Applicable (N/A)	scfan-1
HVS Fan	N/A	hvfan-0
OIS Fan	N/A	oifan-{1-4}

LambdaRouter™ AOS 256 AID Parameter Tables

Introduction The following tables specify LambdaRouter™ All Optical Switch (AOS) 256, Release 3.0 AID details for TL1 commands/messages.

System AID **Table A-13. External User AID for the System**

Entity	Input AID	Output AID
System	system	system

LambdaRouter™ AOS 256 Shelf AIDs **Table A-14. External User AIDs for Shelves**

Entity	Input AID	Output AID
System Controller Shelf (SCS)	scs-1	scs-1
Switch Shelf (SWS)	sws-{0,1}	sws-{0,1}
High-Voltage Shelf (HVS)	hvs-{0,1}	hvs-{0,1}
Optical Interface Shelf (OIS)	ois-{1-7}	ois-{1-7}

Protection Group AIDs **Table A-15. External User AIDs for Switch Interface Points (SWIPs)**

Entity	Input AID	Output AID
Switch Interface Point (SWIP)	swip-{0,1}-{in,out,all}- {[A,B][1-8],all}-{1-16,all}	swip-{0,1}-{in,out}- {[A,B][1-8]}-{1-16}

**Slot/Circuit Pack
AIDs**

Table A-16. External User AIDs for Slots/Circuit Packs

Entity	Input AID	Output AID
DCC Slot	dcc-1-{1,2,all}	dcc-1-{1,2}
EI Slot	ei-1-{0,1,all}	ei-1-{0,1}
SWIC Slot (High-Voltage Shelf)	hswic-{0,1}-{0,1,all}	hswic-{0,1}-{0,1}
HVDAC Slot	hvdac-{0,1}-{1-16,all}	hvdac-{0,1}-{1-16}
SWIC Slot (Optical Interface Shelf)	oswic-{1-7}-{0,1,all}	oswic-{1-7}-{0,1}
OXI Slot	oxi-{1-7}-{1-32,all}	oxi-{1-7}-{1-32}
Personality Module Slot	pmod-1-{1-4,all}	pmod-1-{1-4}
Primary Memory Slot	pri-1-{0,1,all}	pri-1-{0,1}
RC Slot	rc-1-{0,1,all}	rc-1-{0,1}
RIP Slot	rip-1-{1,2,all}	rip-1-{1,2}
Secondary Memory Slot	sec-1	sec-1
SYS50D Slot	sys50d-1-{0,1,all}	sys50d-1-{0,1}

Port AIDs

Table A-17. External User AIDs for Ports

Entity	Input AID	Output AID
Optical Channels	och-{1-7}-{1-32,all}-{1-4,all}	och-{1-7}-{1-32}-{1-4}
2.5G (OC-48/STM-16) CCN Port	pmoch-1-{1-4}-{1,2,all}	pmoch-1-{1-4}-{1,2}
10Base-T hub on RC Pack	rc10-1-{0,1}-1	rc10-1-{0,1}-1
100Base-T hub on RC Pack	rc100-1-{0,1}-1	rc100-1-{0,1}-1
Internal 100Base-T hub on RC Pack	rcip-1-{0,1}-1	rcip-1-{0,1}-1

Entity	Input AID	Output AID
10Base-T hub on RIP Pack	rip10-1-{0,1}-1	rip10-1-{0,1}-1
100Base-T hub on RIP Pack	rip100-1-{0,1}-1	rip100-1-{0,1}-1
Internal 100Base-T hub on RIP Pack	ripip-1-{0,1}-1	ripip-1-{0,1}-1

**System Controller
Complex AIDs**

Table A-18. External User AIDs for System Controller Complex

Entity	Input AID	Output AID
System Controller Complex	scc-1-{0,1,all}	scc-1-{0,1}

**Protection/
Maintenance Group
AIDs**

Table A-19. External User AIDs for Protection/Maintenance Groups

Entity	Input AID	Output AID
SWIP Maintenance Group	swmg-{0,1}	swmg-{0,1}
System Controller Complex Protection Group	sccpg-1	sccpg-1
HVS Controller Protection Group	hvcpg-{0,1}	hvcpg-{0,1}
OIS Controller Protection Group	oicpg-{1-7}	oicpg-{1-7}

Fan AIDs

Table A-20. External User AIDs for Shelf Fans

Entity	Input AID	Output AID
SCS Fan	Not Applicable (N/A)	scfan-1
HVS Fan	N/A	hvfan-{0,1}
OIS Fan	N/A	oifan-{1-7}

LambdaRouter™ AOS 128/256 Alarms/ Events Tables

Introduction The parameters specified in the alarms/events table are described as follows.

Parameter	Description
Modifier (<i>modifier</i>)	The Modifier identifies the message classification to which the condition or specific event belongs.
Condition Description (<i>conddescr</i>)	The Condition Description is a detailed description of the condition or specific event.
Condition Type (<i>condtype</i>)	The Condition Type identifies the type of event, condition, or alarm being reported.
Access Identifier (<i>aid</i>)	The Access Identifier identifies an entity (or group of entities) in the network element to which the condition or specific event pertains.
Notification Code (<i>ntfncode</i>)	The Notification Code identifies the severity of the alarm or event. The severity is provided for the case where the condition or specific event is Service Affecting and for the case where it is Non-Service Affecting (SA/NSA). Values include Critical ("CR"), Major ("MJ"), Minor ("MN"), and Not Alarmed ("NA"). Note: Brackets ("[" "]") indicate the alarm level for an idle input port (used when the Notification Code differs between a cross-connected and non-cross-connected input port).
Reporting Type	The Reporting Type specifies whether the condition or specific event is a Standing or a Transient condition. A Standing condition generates an alarm or event clearing message when the condition no longer exists. A Transient condition has no associated clearing message.
Alarm Log	The Alarm Log specifies whether or not the alarm is entered into the alarm history log.
Additional Text (<i>addtxt</i>)	Additional Text provides information that is useful in clarifying the nature of the alarm, such as: ^a IP address of the destination IP port ^b IP address of the local IP port ^c AID of the port associated with the alarmed SWIP ^d Direction, signal format/rate of the port (e.g. IN,OC48)

Parameter	Description
Threshold Level (<i>THLEV</i>) {For Qos events only}	The Threshold Value identifies the current setting of the threshold for the given Time Period of the performance monitoring profile type specified in the event message. Details provided in Table A-22.
Monitored Value (<i>MONVAL</i>) {For Qos events only}	The Monitored Value identifies the value of the performance monitoring data collected in the given Time Period which caused the event message. Details provided in Table A-22.
Time Period (<i>TMPER</i>) {For Qos events only}	The Time Period identifies the time interval in which the performance monitoring data was collected. Details provided in Table A-22.

**Alarms/Events
Table**

The following table contains the LambdaRouter™ All Optical Switch (AOS) 128/
256, Release 3.0 alarms/events descriptions.

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (1 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
CCN	AIS-L/AIS-MS	CCN-AIS-L	pmoch-1-{1-4}- {1,2}	-/MN	Standing	Yes	w.x.y.z where w, x, y, and z ={0-255} ^b
	Auto Port Dis- covered	AUTODISC	AOS 128: och-{1-4}-{1- 32}-{1-4} AOS 256: och-{1-7}-{1- 32}-{1-4}	-/NA -/NA	Transient	Yes	
	Auto Port Dis- covery Failure	AUTODISC- MR	AOS 128: och-{1-4}-{1- 32}-{1-4} AOS 256: och-{1-7}-{1- 32}-{1-4}	-/NA -/NA	Transient	Yes	
	Auto Port Dis- covery Failure	AUTODISC- TO	AOS 128: och-{1-4}-{1- 32}-{1-4} AOS 256: och-{1-7}-{1- 32}-{1-4}	-/NA -/NA	Transient	Yes	
	Bad Link Con- nection	BADLINK-IN	AOS 128: och-{1-4}-{1- 32}-{1-4} AOS 256: och-{1-7}-{1- 32}-{1-4}	-/NA -/NA	Standing	Yes	
	Bad Link Con- nection	BADLINK-OUT	AOS 128: och-{1-4}-{1- 32}-{1-4} AOS 256: och-{1-7}-{1- 32}-{1-4}	-/NA -/NA	Standing	Yes	
	Bit Error Rate B2	CCN-BER	pmoch-1-{1-4}- {1,2}	-/MN	Standing	Yes	w.x.y.z where w, x, y, and z ={0-255} ^b
	DCN Initializa- tion Complete	NORMAL- DCN	system	-/NA	Transient	Yes	

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (2 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
CCN	DCN Out-of-Service	DCN-OOS	system	-/NA	Transient	Yes	
	Double LSP Down	SLKTERM	rc-1-{0,1}	-/NA	Transient	Yes	w.x.y.z where w , x , y , and z ={0-255} ^a
	End of Neighbor Confirmation	END-TST-NBR	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	-/NA -/NA	Transient	Yes	
	Excessive Bit Error Rate B2	CCN-EBER	pmoch-1-{1-4}-{1,2}	-/MJ	Standing	Yes	w.x.y.z where w , x , y , and z ={0-255} ^b
	Inconsistent Link Neighbor Data	INCON-NBR-IN	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	-/NA -/NA	Standing	Yes	
	Inconsistent Link Neighbor Data	INCON-NBR-OUT	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	-/NA -/NA	Standing	Yes	
	Initialization Error	PROGFLT	pmod-1-{1-4}	-/MJ	Standing	Yes	
	Link Integrity Failure	PLKTERM	rc10-1-{0,1}-1 rc100-1-{0,1}-1 rip10-1-{1,2}-1 rip100-1-{1,2}-1 rcip-1-{0,1}-1 ripip-1-{1,2}-1	-/MJ -/MJ -/MJ -/MJ -/MJ -/MJ	Standing	Yes	w.x.y.z where w , x , y , and z ={0-255} ^b
	Link probe port unavailable	NO-PROBE	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	-/NA -/NA	Transient	Yes	

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (3 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
CCN	Loss of Frame	CCN-LOF	pmoch-1-{1-4}-{1,2}	-/MJ	Standing	Yes	w.x.y.z where w, x, y, and z = {0-255} ^b
	LSP Signal Connection Up	NORM-LSP	rc-1-{0,1}	-/NA	Transient	Yes	
	Mapper Loss of Signal	CCN-MLOS	pmoch-1-{1-4}-{1,2}	-/MJ	Standing	Yes	w.x.y.z where w, x, y, and z = {0-255} ^b
	NO OSPF port	MAN-OSPF	rip-1-{1,2}	-/MJ	Standing	Yes	
	ONN Initialization Complete	NORMAL-ONN	system	-/NA	Transient	Yes	
	ONN Out-of-Service	ONN-OOS	system	-/NA	Transient	Yes	
	Optical Loss of Signal	CCN-LOS	pmoch-1-{1-4}-{1,2}	-/MJ	Standing	Yes	w.x.y.z where w, x, y, and z = {0-255} ^b
	Single LSP Down	SLKTERM	rip-1-{1,2}	-/NA	Transient	Yes	w.x.y.z where w, x, y, and z = {0-255} ^a
COM	Circuit Pack Autonomous Reset	ARST	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	-/NA -/NA -/NA -/NA	Transient	Yes	
	Circuit Pack Autonomous Reset	AUTORESET	sys50d-1-{0,1} dcc-1-{1,2} rc-1-{0,1} rip-1-{1,2}	-/NA -/NA -/NA -/NA	Transient	Yes	

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (4 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
COM	Communication Lost with Sub-Shelf	CONTBUS	AOS 128: hvs-0 ois-{1-4} AOS 256: hvs-{0,1} ois-{1-7}	-/MJ -/MJ -/MJ -/MJ	Standing	Yes	
	Non-Volatile Memory Usage	NVMU	sys50d-1-{0,1}	-/MJ	Standing	Yes	
	Out of Memory Error	OMERR	sys50d-1-{0,1}	-/NA	Transient	Yes	
	Power Failure on Feeder A	PWR	scs-1 AOS 128: hvs-0 ois-{1-4} AOS 256: hvs-{0,1} ois-{1-7}	-/MN -/MN -/MN -/MN -/MN	Standing	Yes	
	Power Failure on Feeder B	PWR	scs-1 AOS 128: hvs-0 ois-{1-4} AOS 256: hvs-{0,1} ois-{1-7}	-/MN -/MN -/MN -/MN -/MN	Standing	Yes	
	Shelf Dual Power Failure	PWR-DUAL	AOS 128: hvs-0 ois-{1-4} AOS 256: hvs-{0,1} ois-{1-7}	CR/ CR/ CR/ CR/	Standing	Yes	
	SNIP ID Mismatch	DATAFLT	AOS 128: sws-0 AOS 256: sws-{0,1}	CR/ CR/MJ	Standing	Yes	
	Software Error on Circuit Pack	SWERR	dcc-1-{1,2} sys50d-1-{0,1} rc-1-{0,1} rip-1-{1,2} AOS 128: hswic-0-{0,1} oswic-{1-4}-{0,1} AOS 256: hswic-{0,1}-{0,1} oswic-{1-7}-{0,1}	-/NA -/NA -/NA -/NA -/NA -/NA -/NA -/NA	Transient	Yes	

