Lucent Technologies
Bell Labs Innovations

WaveStar™ Optical Line System 40G Release 3.1.1

Operations Systems Engineering Guide

365-575-355
Issue 3.1
June 1998

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ISO 9001 is an international quality standard recognized by more than 50 countries. ISO 9001 is the most comprehensive standard in the ISO 9000 series, requiring well documented and implemented controls for design development, production, delivery, installation, and servicing. Its purpose is to ensure manufacturers produce products with consistently high levels of quality and services.

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Title: WaveStar™ Optical Line System 40G, Release 3.1, Operations Systems Engineering Guide

Identification No.: 365-575-355 Issue No.: 3.1 Date: June 1998

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Clarity					////////////////////
Completeness					////////////////////
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- ❒ Improve the organization
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- ❒ Add more examples
- ❒ Add more detail
- ❒ Make it more concise/brief
- ❒ Add more step-by-step procedures/tutorials
- ❒ Add more troubleshooting information
- ❒ Make it less technical
- ❒ Add more/better quick reference aids
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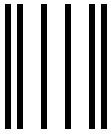

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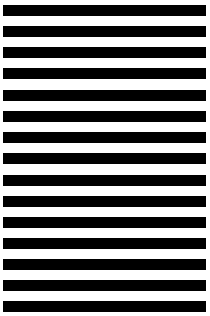

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Clarity					////////////////////
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Accuracy					////////////////////
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Appearance					////////////////////
Examples					
Illustrations					
Overall Satisifaction					////////////////////

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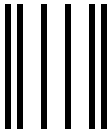

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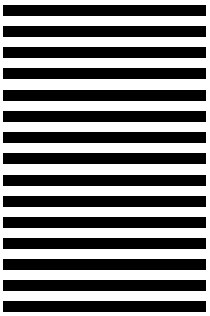

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Contents

About This Document

- Purpose ix
- Intended Audience ix
- Reason for Reissue ix
- How to Use This Document x
- ■ Related Documentation x
  - Documents x
  - Drawings xii
  - Documentation for Related Equipment and Software xiii
  - Electronic Documentation xv
  - How to Order Documents xvi
- ■ Training xvii
- ■ Product Support xx
  - Technical Support xxii
  - Product Change Notifications xxv
- ■ How to Comment on the Optical Line System xxv
- ■ How to Comment on This Document xxv

1 Introduction

- ■ Overview 1-1
- ■ Introduction to Operations Systems Interfaces 1-1

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

- ■ Overview 2-1
- ■ Introduction 2-1
- ■ X.25 Technical Specifications 2-2

Contents

3	OLS TL1 Message Details	
	■ Overview	3-1
	■ TL1 Messages	3-5
4	Optical Line System (OLS) Parallel Telemetry	
	■ Overview	4-1
	■ Introduction	4-1
	■ Parallel Telemetry Test	4-2
GL	Glossary	GL-1
IN	Index	IN-1

Figures

About This Document

1 Product Support xxiii

Tables

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

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

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

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

3 OLS TL1 Message Details

3-1 R3.1-OLS TL1 Message Privilege Level and Category Summary 3-3

4 Optical Line System (OLS) Parallel Telemetry

4-1 SONET OLS Parallel Telemetry Points 4-1

4-2 SDH OLS Parallel Telemetry Points 4-2

About This Document

Purpose

This document includes operations systems (OS) engineering information for the Optical Lightwave System (OLS) (Release 3.1).

Intended Audience

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

Reason for Reissue

This document, Release 3.1, replaces the Optical Line System Release 3.0. This document was reissued to provide information about Release 3.1. Significant changes include the following:

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

How to Use This Document

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

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

Related Documentation

Documents

The following documents provide information about the Optical Line System:

- Number: 365-575-350

  Title: *WaveStar Optical Line System (OLS) 40G, Applications, Planning, and Ordering Guide, Release 3.1*

  Audience: System planners and engineers

  Content: Features, applications, general description, system planning/ engineering, and ordering information

- Number: 365-575-351

  Title: *WaveStar Optical Line System (OLS) 40G User/Service Manual , Release 3.1*

  Audience: End user maintenance personnel

  Content: Detailed system description technical specifications, operation and maintenance, and user interface descriptive tutorial information

- Number: 365-575-444

  Title: *WaveStar Optical Line System (OLS) 40G, Installation Manual*

  Audience: Customers planning to install and turn up the equipment

  Content: Customer installation instructions

- Number: Comcode C108286493*

  Title: *WaveStar Optical Line System (OLS) 40G, Software Release Description, Release 3.1.1-OLS*

  Audience: End-user maintenance personnel

  Content: Status of problems fixed and known problems for Release 3.1.1-OLS software

- Number: 5088TS

  Title: *WaveStar Optical Line System (OLS) 40G, Technical Specifications*

  Audience: Engineers responsible for system planning, operation, and maintenance

  Content: Technical specifications of system components

- Number: 365-575-355

  Title: *WaveStar Optical Line System (OLS) 40G, Operations Systems Engineering Guide, Release 3.1*

  Audience: End-user maintenance personnel

  Content: Operations systems software commands, messages, and other information for Release 3.1.1-OLS software

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

Drawings

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

J68982C-1	*Optical Line System Cabinet (equipment and circuit packs ordered with equipment)*
J68982D-1	*Optical Line System Integrated Bay (equipment and circuit packs ordered with equipment)*
J68982CS-1	*Optical Line System Cabinet Software and Documentation*
J69000C-1	*Optical Translator System (equipment and circuit packs ordered with equipment)*
SD-5G276-01	*Optical Line System Application Schematic*
SD-6G156-01	*Optical Translator System Application Schematic*
SD-6G157-01	*Optical Line System Application Schematic (Integrated Bay)*
SDM-5G273-01	*Optical Line System Shelf Circuit*
SDM-6G155-01	*Optical Translator Shelf Circuit*
T-5G273-30	*Optical Line System Shelf Circuit*
T-5G276-33	*Optical Line System Interconnection Circuit*
T-5G276-30	*Optical Line System Circuit*
T-6G156-30	*Optical Translator Circuit*
T-6G156-33	*Optical Translator Interconnection Circuit*
T-6G157-30	*Optical Line System Integrated Bay Circuit*
T-6G157-33	*Optical Line System Integrated Bay Interconnect Circuit*
ED-7G033-30	*Optical Line System Cabinet Framework*
ED-7G028-20	*Optical Line System Cable Assembly*
ED-7G028-22	*Optical Line System Intercabinet Cable Assembly*
ED-7G028-30	*Optical Line System Shelf Assembly*
ED-7G027-30	*Optical Line System User/Fuse Panel/Power Indicating Assembly*
ED-7G044-30	*Optical Translator Cabinet Framework*
ED-7G045-20	*Optical Translator Cable Assembly*

ED-7G045-22	*Optical Translator (Intercabinet Cable) Assembly*
ED-7G045-30	*Optical Translator Shelf Assembly*
ED-7G047-30	*Optical Translator Fuse/Fuse Power Indicating Panel Assembly*
ED-7G048-30	*Optical Line System Integrated Bay Framework*
ED-5D785-70	*5ESS-2000 Switching Equipment Global Single Bay Frame Doors and Cabinet Assembly (Phase II)*
ED-5D786-70	*5ESS-2000 Global Switching Equipment End Guard Assembly*
ED-8C800-50	*Seismic Network Bay Frame*
ED-8C903-40	*Optical Line System Integrated Cabinet/Bay*
ED-5D779-70	*5ESS-2000 Global Switching Equipment Cable Rack Assembly , GX*
FPD-804-604-161-( )	*Optical Line System (Floor Plan Data Sheets)*
FPD-804-604-162-( )	*Optical Translator Cabinet (Floor Plan Data Sheets)*

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

Documentation for Related Equipment and Software

The following documents provide information about related equipment:

065-215-200	*Seismic Network Bay Frame Applications, Planning, and Ordering Guide*
065-215-250	*Seismic Network Bay Frame Installation Guide*
363-206-200	*DDM-2000 OC-3 and OC-12 Multiplexers, Applications, Planning, and Ordering Guide*
363-206-202	*DDM-2000 OC-3 Multiplexer, User/Service Manual*
363-206-207	*DDM-2000 OC-12 Multiplexer, User/Service Manual*
365-575-100	*FT-2000 OC-48 Lightwave System, Applications, Planning, and Ordering Guide*
365-575-102	*FT-2000 OC-48 Lightwave System, User/Service Manual*
365-575-115	*FT-2000 OC-48 Lightwave System, Installation Manual*
365-575-230	*FT-2000 OC-48 Large Capacity Terminal, Applications, Planning, and Ordering Guide*

365-575-231	*FT-2000 OC-48 Large Capacity Terminal, User/Service Manual*
365-575-220	*FT-2000 OC-48 Large Capacity Terminal, Installation Manual*
365-575-211	*FT-2000 OC-48 Large Capacity Terminal, Integration Manual*
365-575-212	*FT-2000 OC-48 Large Capacity Terminal, Modification Implementation Procedure*
365-575-215	*FT-2000 OC-48 Large Capacity Terminal, Software Release Description*
5408TS	*FT-2000 OC-48 Large Capacity Terminal, Technical Specifications*
636-299-120	***LGX***® *Distribution System, Planning, Engineering, Installation, and Operation System Reference Guide*
824-102-147	*2000 Product Family Operations Interworking Guide*
824-102-148	*FT-2000 OC-48 Lightwave System Operations Systems Engineering Guide*
824-102-151	*DDM-2000 Multiplexer Operations Systems Engineering Guide*
824-102-200	*FT-2000 OC-48 Large Capacity Terminal, Operations Systems Engineering Guide*

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- For pricing information, contact your Lucent Technologies Account Executive or the Lucent Technologies Customer Information Center (1-888-LUCENT-8).
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Training

No product offering is complete without a formal training package. The Customer Training and Information Products (CTIP) Organization provides management courses for system planning, engineering, and ordering, as well as training telecommunications technicians in installation, operations, and maintenance. Suitcasing of these courses is also available. Contact the CTIP Organization on **1-800-LUCENT8** to enroll in training classes. To arrange suitcase sessions, call the Product Training Manager on **1-800-432-6317** (within USA) or **1-614-764-5542** (worldwide).

The following courses are provided by the CTIP Organization:

- Number: LW2200

  Title: *Optical Networking Overview*

  Audience: Network planners, product managers, project managers, equipment engineers, sales personnel, and anyone desiring a high-level description of optical networking.

  Content: Overview of the principles and applications of optical networking, features of the backbone system for optical networking

  Prerequisites: None. However, the student must have a basic understanding of digital fundamentals and lightwave transmission systems

- Number: LW2252

  Title: *WaveStar OLS 40G Applications, Architecture, Planning and Ordering*

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

  Content: Basic synchronous optical network (SONET) terms, applications (for example, point-to-point, rings), architecture (that is, cabinets, bays, shelves, circuit packs), operation, administration, maintenance, and provisioning (OAM&P) features, and equipment cabling specifications for engineering/ordering the Optical Line System

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

— LW2200, Optical Networking Overview

— TR0510, Transmission Principles, self-paced (optional)

- Number: LW2253

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

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

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

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

  — LW2200, Optical Networking Overview

  — TR0510, Transmission Principles, self-paced (optional)

- Number: LW2652

  Title: *WaveStar OLS 40G Operations and Maintenance*

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

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

  — Skills using the user/service manual

  — Competence performing day-to-day provisioning and maintenance tasks of the OLS

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

— LW2200, Optical Networking Overview

- Number: LW2653

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

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

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

  — Skills using the user/service manual

  — Competence performing day-to-day provisioning and maintenance tasks of the LCT

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

  — LW2200, Optical Networking Overview

- Number: LW2452

  Title: *WaveStar OLS 40G Installation and Test (Hands-On)*

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

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

  Prerequisites: None

- Number: LW2453

  Title: *FT-2000 OC-48 Large Capacity Terminal, Installation and Test (Hands-On)*

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

  Content: Practical hands-on experience installing the FT-2000 OC-48 Large Capacity Terminal, equipping the system with required circuit packs/units, and conducting installation testing

  Prerequisites: None

- Number: LW2454

  Title: *WaveStar OLS 40G Installation and Test (Self-paced with videos)*

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

  Content: Instructions for installing the Optical Line System, equipping the system with required circuit packs/units, and conducting installation testing

  Prerequisite: TR0510, Transmission Principles, self-paced

- Number: LW2455

  Title: *FT-2000 OC-48 Large Capacity Terminal Installation (Self-paced with videos)*

  Audience: Personnel responsible for the installation of LCT equipment

  Content: Instruction on the equipment architecture, the installation methods and tests, and the content of the Installation Manual

  Prerequisite: TR2448, FT-2000 OC-48 Installation (Hands-on)

Product Support

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

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

These services include the following:

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

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

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

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

Technical Support

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

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

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

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

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

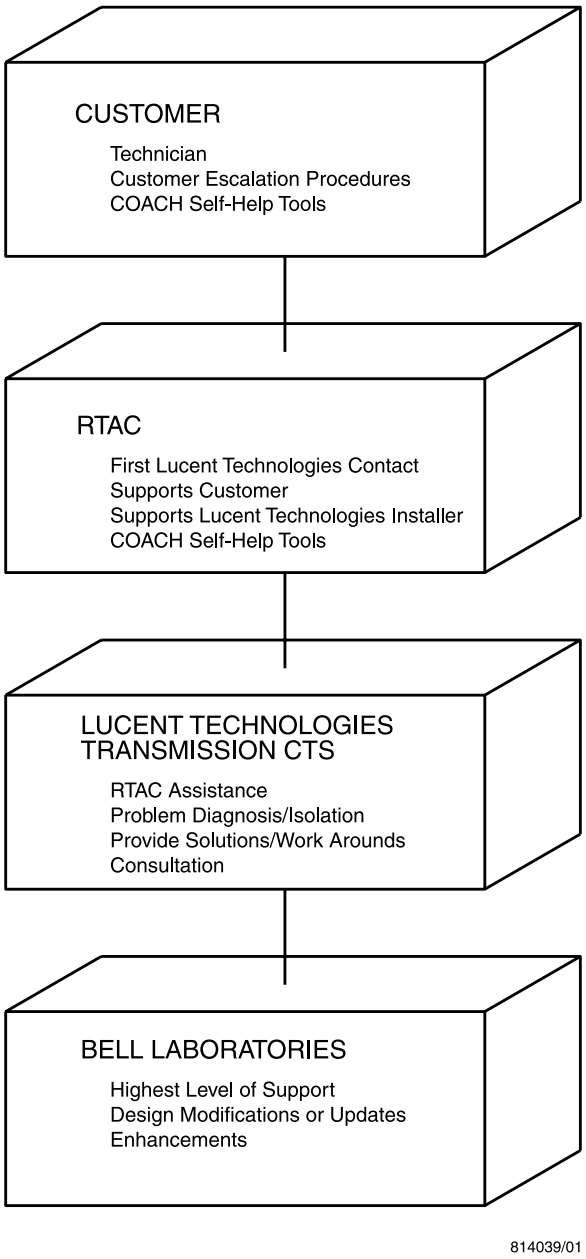

Figure 1. Product Support

These COACH tools are available to the user:

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

For information about how to access COACH, contact:

COACH Software Development
Lucent Technologies — Department JC09110A0
1600 Osgood St.
North Andover, MA 01845
Telephone: **1-800-238-4021**
FAX: **1-978-960-1772**

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

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

Product Change Notifications

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

How to Comment on the Optical Line System

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

How to Comment on This Document

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

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

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Winston-Salem, NC 27106

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

Introduction

1

Contents

Overview 1-1

Introduction to Operations Systems Interfaces 1-1

Introduction

1

Overview

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

Introduction to Operations Systems Interfaces

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

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

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

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

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

2

Contents

Overview 2-1

Introduction 2-1

X.25 Technical Specifications 2-2

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

2

Overview

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

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

Introduction

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

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

X.25 Technical Specifications

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

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

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

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

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

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

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

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

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

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

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

* DTR and RTS are always on when the OLS is powered.
† The OLS will only transmit data via X.25 when CTS is on.

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

OLS TL1 Message Details

3

Contents

Overview 3-1

TL1 Messages 3-5

Contents

Overview	3-1
ACT-USER	3-7
ALW-MSG-EQPT	3-13
CANC-USER	3-17
CPY-PRGM	3-21
DLT-ASSOC-OTPS	3-27
DLT-TADRMAP	3-31
DLT-USER-SECU	3-35
ED-DAT	3-39
ED-PID	3-43
ED-USER-SECU	3-49
ENT-ASSOC-OTPS	3-57
ENT-CID-SECU	3-63
ENT-CMS	3-73
ENT-FECOM	3-79
ENT-NE-SECU	3-83
ENT-OCHAN	3-87
ENT-OPS	3-93
ENT-OTPS	3-101
ENT-SECTRC	3-109
ENT-SUPR	3-117
ENT-SYS	3-125
ENT-USER-SECU	3-143
INH-MSG-EQPT	3-151
INIT-REG-ALL	3-155
INIT-REG-OLINE	3-159
INIT-SYS	3-165
OPR-ACO-ALL	3-173
OPR-EXT-CONT	3-177
OPR-PROTNSW-OPS	3-181
REPT ALM	3-187
REPT ALM ENV	3-197
REPT COND	3-199
REPT DBCHG	3-203
REPT EVT	3-209
RLS-EXT-CONT	3-215
RLS-PROTNSW-OPS	3-219
RTRV-ALL	3-223
RTRV-ALM-ALL	3-237
RTRV-ALM-CMS	3-243
RTRV-ALM-COM	3-247
RTRV-ALM-ENV	3-253

RTRV-ALM-EQPT 3-257
RTRV-ALM-NTWK 3-263
RTRV-ALM-OCHAN 3-267
RTRV-ALM-OLINE 3-273
RTRV-ALM-OPS 3-279
RTRV-ALM-OTPS 3-285
RTRV-ALM-SUPR 3-291
RTRV-AO 3-297
RTRV-ASSOC-OTPS 3-305
RTRV-ATTR-ALM 3-309
RTRV-ATTR-CONT 3-311
RTRV-ATTR-ENV 3-315
RTRV-BASELINE 3-321
RTRV-CID-SECU 3-325
RTRV-CMS 3-331
RTRV-COND-ALL 3-337
RTRV-COND-CMS 3-343
RTRV-COND-COM 3-347
RTRV-COND-EQPT 3-353
RTRV-COND-OCHAN 3-359
RTRV-COND-OLINE 3-365
RTRV-COND-OPS 3-369
RTRV-COND-OTPS 3-373
RTRV-COND-SUPR 3-379
RTRV-DAT 3-383
RTRV-EQPT 3-387
RTRV-FECOM 3-395
RTRV-HDR 3-397
RTRV-LOG 3-405
RTRV-MAP-NETWORK 3-409
RTRV-MAP-RING 3-415
RTRV-NE-SECU 3-419
RTRV-OCHAN 3-423
RTRV-OLINE 3-427
RTRV-OPS 3-431
RTRV-OTPS 3-437
RTRV-PM-ALL 3-453
RTRV-PM-OCHAN 3-469
RTRV-PM-OLINE 3-479
RTRV-PM-OTPS 3-489
RTRV-PM-STIME 3-499
RTRV-PM-SUPR 3-501
RTRV-RELSPR 3-511
RTRV-SECTRC 3-517

RTRV-STATE 3-529
RTRV-SUPR 3-545
RTRV-SYS 3-551
RTRV-TH-ALL 3-559
RTRV-TH-OCHAN 3-565
RTRV-TH-OLINE 3-571
RTRV-TH-OTPS 3-577
RTRV-TH-SUPR 3-583
RTRV-USER-SECU 3-589
SET-ATTR-ALM 3-593
SET-ATTR-CONT 3-597
SET-ATTR-ENV 3-601
SET-PM-STIME 3-607
SET-SID 3-611
SET-TH-OCHAN 3-615
SET-TH-OLINE 3-621
SET-TH-OTPS 3-627
SET-TH-SUPR 3-633
TEST-ALM 3-639
TEST-AUTO-LOCAL 3-643
TEST-LED 3-649
TEST-TLM-PAR 3-653
UPD-SYS 3-657

OLS TL1 Message Details

3

Overview

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

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

The network element does not support parameter grouping.

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

Two digits are used for the year in both input and output. The system have been tested for, and passed, proper year 2000 operation.

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

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

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

perform. They are :

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

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

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

R3.1-OLS TL1 Message Privilege Level and Category Summary			
New this Rel.	TL1 Message	Privilege	Category
	ACT-USER	REPORTS	SECURITY
	ALW-MSG-EQPT	PRIVILEGED	SECURITY
	CANC-USER	REPORTS	SECURITY
	CPY-PRGM	PRIVILEGED	CONFIGURATION
	DLT-ASSOC-OTPS	GENERAL	CONFIGURATION
	DLT-TADRMAP	PRIVILEGED	CONFIGURATION
	DLT-USER-SECU	PRIVILEGED	SECURITY
	ED-DAT	PRIVILEGED	CONFIGURATION
	ED-PID	REPORTS	SECURITY
	ED-USER-SECU	PRIVILEGED	SECURITY
	ENT-ASSOC-OTPS	GENERAL	CONFIGURATION
	ENT-CID-SECU	PRIVILEGED	SECURITY
	ENT-CMS	PRIVILEGED	CONFIGURATION
	ENT-FECOM	PRIVILEGED	SECURITY
	ENT-NE-SECU	PRIVILEGED	SECURITY
	ENT-OCHAN	PRIVILEGED	CONFIGURATION
X	ENT-OPS	GENERAL	CONFIGURATION
	ENT-OTPS	GENERAL	CONFIGURATION
	ENT-SECTRC	PRIVILEGED	CONFIGURATION
	ENT-SUPR	PRIVILEGED	CONFIGURATION
	ENT-SYS	PRIVILEGED	SECURITY
	ENT-USER-SECU	PRIVILEGED	SECURITY
	INH-MSG-EQPT	PRIVILEGED	SECURITY
	INIT-REG-ALL	GENERAL	PERFORMANCE
	INIT-REG-OLINE	GENERAL	PERFORMANCE
	INIT-SYS	GENERAL	CONFIGURATION
	OPR-ACO-ALL	REPORTS	FAULT
	OPR-EXT-CONT	GENERAL	FAULT
X	OPR-PROTNSW-OPS	GENERAL	FAULT
	RLS-EXT-CONT	GENERAL	FAULT
X	RLS-PROTNSW-OPS	GENERAL	FAULT
	RTRV-ALL	REPORTS	CONFIGURATION
	RTRV-ALM-ALL	REPORTS	FAULT
	RTRV-ALM-CMS	REPORTS	FAULT
	RTRV-ALM-COM	REPORTS	FAULT
	RTRV-ALM-ENV	REPORTS	FAULT
	RTRV-ALM-EQPT	REPORTS	FAULT
	RTRV-ALM-NTWK	REPORTS	FAULT
	RTRV-ALM-OCHAN	REPORTS	FAULT
	RTRV-ALM-OLINE	REPORTS	FAULT
X	RTRV-ALM-OPS	REPORTS	FAULT
	RTRV-ALM-OTPS	REPORTS	FAULT
	RTRV-ALM-SUPR	REPORTS	FAULT
	RTRV-AO	REPORTS	FAULT
	RTRV-ASSOC-OTPS	REPORTS	CONFIGURATION

R3.1-OLS TL1 Message Privilege Level and Category Summary			
New this Rel.	TL1 Message	Privilege	Category
	RTRV-ATTR-ALM	REPORTS	CONFIGURATION
	RTRV-ATTR-CONT	REPORTS	CONFIGURATION
	RTRV-ATTR-ENV	REPORTS	CONFIGURATION
	RTRV-BASELINE	REPORTS	PERFORMANCE
	RTRV-CID-SECU	REPORTS	SECURITY
	RTRV-CMS	REPORTS	CONFIGURATION
	RTRV-COND-ALL	REPORTS	FAULT
	RTRV-COND-CMS	REPORTS	FAULT
	RTRV-COND-COM	REPORTS	FAULT
	RTRV-COND-EQPT	REPORTS	FAULT
	RTRV-COND-OCHAN	REPORTS	FAULT
	RTRV-COND-OLINE	REPORTS	FAULT
X	RTRV-COND-OPS	REPORTS	FAULT
	RTRV-COND-OTPS	REPORTS	FAULT
	RTRV-COND-SUPR	REPORTS	FAULT
	RTRV-DAT	REPORTS	CONFIGURATION
	RTRV-EQPT	REPORTS	CONFIGURATION
	RTRV-FECOM	REPORTS	SECURITY
	RTRV-HDR	REPORTS	FAULT
	RTRV-LOG	REPORTS	FAULT
	RTRV-MAP-NETWORK	REPORTS	CONFIGURATION
	RTRV-MAP-RING	REPORTS	CONFIGURATION
	RTRV-NE-SECU	REPORTS	SECURITY
	RTRV-OCHAN	REPORTS	CONFIGURATION
	RTRV-OLINE	REPORTS	CONFIGURATION
X	RTRV-OPS	REPORTS	CONFIGURATION
	RTRV-OTPS	REPORTS	CONFIGURATION
	RTRV-PM-ALL	REPORTS	PERFORMANCE
	RTRV-PM-OCHAN	REPORTS	PERFORMANCE
	RTRV-PM-OLINE	REPORTS	PERFORMANCE
	RTRV-PM-OTPS	REPORTS	PERFORMANCE
	RTRV-PM-STIME	REPORTS	PERFORMANCE
	RTRV-PM-SUPR	REPORTS	PERFORMANCE
	RTRV-RELSPR	REPORTS	PERFORMANCE
	RTRV-SECTRC	REPORTS	CONFIGURATION
	RTRV-STATE	REPORTS	FAULT
	RTRV-SUPR	REPORTS	CONFIGURATION
	RTRV-SYS	REPORTS	SECURITY
	RTRV-TH-ALL	REPORTS	PERFORMANCE
	RTRV-TH-OCHAN	REPORTS	PERFORMANCE
	RTRV-TH-OLINE	REPORTS	PERFORMANCE
	RTRV-TH-OTPS	REPORTS	PERFORMANCE
	RTRV-TH-SUPR	REPORTS	PERFORMANCE
	RTRV-USER-SECU	REPORTS	SECURITY
	SET-ATTR-ALM	PRIVILEGED	CONFIGURATION

R3.1-OLS TL1 Message Privilege Level and Category Summary			
New this Rel.	TL1 Message	Privilege	Category
	SET-ATTR-CONT	PRIVILEGED	CONFIGURATION
	SET-ATTR-ENV	PRIVILEGED	CONFIGURATION
	SET-PM-STIME	GENERAL	PERFORMANCE
	SET-SID	PRIVILEGED	SECURITY
	SET-TH-OCHAN	GENERAL	PERFORMANCE
	SET-TH-OLINE	GENERAL	PERFORMANCE
	SET-TH-OTPS	GENERAL	PERFORMANCE
	SET-TH-SUPR	GENERAL	PERFORMANCE
	TEST-ALM	REPORTS	FAULT
	TEST-AUTO-LOCAL	PRIVILEGED	FAULT
	TEST-LED	REPORTS	FAULT
	TEST-TLM-PAR	GENERAL	FAULT
	UPD-SYS	GENERAL	CONFIGURATION

ACT-USER

ACT-USER: Activate User

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

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

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

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

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

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

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

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

— Logins are enabled on the access port,

— A provisioned login ID and correct password are entered, and

— Network element login security is enabled (for non-privileged users only).

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

uid User identifier. This is the unique user login identifier for which the **ACT-USER** login command is intended.

Grouping and/or ranging of *uid* values for this command is not allowed.

Valid *uid* values for the **ACT-USER** command are case-sensitive alphanumeric strings of 1 to 10 characters which have been previously provisioned as valid login IDs in the network element.

This includes login and password aging.

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

pid Private identifier. This required parameter is the confidential password authenticator for the given *uid*. Valid *pid* values consist of case-sensitive strings of six to ten alphabetic, numeric and symbolic characters where at least two are non-alphabetic and at least one is symbolic (white space is ignored). Password strings are transmitted in unencrypted form in the **ACT-USER** command; are encrypted when stored in the network element; and are never transmitted from the network element.

Symbolic characters:
! " % ' ( ) * + - . / < > [ ] ‘ { | } ~

Numeric characters:
0 1 2 3 4 5 6 7 8 9

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

CENTERLINK CIT TEXT

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

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

REMINDER: Execute the RTRV-COND-ALL command in the Fault Command Category to display all alarms and conditions currently active on the target network element.

OUTPUT FORMAT

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

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

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

Release x.y.z-type

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

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

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

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

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

The following are possible FCAL values:

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

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

PM[1-5] For **P**erformance **M**onitoring Authorization Level 1 through 5.

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

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

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

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

OUTPUT PARAMETERS

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

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

lastlog This is the date and time of the last session established by this *uid*. It is output in the format "MM-DD HH-MM-SS" with the date and time

separated by one space. If no information is available regarding the last login session for this *uid* (for example, this is the first login session), this output field is null.