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (5 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
COM	System in Maintenance Condition	SCMMA	system	-/NA	Transient	Yes	
	System Restart	SYSBOOT	system	-/NA	Transient	Yes	
	System Startup Complete	NORMAL	system	-/NA	Transient	Yes	
EQPT	Controller Circuit Pack Failure	CONTR	AOS 128: hswic-0-{0,1} oswic-{1-4}-{0,1} AOS 256: hswic-{0,1}-{0,1} oswic-{1-7}-{0,1}	-/MJ -/MJ -/MJ -/MJ	Standing	Yes	
	Controller Circuit Pack Failure	CPF	sys50d-1-{0,1} rc-1-{0,1} rip-1-{1,2} pmod-1-{1-4} pri-1-{0,1} ei-1-{0,1} dcc-1-{1,2} sec-1	-/MJ -/MJ -/MJ -/MJ -/MJ -/MJ -/MJ -/MN	Standing	Yes	
	Fan Failure	INT	scfan-1 AOS 128: hvf fan-0 oifan-{1-4} AOS 256: hvf fan-{0,1} oifan-{1-7}	-/MJ -/MJ -/MJ -/MJ -/MJ	Standing	Yes	
	HVDAC Circuit Pack Failure	CTNEQPT	AOS 128: hvdac-0-{1-16} AOS 256: hvdac-{0,1}-{1-16}	-/MJ -/MJ	Standing	Yes	
	HVDAC High Voltage Cable Fault	CONTCOM	AOS 128: hvdac-0-{1-16} AOS 256: hvdac-{0,1}-{1-16}	-/MJ -/MJ	Standing	Yes	

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (6 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
EQPT	Improper Removal of Circuit Pack	CP_UNEQ	sys50d-1-{0,1} rc-1-{0,1} rip-1-{1,2} pmod-1-{1-4} pri-1-{0,1} ei-1-{0,1} dcc-1-{1,2} sec-1	-/MJ -/MJ -/MJ -/MJ -/MJ -/MJ -/MJ -/MN	Standing	Yes	
	Improper Removal of Circuit Pack	IMPROPRMVL	AOS 128: hswic-0-{0,1} oswic-{1-4}-{0,1} hvdac-0-{1-16} oxi-{1-4}-{1-32} AOS 256: hswic-{0,1}-{0,1} oswic-{1-7}-{0,1} hvdac-{0,1}-{1-16} oxi-{1-7}-{1-32}	-/MJ -/MJ -/MJ CR/MN -/MJ -/MJ -/MJ CR/MN	Standing	Yes	
	Improper Removal of Fan	IMPROPRMVL	scfan-1 AOS 128: hvfans-0 oifan-{1-4} AOS 256: hvfans-{0,1} oifan-{1-7}	-/MJ -/MJ -/MJ -/MJ -/MJ	Standing	Yes	
	Improper SWIP association	SWMTXMOD	AOS 128: swip-0-{in,out}- {[A,B][1-8]}-{1-16} AOS 256: swip-{0,1}- {in,out}-{[A,B][1-8]}-{1-16}	-/MJ -/MJ	Standing	Yes	AOS 128: och-{1-4}- {1-32}-{1-4} ^c AOS 256: och-{1-7}- {1-32}-{1-4} ^c
	Invalid Circuit Pack	PRCDRERR	AOS 128: oxi-{1-4}-{1-32} AOS 256: oxi-{1-7}-{1-32}	CR/MN CR/MN	Standing	Yes	
	Microcontroller Failure	WATM-TO	AOS 128: oxi-{1-4}-{1-32} AOS 256: oxi-{1-7}-{1-32}	CR/MN CR/MN	Standing	Yes	
	Non-Volatile Memory Failure	NVMW	pri-1-{0,1} sec-1	-/MJ -/MJ	Standing	Yes	

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (7 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
EQPT	Outgoing AIS-L/ AIS-MS	INT-AIS-L	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/MN -/MN	Standing	Yes	
	Outgoing Loss of Frame	INT-LOF	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	CR/- CR/-	Standing	Yes	
	Outgoing Loss of Signal	INT-LOS	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	CR/- CR/-	Standing	Yes	
	Outgoing Signal Degrade B2	INT-BER	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/MJ -/MJ	Standing	Yes	
	Outgoing Signal Fail B2	INT-EBER	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	CR/- CR/-	Standing	Yes	
	Output Port Extraneous Signal	INT-ESIG	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	-/MN -/MN	Standing	Yes	
	Output Port Fail to Switch	FAILTOSW	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	CR/- CR/-	Standing	Yes	

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (8 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
EQPT	Output port Loss of Signal	CTNEQPT-LOS	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	CR/MN CR/MN	Standing	Yes	
	OXI Circuit Pack Internal failure	FACTERM	AOS 128: oxi-{1-4}-{1-32} AOS 256: oxi-{1-7}-{1-32}	CR/MN CR/MN	Standing	Yes	
	RC Auto Sideswitch	SW-RC	rc-1-{0,1}	-/NA	Transient	Yes	
	RIP-Autolock	CONTEQPT-RIP	rip-1-{1,2}	-/MJ	Standing	Yes	
	SWIP not Assigned	SWMTXMOD_UAS	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	CR/MJ CR/MJ	Standing	Yes	
	Switch interface point suspect	CTNEQPT	AOS 128: swip-0-{in,out}- {[A,B][1-8]}-{1-16} AOS 256: swip-{0,1}- {in,out}-{[A,B][1-8]}-{1-16}	-/MN -/MN	Standing	Yes	
	Switch shelf extraction	IMPROPRMVL	AOS 128: sws-0 AOS 256: sws-{0,1}	CR/ CR/MJ	Standing	Yes	
	System is in ACO condition	INHAUDB	system	-/NA	Transient	No	
	Time of Day Clock Battery Fail	RTCLK	rc-1-{0,1}	-/NA	Transient	Yes	

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (9 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
OCH	Forced Duplex Loopback	LPBK-DX	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	-/NA -/NA	Standing	Yes	
	Forced Simplex Loopback	LPBK-SX	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	-/NA -/NA	Standing	Yes	
	Incoming AIS-L/ AIS-MS	AIS-L	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/MN[MN] -/MN[MN]	Standing	Yes	
	Incoming Loss of Frame	LOF	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	CR/[MN] CR/[MN]	Standing	Yes	
	Incoming Loss of Signal	MLOS	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	CR/[MN] CR/[MN]	Standing	Yes	
	Incoming Loss of Signal-Optical)	LOS	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	CR/[MN] CR/[MN]	Standing	Yes	
	Incoming Signal Degrade B2	BER	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	MJ/[MN] MJ/[MN]	Standing	Yes	

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (10 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
OCH	Incoming Signal Fail B2	EBER	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	CR/[MN] CR/[MN]	Standing	Yes	
	Loopback Crossconnect	LPBKCRS	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	-/NA -/NA	Standing	Yes	
	LOS and Optical Amplifier ON	LOS-MOD-ERR	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	CR/MN CR/MN	Standing	Yes	
	Optical Amplifier Failure	MOD	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	CR/- CR/-	Standing	Yes	
	Optical Amplifier ON Failure	MOD-ERR	AOS 128: och-{1-4}-{1-32}-{1-4} AOS 256: och-{1-7}-{1-32}-{1-4}	CR/MN CR/MN	Standing	Yes	
QoS	Code Violations Line FarEnd TCA	CV-LFE	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
	Code Violations Line TCA	CV-L	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (11 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
QoS	Code Violations Sect TCA	CV-S	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
	Error Sec Line FarEnd TCA	ES-LFE	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
	Error Sec Line TCA	ES-L	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
	Error Sec Sect TCA	ES-S	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
	Laser Bias Current TCA	LBC-IN	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Standing	Yes	{IN,OUT}, {OC48, STM16, OC192, STM64} ^d
	Laser Bias Current TCA	LBC-OUT	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Standing	Yes	{IN,OUT}, {OC48, STM16, OC192, STM64} ^d
	MS FarEnd Bgd Blk Error TCA	MS_F_BBE	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (12 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
QoS	MS FarEnd Error Sec TCA	MS_F_ES	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d
	MS FarEnd Svrly Error Sec TCA	MS_F_SES	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d
	MS FarEnd UnAvail Sec TCA	MS_F_UAS	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d
	MS NearEnd Bgd Blk Error TCA	MS_N_BBE	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d
	MS NearEnd Error Sec TCA	MS_N_ES	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d
	MS NearEnd Svrly Error Sec TCA	MS_N_SES	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d
	MS NearEnd UnAvail Sec TCA	MS_N_UAS	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (13 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
QoS	Optical Power Received TCA	OPR-IN	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Standing	Yes	{IN,OUT}, {OC48, STM16, OC192, STM64} ^d
	Optical Power Received TCA	OPR-OUT	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Standing	Yes	{IN,OUT}, {OC48, STM16, OC192, STM64} ^d
	Optical Power Transmitted TCA	OPT-IN	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Standing	Yes	{IN,OUT}, {OC48, STM16, OC192, STM64} ^d
	Optical Power Transmitted TCA	OPT-OUT	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Standing	Yes	{IN,OUT}, {OC48, STM16, OC192, STM64} ^d
	RS NearEnd Bgd Blk Error TCA	RS_N_BBE	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d
	RS NearEnd Error Sec TCA	RS_N_ES	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d
	RS NearEnd Svrly Error Sec TCA	RS_N_SES	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d

Table A-21. LambdaRouter™ AOS 128/256 Alarms/Events (14 of 14)

Modifier	Condition Description	Condition Type	Access Identifier	Notification Code (SA/NSA)	Reporting Type	Alarm Log	Additional Text
QoS	RS NearEnd UnAvail Sec TCA	RS_N_UAS	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {STM16, STM64} ^d
	Svrly Error Frame Sec Sect TCA	SEFS-S	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
	Svrly Error Sec Line FarEnd TCA	SES-LFE	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
	Svrly Error Sec Line TCA	SES-L	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
	Svrly Error Sec Sect TCA	SES-S	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
	UnAvail Sec Line FarEnd TCA	UAS-LFE	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
	UnAvail Sec Line TCA	UAS-L	AOS 128: och-{1-4}-{1-32}-{1,2} AOS 256: och-{1-7}-{1-32}-{1,2}	-/NA -/NA	Transient	No	{IN,OUT}, {OC48, OC192} ^d
SECU	Intruder Alert Alarm	SECBUFTHEx	system	-/NA	Transient	Yes	

Additional Event Parameters Table The following table contains the LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0 additional parameters for QoS events.

Table A-22. Additional QoS Event Parameters (1 of 2)

Modifier	Condition Description	Condition Type	Threshold Level	Monitored Value	Time Period
QoS	Code Violations Line FarEnd TCA	CV-LFE	{1-16777215} {1-2147483647}	{1-16777215} {1-2147483647}	15-MIN 1-DAY
	Code Violations Line TCA	CV-L	{1-16777215} {1-2147483647}	{1-16777215} {1-2147483647}	15-MIN 1-DAY
	Code Violations Sect TCA	CV-S	{1-16777215} {1-2147483647}	{1-16777215} {1-2147483647}	15-MIN 1-DAY
	Error Sec Line FarEnd TCA	ES-LFE	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	Error Sec Line TCA	ES-L	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	Error Sec Sect TCA	ES-S	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	Laser Bias Current TCA	LBC-IN	{1-255}	{1-255}	{15-MIN,1-DAY}
	Laser Bias Current TCA	LBC-OUT	{1-255}	{1-255}	{15-MIN,1-DAY}
	MS FarEnd Bgd Blk Error TCA	MS_F_BBE	{1-16777215} {1-2147483647}	{1-16777215} {1-2147483647}	15-MIN 1-DAY
	MS FarEnd Error Sec TCA	MS_F_ES	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	MS FarEnd Svrly Error Sec TCA	MS_F_SES	{1-810} {1-77760}	{1-810} {1-77760}	15-MIN 1-DAY
	MS FarEnd UnAvail Sec TCA	MS_F_UAS	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	MS NearEnd Bgd Blk Error TCA	MS_N_BBE	{1-16777215} {1-2147483647}	{1-16777215} {1-2147483647}	15-MIN 1-DAY
	MS NearEnd Error Sec TCA	MS_N_ES	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	MS NearEnd Svrly Error Sec TCA	MS_N_SES	{1-810} {1-77760}	{1-810} {1-77760}	15-MIN 1-DAY
	MS NearEnd UnAvail Sec TCA	MS_N_UAS	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	Optical Power Received TCA	OPR-IN	{1-255}	{1-255}	{15-MIN,1-DAY}
	Optical Power Received TCA	OPR-OUT	{1-255}	{1-255}	{15-MIN,1-DAY}

Table A-22. Additional QoS Event Parameters (2 of 2)

Modifier	Condition Description	Condition Type	Threshold Level	Monitored Value	Time Period
QoS	Optical Power Transmitted TCA	OPT-IN	{1-255}	{1-255}	{15-MIN,1-DAY}
	Optical Power Transmitted TCA	OPT-OUT	{1-255}	{1-255}	{15-MIN,1-DAY}
	RS NearEnd Bgd Blk Error TCA	RS_N_BBE	{1-7200000} {1-691200000}	{1-7200000} {1-691200000}	15-MIN 1-DAY
	RS NearEnd Error Sec TCA	RS_N_ES	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	RS NearEnd Svrly Error Sec TCA	RS_N_SES	{1-810} {1-77760}	{1-810} {1-77760}	15-MIN 1-DAY
	RS NearEnd UnAvail Sec TCA	RS_N_UAS	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	Svrly Error Frame Sec Sect TCA	SEFS-S	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	Svrly Error Sec Line FarEnd TCA	SES-LFE	{1-810} {1-77760}	{1-810} {1-77760}	15-MIN 1-DAY
	Svrly Error Sec Line TCA	SES-L	{1-810} {1-77760}	{1-810} {1-77760}	15-MIN 1-DAY
	Svrly Error Sec Sect TCA	SES-S	{1-810} {1-77760}	{1-810} {1-77760}	15-MIN 1-DAY
	UnAvail Sec Line FarEnd TCA	UAS-LFE	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY
	UnAvail Sec Line TCA	UAS-L	{1-900} {1-86400}	{1-900} {1-86400}	15-MIN 1-DAY

LambdaRouter™ AOS 128/256 Error Code Table

Error Code Table The following table lists the error codes used in the LambdaRouter™ All Optical Switch (AOS) 128/256, Release 3.0.

Table A-23. LambdaRouter™ AOS 128/256 Error Codes (1 of 2)

Error Code	Error Code Description
ENEQ	Equippage, Not EQuipped
ICNV	Input, Command Not Valid
IDNC	Input, Data Not Consistent
IDNV	Input, Data Not Valid
IEAE	Input, Entity to be created Already Exists
IENE	Input, object Entity does Not Exist
IIAC	Input, Invalid ACcess identifier
IICM	Input, Invalid CoMmand
IICT	Input, Invalid Correlation Tag
IISP	Input, Invalid Syntax or Punctuation
IITA	Input, Invalid TArget identifier
INAC	Input, Access number Not Correct
IPMS	Input, Parameter MiSsing
IPNC	Input, Parameter Not Consistent
IPNV	Input, Parameter Not Valid
PICC	Privilege, Invalid Command Code
PIMF	Privilege, Invalid Memory File
PIUC	Privilege, Invalid User Code
PIUI	Privilege, Invalid User Identity
RCBY	Resource, Circuit BusY
SAAS	Status, Already ASsigned

Table A-23. LambdaRouter™ AOS 128/256 Error Codes (2 of 2)

Error Code	Error Code Description
SACC	Status, Already Cross-Connected
SADS	Status, Access unit in Diagnostic State
SAPR	Status, Already in PProtection
SARB	Status, All Resources Busy
SCBS	Status, Channel BuSy
SDNA	Status, Duplex unit Not Available
SNCC	Status, Not Cross-Connected
SNIS	Status, Not In Service
SNOS	Status, Not manually Out of Service
SNSR	Status, No Switch Request outstanding
SNVS	Status, Not in Valid State
SNVS	Status, Not in Valid State
SRAC	Status, Requested Access Configuration is invalid
SRCN	Status, Requested CoNdition already exists
SROF	Status, Requested Operation Failed
SRQN	Status, ReQuest Not valid
SRQN	Status, ReQuest Not valid
SSPN	Status, SPeed selected is Not correct
SSRD	Status, Switch Request Denied
SSRE	Status, System Resources Exceeded
SWFA	Status, Working unit FAiled

Abbreviations and Acronyms

Numerics

10BT 10 BaseT

10G 10 Gigabits per second

100BT 100 BaseT

2G/2.5G 2.5 Gigabits per second

A

ABN Abnormal

ACO Alarm Cut-Off

ACO/TST Alarm Cut-Off and Test

ACT Active

ACTY Activity

ADC Analog-to-Digital Converter

ADM Add/Drop Multiplexer

AID Access Identifier

AINS Automatic In-Service

AIRP Automatic Interconnection Recognition Protocol

AIS Alarm Indication Signal

AIS-L Alarm Indication Signal-Line

AIS-MS Alarm Indication Signal-Multiplex Section

ALM Alarm

ALSO Automatic Laser Shut-Off

ANR Abnormal

ANSI American National Standards Institute

AOS All Optical Switch

APP Apparatus Code

APR Automatic Power Reduction

ARP Address Resolution Protocol

ARST Autonomous Reset

ASAP Alarm Severity Assignment Profile

ASCII American Standard Code for Information Interchange

ASIC Application-Specific Integrated Circuit

ATM Asynchronous Transfer Mode

ATTR Attribute

B

BBE Background Block Error

BER Signal Degrade B2 Bit Error Rate

BIP Bit Interleaved Parity

BT BaseT

C

CC Communication Client

CCD CTLI-D Controller Device

CCN Control Communications Network

CIT Craft Interface Terminal

CLEI™ Common Language® Equipment Identifier

CO Central Office

COM Common

CONTR Controller

CP Circuit Pack

CP-ID Circuit Pack Identifier

CPF Circuit Pack Failure

CPLD Complex Programmable Logic Device

CPU Central Processing Unit

CR Critical

CSA Canadian Standards Association

CSMA/CD Carrier Sense Multiple Access/Collision Detect

CSR Composite Service Request

CTL Controller

CTLI-D Control Interface to Devices

CV Coding Violation

CV-L Coding Violation-Line (Near End)

CV-LFE Coding Violation-Far End Line

CV-S Coding Violation-Section10 BaseT

D

DAC Digital-to-Analog Converter

DATAFLT Database Fault

DBCHG Database Change

DCC Data Communications Controller; Data Communications Channel

DCE Data Communications Equipment

DHCP Dynamic Host Configuration Protocol

DLC Download Client

DLS Download Server

DNS Domain Name Server

DOS Detection of Signal

DTE Data Terminal Equipment

DTP Data Transfer Process

DVM Digital Voltage Meter

DWDM Dense Wavelength Division Multiplexing

E

EB Errored Block

EBER Signal Fail B2 Excessive Bit Error Rate

ECI	Equipment Catalog Item
ECS	Express Connection Service
EEPROM	Electrically Erasable Programmable Read Only Memory
EI	External Interface
EIS	Engineering Information Standards
ELSR	Edge Label Switched Router
EM	Equipment Management
EMI	Electromagnetic Interference
EMS	Element Management System
EO	Expansion Operations Network
EOF	End of File
EOL	End of Line
EOR	End of Record
EPROM	Electrically Programmable Read Only Memory
EQ	Equipped; Equipment
EQPT	Equipment
ESD	Electrostatic Discharge
ES	Errored Seconds
ES-L	Errored Seconds-Line (Near End)
ES-LFE	Errored Seconds-Far End Line
ES-S	Errored Seconds-Section
ETS	European Telecommunications Standard

ETSI European Telecommunications Standards Institute

F

FCC Federal Communications Commission; Fast Communications Channel

FCIO Function Controller Input/Output Device

FDA/CDRH Federal Drug Administration, Center for Devices and Radiological Health

FDP Fiber Distribution Panel

FE Far End

FEND Far End

FI Facility Interface

FIFO First In First Out

FIT Failure In Time

FLT Fault

FM Fault Management

FTP File Transfer Protocol

G

GBELX Gigabit Ethernet

GMPLS Generalized Multiprotocol Label Switching

GMT Greenwich Mean Time

GPIO General Purpose Input/Output

GUI Graphical User Interface

H

HSBB High-Speed Broadband

HSWIC High-Voltage Shelf Switch Interface Controller

HV High Voltage

HVCPG High-Voltage Shelf Controller Protection Group

HVDAC High-Voltage Digital-to-Analog Converter

HVFAN High-Voltage Shelf Fan

HVS High-Voltage Shelf

I

IAO Intraoffice

IAO LAN Intraoffice Local Area Network

ID Identifier

IDC Insulation Displacement Connector

IEC International Engineering Consortium

IEEE Institute of Electrical and Electronics Engineers

IETF Internet Engineering Task Force

IF In Frame

IFMT Interface Format

IIC Inter-Integrated Circuit

IMF Infant Mortality Factor

IMPROPRML Improper Removal

INTSFT Internal Software

I/O Input/Output

IOPT Interface Optics

IP Internet Protocol

IP-CPY-MEM In Progress—Copy Memory

IR Intermediate Reach

IS In Service

IS-NR In Service-Normal

ISO International Standards Organization

ITE Information Technology Equipment

ITU International Telecommunications Union

ITU-T International Telecommunications Union—Telecommunication Standardization Sector

J

J0 SONET/SDH Section Trace Byte

JTAG Joint Test Action Group

K

KA Keep Alive

KAALM Keep Alive Alarm

L

L<number> Layer <number>

L/MS Line/Multiplex Section

LAN Local Area Network

LBC Laser Bias Current

LC Lucent Connector

LED Light-Emitting Diode

LID LED Interface Device; Logical Identifier

LLC Logical Link Control

LLO Lucent Learning Organization

LM Loss Parameter

LMPTST Lamp Test

LOF Loss of Frame

LOS Loss of Signal

LPBKCRS Loopback Cross-Connect

LPBK-DX Loopback–Duplex

LPBK-SX Loopback–Simplex

LR Long Reach

LSAP LLC Service Access Point

LSBB Low Speed Broadband

LVDS Low Voltage Differential Signal

M

M Maintenance

MA Management; Messaging Agent

MAC Media Access Control

MAN Metropolitan Area Network

MD Mediation Device

MEA Mismatch of Equipment and Attributes

MEM Memory

MEMS Micro-Electromechanical System

MIB Management Information Base

MJ Major

MLOS Mapper Loss of Signal

MMIS Memory Mismatch

MN Minor

MON Monitoring

MONE Monitor E-tributary

MONEF Monitor E- and F-tributary

MONF Monitor F-tributary

MPLS Multiprotocol Label Switching

MS Multiplex Section

MS_F_BBE Multiplex Section Far End Background Block Errors

MS_F_ES Multiplex Section Far End Errored Seconds

MS_F_SES Multiplex Section Far End Severely Errored Seconds
MS_F_UAS Multiplex Section Far End Unavailable Seconds
MS_N_BBE Multiplex Section Near End Background Block Errors
MS_N_ES Multiplex Section Near End Errored Seconds
MS_N_SES Multiplex Section Near End Severely Errored Seconds
MS_N_UAS Multiplex Section Near End Unavailable Seconds
MT Maintenance
MTBMA Mean Time Between Maintenance Activities
MTTF Mean Time To Failure
MTTR Mean Time To Repair

N

NBF Non-blocking Fabric
NDF New Data Flag
NE Near End; Network Element
NEBS Network Equipment-Building System
NEDS Network Equipment Development Standards
NEND Near End
NIC Network Interface Card
NMON Non-Monitoring
NMS Network Management System
NNI Network to Network Interface

NP Network Path

NR Not Reported

NSA Non-Service-Affecting

NVM Non-Volatile Memory

NVMU Non-Volatile Memory Usage

NVMW Non-Volatile Memory Wearout

NVRAM Non-Volatile RAM

O

OA Optical Amplifier

OC-n Optical Carrier <number>

OCH Optical Channel

OCI Optical Craft Interface

OEO Optical to Electrical to Optical

OICPG Optical Interface Shelf Controller Protection Group

OIFAN Optical Interface Shelf Fan

OIM Optical Interface Module

OIS Optical Interface Shelf

OIS-10G Optical Interface Shelf-10Gbps

OIS-2G Optical Interface Shelf-2.5Gbps

OIS-MX Optical Interface Shelf-Mixed

OIS-S Optical Interface Shelf-SDH/SONET

OIS-T	Optical Interface Shelf-Transparent
OLS	Optical Line System
OMERR	Out of Memory Error
ON	Operations Network
ONI	Operations Network Interface
ONNS	Optical Network Navigation System
OOF	Out of Frame
OOS	Out of Service
OOS-AU	Out of Service Autonomous
OOS-MA	Out of Service Management
OPI	Operations Peripheral Interface
OPR	Operate; Optical Power Received
OPT	Optical Power Transmitted
OS	Operations System
OSPF	Open Shortest Path First
OSWIC	Optical Interface Shelf Switch Interface Controller
OTDR	Optical Time Domain Reflectometer
OTU	Optical Translator Unit
OXC	Optical Cross-Connect
OXI	Optical Cross-Connect Interface
OXI-10GC	Optical Cross-Connect Interface-10 Gbps Client
OXI-2GC	Optical Cross-Connect Interface-2.5 Gbps Client

OXI-4A13 Optical Cross-Connect Interface-4 ports with optical amplifiers in the 1310 nm band

OXI-4A15 Optical Cross-Connect Interface-4 ports with optical amplifiers in the 1550 nm band

P

P Provisioning

PCMCIA Personal Computer Memory Card International Association

PFVP Power Filter Voltage Protection

PFVP-CB Power Filter Voltage Protection with Circuit Breaker

PIC Peripheral Interface Controller

PID Password Identifier

PLD Programmable Logic Device

PM Performance Monitoring

PMD Polarization Mode Dispersion

PMOD Personality Module

POR Power On Reset

PPP Point-to-Point Protocol

PRI Primary Nonvolatile Memory

PROGFLT Program Fault

PROV Provisioned

PSCHG Protection Switch Change

PST Primary State

PU Port Unit

PWR Power

PWRM Power Monitor

Q

QoS Quality of Service

R

RC Restoration Controller

RCCN Restoration Controllers Communications Network

RIP Restoration Interface Processor

RS Regenerator Section

RS_N_BBE Regenerator Section Near End Background Block Errors

RS_N_ES Regenerator Section Near End Errored Seconds

RS_N_SES Regenerator Section Near End Severely Errored Seconds

RS_N_UAS Regenerator Section Near End Unavailable Seconds

RSVP Resource Reservation Protocol

RSVP-TE Resource Reservation Protocol-Traffic Engineering

RU Resource Usage

S

S Security

SA Service-Affecting

SAP Service Access Point

SB Secondary Boot

SCC System Controller Complex

SCCPG System Controller Complex Protection Group

SCFAN System Controller Shelf Fan

SCMMA System Controller in Maintenance

SCS System Controller Shelf

SD Signal Degrade

SDH Synchronous Digital Hierarchy

SDRAM Synchronous Dynamic Random Access Memory

SEC MEM Secondary Non-Volatile Memory

SEEPROM Serial EEPROM

SEFS Severely Errored Framing Seconds

SEFS-S Severely Errored Framing Seconds-Section

SELV Safety Extra Low Voltage

SES Severely Errored Seconds

SES-L Severely Errored Seconds-Line (Near End)