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

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

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

EXAMPLE INPUT/OUTPUT

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

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


   LT-OLS 96-07-03 16:42:11
M  123456 COMPLD
   "PeterPan:07-03 16-39-27,1"
   /*  Lucent Technologies Optical Line System
       Release 2.1.0-OLS
       User Privilege Level: C4&F3&PM1&S2
                LUCENT TECHNOLOGIES - PROPRIETARY
      THIS SOFTWARE CONTAINS INFORMATION OF LUCENT TECHNOLOGIES
      AND IS NOT TO BE DISCLOSED OR USED EXCEPT IN ACCORDANCE
      WITH APPLICABLE AGREEMENTS.
      NOTICE:  THIS IS A PRIVATE COMPUTER SYSTEM.
      USE OF THIS SOFTWARE IS GOVERNED SOLELY AS EXPRESSLY
      AUTHORIZED IN THE RELEVANT AGREEMENT BETWEEN
      LUCENT TECHNOLOGIES AND CUSTOMER.
      UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
   */
;
```

The following example shows a login session attempt for a user login whose password is expired.

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


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

ERROR RESPONSES

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

CANC-USER

ED-PID

DLT-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

ED-USER-SECU

ALW-MSG-EQPT

ALW-MSG-EQPT: Allow Message Equipment

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

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

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. The *aid* value can be one of the following values: "ALL", "OFFICE ALMS", "PAR TLM", "TL1".

all	This specifies that reporting for all of the parameters below is to resume on the network element.
office alms	This specifies that reporting of office alarms is to resume on the network element.
par tlm	This specifies reporting of alarms over the parallel telemetry is to resume on the network element.
tl1	This specifies that autonomous message reporting is to resume on all TL1 ports on the network

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

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

CENTERLINK CIT TEXT

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

None

OUTPUT FORMAT

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

```
alw-msg-eqpt:LT-OLS:all:123xyz;


IP 123xyz
<


   LT-OLS 94-06-06,09:30:49
M  123xyz COMPLD
;
```

ERROR RESPONSES

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

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

RELATED TL1 COMMANDS/MESSAGES

INH-MSG-EQPT

REPT EVT EQPT

CANC-USER

CANC-USER: Cancel User

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

— A provisioned login identifier is entered, and

— The login identifier is currently active on the access channel on which the command is received.

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

uid User identifier. This is the unique case sensitive user login identifier for which the **CANC-USER** logout command is intended.

The *uid* value that was used to initiate a login session, even if changed or deleted by a system administrator while the current login session is still active, is the *uid* value expected in the **CANC-USER** command to terminate the login session.

Grouping and/or ranging of *uid* values for this command is not allowed.

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a

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

CENTERLINK CIT TEXT

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

None

OUTPUT FORMAT

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows a successful login session termination.

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


IP 123456
<


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

ERROR RESPONSES

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

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

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

RELATED TL1 COMMANDS/MESSAGES

ACT-USER

ED-PID

DLT-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

ED-USER-SECU

CPY-PRGM

CPY-PRGM: Copy Program

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

CPY-PRGM*:tid::ctag::,,,dest_tid;*

DESCRIPTION

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

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

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

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

dest_tid Destination target identifier. This is the target identifier of the destination network element to which the program will be copied. It has no default value. A valid value must be entered.

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

CENTERLINK CIT TEXT

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

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

copies) in the background. You may log off during this time.

For LCT and OLS use the Retrieve-Alarm-Common (**RTRV-ALM-COM**) command for status of the execution of this command.

OUTPUT FORMAT

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

```
IP ctag
<


  sid date time
M ctag COMPLD
;
```

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

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

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

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

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

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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

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


IP 123456
<


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

ERROR RESPONSES

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

If the *dest_tid* is syntactically incorrect, the following error response will be returned:

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

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

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

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

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

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

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

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

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

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

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

For LCT and OLS only: If communications cannot be established to the Destination network element because of an invalid tid (that is, the destination tid is not in Local Cache/DIB), the following error response will be returned:

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

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

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

None

DLT-ASSOC-OTPS

DLT-ASSOC-OTPS: Delete Association OT_Port_Signal

The privilege level for this command is GENERAL.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

DLT-ASSOC-OTPS*:tid:src_aid,dest_aid:ctag::assoc;*

DESCRIPTION

⚠ CAUTION:
Execution of this command may affect alarm reporting.

The **DLT-ASSOC-OTPS** command takes down OTPS associations, that is, it separates an association between an optical channel and one optical translator port signal.

Deletions can be made to upstream and downstream associations.

Downstream associations allow suppression of signal defect alarms at the optical channel if a signal defect is detected and alarmed or suppressed at the OTU/OTPM.

Upstream associations allow suppression of upstream signal defect alarms at the OTU/OTPM if a signal defect is detected and alarmed or suppressed at the optical channel.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

src_aid Access Identifier. This is the address of the optical translator port for which the command is intended.

Entity: Single Port (OTU)
Legal Values: (OTU)-(1,2)-(1-32)-(1)
CenterLink CIT selection options: (OTU)-(1, 2)-(1-32)-(1)

Entity: Single Port (OT Port Module)
Legal Values: (OTPM)-(1,2)-
(1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(1-4)-(1)
CenterLink CIT selection options: (OTPM)-(1, 2)-(1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(1-4)-(1)

dest_aid Access Identifier. This is the address of the optical channel for which the command is intended.

Entity: Single Optical Channel
Legal Values: (OCHAN)-(1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(1-16)

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

assoc Association type. This parameter specifies the type of association being requested. It may have one of the following values: "UPSTREAM" or "DOWNSTREAM".

UPSTREAM This requests the upstream association between the receiving OTPS and transmitting OCHAN.

DOWNSTREAM This requests the downstream association between the transmitting OTPS and receiving OCHAN.

CENTERLINK CIT TEXT

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

CAUTION: Execution of this command may affect service.

OUTPUT FORMAT

If the network element fully complies with this command, the following output message is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example deletes an upstream association between an OTPM ("otpm-1-3-3-1") and an optical channel ("ochan-1a-7") as follows:

```
dlt-assoc-otps:LT-PF-2000-3:otpm-1-3-3-1,ochan-1a-7:123456::upstream;



IP 123456
<


   LT-PF-2000-3 93-11-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

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

If the network element receives this command with any extra (beyond the input format specification just shown) null or non-null command parameter blocks (:), parameters (not supported by FT-2000, delimited by ","), or termination characters (;), the following error response is returned:

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

If the network element receives this command without a *src_aid* or *dest_aid* value or with a *src_aid* or *dest_aid* value that does not identify either a single OTU or OTPM signal or a single optical channel, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier,
   Source or Destination AID missing or invalid */
;
```

If this command is received with an *assoc* which does not exactly match that of the existing association specified by the *src_aid* and *dest_aid*, this command will be

denied with the following error response:

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

If the network element receives this command with an *assoc* value that is not supported by FT-2000, the following error response is returned:

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

If the association specified by this command does not exist, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, specified association does not exist */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-ASSOC-OTPS

RTRV-ASSOC-OTPS

DLT-TADRMAP

DLT-TADRMAP: Delete Target_Identifier_Address_Map

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available beginning in OLS Release 2.0.

INPUT FORMAT

DLT-TADRMAP*:tid:aid:ctag[:[:]]:spec_block;*

DESCRIPTION

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

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

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

INPUT PARAMETERS

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

DLT_TID The DLT_TID identifies the network element to be removed from the DSNE's network map.

CENTERLINK CIT TEXT

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

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

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

```
DLT-TADRMAP:LT-PF-2000:all:123456:::tid=DELETED-NE;


IP 123456
<


   LT-PF-2000 94-03-22 16:12:11
M  123456 COMPLD
;
```

ERROR RESPONSES

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

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

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

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

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

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

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

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

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

"FAILED".

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

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

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-MAP-NTWK

DLT-USER-SECU

DLT-USER-SECU: Delete User Security

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

uid This is the User Identifier of a user. Valid values are a case-sensitive alphanumeric string of 1 to 10 characters. Only a single *uid* is supported in this command.

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

CENTERLINK CIT TEXT

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

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

OUTPUT FORMAT

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

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

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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


IP 123456
<


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

ERROR RESPONSES

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

ENT-USER-SECU

ED-USER-SECU

RTRV-USER-SECU

ED-DAT

ED-DAT: Edit Date_and_Time

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

Delayed activation is not allowed for this command.

INPUT PARAMETERS

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

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

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

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

CENTERLINK CIT TEXT

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

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

OUTPUT FORMAT

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

OUTPUT PARAMETERS

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

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

EXAMPLE INPUT/OUTPUT

```
ed-dat:LT-OLS::xyz123::96-01-06,09-30-45;


IP xyz123
<


   LT-OLS 96-01-06,09:30:49
M  xyz123 COMPLD
;0
```

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

```
ed-dat:LT-PF-2000::xyz123::94-06-06:tz=est,strtdst=04-04,
   stopdst=10-31;


IP xyz123
<


   LT-PF-2000 94-06-06,09:30:49
M  xyz123 COMPLD
;0
```

ERROR RESPONSES

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

None

ED-PID

ED-PID: Edit Private_Identifier (Password)

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

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

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

If password aging is disabled, a non-Privileged user may change a password without any restrictions.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

uid User identifier. This is the unique case-sensitive user login identifier for which the **ED-PID** login command is intended.

Grouping and/or ranging of *uid* values for this command is not allowed.

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

old_pid Old private identifier (password). This is included in the command by the user and must exactly match the current PID for the login identifier.

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

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

NOTE:
The *new_pid* value must differ from the *old_pid* value in at least one character.

Symbolic characters:
! " % ' ( ) * + - . / < > [ ] ‘ { | } ~

Numeric characters:
0 1 2 3 4 5 6 7 8 9

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

CENTERLINK CIT TEXT

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

None

OUTPUT FORMAT

If the password change request completes successfully, and transitions the state of the login procedure from the "Password_Expired" state to the "Login_Active" state, the following normal completion response is returned:

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

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

`Release x.y.z-type`

where `x.y.z` reflects the actual software release number and `type` can be `LCT` for Large Capacity Terminal (LCT) or `OLS` for Optical Line System.
The `<privilege>` shows the user's authorization levels (AL) for each command function category (FC) in the form of **FCAL&FCAL&FCAL&FCAL**.

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

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

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

The following are possible FCAL values:

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

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

PM[1-5] For **P**erformance **M**onitoring Authorization Level 1 through 5.

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows a successful password change operation.

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


IP 123456
<


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

ERROR RESPONSES

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

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

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

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

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

ACT-USER

CANC-USER

DLT-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

ED-USER-SECU

ED-USER-SECU

ED-USER-SECU: Edit User Security

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

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

DESCRIPTION

The **ED-USER-SECU** command is used by an appropriate administrator to edit the security parameters associated with a user. This command enables a user with privilege **S4** or higher (Security Management Authorizaiton Level equals to Privilege or higher), to edit the login ID, password, and/or user privileges of any non-expert user, and to alter a temporary visitor login. The user executing the command may not edit any of the user's own login parameters, including *uid, pid*, and *uap*. Only an Expert user is allowed to edit the login ID and/or password of the other Expert user.

INPUT PARAMETERS

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

new_pid

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

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

Symbolic characters:
! " % ' ( ) * + - . / < > [ ] ‘ { | } ~

Numeric characters:
0 1 2 3 4 5 6 7 8 9

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

uap

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

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

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

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

The following are possible FCAL values:

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

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

PM[1-4] For **P**erformance **M**onitoring Authorization Level 1 through 4.

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

If omitted, the User Access Privilege is not changed.

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

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

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

TYPE If a temporary login is desired, this parameter must equal "VISITOR".

visitor Visitor Login. This indicates that this login is assigned for temporary access to the network element.

EXPDAT Expiration Date. This is the requested **EXPDAT** in the following format: YY-MM-DD, where YY is the last two digits of the year ranging from 00 to 99; MM is the month of the year ranging from 01 to 12; and DD is the day of the month ranging from 01 to 31.

The expiration date must be set if **TYPE=visitor**.

CENTERLINK CIT TEXT

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

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

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

OUTPUT FORMAT

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

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example changes the current *uid*, **kjlee**, to a *new_uid*, **ilf**, and assigns **ilf** a *new_pid* and a *uap*.

```
ed-user-secu:LT-PF-2000:kjlee:123456::ilf,pass12+,,C1&F1&PM3&S1;



IP 123456
<


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

ERROR RESPONSES

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

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

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

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

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

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

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

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

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

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

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

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

new_uid (new user identifier) value, the following error response is returned:

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

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

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

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

ED-PID

DLT-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

ENT-ASSOC-OTPS

ENT-ASSOC-OTPS: Enter Association OT_Port_Signal

The privilege level for this command is GENERAL.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

ENT-ASSOC-OTPS*:tid:src_aid,dest_aid:ctag::assoc;*

DESCRIPTION

⚠ CAUTION:
Execution of this command may affect alarm reporting.

The **ENT-ASSOC-OTPS** command message can be initiated by a user to request FT-2000 to establish associations between OTUs or OTPMs and optical channels.

Downstream associations allow suppression of signal defect alarms at the optical channel if a signal defect is detected and alarmed or suppressed at the OTU/OTPM.

Upstream associations allow suppression of upstream signal defect alarms at the OTU/OTPM if a signal defect is detected and alarmed or suppressed at the optical channel.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

src_aid Access Identifier. This is the address of the optical translator port for which the command is intended.

Entity: Single Port (OTU)
Legal Values: (OTU)-(1,2)-(1-32)-(1)
CenterLink CIT selection options: (OTU)-(1, 2)-(1-32)-(1)

Entity: Single Port (OT Port Module)
Legal Values: (OTPM)-(1,2)-
(1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(1-4)-(1)
CenterLink CIT selection options: (OTPM)-(1, 2)-(1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(1-4)-(1)

dest_aid Access Identifier. This is the address of the optical channel for which the command is intended.

Entity: Single Optical Channel
Legal Values: (OCHAN)-(1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(1-16)

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

assoc Association type. This parameter specifies the type of association being requested. It may have one of the following values: "UPSTREAM" or "DOWNSTREAM".

UPSTREAM	This requests the upstream association between the receiving OTPS and transmitting OCHAN.
DOWNSTREAM	This requests the downstream association between the transmitting OTPS and receiving OCHAN.

The validity of an association is dependent on the side configuration. The following is a list of the valid and invalid associations for a normal configuration. The terms "ochan-nA-x" and "ochan-nB-x" are optical channel access identifiers where "n" is the optical line and "x" is the port.

If the side configuration is 1A-TX, then an upstream association to ochan-nA-x is invalid, and an upstream association to ochan-nB-x is valid.

If the side configuration is 1A-RCV, then an upstream association to ochan-nA-x is valid, and an upstream association to ochan-nB-x is invalid.

If the side configuration is 1A-TX, then a downstream association to ochan-nA-x is valid, and a downstream association to ochan-nB-x is invalid.

If the side configuration is 1A-RCV, then a downstream association to ochan-nA-x is invalid, and a downstream association to ochan-nB-x is valid.

The validity of an association is dependent on the side configuration. The following is a list of the valid and invalid associations for a single-OA configuration. The terms "ochan-nA-x" and "ochan-nB-x" are optical channel access identifiers where "n" is the optical line and "x" is the port.

If the side configuration is 1A-TX, then an upstream association to ochan-nA-x is valid, and an upstream association to ochan-nB-x is invalid.

If the side configuration is 1A-RCV, then an upstream association to ochan-nA-x is invalid, and an upstream association to ochan-nB-x is valid.

If the side configuration is 1A-TX, then a downstream association to ochan-nA-x is invalid, and a downstream association to ochan-nB-x is valid.

If the side configuration is 1A-RCV, then a downstream association to ochan-nA-x is valid, and a downstream association to ochan-nB-x is invalid.

CENTERLINK CIT TEXT

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

CAUTION: Execution of this command may affect alarm reporting. This command will update the Source and/or Destination of existing associations.

CAUTION: Execution of this command may affect service.

OUTPUT FORMAT

If the network element fully complies with this command, the following output message is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example establishes an upstream association between an OTPM ("otpm-1-3-3-1") and an optical channel ("ochan-1a-7") as follows:

```
ent-assoc-otps:LT-PF-2000-3:otpm-1-3-3-1,ochan-1a-7:123456::upstream;



IP 123456
<


   LT-PF-2000-3 93-11-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

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

If the network element receives this command with any extra (beyond the input format specification just shown) null or non-null command parameter blocks (:), parameters (not supported by FT-2000, delimited by ","), or termination characters (;), the following error response is returned:

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

If the network element receives this command without a *src_aid* or *dest_aid* value or with a *src_aid* or *dest_aid* value that does not identify either a single OTU or OTPM signal or a single optical channel, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier,
   Source or Destination AID missing or invalid */
;
```

If the network element receives this command with an *assoc* value that is not supported by FT-2000, the following error response is returned:

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

If an otherwise valid instance of this command is received, but for which the association cannot be made because it would cause associations with different source aids to share the same destination aid, the following error response is returned:

```
   sid date time
M  ctag DENY
   SAAS
   /* Status, Already ASsociated,
   Establishing this association requires that the existing
   associations identified with the addressed OTPS or
   optical channel be deleted.
   */
;
```

If an otherwise valid instance of this command is received, but for which the association cannot be made because it would cause associations with one source aid to different destination aids in the same direction, the following error response is returned:

```
   sid date time
M  ctag DENY
   SAAS
   /* Status, Already ASsociated,
   Establishing this association requires that the existing
   associations identified with the addressed OTPS or
   optical channel be deleted.
   */
;
```

If an otherwise valid instance of this command is received, but for which the association cannot be made because it would be inconsistent with the transmission direction, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, association is inconsistent with
   the transmission direction or system configuration
   */
;
```

If an otherwise valid instance of this command is received, but for which the association cannot be made because it would cause the destination aid to have an upstream and a downstream association, the following error response is returned:

```
   sid date time
M  ctag DENY
   SAAS
   /* Status, Already ASsociated,
   Establishing this association requires that the existing
   associations identified with the addressed OTPS or
   optical channel be deleted.
   */
;
```

RELATED TL1 COMMANDS/MESSAGES

DLT-ASSOC-OTPS

RTRV-ASSOC-OTPS

ENT-CID-SECU

ENT-CID-SECU: Enter Channel_Identifier Security

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

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

DESCRIPTION

The **ENT-CID-SECU** command is initiated to set port security parameters for X.25, DTE, DCE, DCC, and SER_TLM1 ports.

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access Identifier. This is the address of the communication ports for which parameters need to be set. A null value is not allowed.

Entity: Single Port (COM)
Legal Values: (DCE, DTE, DCC, X25, SER_TLM1)

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

spec_block Specific block. This optional parameter field is used for most basic capabilities of the **ENT-CID-SECU** command. Parameters set within the specific block are positionally independent and are set using a construct such as: PARAMETER=*value* in a comma-separated list. The specific block may have zero or more of the following parameters set within it. Furthermore, each parameter listed below may appear at most once within the specific block for a single **ENT-CID-SECU** command.

TMOUT This parameter sets the time out interval for the DCE, DTE, and DCC ports. It has an integer value in the range 0-999 minutes. A value of 0 disables the time out mechanism. When a null value is provided, TMOUT is unchanged.

PORTACC — This parameter sets the port access for DTE, DCC or SER_TLM1 port and has one of the following vaules: "ENABLE" or "DISABLE". When port access to a port becomes disabled, any active session is terminated. When the port access is disabled on the DTE port, the DTR and RTS leads should be reset. Likewise, when the port access is enabled on the DTE port, the DTR and RTS leads should be asserted.

PORTTYPE — This parameter sets the port type and has the following value: "TL1". This parameter is used only for the DTE port or DCE port. Disabling the DCC port does not affect TL1 commands, only CIT access to the network via the DCC port.

BAUDRATE — This parameter sets the baud rate of the DTE port or DCE port if the port type is **tl1**. It has one of the following values: "1200", "2400", "4800", or "9600". The baud rate of the DTE port or DCE port from CenterLink must be "9600".

CHAN — This parameter sets the channel type of the X.25 port and has one of the following values: "PVC_1", "PVC_2", "TBL_1", "TBL_2", "TBL_3", "TBL_4", "TBL_5", "TBL_6", "TBL_7", "TBL_8", "TBL_9", "TBL_10", "TBL_11", "TBL_12", "TBL_13", "TBL_14", "TBL_15", or "TBL_16". TBL_{1-16} are the provisioning table entries of the TL1 calling address table. This parameter has no default value.

OSTYPE — This parameter sets the OS type for the virtual circuit of the X.25 port. It has one of the following values (MT, MA, CMDR, OTHR, RST) for **pvc**; and (MT, MA, CMDR, OTHR, RST, NONE) for **tbl** (that is, the table entry corresponding to X.25 switched channels [**svc**] of X.25).

MT means maintenance, MA means memry-admin, CMDR means cmd-resp, OTHR means other, NONE means none, and RST means restoration.

CALLADDR — This parameter sets the calling address of the OS for a table entry **tbl** corresponding to the **svc** of the X.25 port if the OS type is other than NONE. It has a value of a string of digits up to a maximum of 15 digits.

CENTERLINK CIT TEXT

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

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

OUTPUT FORMAT

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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

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

```
ENT-CID-SECU:LT-PF-2000:x25:123456:::CHAN=tbl_3,OSTYPE=MA,
   CALLADDR=0123456789;


IP 123456
<


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

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

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

```
ENT-CID-SECU:LT-PF-2000:dte:123456:::TMOUT=10,PORTACC=enable,
   PORTTYPE=tl1,BAUDRATE=9600;


IP 123456
<


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

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

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


IP 123456
<


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

The following example shows an **ENT-CID-SECU** command that provisions security parameters for a SER_TLM1 port.

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


IP 123456
<


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

ERROR RESPONSES

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

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

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

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

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

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

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

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

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

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

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

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

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

If this command is received with an invalid OSTYPE parameter, the following error response is returned:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-CID-SECU

ENT-CMS

ENT-CMS: Enter Customer_Maintenance_Signal

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. Access identifier. This is the address of the facility for which this command is intended.

Entity: CMS Port [End Terminals and Repeaters]
Legal Values: (CMS)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

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

type Type. A value for this parameter is neither expected nor allowed.

pst Primary state. This parameter must have no value.

sst Secondary state. This parameter is used to set the secondary state of the OLS CMS port(s) addressed by the *aid* field for the purpose of defining the signal monitoring state of the CMS port in the *mux* (that is, towards the Optical line) direction **only**. The secondary state parameter is position defined.

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

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

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

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

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

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

CENTERLINK CIT TEXT

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

None

OUTPUT FORMAT

If the network element fully complies with this command, the following output message is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example provisions the OLS CMS port "cms-1a" with a secondary state of OOS-MA-AS.

```
ent-cms:LT-OLS:cms-1a:123456::::,OOS-MA-AS;


IP 123456
<


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

ERROR RESPONSES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-CMS

ENT-FECOM

ENT-FECOM: Enter Far_End_Communications

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

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

DESCRIPTION

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

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

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

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

RAR Remote Activity Reporting. The RAR is the reporting of activity from other network elements in the ring via the **RTRV-ALM-NET** command and the FE ACTY LED is enabled or disabled. The allowable values for this parameter are: "ENABLED" or "DISABLED".

R0A Remote Office Alarm. If enabled, the remote office alarms will also cause local alarms (alarm contacts). If

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

CENTERLINK CIT TEXT

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

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

OUTPUT FORMAT

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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

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


IP 123456
<


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

ERROR RESPONSES

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-FECOM

ENT-NE-SECU

ENT-NE-SECU: Enter Network_Element Security

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

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

DESCRIPTION

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

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

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

spec_block Specific Parameter Block. The system level attributes to be modified are specified inside the *spec_block*. Parameters within *spec_block* are specified using a *NAME=value,NAME=value,...* type construct with no constraints on the order of parameters. Constructs such as *NAME1=value1,NAME3=value3,...* are acceptable and in this example only the parameters *NAME1* and *NAME3* will be changed at the network element. If the current value of the parameter *NAME1* is already *value1* in the example just shown, *NAME1* will not be changed.

For the **ENT-NE-SECU** command, the *spec_block* must contain one or more of the following parameters:

ALW_UID This parameter allows or disallows non-expert logins into the network element. This parameter can take one of the two values: "YES" or "NO". If this parameter is omitted (null), the currently effective value remains in effect.

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

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

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

CENTERLINK CIT TEXT

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

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

NOTE: If a PRIVILEDGED user executes this command and changes the ALW_UID parameter to NO, then that user will be logged out and will not be able to login in again.

OUTPUT FORMAT

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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

```
ent-ne-secu:LT-PF-2000::CTAG::ALW_UID=Yes,PAGE=60,UOUT=90;


IP CTAG
<


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

ERROR RESPONSES

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

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

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-NE-SECU

ENT-OCHAN

ENT-OCHAN: Enter Optical_Channel

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the facility for which this command is intended.

Entity: Optical Channel

Legal Values:(OCHAN)-(ALL), (OCHAN)-(1A,1B,2A,2B,3A,3B,4A,4B)-(ALL,1-16)

CenterLink CIT selection options: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)

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

type Type. A value for this parameter is neither expected nor allowed.

pst Primary state. This parameter is used to set the primary state of the OLS optical channel addressed by the *aid* field for the purpose of defining the signal monitoring state of the optical channel. The primary state parameter is position defined.

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

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

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

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

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

CENTERLINK CIT TEXT

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

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

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

OUTPUT FORMAT

If the network element fully complies with this command, the following output message is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example provisions the OLS optical channel "ochan-1a-1" primary state as OOS-MA-AS.

```
ent-ochan:LT-OLS:ochan-1a-1:123456:::OOS-MA-AS;


IP 123456
<


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

ERROR RESPONSES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-OCHAN

ENT-OPS

ENT-OPS: Enter OPS

The privilege level for this command is GENERAL.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 3.1.

INPUT FORMAT

ENT-OPS*:tid::ctag:::[spec_block];*

DESCRIPTION

The **ENT-OPS** command provisions the Optical Protection Switch parameters.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

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

spec_block Specific Parameter Block. Parameters set within the specific block are positionally independent and are set using a construct such as: **PARAMETER=***value* in a comma-separated list. The specific block may have zero or more of the following parameters set within it. Furthermore, each parameter listed below may appear at most once within the specific block for a single command.

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

hold_off Hold Off Time in milliseconds. Allowed values are: "0", "50", "100", "150", "200", "250", "300", "350", "400","450","500","550","600","650","700", "750","800","850","900","950","1000", "1050","1100","1150","1200","1250","1300", "1350","1400","1450","1500","1550","1600", "1650","1700","1750","1800","1850","1900", "1950","2000","2050","2100","2150","2200", "2250","2300","2350","2400","2450","2500", "2550","2600","2650","2700","2750","2800",

"2850","2900","2950","3000"

PROTNMODE Protection Mode. The allowed values are "unidirectional" and "bidirectional":

`unidirectional` The Optical Protection Switch is provisioned for unidirectional switching, that is, single ended.

`bidirectional` The Optical Protection Switch is provisioned for bidirectional switching, that is, dual ended.

Bidirectional switching is implemented by interrupting traffic on the active outgoing line for 4 seconds whenever a switch is executed.

FRCD, APS(SF), and MAN switches shall cause an active outgoing line interruption.

FRCD and MAN switches to the active line, that is, they don't cause a physical switch, shall cause a standby outgoing line interruption.

Note, the OPS does not auto switch, and therefore does not interrupt traffic on the active outgoing line, upon detection of LOS on the active line when there already is an Active Switch Priority (actswprty) present, that is, INH, FRCD, or APS(SF).

Both end terminals should have the same provisioned PROTNMODE value to ensure proper system operation.

PRIMARY_LINE Primary Line. The Legal values are "1" and "2". PRIMARY_LINE is the line number of the OAs which are connected to the OPS Primary input and output.

NOTE:
For the two end terminals at either end of a pair of OPS protected lines, PRIMARY_LINE should be 1 in one of them and 2 in the other.

ops_aid Access Identifier. This is the address of the optical protection switch.

Entity: Single Slot (OPS)
Legal Values: (OTU)-(1, 2)-(1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

spodu_aid This is the Access Identifier of the ODU which the OPS feeds.

Entity: Single Self Powered OU Slot (OU)
Legal Values: (OTU)-(1, 2)-(1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

omu_aid This is the Access Identifier of the OMU which feeds the OPS.

Entity: Line 1 or 2 Single Slot (OU)
Legal Values: (OU)-(1A-2B)

Entity: Single Self Powered OU Slot (OU)
Legal Values: (OTU)-(1, 2)-(1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

OPSPRMD OPS Provisioned Mode. Allowed values are "enabled" and "disabled". The network element configuration becomes the OPS Configuration only when the OPS Operating Mode is ENABLED.

The OPSOPMD becomes ENABLED if:

- OPSPRMD (OPS Provisioned Mode) is ENABLED,
- The slot specified by OPS_AID is in the EQ state and equipped with an OPS circuit pack,
- The slot specified by SPODU_AID is in the EQ state and equipped with a SPODU circuit pack,
- The slot specified by OMU_AID is in the EQ state and equipped with an OMU or SPOMU circuit pack,
- It is equipped the same as a 2_OA dual facing shelf except for ODU (and OMU if SPOMU is indicated in the OMU_AID), and

— It is an end terminal as determined by detection of an EQ OTCTL during the system's most recent reset or execution of INIT-SYS.

The OPSOPMD becomes DISABLED if any of the conditions, just listed, are not met.

If the OPSPRMD is ENABLED but the OPSOPMD is DISABLED, the network element shall raise an 'OPS configuration error' condition.

A LOS at an OPS is reported only if the OPSOPMD is ENABLED and only if that OPS circuit pack with the LOS is equipped (EQ) in the OPS_AID slot. For switch events, this includes all events, regardless of whether they are automatic, manual or forced.

If OPSOPMD is ENABLED, the system shall turn off both the incoming line 1 and the incoming line 2 OA when the SPODU temperature is out of operating range.

The OPS Operating Mode only affects the behavior of lines 1 and 2. The behavior of lines 3 and 4 is not affected by the OPS feature.

Phase 3 System Initialization is required to activate OPS Operating Mode changes made by execution of this command. OPS switching, that is, forced, auto, or manual, can occur independent of OPSPRMD and OPSOPMD. When the OPS Operating Mode (OPSOPMD) is ENABLED, OTPS associations made to the OCHANs in the OA line associated with the Primary OPS line shall automatically be extended to the OCHANs in the OA line associated with the Secondary OPS line and the OTPS associations made to the OCHANs in the OA line associated with the Secondary OPS line shall be ignored.

However, **RTRV-ASSOC-OTPS** shall always report the provisioned values.

When OPSOPMD is DISABLED, the OTPS associations made to the OCHANs in the OA line associated with the Secondary OPS line shall not be ignored.

CENTERLINK CIT TEXT

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

CAUTION: Execution of this command may affect service.

NOTE: System Initialization (phase=3) is required to activate OPS Operating Mode changes made by execution of this command.

OUTPUT FORMAT

If the network element fully complies with this command, the following output message is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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

```
ent-ops:LT-PF2000::123456:::hold_off=50,protnmode=bidirectional,
   primary_line=2,ops_aid=otu-1-1,spodu_aid=otu-1-3,omu_aid=ou-1A;


IP 123456
<


   LT-PF2000 97-06-10 10:06:57
M  123456 COMPLD
;
```

ERROR RESPONSES

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

In addition to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section, the following error responses are listed in the order and priority that the network element checks for each condition.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:),

parameters (not supported by the network element, delimited by ","), or termination characters (;), the following error response is returned:

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

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

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

If this command specifies changes to the OPS_AID, SPODU_AID, or OMU_AID parameter AND OPSOPMD is ENABLED, the following error response is returned:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed,
   OPS AID parameters can not be changed while OPS Operating Mode is
ENABLED */
;
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-OPS

OPR-PROTNSW-OPS

ENT-OTPS

ENT-OTPS: Enter OT_Port_Signal

The privilege level for this command is GENERAL.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

ENT-OTPS*:tid:aid:ctag:[gen_block][:[:[spec_block][:*
pst]]];

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

DESCRIPTION

CAUTION:
Execution of this command may affect alarm reporting.

The **ENT-OTPS** command messages can be initiated by a user to request the provisioning of various port parameters related to optical translator port signal (OTPS) facilities.

When an OLS receives an **ENT-OTPS** command from the user, the OLS shall provision the appropriate OT port signal according to the parameter settings in the command.

The provisioned values remain active until modified.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access Identifier. This is the address of the optical translator port for which the command is intended.

Entity: Port (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)-(1)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)-(1)

Entity: Port (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)-(1)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)-(1)

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

gen_block General block. This optional parameter field provides the capability to extend the usefulness of this command beyond the limits of those fields specified in Bellcore TR-199, Issue 1. For FT-2000 and WaveStar OLS applications, the general block must be null.

spec_block Specific Parameter Block. Parameters set within the specific block are positionally independent and are set using a construct such as: **PARAMETER=***value* in a comma-separated list. The specific block may have zero or more of the following parameters set within it. Furthermore, each parameter listed below may appear at most once within the specific block for a single command.

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

LSBBRATE Low Speed Broad Band Bit Rate. This parameter is used to set the bit rate of the Low Speed Broad Band (LSBB) OTPM.

If included in the *spec_block* at all, this parameter must have one of the following values: "High_Band", or "Low_Band".

The original value is "High_Band".

NTFCNCDE Notification code. The *NTFCNCDE* parameter is used to set the alarm level of facility failures carried by the addressed *aid*.

If included in the *spec_block* at all, this parameter must have one of the following values: "CR", "MJ", "MN", "NA", "NR", "NO", "CR_Critical", "MJ_Prompt", "MN_Deferred", "NA_No_Alarm", "NR_No_Report", and "NO_Not_Indicated".

CR Critical. If provisioned as **CR**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of CR being generated and sent to the user.

MJ Major. If provisioned as **MJ**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a

	notification code of MJ being generated and sent to the user.
MN	Minor. If provisioned as **MN**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of MN being generated and sent to the user.
NA	Not alarmed. If provisioned as **NA**, a facility failure on the addressed port will result in an autonomous REPT EVT message being generated and sent to the user.
NR	Not reported. If provisioned as **NR**, a facility failure on the addressed port will result in no autonomous message being generated and sent to the user. If this condition remains active when an appropriate **RTRV-COND** TL1 message is received by the network element, it will be reported in the response.
NO	Not indicated. If provisioned as **NO**, a optical low speed facility failure on the addressed port will result in no failure indication being generated whatsoever for the underlying failure condition. No report, autonomous or otherwise will be generated and sent to the user.
CR_Critical	Critical. If provisioned as **CR_Critical**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of CR_Critical being generated and sent to the user.
MJ_Prompt	Major/Prompt. If provisioned as **MJ_Prompt**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of MJ_Prompt being generated and sent to the user.
MN_Deferred	Minor/Deferred. If provisioned as **MN_Deferred**, a facility

failure on the addressed port will result in an autonomous REPT ALM message with a notification code of MN_Deferred being generated and sent to the user.

NA_No_Alarm Not Alarmed/No_Alarm. If provisioned as **NA_No_Alarm**, a facility failure on the addressed port will result in an autonomous REPT EVT message being generated and sent to the user.

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

NO_Not_Indicated Not indicated. If provisioned as **Not_Indicated**, a optical low speed facility failure on the addressed port will result in no failure indication being generated whatsoever for the underlying failure condition. No report, autonomous or otherwise will be generated and sent to the user.

pst Primary state. This parameter is used to set the primary state of the port(s) (that is, the optical signal input). The primary state parameter is position defined.

The OTU allows for user provisioning of two basic states: AUTO and NMON. When an OTU low speed port *pst* is provisioned in the **AUTO** state, it will automatically transition to the in-service (IS) state upon any detection on the low speed port of a valid input. When an OTU low speed port *pst* is provisioned in the NMON state, the monitoring of incoming signals is disabled. The port exits this state to the AUTO state through either another **ENT** command or **UPDATE**.

The *pst* must be null or have one of the following two values: "OOS-MA-AS" or "OOS".

OOS-MA-AS Out of service, memory administration, assigned. This *pst* value places the port(s) in the AUTO state (in the terminology of FT-2000). This is the default *pst* value.

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

the terminology of FT-2000).

CENTERLINK CIT TEXT

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

CAUTION: Execution of this command may affect alarm reporting. This command will update the Source and/or Destination of existing associations.