SES-LFE Severely Errored Seconds-Far End Line

SES-S Severely Errored Seconds-Section

SF Signal Fail

SI Switch Interface

SID Source Identifier

SI-S Switch Interface-SONET/SDH (cable)

SI-T Switch Interface-Transparent (cable)

SLA Service Level Agreement

SLN Serial Number

SMC Serial Management Controller

SMEM Secondary MEM

SMF Single Mode Fiber

SMI Serial Management Interface

SMS Service Management System

SN Serial Number

SNIP Serial Number Identification Port

SNMP Simple Network Management Protocol

SNMS SubNetwork Management System

SONET Synchronous Optical Network

SPLTR Splitter

SR Short Reach

SRC Subrack Controller

SSN Series Number

STBY Standby

STBYS Standby Switched

STCHG State Change

STM Synchronous Transfer Mode

STS Synchronous Transport Signal

SWIC Switch Interface Controller

SWIP Switch Interface Point

SWMG SWIP Maintenance Group

SWS Switch Shelf

SYSCTL System Controller

T

T Test

TA Test Access

TAM Test Access Monitoring

TC Transient Condition

TCA Threshold Crossing Alert

TCP/IP Transmission Control Protocol/Internet Protocol

TID Target Identifier

TL1 Transaction Language 1

TMN Transport Management Network

TSA Test Alarm

TSS Technical Support Services

U

UAS Unassigned; Unavailable Seconds

UAS-L Unavailable Seconds-Line (Near End)

UAS-LFE Unavailable Seconds-Far End Line

UDP User Datagram Protocol

UEQ Unequipped

UI Unit Interface

UIA User Interface Appliance

UID User Identification

UL Underwriters Laboratories

UNEQ Unequipped

UNI User to Network Interface

UPC User Privilege Code

V

V/V Voltage to Voltage

VSR Very Short Reach

W

WAN Wide Area Network

WDM Wavelength Division Multiplexing

WINS Windows Internet Network Service

Lucent Technologies — Proprietary
See notice on first page

Glossary

Numerics

0x1 Facility Interface

A transmission interface without line or equipment protection switching.

0x1 Line Operation

Operation between network elements, without protection in a single bidirectional line (no protection line is available).

1+1 Client Protection

A protection architecture, in which connections between a LambdaRouter™ All Optical Switch and client network elements can be configured as 1+1 at the optical level.

1+1 Protection Group

A protection architecture, in which one working function is protected by one protection function. In addition, the protection function is fully synchronized with the working function. The functions are permanently bridged upstream, and one is selected downstream.

1+1 Restoration

A type of network restoration. The restoration path, including the end-points, is provisioned when initial path provisioning is done. The restoration path always carries the same signal as the service path, and the egress LambdaRouter™ All Optical Switch automatically switches over to it when the service path fails.

1x1 Protection Group

A protection architecture, in which one working function is protected by one protection function. In contrast to the 1+1 Protection Group, the protection function is not fully synchronized with the working function.

A

Access Identifier (AID)

A technical specification for explicitly naming entities (both physical and logical) of a network element, following Telcordia TL1 syntax.

Accumulation Registers

Used in performance monitoring. Registers that provide data storage for each SONET (Section and Line) and SDH (Regenerator Section and Multiplex Section) transmission parameter monitored.

Activation

The process of starting software or using the data in execution the first time after installation.

Active (ACT)

Indication that a circuit pack or module is in service and is currently providing service functions. *See also* Standby.

Active Path

One of two signals entering a constituent path selector. The active path is the one currently being selected.

Add/Drop Multiplexer (ADM)

A synchronous network element capable of combining signals of different rates and having those signals added to or dropped from the stream.

Alarm

A visible or audible signal to the operations environment that a communication, equipment, or processing failure has occurred.

Alarm Correlation

A LambdaRouter™ All Optical Switch feature that minimizes the number of alarm messages generated for a single fault condition.

Alarm Cut-Off (ACO)

A mechanism to silence local Central Office audible alarms. It is activated by a user

panel button or a user command.

Alarm Indication Signal (AIS)

A code sent downstream in a network to indicate an upstream failure.

Alarm List

A LambdaRouter™ All Optical Switch status report that lists active alarms on the network element. It includes alarm level and type, affected equipment, effect on service, condition description, and additional details of the failure, if available.

Alarm Log

A history and time sequence of the setting and clearing of alarms on the LambdaRouter™ All Optical Switch. The alarm log contains as many as 512 alarm messages. It includes the type of trouble, time of occurrence, identification of affected equipment, effect on service, alarm level, alarm condition state, and additional details of the failure, if available.

Alarm Notification Category

One of the types of LambdaRouter™ All Optical Switch alarm messages: Optical Channel, Equipment, Common, Security, Control Communications Network (CCN), or Quality of Service (QoS) Alarm.

Alarm Severity

An attribute that defines the priority of an alarm message. The way alarms are processed depends on their severity.

American Standard Code for Information Interchange (ASCII)

A standard seven-bit code that represents letters, numbers, punctuation marks, and special characters in the interchange of data among computing and communications equipment.

Apparatus Code (APP)

A circuit pack identifier stored in EEPROM.

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 uses a packet switching and multiplexing technique that allocates bandwidth on demand.

Authorization Level

A numeric code that determines what commands within a functional category a user may access on the LambdaRouter™ All Optical Switch. The authorization level ranges from 0 (lowest) to 5 (highest) for all functional categories except security, which ranges from 1 to 5. Assigning an authorization level of 0 disables that functional category for a particular user.

Automatic Interconnection Recognition Protocol (AIRP)

A protocol used by LambdaRouter™ All Optical Switch in conjunction with LambdaRouter™ Optical Network Navigation System (ONNS), to perform automatic port neighbor discovery.

Automatic Port Neighbor Discovery

A network element process that uses the Automatic Interconnection Recognition Protocol (AIRP) to automatically discover the association of input ports and output ports in adjacent LambdaRouter™ All Optical Switch network nodes.

Auto-Provisioning

The capability of the LambdaRouter™ All Optical Switch to discover its hardware configuration and to create associated database entries autonomously using the original (default) or user-defined, pre-provisioned parameters. These parameters are maintained in non-volatile memory (NVM) and/or hardware registers.

Automatic Protection Switch

A protection switch that occurs automatically in response to an automatically detected fault condition.

B**Backup and Restore**

The capability to copy and restore databases between Primary Non-Volatile

Memory (NVM) and Secondary NVM, Primary NVM and Navis™ Optical Element Management System, and Primary NVM and Optical Craft Interface.

Bandwidth Management

The capability that allows LambdaRouter™ All Optical Switch users to provision either unidirectional or bidirectional optical, or optical-electrical-optical (OEO), cross-connections for transmission paths through the switch fabric.

Bay

A hardware frame in which shelves are mounted and housed.

Bidirectional Line

A transmission path consisting of two fibers that handle traffic in both the transmit and receive directions.

Bit Error Rate (BER)

The ratio of error bits received to the total number of bits transmitted.

Blank (BLK)

The status of a circuit pack slot that contains a bus extender (blank) circuit pack; the pack itself.

Bridging

A one-way 1:2 multicast from an input port where a 1:2 splitter routes the two one-way signals through the duplicated switch fabric to two different output ports. Each one-way leg is a simplex transmission path. *See also* Merging.

Broadband Communications

Voice, data, and/or video communications at greater than 2 Mbps rates.

Busy State

Indication that a port is being used in a cross-connection.

C**Calibration Database**

A database that indicates initial control voltages for each Switch Shelf mirror in an

array. The calibration data is delivered on a non-volatile memory (NVM) card and is installed by inserting the card into the secondary NVM (SEC MEM) on the LambdaRouter™ All Optical Switch.

Card

A removable integrated circuit board/circuit pack.

Central Office (CO)

A building in which common carriers terminate customer circuits.

Channel

A (one-way) transmission pathway from an input port to an output port in the network element, at any supported transmission rate and/or format.

Circuit Pack (CP)

A single field-replaceable electronic or opto-electronic unit. It comprises mechanical piece-parts, electronic components, and their associated connections and performs a specific function.

Circuit Pack Extraction

The process of software acknowledgement of an event associated with the physical removal of a circuit pack from a shelf slot, or the opening of its latch.

Circuit Pack Identifier (CP-ID)

A code that is derived from the circuit pack type (apparatus code), serial number, series number (version), CLEI™ code, and ECI code of each circuit pack. The circuit pack identifier is readable by the system upon insertion of the pack in any allowable slot.

Circuit Pack Insertion

The process of acknowledging and subsequently provisioning a valid circuit pack that has been inserted into a shelf slot. Circuit pack insertion requires equipage and latch closure acknowledgments, and a response to the insertion cannot be completed prior to the detection of the latch closure.

Client

A client network interface.

Cold Standby

A standby function that does not function simultaneously with the active function. It requires a form of initialization (provisioning) before it can assume the role of the active function.

Command Echo

The ability of the LambdaRouter™ All Optical Switch to repeat the text of entered commands to a user provisioned for this feature.

Command Functional Categories

Logical groupings of LambdaRouter™ All Optical Switch commands. These include maintenance (M), provisioning (P), security (S), test (T), and performance monitoring (PM).

Command Group

An administrator-defined group that defines commands to which a user has access.

Common Alarm

A LambdaRouter™ All Optical Switch alarm message category that indicates a controller software fault, controller autonomous reset, data storage problem, software version mismatch, or security-related issue. Common alarm issue points are circuit pack, controller complex, shelf, or system.

Common Language® Equipment Identifier (CLEI™)

A Telcordia code that identifies telecommunications equipment to facilitate inventory, maintenance, investment tracking, and circuit maintenance processes. CLEI codes are stored in circuit pack EEPROM.

Configuration Management (CM)

The activities necessary to create, modify, retrieve, and delete data that controls the configuration and operation of LambdaRouter™ All Optical Switch hardware and software. These activities include equipment provisioning, alarm monitoring and fault management, cross-connection management, software management, and performance management.

Configuration Query

A user-initiated request for a report on provisioned data.

Control Bay

The LambdaRouter™ All Optical Switch frame that contains one System Controller Shelf and up to two Optical Interface Shelves. There is one Control Bay per LambdaRouter™ All Optical Switch system.

Control Communications Network (CCN)

An IP network, using Restoration Controller (RC) and Restoration Interface Processor (RIP) circuit packs, that provides the signaling method used by LambdaRouter™ Optical Network Navigation System (ONNS) to set up and tear down network paths, and to provide restoration in response to path failures.

Control Communications Network (CCN) Alarm

A LambdaRouter™ All Optical Switch alarm message category of alarms that are issued with respect to IP network, port, and process fault detection. Control Communications Network alarms are issued for a port.

Controller Reset

The capability of rebooting shelf controllers locally (manually, on equipment) and through command. An Optical Craft Interface, Navis™ Optical Element Management System, or other managing system can reset the LambdaRouter™ All Optical Switch system or shelf controllers without affecting transmission.

Craft Interface Terminal (CIT)

See Optical Craft Interface (OCI).

Critical (CR) Alarm

An indication of a severe, service-affecting condition.

Cross-Connection

A configurable optical, or optical-electrical-optical (OEO), transmission path interconnection between input and output ports within a single network element.

Cross-Connection Capacity

The total number of cross-connections, as measured by the number of fabric input and fabric output points. A fabric with N input points and N output points provides a cross-connection capacity of N. *See also* Non-Blocking Cross-Connection Capacity; Switch Interface Capacity.

Cross-Connection Configuration

A set of one or more associated cross-connection legs. Examples of configurations that are supported in the LambdaRouter™ All Optical Switch are one-way point-to-point (one duplex leg); two-way point-to-point (two duplex legs); one-way bridge (two simplex legs); one-way merge (two simplex legs); one-way bridge and merge (three simplex legs); and two way bridge and merge (four simplex legs).

Cross-Connection Fabric

See Switch Shelf (SWS).

Cross-Connection Leg

A one-way connection provisioned from one input port to one output port within a single network element. A leg with a transmission path through one switch fabric is called a simplex leg. A leg that has a transmission path between both fabrics is called a duplex leg.

Cross-Connection List

An Optical Craft Interface for status report that lists current cross-connections for the following: a specific port, all ports on a specific circuit pack, all ports on a specific shelf, or all ports in the network element. The report includes the input and output AID, cross-connection type (including loopback type and test access mode), and switch fabric used.

Cross-Connection Loopback

A cross-connection, for maintenance purposes, from an input port through the switch fabric to an output port. An output port may be selected with an access identifier (AID) that is the same or different from the input AID. LambdaRouter™ All Optical Switch supports normal, forced simplex, and forced duplex loopbacks. A forced simplex loopback allows one of the transmission paths in the forward direction to remain operational.

Cross-Connection Management

The activities necessary to establish and remove cross-connections, operate and release loopback cross-connections, and retrieve cross-connection parameters.

Cross-Connection Rate

The transmission rate associated with the cross-connection, which is determined by the type of ports being used. Ports provided by transparent circuit packs allow cross-connections to be bit-rate-independent. Ports provided by optical-electrical-optical circuit packs limit cross-connections to a specific rate, such as 10 Gbps.

Cross-Connection Topology

The basic nature of a cross-connection configuration. All cross-connections can be classified into two topologies: one-way (unidirectional) and two-way (bidirectional).

Cross-Connection Type

See Cross-Connection Configuration.

Crosstalk

An unwanted signal introduced into one transmission path from another.

Cut-Through

An American Standard Code for Information Interchange (ASCII) interface to a network element (NE). It enables the user to send Transaction Language 1 (TL1) messages directly to the NE.

D**Data Communications Controller (DCC)**

A LambdaRouter™ All Optical Switch circuit pack that provides the interface between the system and the operations data communications network, which is physically accessed via the LAN connection on the External Interface packs. There are two DCC packs on the System Controller Shelf, for active/active service.

Database Labeling

A LambdaRouter™ All Optical Switch feature that records system target identifier (TID), date of last database modification, date backed up from the network element, and the software generic ID, for use in subsequent download operations.

Debug Support

Maintenance activity access for Lucent personnel.

Default Provisioning

The implementation of parameter values that are preprogrammed at 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. *See also* Failure.

Dense Wavelength Division Multiplexing (DWDM)

The transmitting of two or more signals of different wavelengths simultaneously over a single fiber.

Deprovisioning

The inverse order of provisioning, to manually remove or delete previously provisioned parameters.

Details Screen

A text-based display of parameter settings, states, and all other information related to the detailed item on the display.

Detection of Signal (DOS)

The detection of a signal that meets provisioned threshold values, applying to both input and output ports.

Dialog Box

A secondary Optical Craft Interface graphical user interface (GUI) window designed to allow the user to enter additional information.

Dimmed State

The condition of a graphical user interface control that is not currently available to a user. This state is indicated on the Optical Craft Interface screen by a greyed image.

Discovery

The process of detecting circuit pack presence during system initialization, prior to

hardware interrupt enabling.

Dispersion

The phenomenon in which different wavelengths or different polarizations of light travel at different speeds through a fiber optic cable.

Dither

In LambdaRouter™ All Optical Switch, the capability to make small adjustments to the orientation of ingress and egress switch fabric mirrors in order to minimize cross-connection signal loss.

Download

The process of transferring files from a managing system such as the Optical Craft Interface or Navis™ Optical Element Management System to a network element, such as the LambdaRouter™ All Optical Switch. Both software and data can be downloaded to the LambdaRouter™ All Optical Switch. ***See also*** Upload.

Downstream

At or toward the destination of the considered transmission stream.

Duplex Control

A control architecture that includes two controllers, one active, one standby, that protect each other; if the active one fails, the inactive takes over.

Duplex Cross-Connection

A cross-connection that has a transmission path through both switch fabrics.

Duplex Cross-Connection Fabric

A cross-connection fabric consisting of two identical subunits (Switch Shelves), which form a 1+1 protection group.

E**Egress**

The direction away from the fabric.

Electromagnetic Compatibility (EMC)

The ability of equipment or systems to operate without causing or receiving degradation from electromagnetic interference (EMI).

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)

A static electrical energy potentially harmful to circuit packs.

End Guard

A panel that is installed at the ends of a LambdaRouter™ All Optical Switch bay lineup; it meets ETSI standards.

Entity (Entity Type)

A physical or logical aspect of the LambdaRouter™ All Optical Switch, including the entire system, that has been assigned a name recognizable by the system. Examples include: a shelf, slot, port, switch interface point (SWIP), protection group, fan, and so on.

Entity Identifier

A particular entity, which is identified by the last portion of the access identifier (AID) pertaining to the entity. Examples include: a High-Voltage Shelf (HVS), a particular Restoration Controller (RC) slot, a particular optical channel, a particular optical interface shelf protection group, and so on.

E-Port (eport)

A LambdaRouter™ All Optical Switch input port that terminates an incoming “E-tributary”. In traditional networks, an incoming E-tributary refers to a circuit incoming to the Test Access equipment from the Central Office equipment. E-Port also refers to an idle input port to be used for establishing a one-way Test Access cross-connection.

Equipage Check

A system check of equipment that results in an alarm if there is a mismatch between a circuit pack and the provisioned slot in which it is installed.

Equipment Alarm

A LambdaRouter™ All Optical Switch alarm message category that indicates transmission and control equipment failures and service interruption owing to failures in power supply, fuse, or fan assembly, or configuration problems. Equipment alarms are issued for port, circuit pack/slot, shelf, and system.

Equipment Catalog Item (ECI)

A circuit pack identifier stored in Erasable Electrical Programmable Read Only Memory (EEPROM).

Equipment Fail (EF) State

A state in which any of the protection group's circuit packs have failed, 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 has been received.

Equipment List

A report, available through user request, that lists equipment for a selected shelf, circuit pack, or port in the LambdaRouter™ All Optical Switch. The report includes the AID for the selected entity and other information, such as CLEI code, serial number, and cabling information.

Equipment Protection

The protection switching for the redundant common transmission and control equipment in the network element.

Equipment Provisioning

The assigning of values to a set of parameters of the system, or any of its subsystems, to enable the expected use of the entity. Provisionable LambdaRouter™ All Optical Switch entities include system, shelves, slots/circuit packs, ports, cross-connections, and protection groups.

Equipped (EQ) Status

Indication that a circuit pack or interface module is in the system database and physically in the frame.

Event

Significant change detected by the system. Events in controlled network elements include signal failures, equipment failures, signals exceeding thresholds, and protection switch activity. When an event occurs, the controlled network element will generate an alarm or status message and send it to the managing system.

External Interface (EI)

The LambdaRouter™ All Optical Switch circuit pack that provides interfaces to the Data Communications Controller (DCC) circuit pack, Optical Craft Interface port (CIT port), and Intraoffice (IAO) LAN. The EI provides local office alarm relay closures and miscellaneous discrete inputs and outputs. It also provides the interface to alarm closures on the System Controller Shelf (SCS) User Panel. Duplex EIs are located on the SCS.

Extraction

Physical removal of a circuit pack from a slot, causing a system-initiated removal of an entity from service.

F**Fabric**

The physical hardware that provides the switching function within the network element; a mesh of interconnections between inputs and outputs. In LambdaRouter™ All Optical Switch, the fabric is a set of mirrors that allows connection between any one of a set of inputs to any one of a set of outputs.

Fabric Wavelength Window

The allowable range of wavelengths transmitted by a given fabric. For LambdaRouter™ All Optical Switch, that range is from 1260 nm to 1360 nm, and from 1500 nm to 1620 nm.

Facility

A one-way or two-way circuit that carries a transmission signal.

Facility Interface (FI)

See Transmission Interface.

Facility Loopback

A loopback of the incoming facility signal to the output of the same facility, without going through a switch fabric. A facility loopback is not supported on LambdaRouter™ All Optical Switch.

Failure

A standing defect. *See also* Software Failure.

Failures in Time (FIT)

A unit of hazard rate used to measure the reliability of non-reparable equipment. A hazard rate of 1 FIT corresponds to a Mean Time to Failure (MTTF) of one billion hours.

Far End (FE, FEND)

Any network element in a maintenance subnetwork other than the one at which the user is posted. *Also called* remote.

Fault

A generic term for anomaly, defect, and failure.

Fault Detection

The ability to identify communications, equipment, and processing failures. LambdaRouter™ All Optical Switch provides continuous, autonomous, in-service fault detection and isolation on transmission and control equipment.

Fault Management

In LambdaRouter™ All Optical Switch, capabilities that provide fault detection, isolation, reporting and facility/equipment alarms, user/alarm displays, circuit pack LEDs, office alarms, and records provisioning.

Fiber Distribution Panel (FDP)

In LambdaRouter™ All Optical Switch, a Switch Shelf panel that contains

connectors for 256 inputs and 256 outputs.

Fiber Management Unit

A LambdaRouter™ All Optical Switch duct used to control and store cables and protect them from physical damage. It is used in both overhead and underfloor installations.

Fiber Organizer

A frame between bays that is used for managing fiber cables.

File Transfer Protocol (FTP)

A protocol used by LambdaRouter™ All Optical Switch for transfer of software and data between the network element and its managing system and between network elements.

F-Port (fport)

A LambdaRouter™ All Optical Switch input port that terminates an incoming “F-tributary”. In traditional networks, an incoming F-tributary refers to a circuit incoming to the Test Access equipment from the facility side. For an existing two-way incoming signal, the input port for either direction can arbitrarily be called the “eport”, and the input port for the other direction is therefore called the “fport”. For a LambdaRouter™ All Optical Switch, an “fport” has no meaning unless a two-way cross-connection already exists.

G**General User**

An Optical Craft Interface user type with access to all commands except network element (NE) security administration, software installation, system initialization, and NE access capabilities.

Generic

A collection of programs and associated static data that fully support and perform all of the designed functions of the LambdaRouter™ All Optical Switch, Optical Craft Interface, or Navis™ Optical Element Management System (EMS).

Generic Labeling

The unique identification of a software generic release so that it is recognized by the system and is available to the user upon query. The label includes the supplier name and type, version number of the generic, the date built or build number, and the date installed. The generic label information can be retrieved via the managing system or Optical Craft Interface.

H**Hard Failure**

An unrecoverable nonsymptomatic (primary) failure that causes signal impairment or interferes with critical network functions.

High-Voltage Digital-to-Analog Converter (HVDAC)

The LambdaRouter™ All Optical Switch circuit pack that provides the digital-to-analog converters and high-voltage linear amplifiers used to control a subset of the Micro-electromechanical System (MEMS) mirrors in the Switch Shelf (SWS).

High-Voltage Shelf (HVS)

The LambdaRouter™ All Optical Switch shelf that houses High-Voltage Digital-to-Analog Converter (HVDAC) circuit packs.

High-Voltage Shelf/Optical Interface Shelf (HVS/OIS) User Panel

The LambdaRouter™ All Optical Switch module that receives alarm status information. It provides visual indications of shelf status through LEDs and a means for generating alarm cutoff and LED test interrupts to the shelf Switch Interface Controller (SWIC) circuit packs. **See also** System Controller Shelf (SCS) User Panel.

Hot Standby

A standby function that is fully operational and acts in synchronism with an active function. It is able to take over the role of the active function without the need for initialization. **See also** Active; Cold Standby.

I

Idle State

The state of a port that is not cross-connected.

Ingress

The direction toward the fabric.

Insert

The physical insertion of a circuit pack into a slot, causing a system-initiated restoral of an entity into service and/or creation of an entity and associated attributes.

Insertion Loss

The decrease in optical signal power incurred by a signal passing through the entire system.

In-Service (IS) State

An administrative state for equipment entities (ports, circuit packs). IS indicates that the entity is fully capable and allowed to perform its specified functions.

Interface Bay

The LambdaRouter™ All Optical Switch frame that contains optical interface shelves.

Intermediate Reach (IR)

A standard for optics, concerning transmitters and receivers in a system, that insures that transmission can be maintained for intermediate distances (50 km). This standard constrains the output power of the transmitter and the sensitivity of the receiver for moderate haul applications (up to 50 km; a compromise between long and short reaches) without the need for regeneration. **See also** Long Reach; Short Reach; Very Short Reach.

International Telecommunications Union–Telecommunications Standards Sector (ITU-T)

One of three sectors of the ITU. The ITU-T sets global telecommunications standards.

Inventory Query

A user-initiated request for a report on all electronic equipment in the system.

J**J0 Byte Sequence**

A 16-byte sequence of J0 bytes that can be inserted in the section overhead of a SONET or SDH test signal that is being generated by a LambdaRouter™ All Optical Switch OEO input port that is not detecting an incoming signal. The byte sequence will include the IP v4 address of the LambdaRouter™ All Optical Switch and the Access Identifier (AID) of the OEO input port that is generating the test signal. The sequence is transmitted in hexadecimal format, and is used by AIRP and Test Access functions.

Jitter

The short-term variation of the significant instants of a digital signal from their ideal positions in time. Jitter may cause crosstalk or distortion of the original analog signal, or both, and is potentially a source of bit errors at the input ports of digital equipment. *See also* Wander.

K**Keep Alive**

A SONET AIS-L signal used for alarm suppression when an input signal is not present.

L**Labeling**

The LambdaRouter™ All Optical Switch capability to label database and software generics. *See also* Database Labeling; Generic Labeling.

Lambda

The Greek letter used to signify the wavelength of a complete cycle of signal that

propagates through space. Common examples of such signals are radio waves and light waves.

LambdaRouter™ All Optical Switch (AOS)

Generic term used to refer to any LambdaRouter™ All Optical Switch 128/256 configuration.

LambdaRouter™ All Optical Switch (AOS) 128

The Lucent Technologies fully optical signal switching system that uses Micro-electromechanical System (MEMS), a fabric technology consisting of arrays of electrically configurable mirrors. It provides 128x128 input and output ports with a maximum of 112 usable for cross-connections (16 are reserved as spares).

LambdaRouter™ All Optical Switch (AOS) 256

The Lucent Technologies fully optical signal switching system that uses Micro-electromechanical System (MEMS), a fabric technology consisting of arrays of electrically configurable mirrors. It provides 256x256 input and output ports with a maximum of 224 usable for cross-connections (32 are reserved as spares).

LambdaRouter™ Optical Network Navigation System (ONNS)

Software that resides on individual LambdaRouter™ All Optical Switch systems and provides networking capabilities between LambdaRouter™ All Optical Switch network nodes via the Control Communications Network (CCN).

Lamp Test (LMPTST)

A user panel button used to test LEDs.