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

OUTPUT FORMAT

If the network element fully complies with this command, the following output message is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows a command to provision an OC48 OTU signal in slot three of OT bay one to an alarm level of MJ_Prompt:

```
ent-otps:LT-PF-2000:otu-1-3-1:123456:::ntfcncde=mj_prompt;


IP 123456
<


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

ERROR RESPONSES

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

In addition to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section, the following error responses are listed in the order and priority that the network element checks for each condition.

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

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

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

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

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

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

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

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

If the network element receives this command with an *LSBBRATE* value with an OTU *aid*, the following error response is returned:

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

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

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

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

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

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

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

If the network element receives this command with otherwise valid *spec_block* parameter(s), but for which the modifier and the parameter(s) are not in agreement, the following error response is returned:

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-OTPS

ENT-SECTRC

ENT-SECTRC: Enter Section_Trace

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

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

DESCRIPTION

The **ENT-SECTRC** commands can be initiated by users to assign user-settable strings to the transmit and receive section trace fields (J0 byte) of a SONET section terminating signal.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the report is requested.

Entity: Single Port (OTU)
Legal Values: (OTU)-(1,2)-(1-32)-(1)
CenterLink CIT selection options: (OTU)-(1, 2)-(1-32)-(1)

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

spec_block Specific Parameter Block. This parameter field is used to enter the user-settable strings to the transmit and receive section trace fields of a SONET section terminating signal. Parameters within the *spec_block* are specified using a name-defined construct of: **PARAMETER**=*value* in a comma separated list.

For the **ENT-SECTRC** command, the *spec_block* may contain zero or more of the following parameters:

Furthermore, each parameter listed below may appear at most once within the *spec_block* for a single **ENT-SECTRC** command

EXPSECTRC Expected incoming Section trace message. This indicates the expected Path Trace (J0) Byte content. The **EXPSECTRC** is a string of up to 15

ASCII alphanumeric and special characters as specified below. The message must be enclosed using delimiters. The delimiter to be used is **\"** [that is, backslash followed by double-quotes].

An **EXPSECTRC** of less than 15 characters is padded out to the right to 15 unprintable characters whose Hex representation is 00.

If **EXPSECTRC** is not specified, the previously provisioned value is not changed.

The user is allowed to enter any combination of up to 15 ASCII characters as the **EXPSECTRC**. The allowed ASCII characters are letters "A" through "Z" and "a" through "z", numbers "0" through "9", and special characters: "#" (pound), "$" (dollar), "%" (percent), "&" (ampersand), "*" (asterisk), "(" (open parenthesis), ")" (close parenthesis), "+" (plus), "|" (pipe), "-" (hyphen), "[" (open square bracket), "]" (close square bracket), "{" (open bracket), "}" (close bracket), "´" (apostrophe), "`" (grave accent), "." (period), "/" (slash), "<" (less than), and ">" (greater than).

The string **EXPSECTRC**="RESET_SECTRC" is reserved to reset the value of **EXPSECTRC** to its original parameter.

ITU Recommendation G.707 (ITU) defines the J0 as follows:

- The section access point identifier may use either a single byte (containing the code 0-255)
- The access point identifier format as defined in section 3 of ITU-T Recommendation G.831 and ITU-T Recommendation G.707.

The received section trace is as follows:

The Network Element must have the capability to recognized both types of J0 section trace formats:

- In the receive end, when the network element receives any single constant byte string in the J0 bye position of the Section Overhead of the first STS-1 of an STS-N, the network element has the capability to recognize it as a valid string. The software has the capability to compare the value of of this constant incoming string against the original parameter of **EXPSECTRC**.

  When the user provisions the parameter **EXPSECTRC** as "RESET_SECTRC", the software causes the Network Element to

expect a constant single byte in the J0 bye position of the Section Overhead of the first STS-1 of an STS-N, whose Hex representation value is 00000001 (1 is the LEAST Significant Bit). This constant string is the original value of **EXPSECTRC**.

- If the user enters any other string than "RESET_SECTRC" as the value for **EXPSECTRC**, the software causes the Network Element to expect to receive the J0 byte string in accordance with ITU recommendation G.831 (16 byte, first byte used for CRC7 calculation other 15 bytes used to transmit the J0 byte information according to recommendation T.50 and ITU-T Recommendations G.831 and G.707).

NTFCNCDE Notification code. The *NTFCNCDE* parameter is used to set the alarm level of facility failures carried by the addressed *aid*.

If included in the *spec_block* at all, this parameter must have one of the following values: "CR", "MJ", "MN", "NA", "NR", "NO", "CR_Critical", "MJ_Prompt", "MN_Deferred", "NA_No_Alarm", "NR_No_Report", and "NO_Not_Indicated".

CR Critical. If provisioned as **CR**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of CR being generated and sent to the user.

MJ Major. If provisioned as **MJ**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of MJ being generated and sent to the user.

MN Minor. If provisioned as **MN**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of MN being generated and sent to the user.

NA	Not alarmed. If provisioned as **NA**, a facility failure on the addressed port will result in an autonomous REPT EVT message being generated and sent to the user.
NR	Not reported. If provisioned as **NR**, a facility failure on the addressed port will result in no autonomous message being generated and sent to the user. If this condition remains active when an appropriate **RTRV-COND** TL1 message is received by the network element, it will be reported in the response.
NO	Not indicated. If provisioned as **NO**, a optical low speed facility failure on the addressed port will result in no failure indication being generated whatsoever for the underlying failure condition. No report, autonomous or otherwise will be generated and sent to the user.
CR_Critical	Critical. If provisioned as **CR_Critical**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of CR_Critical being generated and sent to the user.
MJ_Prompt	Major/Prompt. If provisioned as **MJ_Prompt**, a facility failure on the addressed port will result in an autonomous REPT ALM

	message with a notification code of `MJ_Prompt` being generated and sent to the user.
`MN_Deferred`	Minor/Deferred. If provisioned as **`MN_Deferred`**, a facility failure on the addressed port will result in an autonomous `REPT ALM` message with a notification code of `MN_Deferred` being generated and sent to the user.
`NA_No_Alarm`	Not Alarmed/No_Alarm. If provisioned as **`NA_No_Alarm`**, a facility failure on the addressed port will result in an autonomous `REPT EVT` message being generated and sent to the user.
`NR_No_Report`	Not Reported/No_Report. If provisioned as **`NR_No_Report`**, a facility failure on the addressed port will result in no autonomous message being generated and sent to the user. If this condition remains active when an appropriate **`RTRV-COND`** TL1 message is received by the network element, it will be reported in the response.
`NO_Not_Indicated`	Not indicated. If provisioned as **`Not_Indicated`**, a optical low speed facility failure on the addressed port will result in no failure indication being generated whatsoever for the underlying failure condition. No report, autonomous or otherwise will be generated and sent

to the user.

The original parameter value for *ntfcncde* is *NA_No_Alarm*.

If there is no *spec_block* entry, the currently effective section trace strings provisioned in the network element prevail.

CENTERLINK CIT TEXT

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

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

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

NOTE: The EXPSECTRC string needs to be enclosed in <back slash>". For example, to input the EXPSECTRC string 123 the user must enter <back slash>"123<back slash>".

OUTPUT FORMAT

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

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

If the **ENT-SECTRC** command does not alter the existing section trace strings, the network element provides a normal completion response.

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

```
ENT-SECTRC:LT-PF-2000:otu-1-32-1:123456:::EXPSECTRC=\"


ExptSectTrc1234\";
IP 123456
<


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

ERROR RESPONSES

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

If the network element receives an **ENT-SECTRC** command with an invalid *aid* value, the following error response is returned:

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

If the network element receives an **ENT-SECTRC** command with an invalid *spec_block* parameter(s), in an **ENT-SECTRC** command), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Data Not Valid, invalid punctuation or syntax.
 */
;
```

If this command is received with an invalid **EXPSECTRC** value, including missing leading and/or trailing escaped quotes (\") and/or more than 15 characters in the string and/or unallowed space character in the string, the following error response is returned:

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

This error message will be displayed when one or more spaces are specified and are double quoted.

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

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

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-SECTRC-STS48

ENT-SUPR

ENT-SUPR: Enter Supervisory

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

INPUT PARAMETERS

tid	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set: [A-Z][a-z][0-9].+-%#
aid	Access identifier. This is the address of the facility for which this command is intended. Entity: Supervisory Channel [End terminals and Repeaters] Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
ctag	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
type	Type. A value for this parameter is neither expected nor allowed.
spec_block	Specific Parameter Block. Parameters set within the specific block are positionally independent and are set using a construct such as: **PARAMETER=***value* in a comma-separated list. The specific block may have zero or more of the following parameters set within it. Furthermore, each parameter listed below may appear at most once within the specific block for a single command. For each of the following parameters there is listed one or more parameter values. If a particular parameter does not appear in the

spec_block, its value remains unchanged as a result of this command. The use of the term "null" in the descriptions below implies that the parameter does not appear in the command.

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

If included in the *spec_block* at all, this parameter must have one of the following values: "CR", "MJ", "MN", "NA", "NR", "NO", "CR_Critical", "MJ_Prompt", "MN_Deferred", "NA_No_Alarm", "NR_No_Report", and "NO_Not_Indicated".

CR Critical. If provisioned as **CR**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of CR being generated and sent to the user.

MJ Major. If provisioned as **MJ**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of MJ being generated and sent to the user.

MN Minor. If provisioned as **MN**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of MN being generated and sent to the user.

NA Not alarmed. If provisioned as **NA**, a facility failure on the addressed port will result in an autonomous REPT EVT message being generated and sent to the user.

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

NO	Not indicated. If provisioned as **NO**, a optical low speed facility failure on the addressed port will result in no failure indication being generated whatsoever for the underlying failure condition. No report, autonomous or otherwise will be generated and sent to the user.
CR_Critical	Critical. If provisioned as **CR_Critical**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of CR_Critical being generated and sent to the user.
MJ_Prompt	Major/Prompt. If provisioned as **MJ_Prompt**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of MJ_Prompt being generated and sent to the user.
MN_Deferred	Minor/Deferred. If provisioned as **MN_Deferred**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of MN_Deferred being generated and sent to the user.
NA_No_Alarm	Not Alarmed/No_Alarm. If provisioned as **NA_No_Alarm**, a facility failure on the addressed port will result in an autonomous REPT EVT message being generated and sent to the user.
NR_No_Report	Not Reported/No_Report. If provisioned as **NR_No_Report**, a facility failure on the addressed port will result in no autonomous message being generated and sent to the user. If this condition remains active when an appropriate **RTRV-COND** TL1 message is received by the network element, it will be reported in the response.

`NO_Not_Indicated` Not indicated. If provisioned as **`Not_Indicated`**, a optical low speed facility failure on the addressed port will result in no failure indication being generated whatsoever for the underlying failure condition. No report, autonomous or otherwise will be generated and sent to the user.

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

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

`-9` This sets the signal degrade threshold at a BER of 10^{-9}.

`-8` This sets the signal degrade threshold at a BER of 10^{-8}.

`-7` This sets the signal degrade threshold at a BER of 10^{-7}.

`-6` This sets the signal degrade threshold at a BER of 10^{-6}.

`-5` This sets the signal degrade threshold at a BER of 10^{-5}.

CENTERLINK CIT TEXT

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

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

OUTPUT FORMAT

If the network element fully complies with this command, the following output message is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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

— Signal Degrade Threshold of 10^{-6}

— Supv. Failure Alarm Level of MN

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


IP 123456
<


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

ERROR RESPONSES

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

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

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

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

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

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

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

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

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

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

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

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

If the network element is provisioned as SDH and receives this command with a

SONET *NTFCNCDE* value, the following error response is returned:

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

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

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-SUPR

ENT-SYS

ENT-SYS: Enter System

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. The *aid* value, if supplied, must have the following value:

system This specifies that system parameters are to be modified.

Entity: System
The allowable value is: (SYSTEM)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing ".").

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

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

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

NEW_TID New Target Identifier. The **new_tid** is the new name of the network element to which the command is addressed.

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

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

- Alarm Indicators:

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

- Status indicators/ACO[Suppress] button:

SONET	SDH
ABN	Abnormal
ACO	Suppress
NE Acty	Info-N
FE Acty	Info-F

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

most service affecting alarms in a SDH terminal are "Prompt". All controller failures in SONET terminals lead to "Major" alarms while SDH terminals deem them as "Prompt" as well.

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

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

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

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

APSD Automatic Power shut down. This parameter has one of two values: "ENABLE" or "DISABLE". ENABLE indicates that for incoming loss of power in optical line, the automatic power shut down (APSD) feature will bring down all affected power outputs in the network to safe levels.

DISABLE indicates that the APSD feature has been diabled.

SYSTEM_TYPE System Type. This parameter is no longer supported.

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

AGNE Alarm Gateway Network Element. This parameter has one of two values: "YES" or "NO". YES indicates that the system specified by the *tid* is an Alarm Gateway Network Element (AGNE). One AGNE is needed for each Alarm Group to support message communications for network element status features (FE activity, Office Alarms, Parallel Telemetry, Miscellaneous discretes, remote ACO and FE user panel status). Any member of the

Alarm Group can be an AGNE but some may be preferred because of their position in the subnetwork or location near a maintenance center. Another network element of the same Alarm Group may be provisioned as a backup (dual) AGNE if required.

ALMGRP The alarm group (also known as SONET Maintenance Sub-Branch or SMSB) has an integer value between *0* and *255* (inclusive). Zero *0* indicates that the local network element does not exchange remote alarm information with any other network elements. Any other value for this parameter means that the local network element will exchange remote alarm information with all other network elements in the maintenance subnetwork which share the same alarm group value. All network elements in the given DCC domain (subnetwork), whether nearby or not, that have the same alarm group number are members of the same group.

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

X25PS X.25 Packet Size. This parameter may be set to one of two values: "256" or "128". This parameter determines the TL1 packet size for the X.25 interface.

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

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

The **DIRN** values are NOT case-sensitive. When **DIRN** is modified at an end terminal, the TOHCTL reboots to reconfigure routing tables.

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

1A-TX-THRU also indicates that the optical lines 1A, 2A, 3A and 4A are carrying traffic in the transmit direction (out of OLS) and optical lines 1B, 2B, 3B and 4B are carrying traffic in receive direction (that is, into OLS). Also the output from the telemetry pack in slot TLM-1A is connected to the OA-1A circuit pack and the input is connected to OA-1B circuit pack. The only difference in 1A-TX-THRU provisioned end terminal is that TLM-1B pack is equipped and its input/output are connected to output/input of another TLM-1B pack of adjacent OLS terminal. The two adjacent OLS terminals are usually co-locate d in a central office. However, from transmission point of view they could be as far as 40 km.

1A-RCV-THRU indicates that the optical lines 1B, 2B, 3B and 4B are carrying traffic in the transmit direction (out of OLS) and optical lines 1A, 2A, 3A and 4A are carrying traffic in receive direction (that is, into OLS). Also the output from the TLM-1A is connected to the OA-1B circuit pack and the input is connected to OA-1A circuit pack. 1A-RCV-THRU provisioned end terminal also has an equipped TLM-1B slot with its input/output connected to output/input of another TLM-1B pack of adjacent OLS terminal.

DUAL indicates an end terminal that faces in both the east and west directions. In this configuration, optical line 1B/3B is carrying traffic in the transmit direction (out of OLS) on side 1 (east). and that the optical line 2A/4A is carrying traffic in transmit direction (out of OLS) on side 2 (west). Also, optical line 1A/3A is carrying traffic in receive direction (that is, into OLS) on side 1(east) and

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

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

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

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

PROTOCOL

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

SIDE1_SYS Side 1 System Type. This parameter provisions side 1 of network element for a specific configuration. Side 1 of a network element refers to optical line pairs 1-4 on a regular end terminal or repeater. It refers to optical line pairs 1 and 3 if the terminal is provisioned as "DUAL". This parameter can have the following values: "A","B","C","1_OA". The value **A** sets all optical amplifiers in side 1 in their default mode.

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

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

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

OA	Side Config	# of spans	Span loss(dB)		Max No. of Wavelengths	Bit rates
			min	max		
LEA6	A	1	22	35	8	OC48/12/3
		2	22	34		
		3	22	33		
	B	4	26	31		
		5	26	30		
	A	1	22	33	16	
LEA7	A	1	22	33	16	OC48/12/3
		2	22	30		
		3	22	28		
	B	4	22	27		
		5	21	26		
	C	6	21	26		
		7	17	22		
		8	17	22		
LEA105	A	1	14	18	16	OC48/12/3
	1_OA	1	0	12		
		1	0	12		OC48/12
		1	0	13		OC48/3
		1	0	16		OC12/3
		1	0	13		OC48
		1	0	16		OC12
		1	0	20		OC3
LEA104	A	1	22	35	16	OC48/12/3
		2	22	34		
		3	22	33		
	B	4	26	31		
		5	23	27		

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

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

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

For future upgrade to optical WAD, it is recommended that both sides of a dual facing terminal are provisioned/equipped the same. It is possible for side 1 and side 2 to have different

system configurations. However, all equipage shall be consistent with in a side.

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

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

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

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

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

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

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

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

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

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

SIDE2_SYS Side 2 System Type. This parameter provisions the side 2 of network element for a specific configuration. Side 2 implies optical line pairs 2 and 4 on a terminal provisioned as a dual facing

terminal. The parameter is ignored if the terminal is not provisioned as dual facing terminal. This parameter can have the following values: "A","B","C","1_OA". The value **A** sets all optical amplifiers in side 2 in their default mode.

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

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

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

OA	Side Config	# of spans	Span loss(dB)		Max No. of Wavelengths	Bit rates
			min	max		
LEA6	A	1	22	35	8	OC48/12/3
		2	22	34		
		3	22	33		
	B	4	26	31		
		5	26	30		
	A	1	22	33	16	
LEA7	A	1	22	33	16	OC48/12/3
		2	22	30		
		3	22	28		
	B	4	22	27		
		5	21	26		
	C	6	21	26		
		7	17	22		
		8	17	22		
LEA105	A	1	14	18	16	OC48/12/3
	1_OA	1	0	12		
		1	0	12		OC48/12
		1	0	13		OC48/3
		1	0	16		OC12/3
		1	0	13		OC48
		1	0	16		OC12
		1	0	20		OC3
LEA104	A	1	22	35	16	OC48/12/3
		2	22	34		
		3	22	33		
	B	4	26	31		
		5	23	27		

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

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

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

For future upgrade to optical WAD, it is recommended that both sides of a dual facing terminal are provisioned/equipped the same. It is possible for side 1 and side 2 to have different

system configurations. However, all equipage shall be consistent with in a side.

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

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

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

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

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

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

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

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

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

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

If the *spec_block* is null, the currently effective attributes at the network element system prevails.

CENTERLINK CIT TEXT

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

CAUTION: Disabling APSD feature will affect laser hazard.

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

NOTE: After provisioning a new TID, either locally or remotely, or when changing the DSNE status, CenterLink must be restarted. This is accomplished by closing the window (click 'X' in upper right corner). Then close NEServer on the task bar, by right clicking and selecting close. Then from the task bar select Start button, Programs, Lucent Technologies, NEServer to restart the NEserver. Then click on the CenterLink icon on the desktop to get to the CenterLink Launch Console.

NOTE: System Initialization (phase=3) is required to activate changes made by execution of this command.

OUTPUT FORMAT

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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

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



IP 123456
<


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

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

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

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


IP 123456
<


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

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

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


IP 123456
<


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

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

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



IP 123456
<


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

ERROR RESPONSES

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

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

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

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

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

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

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

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

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

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

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

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

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

If a network element receives an **ENT-SYS** command with a **SIDE1_SYS** value other than A,B or 1_OA, the following error response is returned:

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

If a network element receives an **ENT-SYS** command with a **SIDE2_SYS** value other than A,B or 1_OA, the following error response is returned:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-SYS

SET-SID

ENT-USER-SECU

ENT-USER-SECU: Enter User Security

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

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

If password aging is disabled, a non-Privileged user may change a password without any restrictions.

The NE will keep track of the date of the last time each user password changed. When a user logs in, this date will be compared with the current date. If the current date is more than the provisioned number of days after the last changed date[1], then the NE considers the password expired. A user's password will also be considered expired the first time[2] a user logs in successfully after the login was created. This is to force users to select a password different from the one entered by the privileged user when the login was created.

INPUT PARAMETERS

tid	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set: [A-Z][a-z][0-9].+-%#
uid	This is the User Identifier of a user. Valid values are a case-sensitive alphanumeric string of 1 to 10 characters.

1. Note: it is entirely possible that a privileged user changed the NE date and time via ED-DAT command so that this is the case even though the number calendar days since the last password change is less. The NE shall always behave as if the corresponding number of calendar days have passed.
2. Note that this does **not** apply to the two Expert logins, LT01 and LT02, after initial software installation.

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

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

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

Symbolic characters:
! " % ' ( ) * + - . / < > [ ] ‘ { | } ~

Numeric characters:
0 1 2 3 4 5 6 7 8 9

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

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

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

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

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

The following are possible FCAL values:

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

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

PM[1-4] For **P**erformance **M**onitoring Authorization Level 1 through 4.

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

keyword_block Keyword Parameter Block. Temporary login attributes to be modified are specified inside the *keyword_block*. Parameters within *keyword_block* are specified using a *name=value,name=value,...* type construct with no constraints on the order of the arrangement of parameters. Constructs such as *name1=value1, name2=,...* are acceptable and in this example only the parameter *name1* will be attempted to be changed at the network element. If the current value of the parameter *name1* is already *value1* in the above example, *name1* will not be changed.

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

TYPE If a temporary login is desired, this paramter must be "VISITOR".

visitor Visitor Login. This indicates that this login is assigned for temporary access to the network element.

EXPDAT Expiration Date. This is the requested **EXPDAT** in the following format: YY-MM-DD, where YY is the last two digits of the year ranging from 00 to 99; MM is the month of the year ranging from 01 to 12; and DD is the day of the month ranging from 01 to 31.

The expiration date must be set if **TYPE=visitor**.

CENTERLINK CIT TEXT

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

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

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

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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


IP 123456
<


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

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

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


IP 123456
<


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

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

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


IP 123456
<


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

ERROR RESPONSES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RELATED TL1 COMMANDS/MESSAGES

DLT-USER-SECU

ED-USER-SECU

RTRV-USER-SECU

INH-MSG-EQPT

INH-MSG-EQPT: Inhibit Message Equipment

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

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

DESCRIPTION

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

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

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

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

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

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

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

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

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. The *aid* value can be one of the following values: "ALL", "OFFICE ALMS", "PAR TLM", or "TL1".

all	This specifies that reporting for all of the parameters below is to be inhibited on the network element.
office alms	This specifies that reporting of office alarms is to be inhibited on the network element.
par tlm	This specifies reporting of alarms over the parallel telemetry is to be inhibited on the network element.
tl1	This specifies that autonomous message reporting is to be inhibited on all TL1 ports on the network element.

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

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

CENTERLINK CIT TEXT

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

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

OUTPUT FORMAT

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

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

```
inh-msg-eqpt:LT-OLS:all:123xyz;


IP 123xyz
<


   LT-OLS 96-01-06,09:30:49
M  123xyz COMPLD
;
```

```
inh-msg-eqpt:LT-PF-2000:all:123xyz;


IP 123xyz
<


   LT-PF-2000 96-06-06,09:30:49
M  123xyz COMPLD
;
```

ERROR RESPONSES

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

If an **INH-MSG-EQPT** command is received with an invalid *aid* value, the following error response is returned:

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

RELATED TL1 COMMANDS/MESSAGES

ALW-MSG-EQPT

```
REPT EVT EQPT
```

INIT-REG-ALL

INIT-REG-ALL: Initialize Register All

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

INIT-REG-ALL*:tid:[aid]:ctag::,,,,tmper[,,];*

DESCRIPTION

⚠ CAUTION:
Current day and/or current 15-minute performance monitoring data storage registers for the optical parameters of the addressed line will be corrupted as a result of this command.

The **INIT-REG-ALL** 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.

PM registers for previous day and previous 15-minute time periods are not affected.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. Because *all* current daily and/or 15-minute PM registers are initialized, the *aid* value must be "ALL" or null (default = **ALL**).

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

tmper Time period. This requests that performance monitoring registers for a specified time interval be initialized. This parameter must have one of the values: "15-MIN", "1-DAY", or "ALL".

- **15-MIN** This requests that 15-minute PM registers be initialized.
- **1-DAY** This requests that daily PM registers be initialized.
- **ALL** This requests that 15-minute *and* daily PM registers be initialized.

CENTERLINK CIT TEXT

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

CAUTION: Executing this command will cause all performance monitoring data collected in all current registers of the selected bin(s) to be deleted.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

```
INIT-REG-ALL:LT-PF-2000:all:123456::,,,,15-MIN;


IP 123456
<


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

ERROR RESPONSES

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

If the network element receives an **INIT-REG** command with a command modifier other than **ALL** or **OLINE**, the following error response is returned:

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

If the network element receives an **INIT-REG** command with an invalid *aid* value, the following error response is returned:

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

If the network element receives an **INIT-REG-ALL** command with an invalid *tmper* value (that is, anything other than **15-MIN**, **1-DAY** or **ALL**), the following error response is returned:

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM

SET-TH

RTRV-TH

RTRV-BASELINE

INIT-REG-OLINE

INIT-REG-OLINE: Initialize Register Optical_Line

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

INIT-REG-OLINE*:tid:aid:ctag::[reason,[ochan_aid]],,,[,,];*

DESCRIPTION

CAUTION:
Current day and/or current 15-minute performance monitoring data storage registers for the optical parameters of the addressed line will be corrupted as a result of this command.

The **INIT-REG-OLINE** command can be initiated to request the network element to baseline certain optical parameters for each optical line in a network element. Currently, it is used to baseline SPR-C of all optical channels and the TOPR-OL in the addressed optical line.

The **INIT-REG-OLINE** command will require the user to provide a "reason" for baseline. If the reason for initiating **INIT-REG-OLINE** command is a dropped optical channel, the optical channel aid is needed as well.

The **INIT-REG-OLINE** command will corrupt *current* day and/or *current* 15-minute performance-monitoring (PM) storage registers for **TOPR-OL** of the addressed optical line, and **SPR-C** of all optical channels in that optical line.

PM registers for previous day and previous 15-minute time periods are not affected.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This identifies the optical line for which optical parameters need to be baselined.

Entity: Optical Line
Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

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

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

reason The reason states the reason for executing **INIT-REG-OLINE** command on the addressed optical line. This field can take one of the following values: "OA_REPLACED", "OSP_REPLACED", "OCHAN_DROPPED", "0", "1", "2", "3", "4", "5", "6", "7", "8", or "9".

ochan_aid Optical Channel Access Identifier. If the *reason* for baseline is **OCHAN_DROPPED**, this parameter gives the optical channel access identifier of the channel dropped. This parameter has no default value when *reason* is **OCHAN_DROPPED**.

The *ochan_aid* should be NULL if the *reason* parameter has any other valid string.

Entity: Single Optical Channel
Legal Values: (OCHAN)-(1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(1-16)

CENTERLINK CIT TEXT

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

CAUTION: Executing this command will corrupt current day and/or current 15-minute performance monitoring data storage registers for the optical parameters of the addressed optical line.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

```
INIT-REG-OLINE:LT-OLS:oline-1a:123456::OCHAN_dropped,ochan-1a-1;



IP 123456
<


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

ERROR RESPONSES

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

If the network element receives an **INIT-REG** command with a command modifier other than **ALL** or **OLINE**, the following error response is returned:

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

If the network element receives an **INIT-REG** command with an invalid *aid* value, the following error response is returned:

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

If the network element receives an **INIT-REG-OLINE** command with an invalid *reason* or a NULL entry, then the following error response is returned:

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

If the network element receives an **INIT-REG-OLINE** command with an invalid *ochan_aid* or a NULL entry when reason="OCHAN_dropped", then the following error response is returned:

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

If the network element receives an **INIT-REG-OLINE** command with any non-null *ochan_aid* entry when "reason" is other than "OCHAN_dropped", then the following error response is returned:

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

If the network element receives an **INIT-REG-OLINE** command with an invalid *tmper* value (that is, anything other than **NULL**), the following error response is returned:

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

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM

SET-TH

RTRV-TH

RTRV-BASELINE

INIT-SYS

INIT-SYS: Initialize System

The privilege level for this command is GENERAL.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

INIT-SYS*:tid:aid:ctag::ph;*

DESCRIPTION

⚠ WARNING:
Execution of this command may affect service.

The **INIT-SYS** command with the *ph* parameter set to 9 initializes the system. The **INIT-SYS** command with the *ph* parameter set to 3 resets the system. Initializing the system initializes the provisionable parameters to their original values whereas resetting the system resets the software without changing the provisioned parameters values.

The command **INIT-SYS** with the **all** *aid* should NOT be used on an in-service system when the **ph** is set to 9. With the *ph* set to the highest level, the highest phase of initialization takes place; with this setting, this command should only be used at the end of system installation before system turnup.

⚠ CAUTION:
Execution of this command at any network element will also affect the OS communication with that network element and all OS users logged into that network element will be logged out.

With the phase set to the highest level (9), this command initializes provisionable parameters to their original values. The time and date parameters are not affected by this command.

To reset the system, the **INIT-SYS** command can be used with the phase parameter set to 3. This command with the phase set to 3 resets the system software without changing parameters.

⚠ CAUTION:
INIT-SYS with ph=3 will wipe out the history log.

Protection switches will be frozen until the reset is completed.

After entering the **INIT-SYS** command, with the phase set to the highest level (9), the system will show transient DCC failures that are recorded in the Alarm and History reports. This is a normal, expected system behavior.

This command is available to privileged users for both initializing the system when the phase value is set to 9 and for resetting the system when the phase value is set to 3.

This command is available to general users only for resetting the system when the phase value is set to 3 and NOT for initializing the system. If a general user attempts to initialize the system by setting the phase value to 9, the command is denied.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. *aid* is a required parameter and can have only one value, "ALL" for both system initialization (*ph*=9) and system reset (*ph*=3).

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ph Phase. This field specifies the level of the system initialization. This parameter must be one of the following values: "3" or "9".

9 This is the highest phase of initialization and specifies an initialization of system parameters and a start of systems software. This command with *ph*=**9** is used only at the end of installation of a new system and is never used on an in-service system.

3 This is an interim level of initialization that resets the system software without affecting the setting of parameters. It does cause the history and performance monitoring data to be lost.

A user with authorization level "general" for this command function category is allowed to select a phase value of **3** only. A user with authorization level "privileged" or above for this command function category is allowed to select a phase value of **3** or **9**.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Network element access may be affected by this command. For PH=3, this command saves the current value of all provisioned parameters, deletes the history log, freezes the switch states, and restarts the controllers. For PH=9, this command returns all provisioned parameters to their original values. This may disrupt service. Proceed with extreme caution.

IMPORTANT: Verify that no software copy to or from this network element is in progress.

OUTPUT FORMAT

If the network element fully complies with this command, the following output message is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

Since a full system initialization (phase parameter set to 9) initializes the SYSCTL or the entire system, it will drop all user sessions including the one on the X.25 interface, and COMPLD message may or may not be conveyed back to the TL1 user.

Since a full system initialization occurs in the entire system, it will drop all user sessions including the one on the X.25 interface.

The following example initializes the system:

```
init-sys:LT-PF-2000:all:123456::9;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

Since a full system initialization occurs in the entire system, it will drop all user sessions including the one on the X.25 interface.

The following example resets the system:

```
init-sys:LT-PF2000:all:123456::3;


IP 123456
<


   LT-PF2000 96-10-26 16:42:11
M  123456 COMPLD
;
```

Since a full system reset occurs in the entire system, it will drop all user sessions including the one on the X.25 interface.

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives an **INIT-SYS** command without an *aid* or with an *aid* field other than **all**, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
      inconsistent with modifier */
;
```

If the network element receives an **INIT-SYS** command with a missing or unsupported *ph* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid or missing PH */
;
```

If the network element receives an **INIT-SYS** command with a *ph* value of 9 from a general user, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, unallowed PH value for a general user */
;
```

If the network element receives an **INIT-SYS** command with PH=9 or PH=3 while SW download to this NE from another network element is in progress, the following error response is returned:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed
      The system is not able to access the original parameter values
      in SYSMEM because a software download is currently in progress.
      Please try again later.
   */
;
```

If an **INIT-SYS** command with PH=9 is received while a remote software copy from the NE to another NE is in progress, the command is denied with the following error response.