LC Connector (LC)

A Lucent-designed small form-factor plastic optical fiber connector, designed for applications where space is limited. The LC, which is half the size of other common connectors, is ferrule-based and uses the familiar insertion/release mechanism similar to an ordinary telephone plug.

Line

See Port.

Line Protection

Backup for optical interfaces. Line protection protects against failures of line facilities, including the interfaces at both ends of a line, the optical fibers, switching failures, and any equipment between the two ends.

Link Management

The activities necessary to automatically discover, or manually provision port neighbors, verify connectivity between network elements, and coordinate the ports on the two ends of a link connection.

Location

A user-provisionable identifier of the physical positioning of a specific shelf.

Log

System-maintained data of user session activity, including changes, alarms and security activity, and protection switching.

Login ID

See User ID.

Long Reach (LR)

A standard for optics, concerning transmitters and receivers in a system, that insures that transmission can be maintained for long distances (tens of kilometers). This standard constrains the output power of the transmitter and the sensitivity of the receiver for long-haul applications (up to 80 km) without the need for regeneration. *See also* Intermediate Reach; Short Reach; Very Short Reach.

Loopback

A circuit configuration used to compare an original transmitted signal with the resulting received signal. LambdaRouter™ All Optical Switch supports cross-connection loopback for maintenance purposes.

Loss of Frame (LOF)

An indication of consecutive errored framing patterns in an incoming signal.

Loss of Signal (LOS)

An indication that a signal is below the provisioned threshold values for either the input or output port.

Low-Voltage Shutdown

The capability of LambdaRouter™ All Optical Switch to detect when power drops below a predefined input voltage level and to shut down gracefully.

Cross-connection maps and other provisioned data are maintained through the power loss.

M**Maintenance Condition**

An equipment state in which some normal service functions are suspended, either because of a problem or for special functions (copy memory) that cannot be performed while normal service is being provided.

Maintenance User

An Optical Craft Interface user login with access to testing, retrieval of network element information, and limited service-affecting commands.

Major (MJ)

An indication of a service-affecting failure.

Manual Port Neighbor Provisioning

A process that allows craft personnel to manually specify neighbor information for each port. *See also* Automatic Port Neighbor Discovery.

Manual Provisioning and Deprovisioning

User-initiated provisioning or deprovisioning by the following commands or graphical user interface (GUI) equivalent actions: create, delete, modify, remove, restore.

Manual Switch State

The events that follow the issuing of the manual switch command. While in the Manual Switch state, the system may switch the active unit automatically, if required for protection switching.

Mapping

The logical association of one set of values, such as addresses on one network, with quantities or values of another set, such as devices or addresses on another network.

Mediation Device (MD)

A device that allows for exchange of management information between managing systems and network elements.

Memory (MEM)

The LambdaRouter™ All Optical Switch circuit pack that provides the non-volatile memory (NVM) necessary to store executable code and data for the system. Two primary MEMs (PRI MEMs) are located in the System Controller Shelf and serve as duplicated NVM. They communicate with the SYS50D circuit packs. A secondary MEM (SEC MEM) provides backup to the primary MEMs. Program and configuration data are stored on a PCMCIA card, which can be accessed from the faceplate of the MEM and is removable.

Merging

The use of two simplex cross-connection legs between two different input ports and one output port where a 2:1 selector chooses one of the incoming one-way signals. The use of bridging and merging at a network element provides 1+1 path protection for two-way traffic. *See also* Bridging.

Micro-electromechanical System (MEMS)

The LambdaRouter™ All Optical Switch fabric technology, which consists of a large number of electrically configurable mirrors, fabricated on a single substrate.

Minimum Configuration

A set of network element (NE) entities that are required to exist for the NE to be operational. These entities are created automatically by the system during initialization.

Minor (MN)

An indication of a non-service-affecting failure of equipment or facility.

MONE Test Mode

Test Access cross-connection mode. In the MONE test mode, the quality of the optical signal [either being received at or being injected by the E-tributary input port (eport)] is being monitored at a Test Access Monitoring (TAM) output port. *See also* MONEF Test Mode; MONF Test Mode.

MONEF Test Mode

Test Access cross-connection mode. In the MONEF test mode, the quality of the optical signals [either being received at or being injected by the E-tributary input port (eport) and F-tributary input port (fport)] are being monitored simultaneously at two different Test Access Monitoring (TAM) output ports. **See also** MONE Test Mode; MONF Test Mode.

MONF Test Mode

Test Access cross-connection mode. In the MONF test mode, the quality of the optical signal [either being received at or being injected by the F-tributary input port (fport)] is being monitored at a Test Access Monitoring (TAM) output port. **See also** MONE Test Mode; MONEF Test Mode.

N**Navis™ Optical Element Management System (EMS)**

A Lucent product that provides element management functionality for a variety of networking products, including LambdaRouter™ All Optical Switch. **Formerly called** WaveStar® SNMS (SubNetwork Management System).

Navis™ Optical Network Management System (NMS)

A Lucent product that provides comprehensive and integrated network management functionality for an entire transport network. Navis™ Optical NMS can provide provisioning and maintenance management for the LambdaRouter™ All Optical Switch, and other network elements in the LambdaRouter™ All Optical Switch network. **Formerly called** WaveStar® NMS (Network Management System).

Network Element (NE)

A telecommunications network node that supports network transport services and is directly manageable by a managing system.

Network to Network Interface (NNI)

A LambdaRouter™ All Optical Switch to LambdaRouter™ All Optical Switch interface within a network. Ports configured as NNI are able to participate in automatic port neighbor discovery.

Network View

The Optical Craft Interface screens and menu options used to set up an association with network elements or to administer the Optical Craft Interface GUI itself.

Node

All equipment that is controlled by one system controller. A node is not always directly manageable by a managing system.

Non-Blocking Cross-Connection Capacity

The service cross-connection capacity guaranteed to the user to be free from blocking.

Non-Blocking Fabric

The characteristic that no cross-connection request will be denied because of a lack of a path through the fabric, when the desired input and output ports are available.

Non-Revertive Protection Switching

A process in which an active and standby line exist. When a protection switch occurs, the standby line is selected to support traffic, thereby becoming the active line. The original active line then becomes the standby line. This status remains in effect even when the fault clears (there is no automatic switch back to the original status). *See also* Revertive Protection Switching.

Non-Volatile Memory (NVM)

Memory that retains its stored data after power has been removed; for example, a hard disk.

No Request State

The state in which no protection switching activities are occurring.

Not Monitored (NMON)

A provisioning state for equipment that is not equipped with monitors or alarms.

O**Off-Board Devices**

Transmission devices that are associated with a controller but are located on

another circuit pack. *See also* On-Board devices.

Office Alarm Interface

An interface to the Office Alarm System for each alarm level that leads to audible or visible Central Office alarms. Audible alarm cutoff (ACO) is provided locally on the equipment and remotely through user command. Critical, Major, and Minor audible and visible alarms are supported.

On-Board Devices

Transmission devices associated with a controller and located on the same circuit pack. *See also* Off-Board devices.

One-Way Bridge and Merge Cross-Connection

A complex one-way cross-connection configuration that consists of two concatenated basic bridge and merge cross-connection configurations that share a common simplex leg.

One-Way Double Merge Cross-Connection

A complex one-way cross-connection configuration that consists of two merge cross-connections that share the same source (input) ports. It can also be considered as two bridge cross-connections that share the same destination (output) ports.

One-Way Point-to-Point Cross-Connection

A one-leg duplex interconnection between an input port and an output port. It can be set up and taken down by a single command to the network element.

One-Way Simplex Cross-Connection

A cross-connection leg with a transmission path through a single switch fabric. A simplex cross-connection leg can be added to or deleted from an existing cross-connection to form another type of cross-connection configuration. For example, a simplex leg can be deleted from an existing bridge or merge cross-connection to form a one-way point-to-point cross-connection.

Opacity

Bit-rate and format dependence. The LambdaRouter™ All Optical Switch opaque interfaces are the OXI-10GC and OXI-2GC.

Open Shortest Path First (OSPF) Protocol

A routing protocol used by LambdaRouter™ All Optical Switch to perform Control Communications Network (CCN) topology discovery. The topology information is used to determine routes between the Restoration Interface Processor (RIP) circuit packs in adjacent LambdaRouter™ All Optical Switch nodes.

Open Systems Interconnection (OSI)

A seven-layer reference model, a logical structure for network operations standardized by the International Standards Organization (ISO).

Operations Interface

Any interface providing information on the system behavior or control. In LambdaRouter™ All Optical Switch, operations interfaces include equipment LEDs, user panels, Optical Craft Interface, and office alarms.

Operations System (OS)

A central-computer-based system used to provide operations, administration, and maintenance functions. An example of an OS is the Navis™ Optical Element Management System (EMS).

Operator

User of the system with operator-level user privileges.

Optical Channel Alarms

A LambdaRouter™ All Optical Switch alarm message category that reports input signal failures and are issued against an input port.

Optical Channel Management

A LambdaRouter™ All Optical Switch application that enables adding, dropping or connecting of services traffic through the network, through optical line systems (OLSs).

Optical Craft Interface (OCI)

The user interface terminal used by craft personnel to communicate with the network element. The Optical Craft Interface runs on a PC with Windows NT® or Windows 2000 and provides graphical user interface (GUI) functionality and Transaction Language 1 (TL1) command entry through cut-through. **Formerly**

called WaveStar® CIT (Craft Interface Terminal).

Optical Cross-Connect Interface (OXI)

A LambdaRouter™ All Optical Switch circuit pack that performs optical splitting, power monitoring, and rate- and format-independent transport for signals to and from the network element. OXIs are located in the Optical Interface Shelf-Transparent. Each transparent OXI pack provides four input ports (without optical amplifiers) and four output ports.

Optical Cross-Connect Interface-2.5 Gbps Client (OXI-2GC)

A LambdaRouter™ All Optical Switch circuit pack that supports 2.5 Gbps SONET/SDH signals (OC-48/STM-16). OXI-2GCs are located in the Optical Interface Shelf-2Gbps (OIS-2G) and the Optical Interface Shelf-Mixed (OIS-MX). Each OXI-2GC provides two input and two output ports.

Optical Cross-Connect Interface-10 Gbps Client (OXI-10GC)

A LambdaRouter™ All Optical Switch circuit pack that supports 10 Gbps SONET/SDH signals (OC-192/STM-64). OXI-10GCs are located in the Optical Interface Shelf-10Gbps (OIS-10G) and the Optical Interface Shelf-Mixed (OIS-MX). Each OXI-10GC provides one input and one output port.

Optical Cross-Connect Interface-4A13 (OXI-4A13)

A LambdaRouter™ All Optical Switch circuit pack that performs optical splitting, power monitoring, and rate- and format-independent transport for signals to and from the network element. OXI-4A13 circuit packs are located in the Optical Interface Shelf-Transparent. Each OXI-4A13 pack provides four input ports (optical amplifiers in the 1310 nm band) and four output ports.

Optical Cross-Connect Interface-4A15 (OXI-4A15)

A LambdaRouter™ All Optical Switch circuit pack that performs optical splitting, power monitoring, and rate- and format-independent transport for signals to and from the network element. OXI-4A15 circuit packs are located in the Optical Interface Shelf-Transparent. Each OXI-4A15 pack provides four input ports (optical amplifiers in the 1550 nm band) and four output ports.

Optical Interface Shelf

A generic term for any transmission interface shelf used in LambdaRouter™ All Optical Switch, including the OIS-T shelf for transparent circuit packs, the

OIS-10G for OXI-10GC circuit packs, the OIS-2G for OXI-2GC circuit packs, and the OIS-MX for a combination of OXI-10GC and OXI-2GC circuit packs.

Optical Interface Shelf-2.5 Gbps (OIS-2G)

The LambdaRouter™ All Optical Switch transmission interface shelf that contains 32 OXI-2GC optical-electrical-optical circuit packs and two Switch Interface Controllers (SWICs).

Optical Interface Shelf-10 Gbps (OIS-10G)

The LambdaRouter™ All Optical Switch transmission interface shelf that contains 32 OXI-10GC optical-electrical-optical circuit packs and two Switch Interface Controllers (SWICs).

Optical Interface Shelf/High-Voltage Shelf (OIS/HVS) User Panel

The LambdaRouter™ All Optical Switch module that receives alarm status information. It provides visual indications of shelf status through LEDs and a means for generating alarm cutoff and LED test interrupts to the shelf Switch Interface Controller (SWIC) circuit packs. *See also* System Controller Shelf (SCS) User Panel.

Optical Interface Shelf-Mixed (OIS-MX)

The LambdaRouter™ All Optical Switch transmission interface shelf that contains a combination of 16 OXI-2GC circuit packs, 16 OXI-10GC circuit packs and two Switch Interface Controllers (SWICs).

Optical Interface Shelf-SDH/SONET (OIS-S)

The LambdaRouter™ All Optical Switch general shelf type that contains OXI-10GC or OXI-2GC circuit packs, which provide the opaque OC-192/STM-64 and OC-48/STM-16 interfaces between the LambdaRouter™ All Optical Switch and customer equipment. Each OIS-S contains opaque circuit packs and cannot contain transparent circuit packs.

Optical Interface Shelf-Transparent (OIS-T)

The LambdaRouter™ All Optical Switch shelf that contains the transparent OXI, OXI-4A13, or OXI-4A15 circuit packs. Each OIS-T contains two Switch Interface Controllers (SWICs) and as many as 32 OXI, OXI-4A13, or OXI-4A15 circuit packs.

Optical Line System (OLS)

Any system using a fiber-optic or other optical technology for transmission.

Optical Loss Budget

The allocation of allowable or necessary signal loss in a transmission system, or signal loss to connection subsections of that system.

Optical Return Loss (ORL)

The power of a signal, reflected back to its source in an optical system.

Optical Translator Unit (OTU)

The WaveStar® OLS 1.6T (400G/800G) module that provides wavelength translation and signal regeneration from or to the line system.

Out of Service (OOS)

A state in which an equipment entity is not allowed or is incapable of providing its intended function.

P**Parameter**

A variable that is given a value for a specified application, or a constant, variable, or expression that is used to pass values between components.

Performance Management

The activities necessary to provision the system, ports, and profiles used in performance monitoring.

Performance Monitoring

The monitoring of signal transmission on SONET and/or SDH interfaces in order to ensure that the desired quality of service is provided. When enabled, performance monitoring data is continuously collected and processed using threshold profiles associated with each port.

Personal Computer Memory Card International Association (PCMCIA) card

Non-volatile memory in a form similar to a floppy disk. LambdaRouter™ All Optical Switch program and configuration data are stored on a PCMCIA card in

the MEM circuit packs.

Personality Module (PMOD)

Modules that provide two OC-48 port connections for Restoration Interface Processor (RIP) circuit packs. Up to two Personality Modules may be mounted on each RIP circuit pack.

Point-to-Point Cross-Connection

A duplex cross-connection from a single input point to a single output point. It can be either one-way or two-way.

Polarization Mode Dispersion (PMD)

Output pulse broadening due to random coupling of the two polarization modes in an optical fiber.

Port

A physical transmission interface, comprising both an input and an output, which may be used to carry traffic between network elements. (*Also called* line. Port emphasizes the physical interface, and line emphasizes the interconnection. Either may be used to identify the signal being carried.)

Port Link List

A list that provides the results of automatic port neighbor discovery or port neighbor provisioning parameters, including the status of the port link.

Port Pack

See Port Unit.

Port State Provisioning

A feature that allows a user to set the port state to in-service or out-of-service.

Port Unit (PU)

A transmission circuit pack that receives and transmits optical signals. The OXI, OXI-4A13, OXI-4A15, OXI-10GC, and OXI-2GC are the LambdaRouter™ All Optical Switch port units.

Power Filter Voltage Protection (PFVP) Unit

A LambdaRouter™ All Optical Switch unit that receives power supply current,

suppresses high-frequency emissions, and passes current through the backplane to the circuit packs. This unit also disconnects current through the power source when input voltage falls below an acceptable level, or when a short circuit occurs. PFVPs are located on the Switch Shelf, Optical Interface Shelves, and System Controller Shelf. In the OIS-10G and OIS-2G, the PFVP has an internal circuit breaker.

Pre-provisioning

The process by which a user specifies parameter values for an entity before all of the equipment is present. These parameters are stored in non-volatile memory (NVM).

Primary Non-Volatile Memory (PRI MEM)

A non-volatile MEM circuit pack designated as the primary storage device for the LambdaRouter™ All Optical Switch. *See also* Memory.

Privilege Code

See User Privilege Code.

Privileged User

An Optical Craft Interface user login with access to all user capabilities, including those that are service-affecting, with the exception of security-related capabilities.

Program

The executable software code that controls the LambdaRouter™ All Optical Switch network element or Optical Craft Interface.

Protection

Extra capacity (channels, circuit packs) in power or control equipment that is intended to be used not for service but rather as backup for equipment failures. In active and standby contexts, protection is used to describe a function that at power-up becomes standby.

Protection Group

Protection switching configuration. Within a protection architecture, one working function is protected by one protection function. LambdaRouter™ All Optical Switch supports protection switching with a System Controller Protection Group, High-Voltage Shelf Controller Protection Group, and Optical Interface Shelf Protection Group. *See also* Revertive Protection Switching; Non-Revertive

Protection Switching.

Protection Switch Activity Log

A time-stamped list of LambdaRouter™ All Optical Switch protection switching activity that has occurred within the network element. Facility, equipment, and synchronization-related switching activity is covered. The log includes the protection group ID and the type of protection switch (manual, forced, clear, or automatic).

Protection Switching

LambdaRouter™ All Optical Switch capability to automatically switch to standby or protection circuitry in the event of failure. A manual or forced protection switch may also be initiated as part of operator fault isolation procedures.

Provisioned (PROV)

Indication that a circuit pack is ready to perform its intended function. A provisioned circuit pack can be active (ACT), in-service (IS), standby (STBY), or out-of-service (OOS).

Provisioning

The process of assigning values to a set of variable parameters of the system (or any of its subsystems) to enable or facilitate the expected use of the system (or subsystem). Provisioning of system components includes the creation of a software representation of the component and/or a record of its parameter values, as well as actual modification of the component parameters. Provisioning can be automatic or initialized by manual command. *See also* Auto-Provisioning; Manual Provisioning and Deprovisioning; Pre-Provisioning.

Q**Quality of Service (QoS)**

The performance specification of a communications channel.

Quality of Service (QoS) Alarm

A LambdaRouter™ All Optical Switch alarm message category of alarms that are issued with respect to performance monitoring threshold crossing alerts. Quality of Service alarms are issued for a port.

R**Rapid Network Restoration**

A LambdaRouter™ All Optical Switch application that enables speedy restoration of services via alternate paths by removing the need for manual recabling operations. LambdaRouter™ All Optical Switch offers 1+1 pre-provisioned network restoration, and auto re-route mesh restoration when used with the LambdaRouter™ Optical Network Navigation System (ONNS).

Rapid Service Provisioning

A LambdaRouter™ All Optical Switch application that enables speedy provisioning of optical-layer service, eliminating the need to dispatch craft personnel for manual facility interconnections.

Receive-Direction

The signal direction toward the network element.

Recovery

A predefined process, in response to communication, equipment, or processing failure, that results in a return to normal operation of the network element.

Recovery after Power Failure

The LambdaRouter™ All Optical Switch capability to automatically reset the system after power failure without user intervention, when input voltage rises above a pre-set level. The system returns to its provisioned state prior to the failure.

Remote Network Element

Any network element (NE) that is connected to the NE under consideration. *Also called* Far End.

Remote Provisioning

A feature allowing the user to provision from a remote location through a managing

system and LAN.

Reports Only User

An Optical Craft Interface user type with permissions to access only those capabilities that retrieve information from the system but do not modify the system.

Restoration Controller (RC)

The LambdaRouter™ All Optical Switch circuit pack that provides the interface between the Navis™ Optical Network Management System (NMS) and the Control Communications Network (CCN) for managing the path setup process. The RC circuit pack is also the location where path computation (routing) is performed in response either to requests for path setup and tear-down (from Navis™ Optical NMS), or in response to a path failure in order to initiate a mesh auto-reroute service restoration. Two RC circuit packs are located in the System Controller Shelf (SCS), and each provides one external 10BaseT ethernet connector, one external 100BaseT ethernet connector, and one internal four-port 10/100BaseT ethernet hub.

Restoration Interface Processor (RIP)

The LambdaRouter™ All Optical Switch circuit pack that provides Control Communications Network (CCN) connectivity between each LambdaRouter™ All Optical Switch in a domain. The CCN application runs on the RIP circuit packs. Two RIP circuit packs are located in the System Controller Shelf (SCS), and each provides one internal four-port 10/100BaseT ethernet hub and one external 10/100BaseT ethernet hub. Each RIP circuit pack may also be equipped with up to two Personality Modules.

Revertive Protection Switching

The ability of a working and protection function to revert autonomously to active and standby, respectively, upon the repair of the failure that caused a protection switch. *See also* Non-Revertive Protection Switching.

S**SanDisk**

A vendor Personal Computer Memory Card International Association (PCMCIA)

card; a pre-formatted SanDisk is used in LambdaRouter™ All Optical Switch for software installation. **See also** Personal Computer Memory Card International Association (PCMCIA) card.

Scripting

The Optical Craft Interface feature that supports the ability for the user to create and edit Transaction Language 1 (TL1) scripts and save them for later use.

Secondary Non-Volatile Memory (SEC MEM)

A MEM circuit pack designated as the secondary storage device for LambdaRouter™ All Optical Switch. **See also** Memory.

Security Administrator

1. An Optical Craft Interface or managing system user who has been assigned a security privilege level of S5 and can view existing user logins, add new users and assign user privileges, delete users, change passwords for any user, and modify user privileges. 2. A LambdaRouter™ All Optical Switch user with a privilege level of S5 who can view existing user logins, view a list of users currently logged into the network element, add new users and assign user privileges, delete users, and change passwords for any user.

Security Alarm

A LambdaRouter™ All Optical Switch alarm message category of alarms that are issued with respect to login events and managing system access, and that indicate an intruder alert condition. Security alarms are issued for the system.

Security Log

A LambdaRouter™ All Optical Switch file of all security-related events. It is stored in non-volatile memory of the network element.

Security Management

In LambdaRouter™ All Optical Switch, the administration of user accounts (login IDs, passwords, and privilege levels) and the monitoring of system security to insure that only valid users can perform allowed actions and receive authorized information.

Serial Number (SLN, SN)

A circuit pack identifier that is stored in Electrically Erasable Programmable

Read-Only Memory (EEPROM).

Serial Number Identification Port (SNIP)

A Switch Shelf interface to the High-Voltage Shelf that provides the unique 16-bit serial number of the Switch Shelf.

Series Number (SSN)

A circuit pack identifier that is stored in Electrically Erasable Programmable Read-Only Memory (EEPROM).

Session

A logical connection from the Optical Craft Interface or other managing system to a network element.

Shelf

A set of circuit packs sharing a common physical housing, power source, electronic or opto-electronic backplane, and shelf controller.

Shelf View

An Optical Craft Interface graphical depiction of one shelf. Selectable objects in this view are the shelf, the slots/circuit packs, and the ports.

Short Reach

A standard for optics, concerning transmitters and receivers in a system, that ensures that transmission can be maintained for short distances (10 km). *See also* Long Reach; Intermediate Reach.

Signal Degrade (SD)

A condition that triggers automatic protection switching when the line bit error rate (B2) exceeds a user-provisionable threshold.

Signal Fail (SF)

Loss of signal (LOS), loss of frame (LOF), Alarm Indication Signal-Line (AIS-L), or line bit error rate (B2) greater than the user-provisionable threshold.

Signal Injection

The capability for a LambdaRouter™ All Optical Switch OEO input port to inject a test signal with a payload containing either all 1s (AIS-L) or all 0s (UNEQ) when

requested by using a test access command. Signal injection is possible only when the input port is not detecting an incoming signal. A j0-byte sequence may be inserted in an injected test signal.

Signal Maintenance

In LambdaRouter™ All Optical Switch, the capability of the system to detect the presence or absence of optical power at input and output ports, monitor and react to maintenance signals, generate appropriate alarms, and perform fabric-path protection switching.

Signal Rate

An attribute that defines the bit rate and format of a signal.

Single-Mode Fiber (SM)

An 8.3-Ø 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.

Slip

A repetition or deletion of a block of bits in a bit-stream, caused by a sufficiently large discrepancy in the read and write rates at a receiver buffer.

Slot

A physical position in a shelf designed to hold a circuit pack and connect it to the backplane.

Slot Provisioned State

A transition state for circuit pack insertion. A slot will transition from empty to equipped when the circuit pack insertion is detected and validated, and the hardware registers are loaded. The slot remains so provisioned until the object is deprovisioned.

Slot State Provisioning

Modification of a slot state through a user command.

Software Backup

The process of saving an image of the current network element (NE) databases, which are contained in NE primary non-volatile memory (NVM, PRI MEM), to SEC MEM or remote storage.

Software Delivery

In LambdaRouter™ All Optical Switch, the delivery to a customer of network element generic software, Optical Craft Interface software, factory data, and utilities on a CD-ROM, with accompanying documentation in hard copy and on CD-ROM.

Software Failure

A data or results error detected by the software itself during execution.

Software ID

A number that provides the software version information for the system.

Software Installation

The process of interpreting and unpacking the binary data program that was downloaded to a network element non-volatile memory (NVM) and copying the constituent data items to their designated locations in the network element.

Software Management

The activities necessary to download, upgrade, install, back up, and restore the generic software and provisionable data on the Optical Craft Interface and network element.

Software Upgrade

The process that installs a new release of software.

Standby (STBY)

A state in which a circuit pack is in service but is not providing service functions. The circuit pack is ready to be used to replace a similar circuit pack either by protection or by duplex switching, in hot standby or cold standby functions. **See also** Active; Cold Standby; Hot Standby.

Standing Condition

The declaration type of a notification message (event or alarm) that requires a Clear

message. *See also* Transient Condition.

State

A software parameter indicating the current autonomous and user-defined limitations on the behavior of the entity in question.

Status

The indication of the instantaneous condition of an equipment entity.

Strictly Non-Blocking Fabric (NBF)

Architecture that ensures unhindered signal throughput. Strictly NBF is a fabric architecture such that any incoming signal can be directed to any idle output port, without the need to rearrange any of the existing cross-connections, and without blocking, degrading, or otherwise affecting any of the remaining signals through the system.

Subnetwork

A group of interconnected/interrelated network elements.

Superuser

1. An Optical Craft Interface user type with highest level of permissions to access the system. Up to two superusers logins and passwords may be created on the Optical Craft Interface. 2. A LambdaRouter™ All Optical Switch user with full privileges in all functional categories. Two superuser logins and passwords are pre-installed on the system.

Suppression

A process by which alarms that have been identified as an “effect” are not displayed to a user. Alarms can be suppressed through user provisioning.