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed
      The system is not able to access the original parameter values
      in SYSMEM because a remote software copy from the network element
      to another network element is currently in progress.
      Please try again later.
   */
;
```

NOTE:
If an **INIT-SYS** command with PH=3 is received while a remote software copy from the NE to another NE is in progress, the command is completed with a normal completion response. However, the remote software copy to the other

NE is disrupted and the other NE could be left in an unknown state.

If an **INIT-SYS** command with PH=9 or PH=3 is received while a remote software copy from the NE to another NE is in progress, the command is denied with the following error response.

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed
      The system is not able to access the original parameter values
      in SYSMEM because a remote software copy from the network element
      to another network element is currently in progress.
      Please try again later.
   */
;
```

If the network element receives an **INIT-SYS** command while the SYSMEM is corrupted with bad checksum, the command shall be denied and the following error response is returned:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed
      The execution of this command stopped because of a hardware problem
      in SYSMEM.
   */
;
```

If the network element receives an **INIT-SYS** command with *ph*=**9** while the SYSCTL and SYSMEM have incompatible software versions, the following error response is returned:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed
      The execution of this command stopped because SYSCTL and SYSMEM
      have incompatible software versions.
   */
;
```

If the network element receives an **INIT-SYS** command with ph=3 while the executable code in the SYSCTL and SYSMEM are for different network element types, the following error response is returned:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed
      The execution of this command stopped because the SYSMEM and
      SYSCTL contain software for different network element types.
   */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

OPR-ACO-ALL

OPR-ACO-ALL: Operate Alarm_Cutoff All

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

OPR-ACO-ALL*:tid:[aid]:ctag;*

DESCRIPTION

The **OPR-ACO-ALL** command can be initiated to request the network element to operate the alarm cutoff (ACO) to silence the audible office alarms. Alarms remain silent until a new alarm condition arises.

This command is available to maintenance and reports-only users.

If this command is executed while there is an active alarm condition in the system, it will:

- Silence active audible office alarms
- Light the ACO LED on the user panel

This command is equivalent to pushing the ACO button on the user panel or activating the TBOS ACO control point.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. Because the ACO function applies to the whole system, the *aid* value must be **all** or null (default = **all**).

Entity: All
Legal Values: (ALL)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the operate ACO request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

If the network element receives a valid **OPR-ACO-ALL** command, but no alarm condition exists or existing alarms have already been ACO'ed, the network element provides a normal completion response.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

EXAMPLE INPUT/OUTPUT

```
OPR-ACO-ALL:LT-PF-2000:all:123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to the **OPR-ACO-ALL** command.

If the network element receives an **OPR-ACO** command with a command code modifier other than **ALL**, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If the network element receives an **OPR-ACO-ALL** command with an invalid *aid* value (that is, anything other than **all** or null), the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

OPR-EXT-CONT

OPR-EXT-CONT: Operate External Control

The privilege level for this command is GENERAL.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

OPR-EXT-CONT*:tid:aid:ctag::[dur];*

DESCRIPTION

The **OPR-EXT-CONT** command can be initiated by users to operate an external discrete control, such as a relay activation, a fan, a light, or sprinkler.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. The *aid* identifies the external miscellaneous discrete control for which a description is being provisioned. The *aid* value cannot be null and cannot be CONT-ALL.

Entity: Single Point (Control)
Legal Values: (CONT)-(1-36)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

dur These systems can operate remote controls either continuously ("CONTS") or momentarily ("MNTRY"). The default value is **MNTRY** when parameter is null. The duration for the momentary operation is 300ms.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

To use the **OPR-EXT-CONT** command, please note that the **ENT-CID-SECU** command must first be executed to enable the SER_TLM port. If the network element fully complies with the **OPR-EXT-CONT** request, the following normal completion response is returned.

```
   sid date time
M  ctag COMPLD
;
```

If the **OPR-EXT-CONT** command does not alter the existing attributes, that is, the control referenced by the aid is already being operated, the network element will not deny the command. The system will respond with the completion message shown above.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example shows a command for a PF-2000 system to operate discrete control 1.

```
OPR-EXT-CONT:LT-PF-2000:CONT-1:123456::conts;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

The following example shows a command for a PF-2000 system to operate discrete control 4 using a default value (MNTRY) for *dur*.

```
OPR-EXT-CONT:LT-PF-2000:CONT-4:123456::;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If an **OPR-EXT-CONT** command is received with an invalid access identifier, the following error response is returned:

```
   sid date time
M  ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If an **OPR-EXT-CONT** command is received with an invalid duration parameter, the following error response is returned:

```
   sid date time
M  ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid DUR */
;
```

If this command is received while the SER_TLM port is disabled, the following error response is returned:

```
   sid date time
M  ctag DENY
  SROF
  /* Status, Requested Operation Failed */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-ATTR-CONT

RLS-EXT-CONT

RTRV-ALM

OPR-PROTNSW-OPS

OPR-PROTNSW-OPS: Operate Protection_Switch OPS

The privilege level for this command is GENERAL.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 3.1.

INPUT FORMAT

OPR-PROTNSW-OPS*:tid:aid:ctag::sc;*

DESCRIPTION

The **OPR-PROTNSW-OPS** command executes a manual switch, a forced switch oran inhibit protection switching on an Optical Protection Switch.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access Identifier. This is the address of the optical protection switch.

Entity: Single Slot (OPS)
Legal Values: (OTU)-(1, 2)-(1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

sc Switch command. This specifies the type of protection switching that is to be executed.

The terminology used in the description of *sc* is:

- line — There are two OPS optical lines. One is 'Primary' and the other is 'Secondary'.
- active — The optical (receive) line currently selected by the receiving end is said to be the active line.
- standby — The optical (receive) line not currently selected by the receiving end is said to be the standby line.

The *sc* parameter must have one of the following values: "INH", "FRCD_TO_PRI", "FRCD_TO_SEC", "MAN_TO_PRI", or "MAN_TO_SEC".

INH This requests that protection switching be inhibited, freezing the protection switching mechanism so that the current active line remains selected (until released) regardless of any subsequent failures or switch requests.

A switch inhibit is of higher priority than forced or auto switch requests. If the active line is in a signal fail condition, the switch inhibit may be service affecting.

FRCD_TO_PRI This requests a forced protection switch to the Primary Line.

The primary line is selected provided there is not already a forced switch request active, and there is not an inhibit switch request active.

That line remains selected until released.

FRCD_TO_SEC This requests a forced protection switch to the Secondary Line.

The secondary line is selected provided there is not already a forced switch request active, and there is not an inhibit switch request active.

That line remains selected until released. Forced switches are higher priority than auto switch requests. If the line being switched to is in a signal fail condition, the forced switch may be service affecting.

MAN_TO_PRI This requests a manual protection switch to the Primary Line.

The primary line is selected provided the primary line is good, there is not a forced switch request active, and there is not an inhibit switch request active.

MAN_TO_SEC This requests a manual protection switch to the Secondary Line.

The secondary line is selected provided the secondary line is good, there is not a forced switch request active, and there is not an inhibit switch request active. For reporting purposes and status retrieval, manual switches are treated and reported as transient conditions (TC).

If provisioned for dual ended switching, the far end will attempt to perform an auto switch when a forced or manual switch is executed at the near end.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Execution of this command may affect service.

NOTE: If traffic is not good at the far end on the standby line, a near end manual switch on a bidirectional switched line will result in a 4-second outage on the outgoing line.

NOTE: If traffic is not good on both standby lines, that is, both directions, a forced switch on a bidirectional switched line will result in a loss of traffic.

OUTPUT FORMAT

If the system fully complies with the protection switching request, the following output message is returned:

```
   sid date time
M  ctag COMPLD
;
```

If the protection switching request contained within the command does not alter the existing protection switching state or priority, the network element will not deny the command. Instead the system will respond with the completion message (shown previously).

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

```
opr-protnsw-ops:LT-FT-2000:OTU-1-7:123456::MAN_TO_SEC;


IP 123456
<


   LT-FT-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid access identifier, the following error response is returned:

```
   sid date time
M  ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If this command is received with an unsupported *sc* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid SC */
;
```

If this command is received with an otherwise valid *aid*, but for which the command is directed to a slot in the AUTO state, or to a slot not equipped with an Optical Protection Switch circuit pack, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, AID value inconsistent with current
equipage */
;
```

If the command cannot be executed because of a hardware problem, the following error response is returned:

```
   sid date time
M  ctag DENY
   SPFA
   /* Status, Protection unit FAiled,
   hardware problem with protection switching mechanism. */
;
```

If the command cannot be executed because of a control system failure, the following error response is returned:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed, control system failure */
;
```

If an equal or higher priority protection switching request already exists, the following error response is returned:

```
   sid date time
M  ctag DENY
   SSRD
   /* Status, Switch Request Denied,
   Equal or higher-priority switch request exists
   */
;
```

If a manual switch command cannot be executed because the "switch to" line the following error response is returned:

```
   sid date time
M  ctag DENY
   SSRD
   /* Status, Switch Request Denied,
   Loss of Signal condition exists on alternate line
   */
;
```

If this command is received with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

RELATED TL1 COMMANDS/MESSAGES

RLS-PROTNSW-OPS

ENT-OPS

REPT ALM

REPT ALM: Report Alarm

This autonomous message is available starting in OLS Release 1.0.

DESCRIPTION

The REPT ALM messages are generated autonomously by the network element to report an event that requires immediate attention by the craft at the OS. Each alarm message has an alarm severity associated with it.

If a condition defaults or is provisioned to have an alarm level of critical, major, or minor, the occurrence (and clearing) of that condition will be reported in a REPT ALM message.

An alarm condition reported to the OS via the REPT ALM message has a corresponding REPT ALM clearance message that is generated when the alarm condition clears.

OUTPUT FORMAT

```
   sid date time
almcde atag REPT ALM modifier
   "aid:ntfcncde,condtype,srveff,ocrdat,ocrtm,,,,[thlev]:
    \"conddescr\",:[,tblislt]"
;
```

OUTPUT PARAMETERS

sid Source identifier. This is the system name.

date Date output message is generated. This has the format YY-MM-DD (year-month-day).

time Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).

almcde Alarm code. This has one of the following values:

- ***C** Critical alarm
- ****** Major alarm
- ***** Minor alarm
- **A** Automatic message (nonalarm) (This is used only to report a cleared alarm.)

atag Automatic tag. The *atag* is used for message sequencing. The number is incremented by one for each autonomous message sent by the network element. The network element uses whole numbers from 000 through 999.

modifier This is a message modifier to the REPT ALM command. It has one of the following values:

COM Common. This reports an event that is not an equipment or facility condition but applies to the whole network element system.

OCHAN Channel. This reports a facility-related event at the channel level in OLS.

CMS CMS is the incoming customer maintenance signal [OC3 format.] This reports a facility-related event on the CMS part of the telemetry pack [OC3 format.]

EQPT This reports an equipment-related event for an OLS.

OLINE This reports a facility-related event on the optical line in OLS.

OPS This reports a facility-related event at the optical protection switch in OLS.

SUPR This reports a facility-related event on the supervisory channel in the optical line in OLS.

OTPS This reports a signal-related event at the OTU/OTPM level.

aid Access identifier. This is the address of the equipment component, for which an alarm is being reported.

ntfcncde Notification code. This is the alarm level and will have one of the following values:

CR Critical alarm

MJ Major alarm

MN Minor alarm

CL Cleared alarm

Prompt Prompt (if provisioned for SDH)

Deferred Deferred (if provisioned for SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions.

The values for this parameter can be found in the various **RTRV-COND** command pages associated with the *modifier* output in the message. For example, condition types associated with the **COM** *modifier* are listed in the **RTRV-COND-COM** command page.

srveff Service effect. This indicates the effect of the reported alarm on service and has one of the following values:

SA Service-affecting condition

NSA Non-service-affecting condition

A message reporting the clearing of an alarm has the same *srveff* value as the one reporting the alarm.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

thlev Threshold level. For CMS and SUPR modifier type alarms only, if an incoming facility degradation or failure (or clear) is reported, the *thlev* parameter value is the bit error ratio (BER) threshold level, in integer form, representing the closest negative power of 10 to the BER. Otherwise, this parameter is not reported.

conddescr Condition description. This is the text description of the reported condition.

The following table contains the condition descriptions that can be output.

CAUTION:
The following table is for information only and must not be used for trouble clearing. Refer to the 365-575-201 User/Service Manual, Operation and Maintenance (TOP) section for trouble clearing information.

Alarm Condition Descriptions

Description	Meaning
APSD active - NE	The automatic power shut down feature has been activated because of the detection of a LOS at the local terminal.
APSD active - FE	The automatic power shut down feature has been activated because of the detection of a LOS at the far end terminal.
APSD-OPS sw mode conflict	APSD is enabled, the OPS Operating Mode is ENABLED, and the OPS switching mode is unidirection. The problem is that the actions for APSD is the event of a loss of signal will result in a bidirection OPS switch.
BC LAN 1 failure	The board controller (BC) LAN 1 circuitry on a circuit pack is failed in such a way as to affect BC LAN 1.
BC LAN 2 failure	The board controller (BC) LAN 2 circuitry on a circuit pack is failed in such a way as to affect BC LAN 2.
CP reset in progress	A circuit pack has been installed and the necessary software is being downloaded to the circuit pack.
CP (unknown type) failure	The circuit pack in the indicated slot has failed but its type is unknown.
CP (unknown type) removed	The circuit pack in the indicated slot has been removed but its type is unknown.
CPYPGM:IP tid	Copy program in progress.
DCC APS data error	An error has been detected in the DCC APS byte.
DCC startup in progress	The DCC is starting up.
different OA types in side	All of the OA circuit packs on a side of the end terminal must be the same code. (When the system is provisioned for the dual facing end terminal, the circuit

Alarm Condition Descriptions

Description	Meaning
	pack codes on one side need not be the same as the circuit pack codes on the other side.)
DS-NE not reachable	One of the network elements in the ring network has not been provisioned "DS-NE", far end communications has been disabled to the "DS-NE", or communication to the provisioned "DS-NE" has been interrupted.
duplicate TID defined	A recently entered target identifier (TID) value is a duplicate of the TID of another network element in the ring network.
equipage/prov mode inconsistent	The OA pack equipped is not compatible with the provisioned terminal configuration mode.
fuse/power failure A	The network element has a blown fuse in feeder A, a power failure to a shelf, or a power failure within the cabinet. Likely causes: A blown 10A fuse or a defective filter board in the filter panel.
fuse/power failure A and B	The network element has a blown fuse in feeder A and feeder B, a power failure to a shelf, or a power failure within the cabinet. Likely causes: A blown 10A fuse or a defective filter board in the filter panel.
fuse/power failure B	The network element has a blown fuse in feeder B, a power failure to a shelf, or a power failure within the cabinet. Likely causes: A blown 10A fuse or a defective filter board in the filter panel.
incoming CMS LOF	A CMS loss-of-frame (LOF) condition has been detected on an incoming CMS line. Likely cause: Failure of the far end customer equipment or the local TLM circuit pack.
incoming CMS LOS	A CMS loss-of-signal (LOS) condition has been detected on an incoming CMS line. Likely causes: Failure of the far end customer equipment, the incoming CMS line (receive fiber), or the local TLM circuit pack.
incoming CMS SD	A signal degrade (SD) condition has been detected on an incoming CMS line. The line parity error rate threshold setting has been exceeded (10^{-5} through 10^{-9} with an original value of 10^{-6}). Likely causes: Failure of the far end customer equipment or the local TLM circuit pack.
incoming CMS SF	A signal failure (SF) condition has been detected on an incoming CMS line Likely causes: Failure of the far end customer equipment, the incoming CMS line (receive fiber, or the

Alarm Condition Descriptions

Description	Meaning
	local TLM circuit pack.
inc. (from Supr) DCC failure	The local network element cannot communicate through the supervisory signal data communications channel (DCC).
incoming LSBB failure	An LSBB failure has been detected on an incoming LSBB port. Likely causes: Failure of the far end LSBB circuit pack, the incoming LSBB line (receive fiber) or the local QOTU circuit pack or LSBB OTPM.
incoming OC12 failure	An OC12 failure has been detected on an incoming OC12 port. Likely causes: Failure of the far end OC12 circuit pack, the incoming OC12 line (receive fiber) or the local QOTU circuit pack or OC12 OTPM.
incoming OC3 failure	An OC3 failure has been detected on an incoming OC3 port. Likely causes: Failure of the far end OC3 circuit pack, the incoming OC3 line (receive fiber) or the local QOTU circuit pack or OC3 OTPM.
incoming OC-48 failure	An OC-48 failure has been detected on an incoming OC-48 port. Likely causes: Failure of the far end OC-48 circuit pack, the incoming OC-48 line (receive fiber) or the local OTU circuit pack.
incoming OPS Primary LOS	An optical line Loss Of Signal has been detected at the Primary input of an Optical Protection Switch circuit pack.
incoming OPS Secondary LOS	An optical line Loss Of Signal has been detected at the Secondary input of an Optical Protection Switch circuit pack.
incoming optical channel LOS	An optical channel loss-of-signal (LOS) condition has been detected on an incoming optical channel.
incoming optical line LOS	An optical line loss-of-signal (LOS) condition has been detected on an incoming optical line.
incoming STM1 failure	An STM1 failure has been detected on an incoming STM1 port. Likely causes: Failure of the far end STM1 circuit pack, the incoming STM1 line (receive fiber) or the local QOTU circuit pack or STM1 OTPM.
incoming STM16 failure	An STM16 failure has been detected on an incoming STM16 port. Likely causes: Failure of the far end STM16 circuit pack, the incoming STM16 line (receive fiber) or the local OTU circuit pack.
incoming STM4 failure	An STM4 failure has been detected on an incoming STM16 port.

Alarm Condition Descriptions	
Description	Meaning
	Likely causes: Failure of the far end STM4 circuit pack, the incoming STM4 line (receive fiber) or the local QOTU circuit pack or STM4 OTPM.
incoming supr chnl fail	An incoming supervisory channel loss-of-frame (LOF) or loss-of-signal (LOS) condition has been detected on an incoming (from the optical line) supervisory channel.
incoming supr chnl SD	A signal degrade (SD) condition has been detected on an incoming (from the optical line) supervisory channel.
incoming supr chnl SF	A signal failure (SF) condition has been detected on an incoming (from the optical line) supervisory channel.
inconsistent OTPM association	An association between an OTPM and an optical channel is inconsistent with the side configuration.
inconsistent OTU association	An association between an OTU and an optical channel is inconsistent with the side configuration.
inhibit alarms-office alarms	Alarm reporting via the office alarm interface is disabled.
inhibit alarms-parallel telem	Alarm reporting via the parallel telemetry interface is disabled.
inhibit alarms-X.25	Alarm reporting via the X.25 (TL1) interface is disabled.
j0 mismatch	Section Trace Mismatch detected.
logins inhibited	Logins are disabled.
multiple DS-NEs defined	Two or more network elements in a ring network have their "Directory Server" (DS-NE) parameter provisioned to "Yes". There must be one and only one Directory Server Network Element (DS-NE) in the ring network.
NE status comm failure	The network element is not associated with an Alarm Group Network Element (AGNE) or the AGNE cannot establish associations with all of the network elements in the alarm group. If the AGNE loses power, all network elements in the alarm group will report this condition; however, the condition may not be reported for several minutes.
OA failure	Failure of an OA circuit pack.
OA LAN failure	The local area network (LAN) circuitry on a circuit pack has failed in such a way as to affect the Overhead Access (OA) LAN.
OA output disabled	The output of the specified OA circuit pack has been shut down because of a problem with the ODU circuit pack at the downstream terminal.
OA removed	An OA circuit pack is missing from slot.

Alarm Condition Descriptions

Description	Meaning
ODU warmup in progress	An ODU circuit pack has been installed and is warming up to a stable operating temperature.
OMU/ODU mismatch or missing	An OMU/ODU mismatch has been detected or an OMU/ODU is missing.
OPS auto switch to Primary	An automatic OPS switch to Primary is active.
OPS auto switch to Secondary	An automatic OPS switch to Secondary is active.
OPS configuration error	The OPS Provisioned Mode and been set to ENABLED; however, the network element has not been able to transition to the OPS Operating Mode, that is, OPSOPMD ENABLED, due to a configuration error. See TL1 command ENT-OPS for further details.
OPS failure	Failure of OPS circuit pack.
OPS forced switch to Primary	The indicated OPS has been forced to select the Primary input.
OPS forced switch to Secondary	The indicated OPS has been forced to select the Secondary input.
OPS inhibit	The indicated OPS has been inhibited from any switching.
OPS power converter failure	Failure of one of the two redundant power converters of an OPS circuit pack.
OPS removed	OPS circuit pack is missing from slot.
OPS warmup in progress	An OPS circuit pack has been installed and is warming up to a stable operating temperature.
opr/prov mode inconsistent	Only certain OA circuit pack codes support single OA operation. When a side is provisioned for single OA operation, the OA circuit pack in the OA slot corresponding to the ODU must be one of those codes.
optical line ID mismatch	A fiber misconnection has been detected between Optical Line System network elements.
optical line reset in progress	An optical line has transitioned from the AUTO state to the IS state or the OA configuration has changed from single OA to Dual OA while packs are missing.
OTCTL failure	Failure of OTCTL circuit pack.
OTCTL removed	OTCTL circuit pack is missing from slot.
OTPM failure	Failure of OTPM circuit pack.
OTPM removed	OTPM circuit pack is missing from slot.
OTPM unknown	The port module in the indicated slot is unrecognizable.
OTU failure	Failure of OTU circuit pack.
OTU removed	OTU circuit pack is missing from slot.

Alarm Condition Descriptions	
Description	Meaning
provisioned control point	The specified control point (miscellaneous discrete output) is active. Note: The actual message that appears in the condition description report for this condition can be provisioned; this is the default message. See the **RTRV-ATTR-CONT** and **SET-ATTR-CONT** commands.
provisioned environment alarm point	A contact closure is present at an environmental input point of the network element. Note: The actual message that appears in the condition description report for this condition can be provisioned; this is the default message. See the **RTRV-ATTR-ENV** and **SET-ATTR-ENV** commands.
QOTU failure	Failure of QOTU circuit pack.
QOTU removed	QOTU circuit pack is missing from slot.
reset in progress	The network element is in progress of downloading its software from SYSMEM to SYSCTL, to TOHCTLs, and to all other circuit pack board controllers. Likely cause: Reset or **INIT-SYS** has been executed.
SER TLM 1 port failure	The serial telemetry 1 port has failed.
software download in progress	A software download to the SYSMEM is currently in progress.
SPODU failure	Failure of SPODU circuit pack.
SPODU power converter failure	Failure of one of the two redundant power converters of an SPODU circuit pack.
SPODU removed	SPODU circuit pack is missing from slot.
SPODU warmup in progress	An SPODU circuit pack has been installed and is warming up to a stable operating temperature.
SPOMU failure	Failure of SPOMU circuit pack.
SPOMU power converter failure	Failure of one of the two redundant power converters of an SPOMU circuit pack.
SPOMU removed	SPOMU circuit pack is missing from slot.
SPOMU warmup in progress	An SPOMU circuit pack has been installed and is warming up to a stable operating temperature.
SYSCTL failure	Failure of SYSCTL circuit pack.
SYSMEM failure	Failure of SYSMEM circuit pack.
SYSMEM removed	SYSMEM circuit pack is missing from slot.
SYSMEM/SYSCTL code mismatch	A software mismatch has been detected between the software stored in the SYSMEM circuit pack and the software version running in the network element. Likely cause: A software upgrade procedure is in progress.
SYSMEM unrecognizable	The software stored in the SYSMEM circuit pack has become corrupted and is no longer usable.

Alarm Condition Descriptions	
Description	Meaning
code	Likely causes: Corrupted software download to SYSMEM circuit pack or spontaneous corruption of the software in the SYSMEM circuit pack.
System incomplete	The designated Directory Server Network Element (DS-NE) network element is unable to create a complete ring map because of a controller or transmission failure in the network.
System startup in progress	This is a normally transient condition that indicates the network is starting up.
test alarm in progress	An office alarm test is in progress.
test auto turnup in progress	An auto turnup test is in progress.
test telemetry in progress	A telemetry test is in progress.
TID address map full	The local subnetwork has exceeded the maximum size of 16 network elements.
TL-1 link failure	An incoming TL1 link failure has been detected.
TLM failure	Failure of a TLM circuit pack.
TLM removed	TLM circuit pack is missing from slot.
TOHCTL failure	Failure of TOHCTL circuit pack.
TOHCTL removed	TOHCTL circuit pack is missing from slot.
unexpected CP type	A circuit pack has been replaced with a defective circuit pack.
unexpected OTPM type	An OT port module (OTPM) has been replaced with a defective or a non-similar port module.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, the *tblislt* parameter is not reported.

EXAMPLE OUTPUT

```
   LT-OLS 96-06-07 16:21:30
*  1 REPT ALM EQPT
   "tlm-1a:MN,PRCDRERR,NSA,06-07,16-21-30,,,,:\\"CP (Unknown type)
failure\\",:,ISLTD"
;
   LT-OLS 96-06-07 16:23:18
A  2 REPT ALM EQPT
   "tlm-1a:CL,PRCDRERR,NSA,06-07,16-23-18,,,,:\\"CP (Unknown type)
failure-cleared\\",:,ISLTD"
;
   LT-OLS 96-06-07 16:25:45
A  3 REPT ALM OLINE
   "oline-1a:MN,LOS,NSA,06-07,16-25-45,,,,:\\"incoming optical line
LOS\\",:"
;
   LT-OLS 96-06-07 16:30:08
A  4 REPT ALM OLINE
   "oline-1a:CL,LOS,NSA,06-07,16-25-45,,,,:\\"incoming optical line
LOS-cleared\\",:"
;
   LT-OLS 96-06-07 16:30:45
A  3 REPT ALM OTPS
   "otu-1-2-1:MN,FAIL,NSA,06-07,16-30-45,,,,:\\"incoming OC-48
failure\\",:"
;
   LT-OLS 96-06-07 16:30:50
A  4 REPT ALM OTPS
   "otu-1-2:CL,FAIL,NSA,06-07,16-30-50,,,,:\\"incoming OC-48
failure-cleared\\",:"
;
   LT-OLS 96-06-07 16:31:00
A  3 REPT ALM OTPS
   "otu-1-3-2:MN,FAIL,NSA,06-07,16-31-00,,,,:\\"incoming OC12
failure\\",:"
;
   LT-OLS 96-06-07 16:31:08
A  4 REPT ALM OTPS
   "otu-1-3-2:CL,FAIL,NSA,06-07,16-31-08,,,,:\\"incoming OC12
failure-cleared\\",:"
;
```

RELATED TL1 COMMANDS/MESSAGES

None

REPT ALM ENV

REPT ALM ENV: Report Alarm Environment

This autonomous message is available starting in OLS Release 1.0.

DESCRIPTION

REPT ALM ENV messages are generated autonomously by the network element to inform the OS an environmental condition has been detected at the OLS.

If a miscellaneous discrete environmental point defaults to, or is provisioned to have, an alarm level of critical, major, or minor, the occurrence (and clearing) of that environmental point will be reported in a REPT ALM ENV message. If provisioned as a nonalarmed condition, a REPT EVT message is used to report the event.

For each miscellaneous discrete environmental condition reported to the OS via the REPT ALM ENV message, a corresponding REPT ALM ENV clearance message will be generated when the environmental condition clears.

OUTPUT FORMAT

```
   sid date time
almcde atag REPT ALM ENV
   "aid:ntfcncde,almtype,ocrdat,ocrtm,\"almmsg\""
;
```

OUTPUT PARAMETERS

sid Source identifier. This is the system name.

date Date output message is generated. This has the format YY-MM-DD (year-month-day).

time Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).

almcde Alarm code. This has one of the following values:

- ***C** Critical alarm
- ****** Major alarm
- ***** Minor alarm
- **A** Automatic message (nonalarm) (This is used only to report a cleared alarm.)

atag Automatic tag. The *atag* is used for message sequencing. The number is incremented by one for each autonomous message sent by OLS. OLS uses whole numbers from 000 through 999.

aid Access identifier. This is the address of the miscellaneous discrete environmental point for which an alarm is being reported.

ntfcncde Notification code. This is the alarm level and has one of the following values:

CR Critical alarm

MJ Major alarm

MN Minor alarm

CL Cleared alarm

almtype Alarm type. This parameter has one of the following values:

MISC For miscellaneous discrete environmental conditions reported for near end terminals.

REGR-MISC For miscellaneous discrete environmental conditions reported for far end terminals or repeater bay sites.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

almmsg Alarm message. This is the text description of the reported condition. (The text description of the actual condition monitored and reported by each miscellaneous discrete environmental point can be provisioned by the user. The default is `environment` *n*.)

EXAMPLE OUTPUT

```
   LT-OLS 96-06-07 16:28:41
*  5 REPT ALM ENV
   "env-1:MN,MISC,10-26,16-25-48,\\"provisioned environment alpt\\""
;
   LT-OLS 96-06-07 16:38:17
A  6 REPT ALM ENV
   "env-1:CL,MISC,10-26,16-27-35,\\"provisioned environment
alpt-cleared\\""
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-ALM-ENV

RTRV-ATTR-ENV

SET-ATTR-ENV

REPT COND

REPT COND: Report Condition

This autonomous message is available starting in OLS Release 1.0.

DESCRIPTION

The REPT COND messages are generated periodically and autonomously to report the active *status* conditions at the network element.

The REPT COND messages are generated every 6 hours, that is, at 6:00 A.M., 12:00 Noon, 6:00 P.M. and 12:00 Midnight.

Each REPT COND message reports one active status condition similar to the autonomous REPT EVT message used to report each status condition (non-alarmed event) when it occurred.

Any status condition reported by an autonomous REPT EVT message, which is active when the periodic REPT COND messages are output, is included in a REPT COND message.

The information content of each REPT COND message is effectively equivalent to a line in the response to a **RTRV-COND** command.

OUTPUT FORMAT

If there are no active status conditions to report, the following report is output:

```
   sid date time
A  atag REPT COND
;
```

If there are active status conditions to report, the following report is output:

```
   sid date time
A  atag REPT COND modifier
   "aid:ntfcncde,condtype,srveff,ocrdat,ocrtm,,,,\"conddescr\""
;
```

OUTPUT PARAMETERS

sid	Source identifier (or Target identifier, *tid*). This is the system name.
date	Date output message is generated. This has the format YY-MM-DD (year-month-day).
time	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).

A — This indicates the message is sent autonomously.

atag — Automatic tag. The *atag* is used for message sequencing. The number is incremented by one for each autonomous message sent by the network element, on a per-OS-type basis. The network element uses only whole numbers from 000 through 999.

modifier — This is the message modifier to the REPT COND message and has one of the following values for OLS:

- **COM** — Common. This reports a condition that is not an equipment or facility condition but applies to the whole network element.
- **OCHAN** — Channel. This reports a facility-related condition at the channel level.
- **CMS** — CMS is the incoming customer maintenance signal [OC3/STM1 format]. This reports a facility-related event on the cms part of the telemetry pack [OC3/STM1 format].
- **EQPT** — This reports an equipment-related condition for an OLS terminal or repeater bay.
- **OLINE** — This reports a facility-related event on the optical line.
- **SUPR** — This reports a facility-related event on the supervisory channel in the optical line.
- **OTPS** — This reports a facility-related event on an OTU or OT port module (OTPM).
- **OPS** — This reports a facility-related event at the optical protection switch (OPS).

aid — Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

ntfcncde — Notification code. This parameter value is always NA (not alarmed) for status conditions.

condtype — Condition type. The values for this parameter can be found in the various **RTRV-COND** command pages associated with the *modifier* output in the message. For example, condition types associated with the **COM** *modifier* are listed in the **RTRV-COND-COM** command page.

srveff — Service effect. This indicates the effect of the reported condition on service. This parameter value is NSA (non-service-affecting) or SA (service-affecting) for status conditions.

ocrdat — Occurrence date. This indicates the date of the condition being reported and has the format MM-DD (month-day).

ocrtm — Occurrence time. This indicates the time of the condition being reported and has the format HH-MM-SS (hours-minutes-seconds).

conddescr — Condition description. This is the text description of the reported condition.

Alarm condition descriptions can be found in the REPT ALM message page.

EXAMPLE OUTPUT

```
   LT-PF-2000 93-10-01 06:00:00
A  810 REPT COND COM
   "env-1:NA,MISC,NSA,10-01,01-03-29,,,,\"environment1\""
;
```

```
   LT-OLS 94-06-07 16:28:41
A  820 REPT COND OLINE
   "oline-1a:NA,LOS,06-07,16-25-48,\\"incoming optical line LOS\\""
;
```

```
   LT-OLS 94-06-26 16:25:48
A  830 REPT COND OCHAN
   "ochan-1a-1:NA,OCHANRMVD,06-26,16-25-48,\\"incoming optical
channel removed\\""
;
<
   LT-FT-2000 94-06-26 16:27:35
A  810 REPT COND OC48
   "oc48-in-1e:NA,INHSWPR,06-26,16-27-35,\\"line span lockout - FE\\""
;
```

RELATED TL1 COMMANDS/MESSAGES

REPT ALM

REPT EVT

RTRV-ALM

RTRV-AO

RTRV-COND

REPT DBCHG

REPT DBCHG: Report Database Change

This autonomous message is available starting in OLS Release 1.0.

DESCRIPTION

The REPT DBCHG messages are generated by a network element to report database changes that have occurred as a result of line termination, STS-3 cross-connection, and performance monitoring parameter threshold provisioning commands.

The REPT DBCHG messages are sent on all virtual circuits which have an OS_TYPE allowing the receipt of REPT DBCHG autonomous messages. This will now include the virtual circuit which initiated the command that caused the database change.

The successful completion of commands from the network element which change the provisioning database or change the value of a CIT-provisionable parameter shall generate a REPT DBCHG message with the changed values listed in the output. If a provisionable value of a parameter was entered, and other optional parameter values were not entered, only the value of the parameter that was entered when the command was issued will appear in the REPT DBCHG output.

If an optional parameter was not entered, but the requirements state it must be set to a certain static default value, then that parameter value will be considered "entered". The value will be displayed in the output.

Controller reset: Any time the system controller resets (including on power-up), a REPT DBCHG message is transmitted after the controller has successfully recovered from the reset.

NOTE:
The user is logged out when the controller reset process begins. However, the user can relogin after couple of minutes of controller reset process initiation. The user will be able to see the REPT DBCHG message at the time it is sent only if the user has logged in again after a couple of minutes of controller reset initiation and before the completion of system controller reset. Otherwise, the user has to use the **RTRV-AO** message to see the REPT DBCHG stored in the buffer internally in the system.

NOTE:
OPS/INE will log the **INIT-SYS**, RESET, and UPDATE events but will not make any database changes. The OS craft will be responsible for requesting OPS/INE to run audits to check for OS/network element database discrepancies.

In addition to **INIT-SYS**, there are other commands which will cause the system to restart its program, and/or drop the user session. For these commands, the system should generate the report database change before the user session is terminated.

If the command only causes the user session to be dropped, and the REPT DBCHG message is not transmitted prior to the termination, the user can normally use the

RTRV-AO command after relogging in to retrieve that REPT DBCHG message.

The following TL1 commands will trigger a REPT DBCHG message.

TL1 Command	Special Notes
CPY-PRGM	
DLT-ASSOC-OTPS	
DLT-TADRMAP	
ED-DAT	
ENT-ASSOC-OTPS	
ENT-CID-SECU	
ENT-CMS	
ENT-FECOM	
ENT-NE-SECU	
ENT-OCHAN	
ENT-OPS	
ENT-OTPS	
ENT-SECTRC-STS48	
ENT-SUPR	
ENT-SYS	
INIT-REG-OLINE	
INIT-REG-ALL	
INIT-SYS	
SET-ATTR-ALM	
SET-ATTR-CONT	
SET-ATTR-ENV	
SET-ATTR-SUPR	
SET-PM-STIME	
SET-SID	
SET-TH-OCHAN	
SET-TH-OLINE	
SET-TH-OTPS	
SET-TH-SUPR	
UPD-SYS	

All commands can be categorized into three cases:

1. Those that change the provisioning database;
2. Those that change the state of the system (but not the database);
3. Those that check the database or state of the system.

The commands that change the provisioning database (Case 1) will report a REPT DBCHG. The security commands, although not actually changing the provisioning database, should change a database and will also report a REPT DBCHG.

The following TL1 commands which are in Case 2 or Case 3, will not report a database change:

- RTRV-xxx
- TEST-xxx
- ALW-/INH-MSG
- OPR-ACO-ALL
- OPR-/RLS-EXT-CTL
- ACT-/CANC-USER

OUTPUT FORMAT

```
   sid date time
A  atag REPT DBCHG
   "umb:ccb:aid:[com_block]:[spec_block]:[state_block]"
;
```

Trailing commas after the last non-null parameter value within a parameter block are *not* included in the output message. Also, trailing colons after the last non-null parameter block are *not* included in the output message.

OUTPUT PARAMETERS

sid Source identifier (or Target identifier, *tid*). This is the system name.

date Date output message is generated. This has the format YY-MM-DD (year-month-day).

time Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).

A This indicates the message is sent autonomously.

atag Automatic tag. The *atag* is used for message sequencing. The number is incremented by one for each autonomous message sent by the network element, on a per-OS-type basis. The network element uses only whole numbers from 000 through 999.

umb Update Mangement Block. This parameter field is used for returning the time and date of the database change, and the source ID of the command that caused the change (when applicable). Parameters within the update mangement block are positionally independent and are specified using a name defined construct of: PARAMETER=*value* in a comma separated list. The parameters are listed and explained below.

TIME This reflects the time that the database change occurred and is in the form: HH-MM-SS. The time is the same as the time that is in the REPT DBCHG message header.

DATE This reflects the date that the database change occurred and is in the form: YY-MM-DD. The date is the same as the date that is recorded in the history log for the database change record.

SOURCE If the database change occurs as a result of a TL1 command with a non-null *ctag*, the **SOURCE** field contains this non-null **ctag** value. Otherwise this parameter is not included in the message.

ccb Command Code Block. This is a single position defined parameter block which indicates the trigger information of the action which created the database update. If a TL1 command created this update, the command code parameter is specified in the form:

<verb>-<modifier>[-<modifier>]

If the <*verb*> of the TL1 input command is **SET**, it is **not** reported as **ENT** in the command code block. The command code block must indicate the input verb **SET**.

If the database change was caused by a user interface command or a button push caused the database change, the Command Code Block contains the equivalent TL1 command which would have had to have been entered to make the change.

For controller reset, the *ccb* will be equal to RESET. For the UPDATE function, the *ccb* will be equal to UPD-SYS.

aid Access identifier. This is the address of the object entity which the database update has affected.

For line termination provisioning changes, this field contains the AID of the line which was provisioned.

For system initialization, RESET, and UPDATE events, the AID field will be null.

com_block This field is always null.

spec_block Specific Block. This is a name defined field. If the database change is the result of a TL1 command which contains parameters in this block, the parameter names and values are included in this block. Parameters within the specific block are positionally independent and are specified using a name defined construct of: PARAMETER=*value* in a comma separated list. The parameter names are the same as those for the corresponding TL1 command.

All the database changes except the state change are reported in the *spec_block* as name-defined parameters (PARAMETER=*value*) whether or not the data was originally input as a position-defined parameter or name-defined parameter in the input command. The parameter names are the same as those for the corresponding TL1 command. If the input command used a name-defined parameter that causes a database change, then the **REPT DBCHG** will report it as a name-defined parameter in the specific block. If the input command used a position-defined parameter that causes a database change, then the REPT DBCHG

will report this position-defined parameter as a name-defined parameter (PARAMETER=value) in the specific block.

This field is null if the value in the *ccb* is one of: UPD-SYS, PLUGIN, or UNPLUG.

If the database change is the result of a (non-TL1) user interface command which contains parameters in this block, the equivalent TL1 parameter names and values are included in this block. The parameter names are the same as those for the corresponding TL1 command.

state_block State Block. This is a position defined field. If a state change is being reported, the new state is included in this block. It contains the following parameters in the order shown:

pst Primary State.

EXAMPLE OUTPUT

The following message is sent when the **ENT-SUPR** message has been completed for the supervisory channel 1a:

```
   LT-OLS 93-10-01 08:00:00
A  888 REPT DBCHG
   "TIME=07-59-20,DATE=93-10-01,SOURCE=123456:ENT-SUPR:supr-1a::
    NTFCNCDE=MN,SDTHR=-6"
;
```

The following message is sent when the **SET-TH-OCHAN** message has been completed for the supervisory channel 1a:

```
   LT-OLS 93-10-01 08:00:00
A  888 REPT DBCHG
   "TIME=07-59-20,DATE=93-10-01,SOURCE=123456:SET-TH-OCHAN:ochan-1a-1::
    MONTYPE=CVL,THLEV=-9,TMPER=15-MIN,TCARPT=ENABLE"
;
```

The following message is sent when the **SET-ATTR-CONT** message has been completed for the control point 3:

```
   LT-PF-2000 93-10-01 08:00:00
A  888 REPT DBCHG
   "TIME=07-59-20,DATE=93-10-01,SOURCE=123456:SET-ATTR-CONT:cont-3::
    CONTTYPE=\"StartGenerator\""
;
```

RELATED TL1 COMMANDS/MESSAGES

None

REPT EVT

REPT EVT: Report Event

This autonomous message is available starting in OLS Release 1.0.

DESCRIPTION

The REPT EVT messages are generated autonomously by OLS to report events (nonalarmed conditions).

If an event with a user-provisionable alarm level defaults to or is provisioned as a not alarmed (NA) level, the occurrence of that event is reported in a REPT EVT message. REPT EVT messages also occur when any such standing conditions clear, and are used to report transient conditions. Beginning with OLS Release 1.0, autonomous performance monitoring (PM) threshold crossing alert (TCA) messages are provided to the OS using this TL1 message.

The following table indicates what TL1 will result in what REPT EVT messages.

TL1 Command	REPT EVT message
RTRV-BASELINE	Rtrv-Baseline
TEST-ALM	Test-Alarm:slot()
TEST-AUTO-LOCAL	Test-Auto Turnup-Local:slot()
TEST-LED	Test-LED
TEST-TLM-PAR	Test-Telemetry-Parallel
ACT-USER	Activate-User
ALW-MSG	Allow-Message
CANC-USER	Cancel-User
CPY-PRGM	Copy-Program
DLT-ASSOC-OTPS	Delete-Association-OTPS
DLT-TADRMAP	Delete-TID-Address Map
DLT-USER-SECU	Delete-User-Security
ED-DAT	Edit-Date
ED-PID	Edit-Password-ID
ED-USER-SECU	Edit-User-Security
ENT-ASSOC-OTPS	Enter-Association-OTPS
ENT-CID-SECU	Enter-Channel-ID-Security:port(com)
ENT-CMS	Enter-CMS:cms
ENT-FECOM	Enter-Far-End-Communications
ENT-NE-SECU	Enter-Network Element-Security
ENT-OCHAN	Enter-OCHAN:ochan
ENT-OPS	Enter-Optical Protection Switch:ops
ENT-OTPS	Enter-OTPS:otps
ENT-SECTRC	Enter-Section-Trace:line
ENT-SUPR	Enter-SUPR:supr
ENT-SYS	Enter System

TL1 Command	REPT EVT message
ENT-USER-SECU	Enter User Security
INH-MSG	Inhibit-Message
INIT-REG-ALL	Initialize-PM-Register
INIT-REG-OLINE	Initialize-Optics-Register
INIT-SYS (3)	Initialize-System
INIT-SYS (9)	Reset
OPR-ACO	Operate-Alarm-Cutoff
OPR-EXT-CONT	Operate-External-Control:misc disc(ctl)
OPR-PROTNSW-OPS	Opr-Protection-Switch-OPS:ops
RLS-EXT-CONT	Release-External-Control:misc disc(ctl)
RLS-PROTNSW-OPS	Rls-Protection-Switch-OPS:ops
RTRV-ALL	Rtrv-All
RTRV-ALM	Rtrv-Alarm (and Status)
RTRV-ALM-ENV	Rtrv-Alarm-Environment (and Status)
RTRV-ALM-NTWK	Rtrv-Alarm-Network
RTRV-AO	Rtrv-AO
RTRV-ASSOC-OTPS	Rtrv-Association-OTPS
RTRV-ATTR-ALM	Rtrv-Attr-Alarm
RTRV-ATTR-CONT	Rtrv-Attr-Control:point(cont)
RTRV-ATTR-ENV	Rtrv-Attr-Environment:point(env)
RTRV-ATTR-SUPR	Rtrv-Attr-SUPR:supr
RTRV-CID-SECU	Rtrv-Channel ID-Security:port(com)
RTRV-CMS	Rtrv-CMS:cms
RTRV-COND	Rtrv-Alarm (and Status)
RTRV-DAT	Rtrv-Date
RTRV-EQPT	Rtrv-Equipment:slot()
RTRV-FECOM	Rtrv-Far End Communications
RTRV-HDR	Rtrv-HDR
RTRV-LOG	Rtrv-Log
RTRV-MAP-NETWORK	Rtrv-Map-Network
RTRV-MAP-RING	Rtrv-Map-Ring
RTRV-NE-SECU	Rtrv-Network Element-Security
RTRV-OCHAN	Rtrv-OCHAN:ochan
RTRV-OLINE	Rtrv-OLINE:oline
RTRV-OPS	Rtrv-OPS:ops
RTRV-OTPS	Rtrv-OTPS:otps
RTRV-PM-ALL	Rtrv-PM-All
RTRV-PM-OCHAN	Rtrv-PM-OCHAN:ochan
RTRV-PM-OLINE	Rtrv-PM-OLINE:oline
RTRV-PM-OTPS	Rtrv-PM-OTPS:otps
RTRV-PM-STIME	Rtrv-PM-Start Time

TL1 Command	REPT EVT message
RTRV-PM-SUPR	Rtrv-PM-SUPR:supr
RTRV-SECTRC	Rtrv-Section-Trace:line
RTRV-RELSPR	Rtrv-RELSPR:oline
RTRV-STATE	Rtrv-State:slot()
RTRV-STATE-ALL	Rtrv-State-All
RTRV-SUPR	Rtrv-SUPR:supr
RTRV-SYS	Rtrv-System
RTRV-TH-ALL	Rtrv-Th-All
RTRV-TH-OCHAN	Rtrv-PM-Th-OCHAN:ochan
RTRV-TH-OLINE	Rtrv-PM-Th-OLINE:oline
RTRV-TH-OTPS	Rtrv-PM-Th-OTPS:otps
RTRV-TH-SUPR	Rtrv-PM-Th-SUPR:supr
RTRV-USER-SECU	Rtrv-User-Security
SET-ATTR-ALM	Set-Attribute-Alarm
SET-ATTR-CONT	Set-Attribute-Control
SET-ATTR-ENV	Set-Attribute-Environment
SET-ATTR-SUPR	Set-Attribute-SUPR:supr
SET-PM-STIME	Set-PM-Start Time
SET-SID	Set-Source-Identification
SET-TH-OCHAN	Set-PM-Th-OCHAN:ochan
SET-TH-OLINE	Set-PM-Th-OLINE:oline
SET-TH-OTPS	Set-PM-Th-OTPS:otps
SET-TH-SUPR	Set-PM-Th-SUPR:supr
UPD-SYS	Update System

One and only one REPT EVT message is generated for each command.

No RTRV command shall be reported in the history log.

OUTPUT FORMAT

```
   sid date time
A atag REPT EVT modifier
   "aid:condtype,condeff,ocrdat,ocrtm,[locn],[dirn],[monval],
    [thlev][,tmper]:\"conddescr\",:[,tblislt]"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

sid Source identifier. This is the system name.

date Date output message is generated. This has the format YY-MM-DD (year-month-day).

time Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).

A This indicates the nonalarmed message was sent autonomously.

atag Automatic tag. The *atag* is used for message sequencing. The number is incremented by one for each autonomous message sent. Whole numbers from 000 through 999 are used.

modifier This is a message modifier to the REPT EVT message and has one of the following values:

COM Common. This reports an event that is not an equipment or facility condition but applies to the OLS as a whole. This is also used to report miscellaneous discrete environmental nonalarmed conditions.

OCHAN Channel. This reports a facility-related event at the channel level in OLS.

CMS CMS is the incoming customer maintenance signal [OC3 format.] This reports a facility-related event on the CMS part of the telemetry pack [OC3 format.]

EQPT This reports an equipment-related event for an OLS.

OLINE This reports a facility-related event on the optical line in OLS.

SUPR This reports a facility-related event on the supervisory channel in the optical line in OLS.

OTPS This reports a signal-related event at the OTU/OTPM level.

OPS This reports a facility-related event at the optical protection switch in OLS.

aid Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an event is being reported.

condtype Condition type. This is the type of the condition. There are several types of conditions.

The values for this parameter can be found in the various **RTRV-COND** command pages associated with the *modifier* output in the message. For example, condition types associated with the **COM** *modifier* are listed in the **RTRV-COND-COM** command page.

condeff Condition effect. This indicates the effect of the reported event on the condition of OLS and has one of the following values:

SC Standing Condition Raised. This is a condition that is active for an extended period of time.

TC Transient Condition. This is a condition that does not change the basic condition of the network element for an extended period of time. For example, a performance monitoring TCA message is reported as a transient condition.

CL Standing Condition Cleared. This is a used to report when a standing condition no longer exists.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

locn Location. This indicates whether the event being reported pertains to the near end or far end relative to the entity identified by the *aid*.

The *locn* may be null or have one of the following values:

NEND Near end event or TCA report.

FEND Far end event or TCA report.

The system will output a null value for the *locn* parameter **except** in cases where a TCA message is being generated. A null value is to be interpreted as meaning NEND.

dirn Direction. This indicates the direction of the event being reported relative to the entity identified by the *aid*. The system will always provide a null entry for the *dirn* parameter.

monval Monitored value. For performance monitoring TCAs, this is the measured value of the parameter specified in *condtype* (=T-*montype*) at the time the REPT EVT TCA is reported. Otherwise this parameter is not reported.

thlev Threshold level. If an incoming facility degradation or failure (or clear) is reported, the *thlev* parameter, applicable only for a message modifier of SUPR, is the BER threshold level, in integer form, representing the closest negative power of 10 to the BER.

tmper Time period. For performance monitoring TCAs, this is the performance monitored time interval in which the reported threshold crossing event was observed. The values for this parameter are as follows:

15-MIN 15-minute interval

1-DAY daily interval

Otherwise this parameter is not reported.

conddescr Condition description. This is the text description of the reported condition. The descriptions of PM TCAs are self explanatory and follow the parameter naming format specified in ANSI Draft Standard T1M1.3/92-005 (June 1992).

The system places a "?" in the aid field in the history log and the REPT EVT message if the aid provided was not a valid aid for the command.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

EXAMPLE OUTPUT

```
   LT-OLS 96-06-07 16:28:41
A  7 REPT EVT OCHAN
   "ochan-1a-1:T-SPRC,TC,06-07,16-28-41,,,,:\\"TCA optics:Ochan QH:
SPR-C"\\",:"
;
```

The following example is for an **OPR-LPBK-T3** command that has been denied.

```
   LT-FT-2000 96-10-26 16:28:41
A  7 REPT EVT COM
   "LT01:IO-ACTY,TC,10-26,16-28-41,,,,:\\"operate-loopback-T3:
    line-1e-DENY\\",:"
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RLS-EXT-CONT

RLS-EXT-CONT: Release External Control

The privilege level for this command is GENERAL.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RLS-EXT-CONT*:tid:aid:ctag;*

DESCRIPTION

The **RLS-EXT-CONT** command can be initiated by users to release an external miscellaneous discrete control, such as a generator, a fan, a light, or a sprinkler. Miscellaneous discrete controls are operated by the **OPR-EXT-CONT** command.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. The *aid* identifies the external miscellaneous discrete control for which a description is being provisioned.

Entity: Single Point (Control)
Legal Values: (CONT)-(1-36)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

To use the **RLS-EXT-CONT** command, please note that the **ENT-CID-SECU** command must first be executed to enable the SER_TLM port. If the network element fully complies with the **RLS-EXT-CONT** request, the following normal completion response is returned.

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example shows a command for a PF-2000 system to release miscellaneous discrete control 1.

```
RLS-EXT-CONT:LT-PF-2000:CONT-1:123456::;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

The following example shows a command for a linear PF-2000 system to release miscellaneous discrete control 4.

```
RLS-EXT-CONT:LT-PF-2000:CONT-4:123456::;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If a **RLS-EXT-CONT** command is received with an invalid access identifier, the following error response is returned:

```
   sid date time
M  ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-ATTR-CONT

OPR-EXT-CONT

RTRV-ALM

RLS-PROTNSW-OPS

RLS-PROTNSW-OPS: Release Protection_Switch OPS

The privilege level for this command is GENERAL.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 3.1.

INPUT FORMAT

RLS-PROTNSW-OPS*:tid:aid:ctag;*

DESCRIPTION

The **RLS-PROTNSW-OPS** command releases (*clears*) any standing forced switch or inhibit switch of an Optical Protection Switch circuit pack. The network element provides queuing of auto protection switch requests. However, there can only be one external request active or in the queue at a given time. The **RLS-PROTNSW-OPS** command clears the active or pending external request and thereby enabling the highest priority auto request from the queue (if any).

Thus, this command may result in an Optical Protection Switch and it may be necessary to perform this command at the far end to switch both the transmit and receive direction to the same line.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access Identifier. This is the address of the optical protection switch.

Entity: Single Slot (OPS)
Legal Values: (OTU)-(1, 2)-(1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If the system fully complies with the protection switching request, the following output message is returned:

```
   sid date time
M  ctag COMPLD
;
```

If the protection switching request contained within the command does not alter the existing protection switching state or priority, the network element will not deny the command. Instead the system will respond with the completion message (shown previously).

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

```
rls-protnsw-ops:LT-the Network Element:OTU-1-27:AbC123;


IP AbC123
<


   LT-the Network Element 93-10-26 16:42:11
M  AbC123 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If this command is received with an invalid access identifier, the following error response is returned:

```
   sid date time
M  ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If this command is received with an otherwise valid *aid*, but for which the command is directed to a slot in the AUTO state, or to a slot not equipped with an Optical Protection Switch circuit pack, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, AID value inconsistent with current
equipage */
;
```

If the command cannot be executed because of a hardware problem, the following error response is returned:

```
   sid date time
M  ctag DENY
   SPFA
   /* Status, Protection unit FAiled,
   hardware problem with protection switching mechanism. */
;
```

If the command cannot be executed because of a control system failure, the following error response is returned:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed, control system failure */
;
```

If this command is received with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

RELATED TL1 COMMANDS/MESSAGES

OPR-PROTNSW-OPS

ENT-OPS

RTRV-ALL

RTRV-ALL: Retrieve All

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ALL*:tid:aid:ctag[:type];*

DESCRIPTION

The **RTRV-ALL** command messages can be initiated by a user to retrieve the current provisioned state of the Customer Maintenance Signal (CMS) port, supervisory (SUPR) channel, optical channel (OCHAN), optical translator unit (OTU), and optical translator port module (OTPM) as well as the the current state of the CMS port, supervisory channel, optical channel, OTU port state, and OTPM port state. This command retrieves all CMS port, supervisory channel, optical channel, OTU, or OTPM parameter settings that are provisionable via the **ENT-CMS**, **ENT-SUPR**, **ENT-OCHAN**, and **ENT-OTPS** commands pertaining to the addressed OLS or OT, reported one line per CMS port, supervisory channel, optical channel, OTU port state, or OTPM port state. The **RTRV-ALL** command also retrieves the current state of the OLS supervisory channel.

This command does not report Optical Protection Switch (OPS) data. The **RTRV-OPS** command reports OPS data.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the report is requested.

Entity: All
Legal Values: (ALL)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

type Type. A value for this parameter is neither expected nor allowed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

Because the network element supports pre-provisioning of parameters, lines are included for all applicable *aid* values in response to this command, whether or not the present equipage is capable of supporting the type of facility specified.

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

In response to a valid **RTRV-ALL** command, an output report is returned and is sorted as follows:

1. OCHAN data,
2. SUPR channel data,
3. CMS port data,
4. OTU port data,
5. OTPM port data, and
6. by *aid* value.

```
   sid date time
M  ctag COMPLD
   "ochan_aid:::pst"
   "ochan_aid:::pst"
       .       .       .
       .       .       .
       .       .       .
   "ochan_aid:::pst"
   "supr_aid:::[level,]ntfcncde,sdthr"
   "supr_aid:::[level,]ntfcncde,sdthr"
       .       .       .
       .       .       .
       .       .       .
   "supr_aid:::[level,]ntfcncde,sdthr"
   "cms_aid:::[level,]ntfcncde,sdthr:,sst"
   "cms_aid:::[level,]ntfcncde,sdthr:,sst"
       .       .       .
       .       .       .
       .       .       .
   "cms_aid:::[level,]ntfcncde,sdthr:,sst"
   "otu_aid:::level,lsbbrate,ntfcncde,optlinecde,wavlnth:pst"
   "otu_aid:::level,lsbbrate,ntfcncde,optlinecde,wavlnth:pst"
       .       .       .
       .       .       .
       .       .       .
   "otu_aid:::level,lsbbrate,ntfcncde,optlinecde,wavlnth:pst"
   "otpm_aid:::level,lsbbrate,ntfcncde,optlinecde,wavlnth:pst"
   "otpm_aid:::level,lsbbrate,ntfcncde,optlinecde,wavlnth:pst"
       .       .       .
       .       .       .
       .       .       .
   "otpm_aid:::level,lsbbrate,ntfcncde,optlinecde,wavlnth:pst"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

level Signal level. This parameter is the signal level type being supported by the CMS port, supervisory channel, OTU, or OTPM specified in the addressed slot (if equipped). If equipped the *level* parameter is reported in LEVEL=*xx* format where *xx* has the following value:

OC3 This specifies that the CMS port signal, supervisory channel, or OTPM is OC3 level. (SONET only)

OC12 This specifies that the OTPM port signal is OC12 level. (SONET only)

OC48 This specifies that the OTU port or the OTPM port signal is OC48 level. (SONET only)

STM1 This specifies that the CMS port signal, supervisory channel, or OTPM is STM1 level. (SDH only)

STM4 This specifies that the OTPM port signal is STM4 level. (SDH only)

STM16 This specifies that the OTU port or OTPM port signal is STM16 level. (SDH only)

LSBB This specifies that the OTPM port signal is the Low Speed Broad Band (LSBB) level.

QOTU This will be displayed for the first OTU slot containing a QOTU.

EXT Extension. This will be displayed for the extension slot of a Quad OTU.

OTU Optical Translator Unit. This will be displayed if an OTPM is requested and the slot contains an OTU pack.

No *level* value is reported for unequipped slots.

lsbbrate Low Speed Broad Band Bit Rate. This parameter reports the bit rate for the Low Speed Broad Band (LSBB) OTPM. The valid values are `High_Band` and `Low_Band`.

No *lsbbrate* value is reported for OTU port signals.

optlinecde Optical Line coding. The line coding parameter is only reported in the specific block for OC-48 lines, optical low speed ports, OTUs, or OTPMs. It specifies the type of optical line coding used on the Optical Interface. The *optlinecde* parameter is reported in `OPTLINECDE=`*xx* format where *xx* is:

`NRZ` Non-return to Zero.

No *optlinecde* value is reported for unequipped slots, ports, or lines. If the `level=EXT`, `OTU`, or `QOTU`, this parameter should display a "-".

wavlnth Optical Wavelength. The optical wavelength parameter is only reported in the specific block for OTUs and OTPMs. It specifies the optical wavelength used on the LSBB, OC-48/STM-16, OC-12/STM-4,or OC-3/STM-1 Optical Interface. The *wavlnth* parameter is reported in `WAVLNTH=`*xxxx.xx* format where *xxxx.xx* is (expressed in nanometers):

No *wavlnth* value is reported for unequipped slots, OTUs, or OTPMs. If the `level=EXT`, `OTU`, or `QOTU`, this parameter should display a "-".

ntfcncde Notification code. This parameter is the alarm level provisioned for failures of facilities serviced by the addressed port. The *ntfcncde* parameter is reported in `NTFCNCDE=`*xx* format where *xx* has one of the following values:

CR	Critical (if provisioned for SONET)
MJ	Major (if provisioned for SONET)
MN	Minor (if provisioned for SONET)
NA	Not alarmed (if provisioned for SONET)
NR	Not reported (if provisioned for SONET) (No autonomous report will be generated.)
NO	Ignored (if provisioned for SONET) (No autonomous or on-demand report will be generated.)
Critical	Critical (if provisioned for SDH)
Prompt	Prompt (if provisioned for SDH)
Deferred	Deferred (if provisioned for SDH)
No_Alarm	No Alarm (if provisioned for SDH)
No_Report	No Report (if provisioned for SDH) (No autonomous report will be generated.)
Not_Indicated	Not Indicated (if provisioned for SDH) (No autonomous or on-demand report will be generated.)

sdthr

Signal degrade threshold. This parameter is the signal degrade Bit Error Rate (BER) threshold for the facility serviced by the addressed supervisory channel. The *sdthr* parameter is reported in SDTHR=*xx* format where *xx* has one of the following values:

-9 This signifies that the signal degrade threshold is set at a BER of 10^{-9}.

-8 This signifies that the signal degrade threshold is set at a BER of 10^{-8}.

-7 This signifies that the signal degrade threshold is set at a BER of 10^{-7}.

-6 This signifies that the signal degrade threshold is set at a BER of 10^{-6}.

-5 This signifies that the signal degrade threshold is set at a BER of 10^{-5}.

Signal degrade threshold. This parameter is the signal degrade Bit Error Rate (BER) threshold for the facility serviced by the addressed CMS port. The *sdthr* parameter for CMS port is always reported as SDTHR=-6.

pst

Primary state. This parameter reports the current primary state of the addressed optical channel (OCHAN). The *pst* will have one of the primary states supported by OLS.

The primary state for optical channel will have one of the following values:

IS In service. This specifies that the optical channel addressed by *ochan_aid* is in the in service state.

OOS-MA-AS Out of service, memory administration, assigned. This specifies that the optical channel addressed by *ochan_aid* is in the OLS "AUTO" state and will transition to in-service upon detection of a valid signal.

OOS Out of service. This specifies that the optical channel addressed by *ochan_aid* is in the OLS "NMON" state.

RDNA Requested data not available. If the requested *pst* data for the addressed optical channel is corrupted, this value is reported.

The primary port state for OTUs and OTPMs will have one of the following values:

IS In service. This specifies that the low speed port addressed by *port_aid* is in the in service state.

OOS-MA-AS Out of service, memory administration, assigned. This specifies that the low speed port addressed by *port_aid* is in the "AUTO" state.

OOS Out of service. This specifies that the low speed port addressed by *port_aid* is in the "NMON" state.

RDNA Requested data not available. If the requested *pst* data for the addressed low speed port is corrupted, this value is reported.

sst Secondary state. This parameter reports the current secondary state of the addressed CMS port. The *sst* will have one of the secondary states supported by OLS.

The CMS port secondary state will have one of the following values:

IS In service. This specifies that the CMS port addressed by *cms_aid* is in the in service state in the *mux* (from the customer toward the optical line) direction.

OOS-MA-AS Out of service, memory administration, assigned. This specifies that the CMS port addressed by *cms_aid* is in the OLS "AUTO" state and will transition to in-service upon detection of a valid incoming customer maintenance signal in the *mux* (from the customer toward the optical line) direction.

OOS Out of service. This specifies that the CMS port addressed by *cms_aid* is in the OLS"NMON" state in the *mux* (from the customer toward the optical line) direction.

RDNA	Requested data not available. If the requested *sst* data for the addressed CMS port is corrupted, this value is reported.
ochan_aid	Optical Channel access identifier. This is the optical channel address for which output is being reported.
supr_aid	Supervisory channel access identifier. This is the supervisory channel address for which output is being reported.
cms_aid	CMS access identifier. This is the CMS port address for which output is being reported.
otu_aid	OTU access identifier. This is the OTU port address for which output is being reported.
otpm_aid	OTPM access identifier. This is the OT port module address for which output is being reported.

EXAMPLE INPUT/OUTPUT

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

The example below shows the response to a query concerning all supervisory channels, all CMS ports, all optical channels, and all OT port states associated with all optical lines ("`all`").