Switch Bay

In LambdaRouter™ All Optical Switch, the frame that houses the Switch Shelf, High-Voltage Shelf, and optical interface shelf, either the OIS-T, OIS-10G, OIS-2G, or OIS-MX.

Switch Interface Cable (SI cable)

Cable that connects the Optical Interface Shelf backplane and the Fiber Distribution Panel.

Switch Interface Capacity

The capacity in number of optical interconnection links between any one of the transmission interface shelves and the cross-connection fabric. This term applies to bidirectional capacity (for example, switch interface capacity of 128 corresponds to 128 optical links in each direction).

Switch Interface Controller (SWIC, LGH1 and LGH1AE)

A LambdaRouter™ All Optical Switch circuit pack that provides control functions for optical cross-connect interface or High-Voltage Digital-to-Analog Converter (HVDAC) functions, and a control interface to the Control Bay. There are two types of SWICs. The SWIC for the Optical Interface Shelf-Transparent (OIS-T) and High-Voltage Shelf (HVS) is coded LGH1 and is referred to in software as *oswic* when in an OIS-T and *hswic* when in an HVS. The SWIC for the Optical Interface Shelf-SDH/SONET (OIS-S) is coded LGH1AE and is referred to in software as *oswic*.

Switch Interface Point (SWIP)

A Micro-electromechanical System (MEMS) mirror, the dedicated optical interface (connector and collimator) connected to it, and the dedicated electrical control interface (electrodes, cable connectors) for its operation. Users of LambdaRouter™ All Optical Switch software will view it as a single object in the system.

Switch Interface Point (SWIP) Maintenance Group (SWMG)

A grouping of Switch Interface Points (SWIPs) that are treated as a unit for switch maintenance. This grouping is sometimes referred to as *switch side*.

Switch Request States

State that is defined for protection groups: Forced Switch, Manual Switch Failure, and No Request.

Switch Shelf (SWS)

The LambdaRouter™ All Optical Switch component that contains the Micro-electromechanical System (MEMS) mirror arrays, optical lenses, fibers and connectors, also referred to as switch fabric.

Synchronization

The function that assures accuracy and stability of clocks used to transmit data in

digital networks. In LambdaRouter™ All Optical Switch, clocking is used for 10 Gbps and 2.5 Gbps signals that go through optical-electrical-optical conversion for performance monitoring. The clocking is extracted from the ingress signal and used to transmit egress signal (through timing). An internal clock is used to transmit signal defect (AIS) when the clock from the ingress signal is not available. Synchronization is done on the OXI-10GC and OXI-2GC packs.

Synchronous Digital Hierarchy (SDH)

A hierarchical set of digital transport structures, standardized for the transport of suitable adapted payloads over transmission networks.

Synchronous Optical Network (SONET)

The North American standard for the rates and formats that define optical signals and their constituents.

SYS50D

The LambdaRouter™ All Optical Switch circuit pack that provides the main system control functions. Duplex SYS50Ds are located in the System Controller Shelf and operate as an active/standby pair.

System Controller Complex

The grouping of a SYS50D circuit pack, Restoration Controller (RC), and an External Interface (EI) circuit pack, treated as a unit for controller maintenance and protection switching.

System Controller Shelf (SCS)

The middle shelf of the LambdaRouter™ All Optical Switch Control Bay. It contains the SYS50D and other control packs.

System Controller Shelf (SCS) User Panel

The LambdaRouter™ All Optical Switch module that monitors the temperature of the shelf, receives alarm status information, and provides visual indications of shelf status through LEDs. The SCS User Panel provides an ESD wrist strap ground connector and a port used to connect an Optical Craft Interface to the system. An NE Acty LED indicates software download, loopback, or a forced or manual switch.

System Logs

Autonomous records of system events that can be retrieved by user commands. The system provides a User Session Activity Log, Database Change Log, Alarm Log, Security Activity Log, and Protection Switch Log. Each log has a capacity to store 72 hours of data.

System View

An Optical Craft Interface graphical depiction of the entire network element. Selectable objects in this view are bays and shelves in the network element.

T**Target Identifier (TID)**

A provisionable parameter used to identify a particular network element within a network. The parameter is a case-insensitive ASCII character string of up to 20 characters. The allowed characters are the letters **A** through **Z** and **a** through **z**, the numbers **0** through **9**, and the special characters hyphen (-) and forward slash (/). The string must not begin or end with a hyphen.

Template

A collection of parameters that define a specific network element configuration.

Terminal Access

Accessing and provisioning a LambdaRouter™ All Optical Switch using a personal computer or dumb terminal connected to the RS-232 port located on the back of the LambdaRouter™ All Optical Switch System Controller Shelf (SCS). Provisioning is performed using TL1 commands.

Test Access Cross-Connection

A type of cross-connection that is used for maintenance purposes to monitor the transmission quality of live traffic or an injected signal. Test Access cross-connections involve temporarily cross-connecting an optical signal from an input port, through a switch fabric side, to an output port that has been selected to serve as a test access monitoring port. *See also* MONE Test Mode; MONEF Test Mode; MONF Test Mode.

Test Access Monitoring (TAM) Port

The output port of a Test Access cross-connection.

Threshold Crossing Alert

Used in performance monitoring. A notification that a monitored parameter has exceeded a threshold value for a port. The generation of threshold crossing alerts can be enabled or disabled independently for each parameter.

Through Timing

Timing derived by the network element from the ingress signal and used to transmit the egress signal.

Transaction Language 1 (TL1)

A machine-to-machine communications language that is a subset of ITU human-to-machine language. TL1 is the interface language between the Optical Craft Interface, Navis™ Optical Element Management System, Navis™ Optical Network Management System, and a LambdaRouter™ All Optical Switch.

Transient Condition

The declaration type of a notification message (event only) that does not require a Clear message. *See also* Standing Condition.

Transmission Control Protocol/Internet Protocol (TCP/IP)

Networking protocols used by LambdaRouter™ All Optical Switch to interface with a customer's Intraoffice Local Area Network (IAO LAN).

Transmission Interface

Also known as facility interface. The components that provide connectivity between external Optical Line Systems (OLs) or client network elements (NEs) and the LambdaRouter™ All Optical Switch. The LambdaRouter™ All Optical Switch transmission interfaces are the OXI, OXI-4A13, and OXI4A15 circuit packs containing transparent bidirectional ports, and the OXI-10GC and OXI-2GC circuit packs containing opaque bidirectional ports. Transmission interface functions include receipt, splitting, selection, and output of signals.

Transmission Interface Shelf

See Optical Interface Shelf entries.

Transmit-Direction

The direction away from the network element.

Transparency

Bit-rate and format independence. The OXI, OXI-4A13, and OXI4A15 circuit packs are the LambdaRouter™ All Optical Switch transparent interfaces.

Trouble-Clearing

Activity to correct an alarmed condition.

Two-Way Bridge/Merge Cross-Connection

A two-way cross-connection configuration that consists of a bridge cross-connection in one direction, and a merge cross-connection in the other direction.

Two-Way Double Merge Cross-Connection

A complex two-way cross-connection configuration that consists of two one-way double merge cross-connections, one in each direction of the two-way.

Two-Way Point-to-Point Cross-Connection

Two cross-connection duplex legs that interconnect two input ports and two output ports. A pair of input and output ports used for opposite directions may or may not have the same access identifier (AID). Each of the two cross-connection legs can be established by a single command to the network element and must have a compatible transmission rate.

Two-Way Simplex Cross-Connection

Two simplex cross-connection legs that interconnect two input ports and two output ports. A pair of input and output ports used for opposite directions may or may not have the same access identifier (AID). A pair of two-way simplex cross-connection legs can be added to or deleted from an existing cross-connection to form another type of cross-connection configuration. For example, a two-way simplex cross-connection can be added to an existing two-way point-to-point cross-connection to form a two-way bridge/merge cross connection.

U

Unequipped (UNEQ) Signal

An indication that an incoming signal has valid SDH/SONET Section/Regenerator Section overhead with a Synchronous Payload Envelope (SPE) comprising all zeroes.

Unit Interface Appliance (UIA)

The physical device used by the person who runs Optical Craft Interface software and accesses network elements. The LambdaRouter™ All Optical Switch UIA is a PC or laptop with Microsoft Windows NT or Windows 2000.

Unit Interface (UI) Cable

The specified cable type used in the interface between the System Controller Shelf circuit packs and the Switch Interface Controller (SWIC) circuit packs.

Universal Coordinated Time (UTC)

Formerly called Greenwich Mean Time (GMT). A time-zone-independent indication of an event. The local time can be calculated from the Universal Coordinated Time.

Upgrade Kit

Orderable components that enable either a lower capacity LambdaRouter™ All Optical Switch system to be upgraded to a higher capacity LambdaRouter™ All Optical Switch system, or an earlier version/release system to be upgraded to a later version/release system.

Upload

The process of transferring files from a network element to a managing system. LambdaRouter™ All Optical Switch can only upload data. *See also* Download.

Upstream

At or toward the source of the considered transmission stream.

User ID (UID)

An Optical Craft Interface or LambdaRouter™ All Optical Switch user code that comprises one to ten alphanumeric, case-sensitive characters. Any sequence of

characters is allowed, except as follows: The keyword ALL by itself, in any combination of uppercase and lowercase (that is, ALL ALL, all, and so on), is not allowed as a valid user ID. A user ID containing ALL as a substring, however, in any combination of uppercase and lowercase (such as tallman), is allowed as a valid user ID.

User to Network Interface (UNI)

An IP network interface that allows automated network path setup and teardown to be initiated from an IP router or other client that is external to the LambdaRouter™ All Optical Switch network.

User Notification Registration List

A security feature that determines what messages a LambdaRouter™ All Optical Switch user is allowed to receive.

User Panels

Components on each shelf of the LambdaRouter™ All Optical Switch that monitor the temperature of shelves, receive alarm status information, and provide visual indications of shelf status through LEDs. These panels also provide a means for generating alarm cutoff and LED test interrupts to the shelf Switch Interface Controller (SWIC) circuit packs.

In addition to the status LEDs, the System Controller Shelf user panel provides an ESD wrist strap ground connector and a port used to connect an Optical Craft Interface to the system.

Temperature monitoring, ESD wrist strap ground connectors, and Optical Craft Interface ports are not included in the user panels for the Optical Interface Shelves and High-Voltage Shelves. They also do not support near end (NE) or far end (FE) alarms.

User Privilege Code (UPC)

Permissions assigned to each user when a login is created or modified on either the Optical Craft Interface or LambdaRouter™ All Optical Switch. The UPC is an alphanumeric code of one or two letters that identify the functional category of commands the user may access, and a single digit that indicates the user authorization level for that functional category. UPCs assigned to login IDs on the Optical Craft Interface do not necessarily apply to LambdaRouter™ All Optical Switch.

User Record

Data associated with each user on an Optical Craft Interface or other managing system and on the LambdaRouter™ All Optical Switch network element (NE). Each record (separate on the managing system and the NE) comprises a login ID, password, user type, user privilege level, user priority level (NE only), and User Notification Registration list (NE only).

User Session Activity Log

A LambdaRouter™ All Optical Switch file of all user-initiated commands from login through logout.

User Type

Assigned privilege codes for Optical Craft Interface users that determine which commands and capabilities the user may access. Predefined user types are Superuser, Privileged User, General User, Maintenance User, and Reports Only User. Users may also be assigned a type of “Other.” The default user type is “Reports Only.”

V**Very Short Reach (VSR)**

A standard for optics (as defined in ITU-T Recommendation G.693), concerning transmitters and receivers in a system, that insures that transmission can be maintained for very short distances (up to 2 km). *See also* Long Reach; Intermediate Reach; Short Reach.

Virtual Private Network (VPN)

A leased network that is part of a larger network but operated independently.

Volatile Memory

A type of memory that is lost if electrical power is interrupted.

W**Wander**

The long-term variation of the significant instants of a digital signal from their ideal positions in time. Wander is mainly generated by the variation in transmission characteristics of the media and equipment, which includes disruption in synchronization reference distribution. Wander is a potential source of slips in synchronous networks. *See also* Jitter.

Wavelength Division Multiplexing (WDM)

A means of increasing the information-carrying capacity of an optical fiber by simultaneously transmitting signals at different wavelengths.

Wavelength Range of Operation

A range within the infrared wavelength spectrum in which the system is designed to operate.

Wavelength Window

A standard range of wavelengths in which the intrinsic transmission loss of an optical fiber is low enough to be usable for optical transmission systems. The standard wavelength windows are approximately 850 nm (not used in telecommunications), 1310 nm, and 1550 nm.

WaveStar® CIT (Craft Interface Terminal)

See Optical Craft Interface (OCI).

WaveStar® NMS (Network Management System)

See Navis™ Optical Network Management System (NMS).

WaveStar® OLS (Optical Line System)

A Lucent Technologies lightwave transmission system, for example, WaveStar® OLS 1.6T. Using Dense Wave Division Multiplexing technology, the system combines multiple signals of different wavelengths, transmits the resulting signal over a single fiber, and then demultiplexes the signal at the receiving end.

WaveStar® SNMS (SubNetwork Management System)

See Navis™ Optical Element Management System (EMS).

Wizard

Form of user assistance that automates a task through a dialog with the user.

Working

Descriptor for a physical entity. In revertive switching, the working entity carries service under normal operation. In non-revertive switching the descriptor has no particular meaning. In active and standby operations, **working** indicates the function, when present and healthy, that will become active at power-up. **See also** Protection; Revertive Protection Switching; Non-Revertive Protection Switching.

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