```
rtrv-all:LT-OLS:all:123456;


IP 123456
<


   LT-OLS 93-10-26 16:42:11
M  123456 COMPLD
   "ochan-1a-1::::IS"
   "ochan-1a-2::::IS"
   "ochan-1a-3::::IS"
   "ochan-1a-4::::IS"
   "ochan-1a-5::::IS"
   "ochan-1a-6::::IS"
   "ochan-1a-7::::OOS-MA-AS"
   "ochan-1a-8::::OOS-MA-AS"
   "ochan-1a-9::::IS"
   "ochan-1a-10::::IS"
   "ochan-1a-11::::IS"
   "ochan-1a-12::::IS"
   "ochan-1a-13::::IS"
   "ochan-1a-14::::IS"
   "ochan-1a-15::::OOS-MA-AS"
   "ochan-1a-16::::OOS-MA-AS"
       .       .       .
       .       .       .
       .       .       .
   "ochan-4b-1::::IS"
   "ochan-4b-2::::IS"
   "ochan-4b-3::::IS"
   "ochan-4b-4::::IS"
   "ochan-4b-5::::IS"
   "ochan-4b-6::::IS"
   "ochan-4b-7::::OOS-MA-AS"
   "ochan-4b-8::::OOS-MA-AS"
   "ochan-4b-9::::IS"
   "ochan-4b-10::::IS"
   "ochan-4b-11::::IS"
   "ochan-4b-12::::IS"
   "ochan-4b-13::::IS"
   "ochan-4b-14::::IS"
   "ochan-4b-15::::OOS-MA-AS"
   "ochan-4b-16::::OOS-MA-AS"
   "supr-1a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
```

Screen continues on next page.

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```
   "supr-1b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-2a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-2b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-3a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-3b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-4a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-4b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "cms-1a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6:,IS"
   "cms-1b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6:,IS"
   "cms-2a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6:,IS"
   "cms-2b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6:,IS"
   "cms-3a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6:,IS"
   "cms-3b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6:,IS"
   "cms-4a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6:,OOS-MA-AS"
   "cms-4b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6:,OOS-MA-AS"
   "otu-1-1-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-2-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-3-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-4-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1549.32:IS"
   "otu-1-5-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-6-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-7-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1550.12:IS"
   "otu-1-8-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1551.72:IS"
   "otu-1-9-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-10-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-11-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1552.52:IS"
   "otu-1-12-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1553.33:IS"
   "otu-1-13-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1548.51:IS"
   "otu-1-14-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1549.32:IS"
   "otu-1-15-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-16-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-17-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1550.12:IS"
   "otu-1-18-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1551.72:IS"
   "otu-1-19-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-20-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
```

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```
   "otu-1-21-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-22-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-23-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1548.51:IS"
   "otu-1-24-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1549.32:IS"
   "otu-1-25-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-26-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-27-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1550.12:IS"
   "otu-1-28-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1551.72:IS"
   "otu-1-29-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-30-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-31-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1552.52:IS"
   "otu-1-32-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1553.33:IS"
   "otu-2-1-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1560.61:IS"
       .       .       .
       .       .       .
       .       .       .
   "otu-2-32-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1558.98:IS"
   "otpm-1-1-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1559.79:IS"
   "otpm-1-1-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1559.79:IS"
   "otpm-1-1-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1559.79:IS"
   "otpm-1-1-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1559.79:IS"
   "otpm-1-3-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-3-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-3-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-3-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-5-1-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1559.79:IS"
   "otpm-1-5-2-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1559.79:IS"
```

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```
   "otpm-1-5-3-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1559.79:IS"
   "otpm-1-5-4-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1559.79:IS"
   "otpm-1-7-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-7-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-7-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-7-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-9-1-1:::LEVEL=LSBB,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1556.55:IS"
   "otpm-1-9-2-1:::LEVEL=LSBB,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1556.55:IS"
   "otpm-1-9-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1556.55:IS"
   "otpm-1-9-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1556.55:IS"
   "otpm-1-11-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-11-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-11-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-11-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-13-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-13-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-13-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-13-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-15-1-1:::LEVEL=LSBB,LSBBRATE=Low_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1556.55:IS"
   "otpm-1-15-2-1:::LEVEL=LSBB,LSBBRATE=Low_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1556.55:IS"
   "otpm-1-15-3-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1556.55:IS"
   "otpm-1-15-4-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1556.55:IS"
```

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```
   "otpm-1-17-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-17-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-17-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-17-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-19-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1557.36:IS"
   "otpm-1-19-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1557.36:IS"
   "otpm-1-19-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1557.36:IS"
   "otpm-1-19-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1557.36:IS"
   "otpm-1-21-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1557.36:IS"
   "otpm-1-21-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1557.36:IS"
   "otpm-1-21-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1557.36:IS"
   "otpm-1-21-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1557.36:IS"
   "otpm-1-23-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-23-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-23-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-23-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-25-1-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1558.17:IS"
   "otpm-1-25-2-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1558.17:IS"
   "otpm-1-25-3-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1558.17:IS"
   "otpm-1-25-4-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1558.17:IS"
   "otpm-1-27-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-27-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
```

Screen continues on next page.

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```
   "otpm-1-27-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-27-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-29-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1558.17:IS"
   "otpm-1-29-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1558.17:IS"
   "otpm-1-29-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1558.17:IS"
   "otpm-1-29-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1558.17:IS"
   "otpm-1-31-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-31-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-31-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-31-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-31-4-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1550.92:IS"
   "otpm-2-1-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
       .       .       .
       .       .       .
       .       .       .
   "otpm-2-31-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

If the network element receives a **RTRV** command with an invalid command code modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID missing or inconsistent
      with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   INUP
   /* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-CMS

ENT-OCHAN

ENT-OTPS

ENT-SUPR

SET-ATTR-SUPR

RTRV-ALM-ALL

RTRV-ALM-ALL: Retrieve Alarm All

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ALM-ALL*:tid:aid:ctag[::[ntfcncde],,,,,;*

DESCRIPTION

The **RTRV-ALM-ALL** commands can be initiated by a user to retrieve all active alarms from a network element terminal. This command retrieves all active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (REPT ALM) conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM or REPT ALM ENV message which is active when a **RTRV-ALM-ALL** command is received, is included in the **RTRV-ALM-ALL** response message.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

No value should be entered for this parameter. If a value is transmitted as part of this command, it will be ignored by the network element.

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "CR_Critical", "MJ_Prompt", or "MN_Deferred".

CR	Critcal alarm
MJ	Major alarm
MN	Minor alarm

CR_Critical	Critcal alarm (for SONET and SDH)
MJ_Prompt	Major alarm (for SONET), Prompt alarm (for SDH)
MN_Deferred	Minor alarm (for SONET), Deferred alarm (for SDH)

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

The RTRV-ALM-ALL command does not display environmental alarms.

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are alarm conditions to report, the following output report is returned to the OS:

```
   sid date time
M ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level CR/Critical, then MJ/Prompt, followed by MN/Deferred.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.

aidtype Access identifier type. This has one of the following values:

COM Common. This reports an alarm that is not an equipment or facility condition but applies to the network element as a whole.

OCHAN Channel. This reports a facility-related event at the channel level in WaveStar OLS.

CMS CMS is the incoming customer maintenance signal. This reports a facility-related event on the CMS part of the telemetry pack.

EQPT This reports an equipment-related alarm for a network element terminal or repeater bay.

OLINE This reports a facility-related event on the optical line in WaveStar OLS.

OPS This reports a facility-related event at the optical protection switch in OLS.

SUPR This reports a facility-related event on the supervisory channel in the optical line in WaveStar OLS.

OTPS This reports a facility-related event on the optical translator unit signal or the optical translator port module signal.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".

CR Critical alarm (SONET only)

MJ Major alarm (SONET only)

MN Minor alarm (SONET only)

Prompt Prompt alarm (SDH only)

Deferred Deferred alarm (SDH only)

condtype Condition type. This is the type of the condition. There are several types of conditions.

The values for this parameter can be found in the various **RTRV-ALM** command pages associated with the *aidtype* output in the message. For example, condition types associated with the **COM** *aidtype* are listed in the **RTRV-ALM-COM** command page.

srveff Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).

conddescr Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-all:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "oline-3b,OLINE,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
line LOS\\",,:"
   "supr-4b,SUPR,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming supr chnl
fail\\",,:"
;
```

For an OLS/OT Configuration:

```
rtrv-alm-all:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "oline-3b,OLINE,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
line LOS\\",,:"
   "supr-4b,SUPR,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming supr chnl
fail\\",,:"
   "otu-1-1-1,OTPS,MN,FAIL,NSA,06-07,18-26-14,,:\\"incoming OC48
failure\\",,:"
   "otpm-1-1-3-1-1,FAIL,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming OC3
failure\\",,:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to **RTRV-ALM-ALL**.

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-ALM-CMS

RTRV-ALM-CMS: Retrieve Alarm Customer_Maintenance_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ALM-CMS*:tid:aid:ctag[::[ntfcncde],,,,,;*

DESCRIPTION

The **RTRV-ALM-CMS** command can be initiated by a user to retrieve facility-related events on the customer maintenance signal (CMS) part of the telemetry pack [OC3 format]. This command retrieves all active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (REPT ALM CMS) conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM CMS or REPT ALM ENV message which is active when a **RTRV-ALM-CMS** command is received, is included in the **RTRV-ALM-CMS** response message.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: CMS Port [End Terminals and Repeaters]
Legal Values: (CMS)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "CR_Critical", "MJ_Prompt", or "MN_Deferred".

CR	Critcal alarm
MJ	Major alarm
MN	Minor alarm

CR_Critical	Critcal alarm (for SONET and SDH)
MJ_Prompt	Major alarm (for SONET), Prompt alarm (for SDH)
MN_Deferred	Minor alarm (for SONET), Deferred alarm (for SDH)

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are alarm conditions to report, the following output report is returned to the OS:

```
   sid date time
M ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.

aidtype Access identifier type.

CMS CMS is the incoming customer maintenance signal. This reports a facility-related event on the CMS part of the telemetry pack.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".

CR Critical alarm (SONET only)

MJ Major alarm (SONET only)

MN Minor alarm (SONET only)

Prompt Prompt alarm (SDH only)

Deferred Deferred alarm (SDH only)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **CMS** *aid* type are:

LOF Incoming customer signal loss-of-frame

LOS Incoming customer signal loss-of-signal

T-BERL Incoming customer signal SD/SF

srveff Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).

conddescr Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the

reported condition. Otherwise, this parameter is not reported.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-cms:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "cms-3b,CMS,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming CMS LOS\\",,:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-ALM-COM

RTRV-ALM-COM: Retrieve Alarm Common

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ALM-COM*:tid:aid:ctag[::[ntfcncde],,,,,;*

DESCRIPTION

The **RTRV-ALM-COM** command can be initiated by a user to retrieve all active alarms that are not specifically equipment- or facility-related conditions but apply to the network element as a whole. This command retrieves all active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm common (REPT ALM COM) conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM COM or REPT ALM ENV message which is active when a **RTRV-ALM-COM** command is received, is included in the **RTRV-ALM-COM** response message.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

No value should be entered for this parameter. If a value is transmitted as part of this command, it will be ignored by the network element.

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "CR_Critical", "MJ_Prompt", or "MN_Deferred".

CR	Critcal alarm
MJ	Major alarm

MN	Minor alarm
CR_Critical	Critcal alarm (for SONET and SDH)
MJ_Prompt	Major alarm (for SONET), Prompt alarm (for SDH)
MN_Deferred	Minor alarm (for SONET), Deferred alarm (for SDH)

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are alarm conditions to report, the following output report is returned to the OS:

```
   sid date time
M ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level CR/Critical, then MJ/Prompt, followed by MN/Deferred.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.

aidtype Access identifier type.

COM Common. This reports an alarm that is not an equipment or facility condition but applies to the network element as a whole.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".

CR	Critical alarm (SONET only)
MJ	Major alarm (SONET only)
MN	Minor alarm (SONET only)
Prompt	Prompt alarm (SDH only)
Deferred	Deferred alarm (SDH only)

condtype Condition type. This is the type of the condition. There are several types of conditions.

The valid values for the condition type of the **COM** *aid* type are:

ACOMAN	Operate alarm cutoff
ADMPFL	TID address map full
AGNE-COMF	Alamr Group Network Element status communications failure
BC-LAN-1-FAIL	Board controller LAN 1 failure
BC-LAN-2-FAIL	Board controller LAN 2 failure
CONTR	Control processor failure or software download in progress
DCC-INIT	DCC start-up in progress
DSNE-NR	Directory Services Network Element not reachable
DUPL-TID	Duplicate TID defined

EOC	Incoming (from supervisory) DCC failure or remote communication failure
FLT-CPY-SW-PRGM	Copy program failed due to a fault
INHMSG	Inhibit autonomous messages to OS
INIT-1	Initialize system
INIT-2	Update system
IO-ACTY	Input/output activity
IP-CPY-SW-PRGM	Copy program in progress
MAN	User login/logout
MISC	Provisioned control point
MULT-DSNE	Multiple Directory Services Network Element defined
PIDEXPRD	Password expired
OACNFGMM	Single optical amplifier configuration mismatch
OAPMMM	Optical amplifier equippage/provisioned mode mismatch
OATYPMM	Optical amplifier types mismatch
OA-LAN-FAIL	Optical amplifier LAN failure
OK-CPY-SW-PRGM	Copy program has been successfully completed
OLINEIDMM	Optical line ID mismatch
PWR	Fus/power failure
RNG-INC	Ring incomplete
RNG-INITC	Ring startup in progress
SER-TLM1-FAIL	Serial telemetry port failure
SYSBOOT	Reset in progress
UIDDLT	Login deleted
UIDEXPRD	Login expired

srveff Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).

conddescr Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in

the REPT ALM OUTPUT PARAMETERS section.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-com:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "oline-3b,COM,MN,LOS,NSA,06-07,18-26-14,,:\\"optical line LOS\\",,:"
   "tlm-4b,COM,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming (from OLS)
OC3 AIS\\",,:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-ALM-ENV

RTRV-ALM-ENV: Retrieve Alarm Environment

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ALM-ENV*:tid:[aid]:ctag::[ntfcncde][,];*

DESCRIPTION

The **RTRV-ALM-ENV** command can be initiated to retrieve active environmental alarm conditions from the network element. This command retrieves active environmental alarm conditions pertaining to the addressed network element in a line-by-line format, similar to the autonomous messages used to report environmental alarm conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM ENV message, which is active when a **RTRV-ALM-ENV** command is received, is included in the **RTRV-ALM-ENV** response.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the environmental point(s), for example, **env-1** or **env-all**, for which the current alarm conditions are requested. The *aid* value may also be **all** or null (each of which is effectively equivalent to **env-all**).

If the *aid* value is invalid, the network element responds without limiting the response based on the input *aid*, if any. Entity: Point (Environmental)

Legal Values: (ENV)-(ALL, 1-144)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "CR_Critical", "MJ_Prompt", or "MN_Deferred".

CR	Critcal alarm
MJ	Major alarm
MN	Minor alarm
CR_Critical	Critcal alarm (for SONET and SDH)
MJ_Prompt	Major alarm (for SONET), Prompt alarm (for SDH)
MN_Deferred	Minor alarm (for SONET), Deferred alarm (for SDH)

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If there are no environmental alarms to report, the following response is returned:

```
   sid date time
M  ctag COMPLD
;
```

If there are environmental alarms to report, the following output report is returned:

```
   sid date time
M  ctag COMPLD
   "aid:ntfcncde,almtype,ocrdat,ocrtm,\"almmsg\""
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid:ntfcncde,almtype,ocrdat,ocrtm,\"almmsg\""
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level, greatest to least.
2. By date and time, with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

aid Access identifier. This is the address of the environmental alarm point being reported.

ntfcncde Notification code. This is the alarm level and has one of the following values:

CR Critical alarm

MJ Major alarm

MN Minor alarm

Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".

CR Critical alarm (SONET only)

MJ Major alarm (SONET only)

MN Minor alarm (SONET only)

Prompt Prompt alarm (SDH only)

Deferred Deferred alarm (SDH only)

almtype Alarm type.

ocrdat Occurrence date. This indicates the date of the condition being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the condition being reported and has the format HH-MM-SS (hours-minutes-seconds).

almmsg Alarm message. This is the text description of the reported condition (the default is `environment n`). The text description can be modified using the **SET-ATTR-ENV** command.

EXAMPLE INPUT/OUTPUT

```
RTRV-ALM-ENV:LT-OLS:all:123456::MN;


IP 123456
<


   LT-OLS 96-06-26 16:42:11
M  123456 COMPLD
   "env-1:MN,MISC,08-18,16-30-00,\"provisioned environment alpt\""
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to the **RTRV-ALM-ENV** commands.

RELATED TL1 COMMANDS/MESSAGES

REPT ALM ENV

RTRV-ALM

SET-ATTR-ENV

RTRV-ALM-EQPT

RTRV-ALM-EQPT: Retrieve Alarm Equipment

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ALM-EQPT*:tid:aid:ctag[::[ntfcncde],,,,,;*

DESCRIPTION

The **RTRV-ALM-EQPT** command can be initiated by a user to retrieve active alarms of equipment-related conditions from a network element terminal. This command retrieves all active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (REPT ALM EQPT) conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM EQPT or REPT ALM ENV message which is active when a **RTRV-ALM-EQPT** command is received, is included in the **RTRV-ALM-EQPT** response message.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. *aid* determines slot address for this report.

Entity: All
Legal Values: (ALL)

Entity: Slot (TOHCTL)
Legal Values: (TOHCTL)

Entity: Slot (SYSCTL)
Legal Values: (SYSCTL)

Entity: Slot (SYSMEM)
Legal Values: (SYSMEM)

Entity: Slot (OA)
Legal Values: (OA)-(ALL, 1A-4B)

Entity: Slot (OU)
Legal Values: (OU)-(ALL, 1A-4B)

Entity: Slot (TLM) [End terminals and Repeaters]
Legal Values: (TLM)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

Entity: Shelf (OLS)
Legal Values: (SHLF)-(ALL, 1-2)

Entity: Slot (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)

Entity: Slot (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)

Entity: Slot (OTCTL)
Legal Values: (OTCTL)-(ALL, 1, 2)

Entity: Shelf (OT)
Legal Values: (SHLF)-(OT)-(ALL, 1-2)-(ALL, LO, MID, UP)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "CR_Critical", "MJ_Prompt", or "MN_Deferred".

CR	Critcal alarm
MJ	Major alarm
MN	Minor alarm
CR_Critical	Critcal alarm (for SONET and SDH)
MJ_Prompt	Major alarm (for SONET), Prompt alarm (for SDH)
MN_Deferred	Minor alarm (for SONET), Deferred alarm (for SDH)

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid. If the ntfcncde is valid, the network element response to the user

is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are alarm conditions to report, the following output report is returned to the OS:

```
   sid date time
M ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level CR/Critical, then MJ/Prompt, followed by MN/Deferred.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.

aidtype Access identifier type.

EQPT This reports an equipment-related alarm for a network element terminal or repeater bay.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".

CR	Critical alarm (SONET only)
MJ	Major alarm (SONET only)
MN	Minor alarm (SONET only)
Prompt	Prompt alarm (SDH only)
Deferred	Deferred alarm (SDH only)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **EQPT** *aid* type are:

AUTORESET	Circuit pack reset in progress
CONTR	Control process failure
IMPROPRMVL	Improper circuit pack removal
OADIS	OA output disabled
OMUMISMTCH	Optical multiplexer/demultiplexer mismatch or missing
ODUWRMUP	Optical demultiplexer warming up
PRCDRERR	Unexpected circuit pack type
OPSWRMUP	Optical Protection Switch warming up
SPODUWRMUP	Self Powered ODU warming up
SPOMUWRMUP	Self Powered ODU warming up

srveff Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).

conddescr Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-eqpt:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "tlm-3b,EQPT,MJ,IMPROPRMVL,SA,06-07,18-26-14,,:\\"TLM removed\\",,:"
;
```

For an OLS/OT Configuration:

```
rtrv-alm-eqpt:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "tlm-3b,EQPT,MJ,IMPROPRMVL,SA,06-07,18-26-14,,:\\"TLM removed\\",,:"
   "otu-1-3,EQPT,MJ,IMPROPRMVL,SA,06-07,18-26-14,,:\\"OTU
removed\\",,:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-ALM-NTWK

RTRV-ALM-NTWK: Retrieve Alarm Network

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

RTRV-ALM-NTWK*:tid::ctag;*

DESCRIPTION

The **RTRV-ALM-NTWK** command message can be initiated by a user to retrieve a report of all network elements in the maintenance subnetwork with active alarm/or status conditions.

The information reported by the command may be misleading if the information is incomplete due to any of the following reasons:

- The OC-48 DCC channel in both the East and West direction is declared failed.
- Any OC-3 DCC channel in the local network element is declared failed.
- If "Remote Activity Reporting" is disabled.
- If one or more nodes are unreachable due to multiple failures.

This is because the report does not distinguish between missing entries and no entries due to no active alarms. To determine if the report is complete, please use this command in conjunction with **RTRV-MAP-NETWORK**, **RTRV-FECOM** and **RTRV-ALM**.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The information displayed by this command may be incomplete. Use the Retrieve-Map-Network (RTRV-MAP-NETWORK), Retrieve-Far_End-

Communications (RTRV-FECOM), and Retrieve-Alarm-All (RTRV-ALM-ALL) commands for further details.

OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned:

```
   sid date time
M  ctag COMPLD
;
```

If there are alarm conditions to report, the following output report is returned:

```
   sid date time
M  ctag COMPLD
   "ntfcncde,ocrdat,ocrtm,tid,prodtype,lcl_rng"
        .      .   .    .      .       .
        .      .   .    .      .       .
        .      .   .    .      .       .
   "ntfcncde,ocrdat,ocrtm,tid,prodtype,lcl_rng"
;
```

Applicable output lines are ordered as follows:

1. By highest alarm severity level CR, followed by MJ, followed by MN, followed by ABN, followed by NE_ACTY.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

ntfcncde Notification code. This is the alarm level active at the network element for which the report is being generated. It can have one of the following values:

CR	Critical alarm
MJ	Major alarm
MN	Minor alarm

ABN Abnormal

NE_ACTY Near End Activity

ocrdat Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

prodtype Product Type. This gives the category of network element for which the report is being generated. It takes one of the following values.

DDM-OC3 This indicates that the reported TID is a DDM-2000 OC-3.

DDM-OC12 This indicates that the reported TID is a DDM-2000 OC-12.

DACS **This indicates that the reported** TID is a DACS IV-2000.

FTADR48 This indicates that the reported TID is an FT-2000 OC-48 ADR 2-fiber ring terminal.

FTLCT This indicates that the reported TID is an FT-2000 OC-48 4-fiber ring terminal.

OLS This indicates that the reported TID is an Optical Line System End Terminal or Repeater.

FTADR192 This indicates that the reported TID is an FT-2000 OC-192 2-fiber ring terminal.

OT This indicates that the reported TID is an Optical Translator Network Element.

SLC-2000 This indicates that the reported TID is a SLC-2000.

FbrRch This indicates that the reported TID is a Fiber Reach.

? This indicates that the reported TID is unknown or not one of the product types listed above.

lcl_rng Local ring. This indicates whether or not the network element for which report is being generated represents a node in the local ring. It takes the value from the domain {yes,no}.

EXAMPLE INPUT/OUTPUT

```
rtrv-alm-ntwk:LT-PF-2000::123456;


IP 123456
>


   LT-PF-2000 96-06-07.16:42:11
M  123456 COMPLD
   "CR,06-07,16-10-14,abcdefgh1,DDM-OC3,no"
   "CR,06-07,16-26-14,abcdefgh,FTLCT,yes"
   "MJ,06-07,11-26-14,abcdefgh3,FTADR48,yes"
   "MJ,06-07,11-26-14,abcdefgh3-14,FTADR48,yes"
   "MJ,06-07,13-26-14,abcdefgh2,DDM-OC12,no"
   "MN,06-07,16-26-13,abcdefgh4,FTLCT,no"
   "ABN,06-07,16-29-14,abcdefgh5,SLC-2000,no"
   "ABN,06-07,16-29-14,abcdefgh6,FTLCT,no"
   "ABN,06-07,16-29-14,abcdefgh7,OLS,no"
   "ABN,06-07,16-29-14,abcdefgh8,OLS,no"
   "ABN,06-07,16-29-14,abcdefgh9,OT,no"
   "ABN,06-07,16-29-14,abcdefgh10,FTADR192,no"
;
```

ERROR RESPONSES

The network element returns the following error response if alarm reporting is temporarily disabled due to execution of CIT initiated Test-Auto Turnup-System command.

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed
   The system is temporarily busy, please try later
   */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-MAP-NETWORK

RTRV-FECOM

RTRV-ALM

RTRV-ALM-ENV

RTRV-ALM-OCHAN

RTRV-ALM-OCHAN: Retrieve Alarm Optical_Channel

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ALM-OCHAN*:tid:aid:ctag[::[ntfcncde],,,,,;*

DESCRIPTION

The **RTRV-ALM-OCHAN** command can be initiated by a user to retrieve active alarms that are facility-related events at the channel level for an OLS terminal. This command retrieves active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (REPT ALM OCHAN) conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM OCHAN or REPT ALM ENV message which is active when a **RTRV-ALM-OCHAN** command is received, is included in the **RTRV-ALM-OCHAN** response message.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: Optical Channel

Legal Values:(OCHAN)-(ALL), (OCHAN)-(1A,1B,2A,2B,3A,3B,4A,4B)-(ALL,1-16)

CenterLink CIT selection options: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "CR_Critical", "MJ_Prompt", or "MN_Deferred".

CR	Critcal alarm
MJ	Major alarm
MN	Minor alarm
CR_Critical	Critcal alarm (for SONET and SDH)
MJ_Prompt	Major alarm (for SONET), Prompt alarm (for SDH)
MN_Deferred	Minor alarm (for SONET), Deferred alarm (for SDH)

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid. If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are alarm conditions to report, the following output report is returned to the OS:

```
   sid date time
M ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level CR/Critical, then MJ/Prompt, followed by MN/Deferred.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.

aidtype Access identifier type.

OCHAN Channel. This reports a facility-related event at the channel level in WaveStar OLS.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".

CR Critical alarm (SONET only)

MJ Major alarm (SONET only)

MN Minor alarm (SONET only)

Prompt Prompt alarm (SDH only)

Deferred Deferred alarm (SDH only)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **OCHAN** *aid* type are:

LOS Incoming optical channel loss-of-signal

OCHANDTCTD Incoming optical channel detected

OCHANRMVD Incoming optical channel removed

T-x Threshold crossing alert for the indicated monitored parameter (x)

srveff Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).

conddescr Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

There will be no reported conditions/alarms for optical channels on the demux side of a single OA configuration.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-ochan:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "ochan-3b,OCHAN,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
channel LOS\\",,:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-ALM-OLINE

RTRV-ALM-OLINE: Retrieve Alarm Optical_Line

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ALM-OLINE*:tid:aid:ctag[::[ntfcncde],,,,,;*

DESCRIPTION

The **RTRV-ALM-OLINE** command can be initiated by a user to retrieve active alarms or facility-related events on the optical line. This command retrieves active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (REPT ALM OLINE) conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM OLINE or REPT ALM ENV message which is active when a **RTRV-ALM-OLINE** command is received, is included in the **RTRV-ALM-OLINE** response message.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: Optical Line
Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "CR_Critical", "MJ_Prompt", or "MN_Deferred".

CR	Critcal alarm
MJ	Major alarm
MN	Minor alarm

CR_Critical	Critcal alarm (for SONET and SDH)
MJ_Prompt	Major alarm (for SONET), Prompt alarm (for SDH)
MN_Deferred	Minor alarm (for SONET), Deferred alarm (for SDH)

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are alarm conditions to report, the following output report is returned to the OS:

```
   sid date time
M ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level CR/Critical, then MJ/Prompt, followed by MN/Deferred.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.

aidtype Access identifier type.

OLINE This reports a facility-related event on the optical line in WaveStar OLS.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".

CR	Critical alarm (SONET only)
MJ	Major alarm (SONET only)
MN	Minor alarm (SONET only)
Prompt	Prompt alarm (SDH only)
Deferred	Deferred alarm (SDH only)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **OLINE** *aid* type are:

APSDA	Automatic power shut-down active
LOS	Incoming optical line loss-of-signal

srveff Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).

conddescr Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported. The optical line alarms/conditions are correlated to the supervisory channel for optical line at the demux end of a single OA configuration.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-oline:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "oline-3b,OLINE,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
line LOS\\",,:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-ALM-OPS

RTRV-ALM-OPS: Retrieve Alarm OPS

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 3.1.

INPUT FORMAT

RTRV-ALM-OPS*:tid:aid:ctag[::[ntfcncde]];*

DESCRIPTION

The **RTRV-ALM-OPS** command retrieves active alarms pertaining to the addressed network element optical protection switch(es), reported one line per condition, similar to the autonomous messages used to report alarm (REPT ALM OPS) conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM OPS or REPT ALM ENV message which is active when a **RTRV-ALM-OPS** command is received, is included in the **RTRV-ALM-OPS** response message.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: Slot (OPS)
Legal Values: (OTU)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "CR_Critical", "MJ_Prompt", or "MN_Deferred".

CR	Critcal alarm
MJ	Major alarm
MN	Minor alarm

CR_Critical	Critcal alarm (for SONET and SDH)
MJ_Prompt	Major alarm (for SONET), Prompt alarm (for SDH)
MN_Deferred	Minor alarm (for SONET), Deferred alarm (for SDH)

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid. If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are alarm conditions to report, the following output report is returned to the OS:

```
   sid date time
M ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level CR/Critical, then MJ/Prompt, followed by MN/Deferred.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

aid Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.

aidtype Access identifier type.

OPS This reports an event at an Optical Protection Switch in OLS.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".

CR	Critical alarm (SONET only)
MJ	Major alarm (SONET only)
MN	Minor alarm (SONET only)
Prompt	Prompt alarm (SDH only)
Deferred	Deferred alarm (SDH only)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **OPS** *aid* type are:

INHSWPR	Inhibit Switch
LOS	Incoming Optical Protection Switch Primary or Secondary line loss-of-signal
WKSWPR	OPS switch.

srveff Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).

conddescr Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

EXAMPLE INPUT/OUTPUT

```
rtrv-alm-ops:LT-OLS:OTU-all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "OTU-1-1,OPS:MN,LOS,NSA,06-07,18-26-14,,:\\"incoming Secondary
Line LOS\e",,:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-COND-OPS

REPT-ALM

RTRV-ALM-OTPS

RTRV-ALM-OTPS: Retrieve Alarm OT_Port_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

RTRV-ALM-OTPS*:tid:aid:ctag[::[ntfcncde],,,,,];*

DESCRIPTION

The **RTRV-ALM-OTPS** command can be initiated by a user to retrieve active alarms for facility-related conditions on the Optical Translator Unit (OTU) and Optical Translator Port Modules (OTPM). This command retrieves active alarms pertaining to the addressed OT.

Any alarm condition reported by an autonomous REPT ALM OTPS message which is active when a **RTRV-ALM-OTPS** command is received, is included in the **RTRV-ALM-OTPS** response message.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested. The aid **all** is allowed. When used, it will retrieve the alarms for all OTU and OTPM entities.

Entity: All
Legal Values: (ALL)

Entity: Port (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)-(1)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)-(1)

Entity: Port (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)-(1)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)-(1)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "CR_Critical", "MJ_Prompt", or "MN_Deferred".

CR	Critcal alarm
MJ	Major alarm
MN	Minor alarm
CR_Critical	Critcal alarm (for SONET and SDH)
MJ_Prompt	Major alarm (for SONET), Prompt alarm (for SDH)
MN_Deferred	Minor alarm (for SONET), Deferred alarm (for SDH)

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid. If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are alarm conditions to report, the following output report is returned to the OS:

```
   sid date time
M ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.

aidtype Access identifier type.

OTPS The optical translator port states encompass the AID types for OTU, QOTU, and OTPM packs.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested. It may have one of the values:

CR Critical alarm (SONET)

MJ Major alarm (SONET)

MN Minor alarm (SONET)

Critical Critical alarm (SDH)

Prompt Prompt alarm (SDH)

Deferred Deferred alarm (SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **OC3/STM1, OC12/STM4, and OC48/STM16** *aid* type are:

FAIL Incoming failure

INCASSOC Inconsistent OTU or OTPM association

J0MISMATCH J0 Section Trace Mismatch

srveff Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has the following value:

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).

conddescr Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

EXAMPLE INPUT/OUTPUT

```
M  123456 COMPLD


rtrv-alm-otps:LT-FT-2000:all:123456;
IP 123456
   LT-FT-2000 96-08-15 16:42:11
   "OTPM-1-1-1,OTPS:MN,FAIL,NSA,08-11,03-50-32,,:\\"incoming OC3
failure\\",,:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-ALM-SUPR

RTRV-ALM-SUPR: Retrieve Alarm Supervisory

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ALM-SUPR*:tid:aid:ctag[::[ntfcncde],,,,,;*

DESCRIPTION

The **RTRV-ALM-SUPR** command can be initiated by a user to retrieve active alarms of facility-related events on the supervisory channel in the optical line. This command retrieves active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (REPT ALM SUPR) conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM SUPR or REPT ALM ENV message which is active when a **RTRV-ALM-SUPR** command is received, is included in the **RTRV-ALM-SUPR** response message.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: Supervisory Channel [End terminals and Repeaters]
Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "CR_Critical", "MJ_Prompt", or "MN_Deferred".

CR	Critcal alarm
MJ	Major alarm
MN	Minor alarm

CR_Critical	Critcal alarm (for SONET and SDH)
MJ_Prompt	Major alarm (for SONET), Prompt alarm (for SDH)
MN_Deferred	Minor alarm (for SONET), Deferred alarm (for SDH)

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

If the ntfcncde is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are alarm conditions to report, the following output report is returned to the OS:

```
   sid date time
M ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level CR/Critical, then MJ/Prompt, followed by MN/Deferred.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.

aidtype Access identifier type.

SUPR This reports a facility-related event on the supervisory channel in the optical line in WaveStar OLS.

ntfcncde Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".

CR	Critical alarm (SONET only)
MJ	Major alarm (SONET only)
MN	Minor alarm (SONET only)
Prompt	Prompt alarm (SDH only)
Deferred	Deferred alarm (SDH only)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **SUPR** *aid* type are:

APSB	DCC APS data error
APSDA	Automatic power shut-down active
FAIL	Incoming supervisory channel fail
T-x	Threshold crossing alert for the indicated monitored parameter (x)
T-BERL	Incoming supervisory channel SD/SF

srveff Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).

conddescr Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

tblislt Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-supr:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "supr-3b,SUPR,MJ,LOS,SA,06-07,18-26-14,,:\\"incoming supr chnl
LOS\\",,:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-AO

RTRV-AO: Retrieve Autonomous_Output

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-AO*:tid:[aid]:ctag[:::spec_block];*

DESCRIPTION

The **RTRV-AO** command can be initiated to request the network element to send copies of autonomous TL1 messages.

The content of the response to the **RTRV-AO** command depends on the OS-type assigned to the access channel, for example, the X.25 virtual circuit (VC), over which the command is received. The output is limited to the autonomous TL1 messages that are assigned to the same OS-type.

The network element saves autonomous TL1 messages in a separate file for each OS-type, thus the response to a **RTRV-AO** command is retrieved from the file for the *same OS-type only* that the **RTRV-AO** command came in on.

The copies of autonomous TL1 messages available for retrieval include those actually reported to the user as well as those that may not have reached the user due to external (for example, X.25 failures) or internal (for example, autonomous TL1 message output buffer overflow, no current login for the OS-type, or inhibited autonomous TL1 message reporting) conditions.

The network element saves a copy of each autonomous TL1 message to which an *atag* value is assigned per OS-type.

Whenever the *atag* sequence is reset for an OS-type, for example, due to system initialization or processor reset, the **RTRV-AO** log file for that OS-type is cleared.

The network element saves copies of the 50 most recent autonomous TL1 messages for the *memory administration* OS-type.

The network element saves copies of the 50 most recent autonomous TL1 messages for the *other* OS-type.

The network element saves copies of the 40 most recent autonomous TL1 messages for the *maintenance* OS-type.

The network element saves copies of the 50 most recent autonomous TL1 messages for the *restoration* OS-type.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. Because the **RTRV-AO** log file is not filtered by *aid*, the *aid* value must be "ALL" or omitted. If this parameter is omitted, **ALL** is assumed.

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

spec_block Specific block. Parameters included within the specific block are positionally independent and are specified using a name-defined construct of: PARAMETER=*value*. The specific block may have one, both or none of the following parameters specified within it in a comma-separated list. Furthermore, each parameter listed below can appear at most once within the specific block for a single **RTRV-AO** command. The use of the word "null" in the descriptions below imply that the parameter does not appear or appears with no value (for example, **ATAGSEQ=**, or **MSGTYPE=**) in the command. The parameters are listed in alphabetic order.

ATAGSEQ Automatic tag sequence. This is the three-digit *atag* value of the autonomous TL1 messages requested. For example, "**ATAGSEQ=010**" specifies single *atag* value "010".

Two *atag* values may be specified by using an "**&**" (ampersand), for example, "**ATAGSEQ=010&020**" specifies *atag* values "010" and "020".

A range of *atag* values may be specified by using "**&&**" (double ampersands), for example, "**ATAGSEQ=010&&020**" specifies *atag* values "010, 011, 012, ..., 020".

The network element's response to "**ATAGSEQ=001&&001**" is the same as for "**ATAGSEQ=001**" (or "**ATAGSEQ=001&001**"), that is, to retrieve just *one* copy of the autonomous TL1 message with *atag* "001".

A wrap-around range of *atag* values may also be specified by using "**&&**" (double ampersands), for example, "**ATAGSEQ=998&&2**" specifies *atag* values "998, 999, 000, 001 and 002".

The network element's support of wrap-around ranges indicates that the order of input of *atag* values in ranges is significant.

Combinations of single ampersands (**&**) and double ampersands (**&&**) are not allowed in the same **ATAGSEQ** parameter specification.

If multiple or a range of *atag* values are specified by **ATAGSEQ**, but *some* of the *atag* values are not available in the network element's **RTRV-AO** log file, the network element responds with the *atag* values that *are* available within the specified **ATAGSEQ**. If no **ATAGSEQ** is specified (null), the response is not limited based on *atag* value.

MSGTYPE Message type. This is the type of autonomous messages requested. This parameter may be null or have one of the following values: "ALM", "COND", "EVENT", "DBCHG", or "SW".

ALM	Report Alarm (including Report Alarm Environment)
COND	Report Condition
EVENT	Report Event
DBCHG	Report Database Change
SW	Report Switch

For example, **MSGTYPE=DBCHG** requests all REPT DBCHG autonomous messages.

If no **MSGTYPE** is specified (null), the response is not limited by the type of autonomous messages.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: ATAGSEQ can be 1) blank (don't filter on ATAG); 2) a number between 0 and 999 (provide output for specified ATAG); 3) 2 numbers between 0 and 999 separated by an ampersand (&) (provide output for 2 specified ATAGs); or 4) 2 numbers between 0 and 999 separated by two ampersands (&&) (provide output for specified range of ATAGs).

OUTPUT FORMAT

If there are no autonomous messages to report, the following response is returned:

```
   sid date time
M  ctag COMPLD
;
```

If the input **ATAGSEQ** *atag* or **MSGTYPE** values do not match any *atag* values or message types, respectively, in the network element's **RTRV-AO** log file, or if the **MSGTYPE** value does not match the TL1 autonomous message types provisioned for the OS-types of the current login session, the network element provides a normal completion response.

If there are autonomous messages to report, the following output report is returned:

```
   sid date time
M  ctag COMPLD
/*
complete autonomous messages except without the termination indicator (";")
*/
;
```

If there is more than one autonomous message to report, the autonomous messages are output in ascending (chronological) order by their *atag* values. The *order* of output is independent of the *order* of input of the **ATAGSEQ** *atag* values.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

EXAMPLE INPUT/OUTPUT

```
RTRV-AO:LT-OLS::123456:::ATAGSEQ=11&012;


IP 123456
<


   LT-OLS 96-08-18 16:42:11
M  123456 COMPLD
/*
   LT-OLS 94-08-18 10:30:02
*  011 REPT EVT OCHNL
   "ochnl-1a:SNRSD,SC,10-25,10-30-00:\"TG3 failure\":,ISLTD"
   LT-OLS 94-08-18 10:30:03
A  012 REPT SW
   "tg-1,tg-2"
*/
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to the **RTRV-AO** command.

If the network element receives a **RTRV-AO** command with a non-null command code modifier [including any extra hyphens (**-**)], the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If the network element receives a **RTRV-AO** command with an extra hyphen (**-**), the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, Network Element does not support
   command = xxxxxxxxxxxxxxx */
;
```

where *xxxxxxxxxxxxxxx* is the first 16 characters, or up to the end-of-message semicolon (**;**) if less than 16 characters, of the command received.

If the network element receives a **RTRV-AO** command with a non-null command code modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If the network element receives a **RTRV-AO** command with an invalid *aid* value (that is, anything other than **all** or null), the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

If the network element receives a **RTRV-AO** command with the same parameter specified more than once, the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation, parameter(s) multiply
defined */
;
```

If the network element receives a **RTRV-AO** command with an invalid **ATAGSEQ** value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid ATAGSEQ */
;
```

If the network element receives a **RTRV-AO** command with an invalid **MSGTYPE** value, (that is, an autonomous TL1 message type that the network element doesn't support), the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MSGTYPE */
;
```

RELATED TL1 COMMANDS/MESSAGES

REPT ALM

REPT ALM ENV

REPT COND

REPT DBCHG

REPT EVT

RTRV-ASSOC-OTPS

RTRV-ASSOC-OTPS: Retrieve Association OT_Port_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

RTRV-ASSOC-OTPS*:tid:[aid]:ctag;*

DESCRIPTION

The **RTRV-ASSOC-OTPS** command message can be initiated by an OS or users to request optical channel and optical translator port state associations in an OLS/OT configuration.

When the network element receives this command, it will retrieve all applicable OCHAN and OTPS associations according to the parameter settings in the command.

When the OPS Operating Mode (OPSOPMD) is ENABLED, OTPS associations made to the OCHANs in the OA line associated with the Primary OPS line shall automatically be extended to the OCHANs in the OA line associated with the Secondary OPS line and the OTPS associations made to the OCHANs in the OA line associated with the Secondary OPS line shall be ignored.

However, **RTRV-ASSOC-OTPS** shall always report the provisioned values.

When OPSOPMD is DISABLED, the OTPS associations made to the OCHANs in the OA line associated with the Secondary OPS line shall not be ignored.

Provided that the input command is syntactically correct and uses input parameter values that are consistent with those supported by FT-2000, this command is never DENY-ed.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access Identifier. This is the address of the optical translator port or optical channel for which the command is intended. The aid **all** is allowed. When used, it will retrieve the OTU and OTPM port information.

Entity: All
Legal Values: (ALL)

Entity: Port (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)-(1)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)-(1)

Entity: Port (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)-(1)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)-(1)

Entity: Optical Channel

Legal Values:(OCHAN)-(ALL), (OCHAN)-(1A,1B,2A,2B,3A,3B,4A,4B)-(ALL,1-16)

CenterLink CIT selection options: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)

FT-2000 retrieves association information for all associations in which the *aid*(s) provided is (are) involved; whether as a source, a destination, or both.

Grouping of *aid* values (or any other TL1 input parameter) is not allowed in FT-2000. However, the FT-2000 system does allow for the use of the `all` construct within the *aid* field of TL1 commands to provide access to a range of AIDs.

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If the network element fully complies with the association retrieval request, the following output message is returned:

```
   sid date time
M  ctag COMPLD
   "src_aid,dest_aid:assoc"
   "src_aid,dest_aid:assoc"
        .      .      .      .      .      .      .
        .      .      .      .      .      .      .
        .      .      .      .      .      .      .
   "src_aid,dest_aid:assoc"
;
```

If multiple lines are reported, the output is sorted as follows:

1. All OTU port signals

   By *src_aid* in ascending order where, for a given OTU port signal number:

   - All upstream associations (with *each* src_aid),
   - Followed by downstream associations (with *each* src_aid).

2. All OTPM port signals

   By *src_aid* in ascending order where, for a given OTPM port signal number:

   - All upstream associations (with *each* src_aid),
   - Followed by downstream associations (with *each* src_aid).

OTUs/OTPMs and/or optical channels for which there is no association are not listed.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

src_aid Source access identifier. This is the address of the OT port signal that is associated with the *dest_aid*.

dest_aid Destination access identifier. This is the destination address of the optical channel that is associated with the *src_aid*.

assoc Association type. This parameter specifies the type of association for FT-2000, and may have one of the following values:

UPSTREAM This specifies an upstream association between the source and destination.

DOWNSTREAM This specifies a downstream association between the source and destination.

EXAMPLE INPUT/OUTPUT

The following example retrieves associations with the OT port OTU-1-3-1 (and optical channels ochan-1a-1 and ochan-1b-9):

```
rtrv-assoc-otps:LT-FT-2000-3:otu-1-3-1:123456;


IP 123456
<


   LT-FT-2000-3 93-11-26 16:42:11
M  123456 COMPLD
   "otu-1-3-1,ochan-1b-9:upstream"
   "otu-1-3-1,ochan-1a-1:downstream"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid access identifier, the following error response is returned:

```
   sid date time
M  ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If the network element receives this command with any extra (beyond the input format specification just shown) null or non-null command parameter blocks (:), parameters (not supported by FT-2000, delimited by ","), or termination characters (;), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

RELATED TL1 COMMANDS/MESSAGES

DLT-ASSOC-OTPS

ENT-ASSOC-OTPS

RTRV-ATTR-ALM

RTRV-ATTR-ALM: Retrieve Attribute Alarm

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ATTR-ALM*:tid::ctag;*

DESCRIPTION

The **RTRV-ATTR-ALM** command can be initiated by general users to retrieve the values that have been set for incoming signal alarm delay (almdel), the alarm clear delay interval (clrdel). These parameters are explained in more detail below.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the **RTRV-ATTR-ALM** request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "almdel=AlarmDelay","clrdel=ClearDelay"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined as follows:

almdel The value of the AlarmDelay (incoming signal alarm delay) parameter in seconds. It represents the time that the network element will wait, after it finds an incoming signal condition, before reporting it.

clrdel The value of the ClearDelay (alarm clear delay) parameter in seconds. It represents the time the network element will wait after a condition clears before reporting the changed condition.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-ALM** command for a PF-2000 system where the AlarmDelay parameter has been provisioned to 11 seconds; the ClearDelay parameter has been provisioned to 9 seconds.

```
RTRV-ATTR-ALM:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "almdel=11", "clrdel=9"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

RELATED TL1 COMMANDS/MESSAGES

SET-ATTR-ALM

RTRV-ATTR-CONT

RTRV-ATTR-CONT: Retrieve Attribute Control

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ATTR-CONT*:tid:aid:ctag[:[:[:]]];*

DESCRIPTION

The **RTRV-ATTR-CONT** command can be executed to retrieve the provisioned description(s) associated with an external control device or devices. These descriptions are used for information purposes when a user seeks to operate or release external miscellaneous discrete controls. For example, the user may want to verify that aid=CONT-1 is associated with a fan (and not a sprinkler) before operating it.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. The *aid* identifies the external miscellaneous discrete control for which attributes are being retrieved. An *aid* value must be provided.

Entity: Point (Control)
Legal Values: (CONT)-(ALL, 1-36)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the **RTRV-ATTR-CONT** request, the following normal completion response is returned.

```
   sid date time
M  ctag COMPLD
   "aid:\"conttype\""
       .    .     .     .
       .    .     .     .
       .    .     .     .
   "aid:\"conttype\""
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. Parameters that specifically apply to this command response are defined as follows:

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access Identifier. The aid identifies the external control for which the provisioned names are being retrieved. When the input *aid* is equal to CONT-ALL, the output is sorted by *aid*, with CONT-1 and its description printed first and CONT-2 second, etc.

conttype Control Type. The control type is the user provisioned description for the control identified by the aid. The description is enclosed with a pair of escaped quotes (\").

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-CONT** command to retrieve all the provisioned names for miscellaneous discrete controls for a PF-2000 system:

```
RTRV-ATTR-CONT:LT-PF-2000:CONT-ALL:123456:;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "cont-1:\"startPump\""
   "cont-2:\"startGenerator\""
   "cont-3:\"startlights\""
   "cont-4:\"control4\""
;
```

The following example shows a **RTRV-ATTR-CONT** command to retrieve the description of the first miscellaneous discrete control for a PF-2000 system:

```
RTRV-ATTR-CONT:LT-PF-2000:CONT-1:123456:;


IP 123456
<


   LT-FT-2000 93-10-26 16:42:11
M  123456 COMPLD
   "cont-1:\"startpump\""
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If a **RTRV-ATTR-CONT** command is received with an invalid (or missing) access identifier, the following error response is returned:

```
   sid date time
M  ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID missing or
     inconsistent with modifier value */
;
```

RELATED TL1 COMMANDS/MESSAGES

SET-ATTR-CONT

RTRV-ATTR-ENV

RTRV-ATTR-ENV: Retrieve Attribute Environment

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-ATTR-ENV*:tid:aid:ctag[::,];*

DESCRIPTION

The **RTRV-ATTR-ENV** command can be initiated to retrieve the alarm level and description parameters for each selected miscellaneous discrete environmental input point.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the environmental points for which attributes are requested. A value is required for this parameter. Entity: Point (Environmental)

Legal Values: (ENV)-(ALL, 1-144)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the retrieve attribute environment request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid:ntfcncde,\"almmsg\""
        .       .       .       .
        .       .       .       .
        .       .       .       .
   "aid:ntfcncde,\"almmsg\""
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. The remainder of the output parameters are described as follows:

aid Access identifier. This is the address of the environmental point for which the attributes are reported.

ntfcncde Notification code. This is the alarm level associated with the addressed environmental point, and has one of the following values:

CR Critical alarm

MJ Major alarm

MN Minor alarm

NA Not alarmed

NR Not reported

Notification code. This parameter is the alarm level provisioned for failures of facilities serviced by the addressed port. The *ntfcncde* parameter is reported in NTFCNCDE=*xx* format where *xx* has one of the following values:

CR	Critical (if provisioned for SONET)
MJ	Major (if provisioned for SONET)
MN	Minor (if provisioned for SONET)
NA	Not alarmed (if provisioned for SONET)
NR	Not reported (if provisioned for SONET) (No autonomous report will be generated.)
NO	Ignored (if provisioned for SONET) (No autonomous or on-demand report will be generated.)
Critical	Critical (if provisioned for SDH)
Prompt	Prompt (if provisioned for SDH)
Deferred	Deferred (if provisioned for SDH)

No_Alarm	No Alarm (if provisioned for SDH)
No_Report	No Report (if provisioned for SDH) (No autonomous report will be generated.)
Not_Indicated	Not Indicated (if provisioned for SDH) (No autonomous or on-demand report will be generated.)

almmsg Alarm message. This is the condition description associated with the addressed environmental point. The description is an alphanumeric string, upper-case and lower-case characters (spaces are allowed), up to 26 characters. The description is enclosed within a pair of escaped quotes (**\"**).

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-ENV** command to retrieve the tenth miscellaneous discrete environment parameter:

```
RTRV-ATTR-ENV:LT-FT-2000:env-10:123456;


IP 123456
<


   LT-FT-2000 93-10-26 16:42:11
M  123456 COMPLD
   "env-10:MJ,\"environment 10\""
;
```

The following example shows a **RTRV-ATTR-ENV** command to retrieve all of the miscellaneous discrete environment parameters:

```
RTRV-ATTR-ENV:LT-FT-2000:env-all:123456;


IP 123456
<


   LT-FT-2000 93-10-26 16:42:11
M  123456 COMPLD
   "env-1:NA,\"open door\""
   "env-2:MN,\"high water\""
   "env-3:MN,\"high temperature\""
   "env-4:NA,\"generator started\""
   "env-5:CR,\"battery low\""
   "env-6:MJ,\"environment 6\""
   "env-7:NR,\"environment 7\""
   "env-8:MJ,\"environment 8\""
   "env-9:MJ,\"environment 9\""
   "env-10:MJ,\"environment 10\""
   "env-11:MJ,\"environment 11\""
   "env-12:MJ,\"environment 12\""
   "env-13:MJ,\"environment 13\""
   "env-14:MJ,\"environment 14\""
   "env-15:MJ,\"environment 15\""
   "env-16:MJ,\"environment 16\""
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to the **RTRV-ATTR-ENV** command.

If the network element receives a **RTRV-ATTR** command with an invalid command modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If the network element receives a **RTRV-ATTR-ENV** command with an invalid or missing *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
      inconsistent with modifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

SET-ATTR-ENV

RTRV-BASELINE

RTRV-BASELINE: Retrieve Baseline

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available beginning in OLS Release 2.0.

INPUT FORMAT

RTRV-BASELINE*:tid::ctag;*

DESCRIPTION

The **RTRV-BASELINE** command is initiated by a user to request the network element to send the time and the reason for last baseline of the optical parameters of optical lines and the constituent optical channels through an **INIT-REG-OLINE** command.

The baseline data reported will contain information for all IS optical channels and optical lines.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

After receiving a valid **RTRV-BASELINE** command, the following output message is returned:

```
   sid date time
M  ctag COMPLD
   "aid:time:baseline"
          .         .
          .         .
          .         .
   "aid:time:baseline"
;
```

Applicable output lines are ordered by *aid* in following order of of IS optical lines (1a,1b,2a,2b,3a,3b,4a,4b).

If there is no data to return for the given valid **RTRV-BASELINE** command, the following message is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the IS optical line for which the BASELINE data is being reported. Baselining PM parameters of optical line imply baselining of PM parameters of the IS optical channels.

aid

time Time of Baseline. This is the time when baselining occurs in response to a valid **INIT-REG-OLINE** command. The format is "mm-dd-yy hh:mm".

time

baseline Reason of baseline. The Reason of baseline includes the provisioned string from **INIT-REG-OLINE** command concatenated with the address of the entity which caused it.

baseline

EXAMPLE INPUT/OUTPUT

In the following example, the command returns baseline report for optical lines 1a, 1b, 2a, 2b.

```
rtrv-baseline:LT-OLS::314152;


IP 314152
>


   LT-PF-2000 91-10-26 17:12:31
M  314152 COMPLD
   "oline-1a:01-01-96 00:17:OCHAN_dropped:ochan-1a-1"
   "oline-1b:01-01-96 00:17:OCHAN_dropped:ochan-1b-1"
   "oline-2a:01-01-96 00:17:OA_replaced:oline-2a"
   "oline-2b:01-01-96 00:17:OA_replaced:oline-2b"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

RELATED TL1 COMMANDS/MESSAGES

INIT-REG-OLINE

RTRV-CID-SECU

RTRV-CID-SECU: Retrieve Channel_IDentifier Security

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

RTRV-CID-SECU*:tid:aid:ctag;*

DESCRIPTION

The **RTRV-CID-SECU** command can be initiated by users to retrieve the current CIT or TL1 port provisioning like, port status, timeout, port type or OS type information. Also this command gives the users currently logged on the network element.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This parameter specifies the port address for which the user wants to retrieve information.

Entity: Port (COM)
Legal Values: (ALL, DCE, DTE, DCC, X25, SER_TLM1)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the **RTRV-CID-SECU** request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid:spec_block"
        .    .    .
        .    .    .
        .    .    .
   "aid:spec_block"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below.

aid The *aid* is a port address.

spec_block Specific block. Parameters within the specific block are positionally independent and are using a construct such as: PARAMETER=*value* in a comma-separated list. The specific block may have zero or more of the following parameters set within it. A parameter will not be displayed if it has no value. Furthermore, each parameter listed below may appear at most once within the specific block.

- TMOUT — This parameter sets the time out interval for the DCE, DTE, and DCC ports. It has an integer value in the range 0-999 minutes. A value of 0 disables the time out mechanism. When a null value is provided, TMOUT is unchanged. For other ports, this parameter is reported as 'blank'.
- PORTSTAT — This parameter gives the port status as provisioned. This parameter is reported for the DTE, DCE, Virtual channel 0 (vc-0) of DCC port, and the ser-tlm1 port.
- PORTTYPE — This parameter gives the port type and has a value **cit** or **tl1**. This parameter is reported only for the DTE port, DCE port and the virtual channel 0 (vc-0) of DCC port.
- BAUDRATE — This parameter gives the baud rate of the DTE port or DCE port as provisioned.

  The BAUDRATE for DCC port is always reported as blank.

  The BAUDRATE for x25 PVCs is always reported as blank.
- CHAN — This parameter lists the permanent virtual channels(pvc-{1-2}) and the table entries from the calling address table for switched virtual channels (tbl-{1-16}) of X.25 port. It also lists the virtual channels (vc-{0-8}) for the DCC port.

	This parameter is reported as ’blank’ for ’dce’ and ’dte’ ports.
OSTYPE	This parameter gives the OS type for the virtual circuit of the X.25 port and the virtual channel (1-8) of DCC.
CALLADDR	This parameter gives the calling address of the OS/user on the **svc** of the X.25 port.
	The calling address for all other ports(and associated virtual channels) is always reported as a blank.
GNETID	This parameter gives the tid of the gateway network element(GNE) for DCC virtual channels, vc 1-8.
	For all other entries, this parameter is reported as blank.
UID	This parameter gives the user ID of the user currently logged in the system.
	If no user is currently logged in at the time of the report, this parameter is reported as a ’blank’.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-CID-SECU** command for {aid=all}:

```
RTRV-CID-SECU:LT-PF-2000:all:123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "dce:TMOUT=25,PORTSTAT=enabled,PORTTYPE=cit,BAUDRATE=auto,UID=lt1"
   "dte:TMOUT=10,PORTSTAT=enabled,PORTTYPE=tl1,BAUDRATE=9600,UID=lt2"
   "dcc:CHAN=vc_0,TMOUT=15,PORTSTAT=enabled,PORTTYPE=cit,UID=lt3"
   "dcc:CHAN=vc_1,OSTYPE=ma,GNETID=another.gid1,UID=lt1"
   "dcc:CHAN=vc_2,OSTYPE=cmdr,GNETID=another.gid2,UID=lt2"
   "dcc:CHAN=vc_3,OSTYPE=rst,GNETID=another.gid3,UID=lt3"
   "dcc:CHAN=vc_4"
   "dcc:CHAN=vc_5"
   "dcc:CHAN=vc_6"
   "dcc:CHAN=vc_7"
   "dcc:CHAN=vc_8"
   "x25:CHAN=pvc_1,OSTYPE=mt,UID=NMA01"
   "x25:CHAN=pvc_2,OSTYPE=cmdr"
   "x25:CHAN=svc_1,OSTYPE=rst,CALLADDR=19089188888,UID=lt3"
   "x25:CHAN=svc_2"
   "x25:CHAN=svc_3"
   "x25:CHAN=svc_4"
   "x25:CHAN=svc_5"
   "x25:CHAN=svc_6"
   "x25:CHAN=tbl_1,OSTYPE=cmdr,CALLADDR=19089188888,UID=lt3"
   "x25:CHAN=tbl_2"
   "x25:CHAN=tbl_3"
   "x25:CHAN=tbl_4"
   "x25:CHAN=tbl_5"
   "x25:CHAN=tbl_6"
   "x25:CHAN=tbl_7"
   "x25:CHAN=tbl_8"
   "x25:CHAN=tbl_9"
   "x25:CHAN=tbl_10"
   "x25:CHAN=tbl_11"
   "x25:CHAN=tbl_12"
   "x25:CHAN=tbl_13"
   "x25:CHAN=tbl_14"
   "x25:CHAN=tbl_15"
   "x25:CHAN=tbl_16"
   "Ser_tlm1:PORTSTAT=enabled"
```

Screen continues on next page.

```
Screen continued from previous page.
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If the command is received with an invalid aid, the following error response is returned:

```
   sid date time
M  ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-CMS

RTRV-CMS: Retrieve Customer_Maintenance_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-CMS*:tid:aid:ctag[:type];*

DESCRIPTION

The **RTRV-CMS** command messages can be initiated by a user to retrieve the current provisioned state and current state of the Customer Maintenance Signal (CMS) port. This command retrieves all CMS port parameter settings that are provisionable via **ENT-CMS** commands pertaining to the addressed OLS, reported one line per CMS port.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the report is requested.

Entity: CMS Port [End Terminals and Repeaters]
Legal Values: (CMS)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

type Type. A value for this parameter is neither expected nor allowed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

Because the network element supports pre-provisioning of parameters, lines are included for all applicable *aid* values in response to this command, whether or not

the present equipage is capable of supporting the type of facility specified.

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

In response to a valid **RTRV-CMS** command, the following output report is returned, sorted on CMS port data by the *cms_aid* value.

```
   sid date time
M  ctag COMPLD
   "cms_aid:::[level,]ntfcncde,sdthr:,sst"
   "cms_aid:::[level,]ntfcncde,sdthr:,sst"
       .       .       .
       .       .       .
       .       .       .
   "cms_aid:::[level,]ntfcncde,sdthr:,sst"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

cms_aid CMS access identifier. This is the CMS port address for which output is being reported.

ntfcncde Notification code. This parameter is the alarm level provisioned for failures of facilities serviced by the addressed port. The *ntfcncde* parameter is reported in NTFCNCDE=*xx* format where *xx* has one of the following values:

CR	Critical (if provisioned for SONET)
MJ	Major (if provisioned for SONET)
MN	Minor (if provisioned for SONET)
NA	Not alarmed (if provisioned for SONET)
NR	Not reported (if provisioned for SONET) (No autonomous report will be generated.)
NO	Ignored (if provisioned for SONET) (No autonomous or on-demand report will be generated.)
Critical	Critical (if provisioned for SDH)
Prompt	Prompt (if provisioned for SDH)
Deferred	Deferred (if provisioned for SDH)
No_Alarm	No Alarm (if provisioned for SDH)
No_Report	No Report (if provisioned for SDH) (No autonomous report will be generated.)

Not_Indicated Not Indicated (if provisioned for SDH) (No autonomous or on-demand report will be generated.)

sdthr Signal degrade threshold. This parameter is the signal degrade Bit Error Rate (BER) threshold for the facility serviced by the addressed CMS port. The *sdthr* parameter for CMS port is always reported as SDTHR=-6.

sst Secondary state. This parameter reports the current secondary state of the addressed CMS port. The *sst* will have one of the secondary states supported by OLS.

The CMS port secondary state will have one of the following values:

IS In service. This specifies that the CMS port addressed by *cms_aid* is in the in service state in the *mux* (from the customer toward the optical line) direction.

OOS-MA-AS Out of service, memory administration, assigned. This specifies that the CMS port addressed by *cms_aid* is in the OLS "AUTO" state and will transition to in-service upon detection of a valid incoming customer maintenance signal in the *mux* (from the customer toward the optical line) direction.

OOS Out of service. This specifies that the CMS port addressed by *cms_aid* is in the OLS"NMON" state in the *mux* (from the customer toward the optical line) direction.

RDNA Requested data not available. If the requested *sst* data for the addressed CMS port is corrupted, this value is reported.

EXAMPLE INPUT/OUTPUT

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

The example that follows shows the response to a query concerning all CMS ports associated with all optical lines (cms-all) for an OLS repeater.

```
rtrv-cms:LT-OLS:cms-all:123456;


IP 123456
<


   LT-OLS 93-10-26 16:42:11
M  123456 COMPLD
   "cms-1a:::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"
   "cms-1b:::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"
   "cms-2a:::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"
   "cms-2b:::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"
   "cms-3a:::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"
   "cms-3b:::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"
   "cms-4a:::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,OOS-MA-AS"
   "cms-4b:::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,OOS-MA-AS"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID missing or inconsistent
      with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   INUP
   /* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-CMS

RTRV-COND-ALL

RTRV-COND-ALL: Retrieve Condition All

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-COND-ALL*:tid:aid:ctag;*

DESCRIPTION

The **RTRV-COND-ALL** command can be initiated by an OS or OS users to retrieve the current state of the network element circuit pack slots and facilities. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM or REPT ALM ENV message which is active; and any status condition reported by an autonomous REPT EVT message with *condeff*=SC (standing condition), which is active when a **RTRV-COND-ALL** message is received, is included in the **RTRV-COND-ALL** response message. Conditions provisioned with an alarm level of NR (not reported) are also included in the report even though they are not included in any REPT EVT autonomous messages.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. If provided at all, the *aid* for this command must be "ALL". If not provided, the value of "ALL" is assumed.

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are status conditions to report, the following output report is returned to the OS:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No_Alarm, followed by NR/No_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

aidtype Access identifier type. This has one of the following values:

COM Common. This reports a condition that is not an equipment or facility condition but applies to the network element as a whole.

OCHAN Channel. This reports a facility-related event at the channel level in WaveStar OLS.

CMS CMS is the incoming customer maintenance signal. This reports a facility-related event on the CMS part of the telemetry pack.

EQPT This reports an equipment-related condition.

OLINE This reports a facility-related event on the optical line in WaveStar OLS.

OPS This reports a facility-related event at the optical protection switch in OLS.

SUPR This reports a facility-related event on the supervisory channel in the optical line in WaveStar OLS.

OTPS This reports an facility-related condition on the optical translator unit (OTU) or the optical translator port module (OTPM).

ntfcncde Notification code. This is the alarm level and has one of the following values:

MJ Major (SONET)

MN Minor (SONET)

NA Not alarmed (SONET)

NR Not reported (SONET)

Prompt Prompt (SDH)

Deferred Deferred (SDH)

No_Alarm No Alarm (SDH)

No_Report No Report (SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions.

The values for this parameter can be found in the various **RTRV-COND** command pages associated with the *aidtype* output in the message. For example, condition types associated with the **COM** *aidtype* are listed in the **RTRV-COND-COM** command page.

srveff Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

locn Location. The location field will always be empty for the network element **RTRV-COND** responses.

dirn Direction. The direction field will always be empty for the network element **RTRV-COND** responses.

tmper Time period. The time period field will always be null for the network element **RTRV-COND** responses.

conddescr Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

EXAMPLE INPUT/OUTPUT

For an OLS/OT Configuration:

```
rtrv-cond-all:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "oline-3a,OLINE,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
line LOS\\",,:"
   "oline-3b,OLINE,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
line LOS\\",,:"
   "dccsupr-2a,COM,MN,EOC,NSA,06-07,18-26-14,,:\\"inc. (from Supr)
DCC failure\\",,:"
   "dccsupr-2b,COM,MN,EOC,NSA,06-07,18-26-14,,:\\"inc. (from Supr)
DCC failure\\",,:"
   "otu-1-1,OTPS,MN,FAIL,NSA,06-07,18-26-14,,:\\"incoming OC-48
failure\\",,:"
;
```

ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section.

RTRV-COND messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-COND-CMS

RTRV-COND-CMS: Retrieve Condition Customer_Maintenance_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-COND-CMS*:tid:aid:ctag::,,,;*

DESCRIPTION

The **RTRV-COND-CMS** command can be initiated by an OS or OS users to retrieve status conditions of facility-related events on the CMS part of the telemetry pack [OC3 format]. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM CMS or REPT ALM ENV message which is active; and any status condition reported by an autonomous REPT EVT message with *condeff*=SC (standing condition), which is active when a **RTRV-COND-CMS** message is received, is included in the **RTRV-COND-CMS** response message. Conditions provisioned with an alarm level of NR (not reported) are also included in the report even though they are not included in any REPT EVT autonomous messages.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: CMS Port [End Terminals and Repeaters]
Legal Values: (CMS)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are status conditions to report, the following output report is returned to the OS:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No_Alarm, followed by NR/No_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

aidtype Access identifier type.

CMS CMS is the incoming customer maintenance signal. This reports a facility-related event on the CMS part of the telemetry pack.

ntfcncde Notification code. This is the alarm level and has one of the following values:

MJ	Major (SONET)
MN	Minor (SONET)
NA	Not alarmed (SONET)
NR	Not reported (SONET)
Prompt	Prompt (SDH)
Deferred	Deferred (SDH)
No_Alarm	No Alarm (SDH)
No_Report	No Report (SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **CMS** *aid* type are:

LOF	Incoming customer signal loss-of-frame
LOS	Incoming customer signal loss-of-signal
T-BERL	Incoming customer signal SD/SF

srveff Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:

SA	Service-affecting alarm condition.
NSA	Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

locn Location. The location field will always be empty for the network element **RTRV-COND** responses.

dirn Direction. The direction field will always be empty for the network element **RTRV-COND** responses.

tmper Time period. The time period field will always be null for the network element **RTRV-COND** responses.

conddescr Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-cms:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "cms-3b,CMS,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming CMS LOS\\",,:"
;
```

ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section.

RTRV-COND messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-COND-COM

RTRV-COND-COM: Retrieve Condition Common

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-COND-COM*:tid:aid:ctag::,,,;*

DESCRIPTION

The **RTRV-COND-COM** command can be initiated by an OS or OS users to retrieve all status conditions that are not specifically equipment- or facility-related conditions but apply to the network element as a whole. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM COM or REPT ALM ENV message which is active; and any status condition reported by an autonomous REPT EVT message with *condeff*=SC (standing condition), which is active when a **RTRV-COND-COM** message is received, is included in the **RTRV-COND-COM** response message. Conditions provisioned with an alarm level of NR (not reported) are also included in the report even though they are not included in any REPT EVT autonomous messages.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. If the null value is specified in this parameter, this parameter becomes "COM".

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are status conditions to report, the following output report is returned to the OS:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No_Alarm, followed by NR/No_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

aidtype Access identifier type.

COM Common. This reports a condition that is not an equipment or facility condition but applies to the network element as a whole.

ntfcncde Notification code. This is the alarm level and has one of the following values:

MJ	Major (SONET)
MN	Minor (SONET)
NA	Not alarmed (SONET)
NR	Not reported (SONET)
Prompt	Prompt (SDH)
Deferred	Deferred (SDH)
No_Alarm	No Alarm (SDH)
No_Report	No Report (SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions.

The valid values for the condition type of the **COM** *aid* type are:

ACOMAN	Operate alarm cutoff
ADMPFL	TID address map full
AGNE-COMF	Alamr Group Network Element status communications failure
BC-LAN-1-FAIL	Board controller LAN 1 failure
BC-LAN-2-FAIL	Board controller LAN 2 failure
CONTR	Control processor failure or software download in progress
DCC-INIT	DCC start-up in progress
DSNE-NR	Directory Services Network Element not reachable
DUPL-TID	Duplicate TID defined
EOC	Incoming (from supervisory) DCC failure or remote communication failure
FLT-CPY-SW-PRGM	Copy program failed due to a fault
INHMSG	Inhibit autonomous messages to OS
INIT-1	Initialize system
INIT-2	Update system
IO-ACTY	Input/output activity
IP-CPY-SW-PRGM	Copy program in progress
MAN	User login/logout

MISC	Provisioned control point
MULT-DSNE	Multiple Directory Services Network Element defined
PIDEXPRD	Password expired
OACNFGMM	Single optical amplifier configuration mismatch
OAPMMM	Optical amplifier equippage/provisioned mode mismatch
OATYPMM	Optical amplifier types mismatch
OA-LAN-FAIL	Optical amplifier LAN failure
OK-CPY-SW-PRGM	Copy program has been successfully completed
OLINEIDMM	Optical line ID mismatch
PWR	Fus/power failure
RNG-INC	Ring incomplete
RNG-INITC	Ring startup in progress
SER-TLM1-FAIL	Serial telemetry port failure
SYSBOOT	Reset in progress
UIDDLT	Login deleted
UIDEXPRD	Login expired

srveff Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

locn Location. The location field will always be empty for the network element **RTRV-COND** responses.

dirn Direction. The direction field will always be empty for the network element **RTRV-COND** responses.

tmper Time period. The time period field will always be null for the network element **RTRV-COND** responses.

conddescr Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-com:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "tlm-4b,COM,MN,EOC,NSA,06-07,18-26-14,,:\\"incoming (from OC3)
DCC failure\\",,:"
;
```

ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section.

RTRV-COND messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-COND-EQPT

RTRV-COND-EQPT: Retrieve Condition Equipment

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-COND-EQPT*:tid:aid:ctag::,,,;*

DESCRIPTION

The **RTRV-COND-EQPT** command can be initiated by an OS or OS users to retrieve status conditions of equipment-related events. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM EQPT or REPT ALM ENV message which is active; and any status condition reported by an autonomous REPT EVT message with *condeff*=SC (standing condition), which is active when a **RTRV-COND-EQPT** message is received, is included in the **RTRV-COND-EQPT** response message. Conditions provisioned with an alarm level of NR (not reported) are also included in the report even though they are not included in any REPT EVT autonomous messages.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: All
Legal Values: (ALL)

Entity: Slot (TOHCTL)
Legal Values: (TOHCTL)

Entity: Slot (SYSCTL)
Legal Values: (SYSCTL)

Entity: Slot (SYSMEM)
Legal Values: (SYSMEM)

Entity: Slot (OA)
Legal Values: (OA)-(ALL, 1A-4B)

Entity: Slot (OU)
Legal Values: (OU)-(ALL, 1A-4B)

Entity: Slot (TLM) [End terminals and Repeaters]
Legal Values: (TLM)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

Entity: Shelf (OLS)
Legal Values: (SHLF)-(ALL, 1-2)

Entity: Slot (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)

Entity: Slot (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)

Entity: Slot (OTCTL)
Legal Values: (OTCTL)-(ALL, 1, 2)

Entity: Shelf (OT)
Legal Values: (SHLF)-(OT)-(ALL, 1-2)-(ALL, LO, MID, UP)

Entity: Slot (OPS)
Legal Values: (OTU)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

Entity: Self Powered OU Slot(OU)
Legal Values: (OTU)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are status conditions to report, the following output report is returned to the OS:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No_Alarm, followed by NR/No_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

aidtype Access identifier type.

EQPT This reports an equipment-related condition.

ntfcncde Notification code. This is the alarm level and has one of the following values:

MJ Major (SONET)

MN Minor (SONET)

NA	Not alarmed (SONET)
NR	Not reported (SONET)
Prompt	Prompt (SDH)
Deferred	Deferred (SDH)
No_Alarm	No Alarm (SDH)
No_Report	No Report (SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **EQPT** *aid* type are:

AUTORESET	Circuit pack reset in progress
CONTR	Control process failure
IMPROPRMVL	Improper circuit pack removal
OADIS	OA output disabled
OMUMISMTCH	Optical multiplexer/demultiplexer mismatch or missing
ODUWRMUP	Optical demultiplexer warming up
PRCDRERR	Unexpected circuit pack type
OPSWRMUP	Optical Protection Switch warming up
SPODUWRMUP	Self Powered ODU warming up
SPOMUWRMUP	Self Powered ODU warming up

srveff Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:

SA	Service-affecting alarm condition.
NSA	Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

locn Location. The location field will always be empty for the network element **RTRV-COND** responses.

dirn Direction. The direction field will always be empty for the network element **RTRV-COND** responses.

tmper Time period. The time period field will always be null for the network element **RTRV-COND** responses.

conddescr Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-eqpt:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "tlm-3b,EQPT,MJ,IMPROPRMVL,SA,06-07,18-26-14,,:\\"TLM removed\\",,:"
;
```

For an OLS/OT Configuration:

```
rtrv-cond-eqpt:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "tlm-3b,EQPT,MJ,IMPROPRMVL,SA,06-07,18-26-14,,:\\"TLM removed\\",,:"
   "otu-1-3,EQPT,MJ,IMPROPRMVL,SA,06-07,18-26-14,,:\\"OTU
removed\\",,:"
;
```

ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section.

RTRV-COND messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-COND-OCHAN

RTRV-COND-OCHAN: Retrieve Condition Optical_Channel

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-COND-OCHAN*:tid:aid:ctag::,,,;*

DESCRIPTION

The **RTRV-COND-OCHAN** command can be initiated by an OS or OS users to retrieve status conditions of facility-related events at the channel level. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM OCHAN or REPT ALM ENV message which is active; and any status condition reported by an autonomous REPT EVT message with *condeff*=SC (standing condition), which is active when a **RTRV-COND-OCHAN** message is received, is included in the **RTRV-COND-OCHAN** response message. Conditions provisioned with an alarm level of NR (not reported) are also included in the report even though they are not included in any REPT EVT autonomous messages.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: Optical Channel

Legal Values:(OCHAN)-(ALL), (OCHAN)-(1A,1B,2A,2B,3A,3B,4A,4B)-(ALL,1-16)

CenterLink CIT selection options: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are status conditions to report, the following output report is returned to the OS:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No_Alarm, followed by NR/No_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

The optical line, and its constituent optical channel(s), DEMUXed at a single OA OLS End Terminal is not directly monitored because there is no OA directly preceding the ODU.

aidtype Access identifier type.

OCHAN Channel. This reports a facility-related event at the channel level in WaveStar OLS.

ntfcncde Notification code. This is the alarm level and has one of the following values:

MJ	Major (SONET)
MN	Minor (SONET)
NA	Not alarmed (SONET)
NR	Not reported (SONET)
Prompt	Prompt (SDH)
Deferred	Deferred (SDH)
No_Alarm	No Alarm (SDH)
No_Report	No Report (SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **OCHAN** *aid* type are:

LOS	Incoming optical channel loss-of-signal
OCHANDTCTD	Incoming optical channel detected
OCHANRMVD	Incoming optical channel removed
T-x	Threshold crossing alert for the indicated monitored parameter (x)

srveff Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:

SA Service-affecting alarm condition.

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

locn Location. The location field will always be empty for the network element **RTRV-COND** responses.

dirn Direction. The direction field will always be empty for the network element **RTRV-COND** responses.

tmper Time period. The time period field will always be null for the network element **RTRV-COND** responses.

conddescr Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section. There will be no reported conditions/alarms for optical channels on the demux side of a single OA configuration.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-ochan:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "ochan-3b,OCHAN,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
channel LOS\\",,:"
;
```

ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section.

RTRV-COND messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-COND-OLINE

RTRV-COND-OLINE: Retrieve Condition Optical_Line

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-COND-OLINE*:tid:aid:ctag::,,,;*

DESCRIPTION

The **RTRV-COND-OLINE** command can be initiated by an OS or OS users to retrieve status conditions of facility-related events on the optical line. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous `REPT ALM OLINE` or `REPT ALM ENV` message which is active; and any status condition reported by an autonomous `REPT EVT` message with *`condeff`*=`SC` (standing condition), which is active when a **RTRV-COND-OLINE** message is received, is included in the **RTRV-COND-OLINE** response message. Conditions provisioned with an alarm level of `NR` (not reported) are also included in the report even though they are not included in any `REPT EVT` autonomous messages.

INPUT PARAMETERS

`tid` Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

`aid` Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: Optical Line
Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

`ctag` Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *`ctag`* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are status conditions to report, the following output report is returned to the OS:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No_Alarm, followed by NR/No_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

The optical line, and its constituent optical channel(s), DEMUXed at a single OA OLS End Terminal is not directly monitored because there is no OA directly preceding the ODU.

aidtype Access identifier type.

OLINE	This reports a facility-related event on the optical line in WaveStar OLS.

ntfcncde Notification code. This is the alarm level and has one of the following values:

MJ	Major (SONET)
MN	Minor (SONET)
NA	Not alarmed (SONET)
NR	Not reported (SONET)
Prompt	Prompt (SDH)
Deferred	Deferred (SDH)
No_Alarm	No Alarm (SDH)
No_Report	No Report (SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **OLINE** *aid* type are:

APSDA	Automatic power shut-down active
LOS	Incoming optical line loss-of-signal

srveff Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:

SA	Service-affecting alarm condition.
NSA	Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

locn Location. The location field will always be empty for the network element **RTRV-COND** responses.

dirn Direction. The direction field will always be empty for the network element **RTRV-COND** responses.

tmper Time period. The time period field will always be null for the network element **RTRV-COND** responses.

conddescr Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

The optical line alarms/conditions are correlated to the supervisory channel for optical line at the demux end of a single OA configuration.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-oline:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "oline-3b,OLINE,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
line LOS\\",,:"
;
```

ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section.

RTRV-COND messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-COND-OPS

RTRV-COND-OPS: Retrieve Condition OPS

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 3.1.

INPUT FORMAT

RTRV-COND-OPS*:tid:aid:ctag;*

DESCRIPTION

The **RTRV-COND-OPS** command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the Optical Protection Switches of the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM OPS message which is active; and any status condition reported by an autonomous REPT EVT message with *condeff*=SC (standing condition), which is active when a **RTRV-COND-OPS** message is received, is included in the **RTRV-COND-OPS** response message. Conditions provisioned with an alarm level of NR (not reported) are also included in the report even though they are not included in any REPT EVT autonomous messages.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: Slot (OPS)
Legal Values: (OTU)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are status conditions to report, the following output report is returned to the OS:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No_Alarm, followed by NR/No_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

aid Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

aidtype Access identifier type.

OPS This reports an event at an Optical Protection Switch in OLS.

ntfcncde Notification code. This is the alarm level and has one of the following values:

MJ	Major (SONET)
MN	Minor (SONET)
NA	Not alarmed (SONET)
NR	Not reported (SONET)
Prompt	Prompt (SDH)
Deferred	Deferred (SDH)
No_Alarm	No Alarm (SDH)
No_Report	No Report (SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **OPS** *aid* type are:

INHSWPR	Inhibit Switch
LOS	Incoming Optical Protection Switch Primary or Secondary line loss-of-signal
WKSWPR	OPS switch.

srveff Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:

SA	Service-affecting alarm condition.
NSA	Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

locn Location. The location field will always be empty for the network element **RTRV-COND** responses.

dirn Direction. The direction field will always be empty for the network element **RTRV-COND** responses.

tmper Time period. The time period field will always be null for the network element **RTRV-COND** responses.

conddescr Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

EXAMPLE INPUT/OUTPUT

```
rtrv-cond-ops:LT-OLS:OTU-all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "OTU-1-1,OPS:MN,LOS,NSA,06-07,18-26-14,,,:\\"incoming Primary
Line LOS\\":"
;
```

ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section.

RTRV-COND messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-ALM-OPS

REPT-COND

RTRV-COND-OTPS

RTRV-COND-OTPS: Retrieve Condition OT_Port_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

RTRV-COND-OTPS*:tid:aid:ctag;*

DESCRIPTION

RTRV-COND-OTPS commands can be initiated by an OS or OS users to retrieve status conditions of facility-related events at the optical translator unit (OTU) and optical translator port module (OTPM) levels. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed OT.

Any alarm condition reported by an autonomous REPT ALM OTPS message which is active; and any status condition reported by an autonomous REPT EVT message with *condeff*=SC (standing condition), which is active when a **RTRV-COND-OTPS** message is received, is included in the **RTRV-COND-OTPS** response message. Conditions provisioned with an alarm level of NR (not reported) are also included in the report even though they are not included in any REPT EVT autonomous messages.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested. The aid **all** is allowed. When used, it will retrieve the OTU and OTPM port information.

Entity: All
Legal Values: (ALL)

Entity: Port (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)-(1)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)-(1)

Entity: Port (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)-(1)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)-(1)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are

strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are status conditions to report, the following output report is returned to the OS:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No_Alarm, followed by NR/No_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

The aid **all** is allowed. When used, it will retrieve the OTU and OTPM port information.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

aidtype Access identifier type.

OTPS The optical translator port states encompass the AID types for OTU, QOTU, and OTPM packs.

ntfcncde Notification code. This is the alarm level and has one of the following values:

MJ Major (SONET)

MN Minor (SONET)

NA Not alarmed (SONET)

NR Not reported (SONET)

Prompt Prompt (SDH)

Deferred Deferred (SDH)

No_Alarm No Alarm (SDH)

No_Report No Report (SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **OC3/STM1, OC12/STM4, and OC48/STM16** *aid* type are:

FAIL Incoming failure

INCASSOC Inconsistent OTU or OTPM association

J0MISMATCH J0 Section Trace Mismatch

srveff Service effect (or condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:

NSA Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

locn Location. The location field will always be empty for the network element **RTRV-COND** responses.

dirn Direction. The direction field will always be empty for the network element **RTRV-COND** responses.

tmper Time period. The time period field will always be null for the network element **RTRV-COND** responses.

conddescr Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

EXAMPLE INPUT/OUTPUT

```
M  123456 COMPLD


rtrv-cond-otps:LT-FT-2000:all:123456;
IP 123456
   LT-FT-2000 96-08-15 16:42:11
   "otpm-1-3-3-1,OTPS:MN,FAIL,NSA,08-11,03-50-32,,:\\"incoming OC3
failure\\""
;
```

ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section.

RTRV-COND messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-COND-SUPR

RTRV-COND-SUPR: Retrieve Condition Supervisory

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-COND-SUPR*:tid:aid:ctag::,,,;*

DESCRIPTION

RTRV-COND-SUPR commands can be initiated by an OS or OS users to retrieve status conditions of facility-related events on the supervisory channel in the optical line. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM SUPR or REPT ALM ENV message which is active; and any status condition reported by an autonomous REPT EVT message with *condeff*=SC (standing condition), which is active when a **RTRV-COND-SUPR** message is received, is included in the **RTRV-COND-SUPR** response message. Conditions provisioned with an alarm level of NR (not reported) are also included in the report even though they are not included in any REPT EVT autonomous messages.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: Supervisory Channel [End terminals and Repeaters]
Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

```
   sid date time
M  ctag COMPLD
;
```

If there are status conditions to report, the following output report is returned to the OS:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\""
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No_Alarm, followed by NR/No_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

aidtype Access identifier type.

SUPR This reports a facility-related event on the supervisory channel in the optical line in WaveStar OLS.

ntfcncde Notification code. This is the alarm level and has one of the following values:

MJ	Major (SONET)
MN	Minor (SONET)
NA	Not alarmed (SONET)
NR	Not reported (SONET)
Prompt	Prompt (SDH)
Deferred	Deferred (SDH)
No_Alarm	No Alarm (SDH)
No_Report	No Report (SDH)

condtype Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **SUPR** *aid* type are:

APSB	DCC APS data error
APSDA	Automatic power shut-down active
FAIL	Incoming supervisory channel fail
T-x	Threshold crossing alert for the indicated monitored parameter (x)
T-BERL	Incoming supervisory channel SD/SF

srveff Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:

SA	Service-affecting alarm condition.
NSA	Non-service-affecting alarm or status condition.

ocrdat Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

ocrtm Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

locn Location. The location field will always be empty for the network element **RTRV-COND** responses.

dirn Direction. The direction field will always be empty for the network element **RTRV-COND** responses.

tmper Time period. The time period field will always be null for the network element **RTRV-COND** responses.

conddescr Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM OUTPUT PARAMETERS section.

EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-supr:LT-OLS:all:123456;


IP 123456
   LT-OLS 94-06-07 16:42:11
M  123456 COMPLD
   "supr-3b,SUPR,MJ,LOS,SA,06-07,18-26-14,,:\\"incoming supr chnl
LOS\\",,:"
;
```

ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** ERROR RESPONSES section.

RTRV-COND messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-DAT

RTRV-DAT: Retrieve Date

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

RTRV-DAT*:tid::ctag;*

DESCRIPTION

The **RTRV-DAT** command can be initiated by all users to retrieve the date and daylight savings time provisioning information.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

When reporting the provisioning information report, the following output message is returned:

```
   sid date time
M  ctag COMPLD
  ":OPDDB:ONDDB"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined as follows:

OPDDB The *OPDDB* is a position defined block to report various attributes. The format will be *value1,value2....*. All applicable attributes to be reported are as follows:

- `date` Date. `date` reports the current day in YY-MM-DD format.
- `time` Time. `time` reports the current time in HH-MM-SS format.

ONDDB The *ONDDB* is a name defined block to report various attributes. The format will be *keyword1=value1,keyword2=value2....*. All applicable attributes to be reported are as follows:

- `tz` Standard Time Zone. `tz` reports the time zone designation outside of daylight savings time(i.e EST).
- `strtdst` Start Daylight Savings Time. `strtdst` is the date on which the one hour increment in the system time is to occur.
- `stopdst` Stop Daylight Savings Time. `stopdst` is the date on which one hour decrement in system time is to occur.
- `dstz` Daylight Savings Time Zone. `dstz` reports the time zone specification for the during Daylight Savings Time(that is, EDT).

EXAMPLE OUTPUT

The following example shows a command **RTRV-DAT** for a network element.

```
rtrv-dat:LT-PF-2000::CTAG;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  CTAG COMPLD
   ":93-10-26,16-42-11:TZ=EST,STRTDST=04-29,STOPDST=10-27,DSTZ=EDT"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

RELATED TL1 COMMANDS/MESSAGES

ED-DAT

RTRV-EQPT

RTRV-EQPT: Retrieve Equipment

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-EQPT*:tid:aid:ctag;*

DESCRIPTION

The **RTRV-EQPT** command is issued to the network element to retrieve the circuit pack and version number information for one or more slots.

When the network element receives a **RTRV-EQPT** command from the user, the network element will display the circuit pack and version number information for the requested slot(s).

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. *aid* determines slot address for this report.

Entity: All
Legal Values: (ALL)

Entity: Slot (TOHCTL)
Legal Values: (TOHCTL)

Entity: Slot (SYSCTL)
Legal Values: (SYSCTL)

Entity: Slot (SYSMEM)
Legal Values: (SYSMEM)

Entity: Slot (OA)
Legal Values: (OA)-(ALL, 1A-4B)

Entity: Slot (OU)
Legal Values: (OU)-(ALL, 1A-4B)

Entity: Slot (TLM) [End terminals and Repeaters]
Legal Values: (TLM)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

Entity: Slot (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)

Entity: Slot (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-

(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)

Entity: Slot (OTCTL)
Legal Values: (OTCTL)-(ALL, 1, 2)

Entity: Slot (OPS)
Legal Values: (OTU)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

Entity: Self Powered OU Slot(OU)
Legal Values: (OTU)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

In response to a valid **RTRV-EQPT** command, the following output report is returned to the user.

```
   sid date time
M  ctag COMPLD
   "aid::spec_block"
       .       .       .
       .       .       .
   "aid::spec_block"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

aid Access identifier. This is the address of the slot and shelf for which equipage is being reported.

spec_block Specific block. This parameter field is used for returning the current equipage information for the slot or quad. Parameters within the specific block are positionally independent and are specified using a name defined construct of: PARAMETER=*value* in a comma-separated list. The parameters are listed and explained in the following paragraphs.

If a parameter does not contain any information, the parameter and its field indicator (a comma) will not appear in the spec_block.

It should be noted, however, that the network elements will return the parameter within the *spec_block* in the following order:

TYPE, APP, SSN, CLEI, ECI, SLN, and VRSN

TYPE Circuit pack type. This is the mnemonic name that identifies the general type function provided by the circuit pack. For example, optical line interface units are all named OU.

APP Apparatus code. This parameter uniquely identifies the specific function provided by the circuit pack. Circuit packs with different APP are not interchangeable, even if they have the same name.

SSN Series number. This parameter is used to indicate interchangeability among the circuit packs with the same circuit pack type and apparatus code, but different manufacturing versions. In general, a circuit pack can be replaced by another pack that has the same apparatus code and the same or later series number.

Note that the series number normally includes a colon (:). Since the colon is used as a TL1 field separator, a dash (-) is used instead.

CLEI Common Language Equipment Identifier†. This parameter is a 10-character code identifying each circuit pack. Absence of demux end OA causes no data available condition for the OMU. Also, the OA 1A slot is not equipped in the Single OA configuration. Therefore, SYSCTL nor any other device will be able to read the CLEI. Circuit pack information is not readable for the CLEI.

ECI Equipment catalog item. This parameter is a 6-character code identifying each circuit pack. This code corresponds to the bar-code label on the face-plate of the circuit pack, and is uniquely equivalent to CLEI.

---

† COMMON LANGUAGE is a registered trademark and CLEI, CLLI, and CLFI are trademarks of Bell Communication Research, Inc.

SLN Serial number. This parameter is a 12-character code uniquely identifying each circuit pack and indicating the date and place of manufacture.

VRSN Program version. This parameter is the version of the software currently stored in the circuit pack.

The network element will include in its response equipage information on only equipped slots.

The network element will successfully complete the **RTRV-EQPT** command and return a COMPLD even if the *aid* in the command points to slot(s) that is/are not equipped.

The slot numbering for the OTU, QOTU, and OTPMs is consecutive. Each OTU slot is reported in ascending order from 1-32. If an OTU slot contains the first slot of a QOTU, the QOTU is reported, followed by each port module in ascending order from 1-4, followed by the extension (EXT) slot.

The port signals are reported in a similar fashion. Port AIDs display a "-1" extension to the slot or port module from which the signal originates.

The initial QOTU slot and its extension (EXT) slot will display the same information in the same order. Only equipped OTPM slots will be displayed.

If the circuit pack in an equipped slot is removed, declared failed, or replaced with a pack of different type, the TYPE of the provisioned (removed/failed) circuit pack is retained and reported in the normal fashion except in some specific cases where it is reported as specified in other requirements in this document. The CLEI value is lost and is not reported . The CLEI is reported in some specific cases where error conditions are reported by the NE as specified in other requirements in this document.

When the *aid* of the slot in the input command is SYSCTL or SYSMEM, the network element will return the equipage information for both SYSCTL and SYSMEM *aid*s.

The program version information is reported whenever the report includes information on a circuit pack on which a downloadable program is stored.

The order and syntax of the information for the *info* field is given as:
ccccccc,aaaaaaaaa,sssss,nnnnnnnnnnn
where,

ccccccc: is the Circuit pack type of the installed circuit pack if available, otherwise reported as a dash.

aaaaaaaaa: is the Apparatus Code of the installed circuit pack if available, otherwise reported as a dash.

sssss: is the Series Number of the installed circuit pack if available, otherwise reported as a dash.

nnnnnnnnnnn: is the Serial Number of the installed circuit pack if available, otherwise reported as a dash.

If the circuit pack in an equipped slot is replaced with a pack of different but known type, the CLEI field for that slot or quad will be set to installed_CP_mismatch_*(info)*, where *info* field contains any information available on the installed CP in the order of CP type, apparatus code, series number and serial number respectively separated by commas. If any one of these pieces of

information is unavailable, a dash is reported in its place.

If the circuit pack in an equipped slot is replaced with a pack of different and unknown type, the TYPE field is set to the expected CP type and the CLEI field for that slot or quad is set to installed_CP_unknown_*(info)*, where *info* field contains any information available on the installed CP in the order of CP type, apparatus code, series number and serial number respectively separated by commas. If any one of these pieces of information is unavailable, nothing is reported.

If an unequipped slot is populated with a pack of unknown type, the TYPE field will not appear and the CLEI field for that slot or quad is set to installed_CP_unknown_*(info)*, where *info* field contains any information available on the installed CP in the order of CP type, apparatus code, series number and serial number respectively separated by commas. If any one of these pieces of information is unavailable a dash is reported in its place.

The allowed TYPE values for the OT are: OTU for an OTU pack; QOTU and EXT for a Quad OTU pack; OTPM for a Quad OTU Port Module; and OTCTL for an OTCTL pack.

If the CP in an equipped slot is removed, the CLEI is set to CP_removed_complete_information_not_available.

If the CP in an equipped slot is failed, and when the alternative pack is not identified by software, the CLEI is set to installed_CP_failed_alternative_CP_information_not_available.

If the CP in the slot specified by the *aid* in the user input command is declared failed and if the software is able to identify a single alternative CP to be replaced, then the CLEI will be set to CP_failed_alternative_CP_*(info)*, where *info* field contains any information available on the alternative CP in the order of slot address, CP type, and apparatus code respectively separated by commas. If any one of these three pieces on information is unavailable a dash is reported in its place.

EXAMPLE INPUT/OUTPUT

The following OLS example requests the equipage information in the *SYSCTL* slot.

```
rtrv-eqpt:LT-OLS:sysctl:123456;


IP 123456
<


   LT-OLS 93-10-26 16:42:11
M  123456 COMPLD
   "sysctl::TYPE=SYSCTL,APP=LAA23,SSN=12345,CLEI=1234567890,ECI=123456,
SLN=123456789012,VRSN=OLS_RELEASE_x.y.z-OLS"
   "sysmem::TYPE=SYSMEM,APP=LAA25,SSN=12345,CLEI=1234567890,ECI=123456,
SLN=123456789012,VRSN=OLS_RELEASE_x.y.z-OLS"
;
```

The following OLS example requests a *"1A-TX"* terminal in single OA configuration.

```
rtrv-eqpt:LT-OLS:tlm-all:123456;


IP 123456
<


   LT-OLS 93-10-26 16:42:11
M  123456 COMPLD
TLM-1A::TYPE=TLM,APP=LDA1,SSN=S1-3,CLEI=SNC2R00BAC,ECI=216539,
SLN=96MV09070837
TLM-1B::TYPE=TLM,APP=LDA1,SSN=S1-3,CLEI=SNC2R00BAC,ECI=216539,
SLN=96MV09070837
TLM-2A::TYPE=TLM,APP=LDA1,SSN=S1-3,CLEI=SNC2R00BAC,ECI=216539,
SLN=96MV09070837
TLM-2B::TYPE=TLM,APP=LDA1,SSN=S1-3,CLEI=SNC2R00BAC,ECI=216539,
SLN=96MV09070837
;
```

The following OLS example requests equipage for an OT. The last two shelves are not equipped.

```
rtrv-eqpt:breckenridge:otu-2-all:taub;


IP taub
<


   BRECKENRIDGE 70-01-10 05:14:25
M  taub COMPLD
   "otu-2-1::TYPE=OTU,APP=41B,SSN=S1-1,CLEI=SNCLBT0AAA,ECI=214183,
SLN=95MV12095517"
   "otu-2-2::TYPE=OTU,APP=41B,SSN=S1-1,CLEI=SNCLBT0AAA,ECI=214183,
SLN=95MV12095518"
   "otu-2-3::TYPE=QOTU,APP=41AS,SSN=S1-1,CLEI=SNCLBT0AAB,ECI=214183,
SLN=95MV12095519"
   "otpm-2-3-1::TYPE=OTPM,APP=41A2,SSN=S1-1,CLEI=SNCLBT0AAC,
ECI=214183,SLN=95MV12095520"
   "otpm-2-3-2::TYPE=OTPM,APP=41A3,SSN=S1-1,CLEI=SNCLBT0AAD,
ECI=214183,SLN=95MV12095521"
   "otpm-2-3-3::TYPE=OTPM,APP=41A4,SSN=S1-1,CLEI=SNCLBT0AAE,
ECI=214183,SLN=95MV12095522"
   "otpm-2-3-4::TYPE=OTPM,APP=41A5,SSN=S1-1,CLEI=SNCLBT0AAF,
ECI=214183,SLN=95MV12095523"
   "otu-2-4::TYPE=EXT"
   "otu-2-5::TYPE=QOTU,APP=41AS,SSN=S1-1,CLEI=SNCLBT0AAB,ECI=214183,
SLN=95MV12095524"
   "otpm-2-5-1::TYPE=OTPM,APP=41A2,SSN=S1-1,CLEI=SNCLBT0AAC,
ECI=214183,SLN=95MV12095525"
   "otpm-2-5-2::TYPE=OTPM,APP=41A3,SSN=S1-1,CLEI=SNCLBT0AAD,
ECI=214183,SLN=95MV12095526"
   "otpm-2-5-3::TYPE=OTPM,APP=41A4,SSN=S1-1,CLEI=SNCLBT0AAE,
ECI=214183,SLN=95MV12095527"
   "otpm-2-5-4::TYPE=OTPM,APP=41A5,SSN=S1-1,CLEI=SNCLBT0AAF,
ECI=214183,SLN=95MV12095528"
   "otu-2-6::TYPE=EXT"
   "otu-2-7::TYPE=OTU,APP=41B,SSN=S1-1,CLEI=SNCLBT0AAA,ECI=214183,
SLN=95MV12095529"
   "otu-2-8::TYPE=OTU,CLEI=CP_not_readable"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The requirements listed there also apply to the **RTRV-EQPT** command.

If the network element receives a **RTRV-EQPT** command without an *aid* or with an invalid *aid* the following error response is returned to the user:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-FECOM

RTRV-FECOM: Retrieve Far_End_Communications

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available in OLS Release 2.0.

INPUT FORMAT

RTRV-FECOM*:tid::ctag;*

DESCRIPTION

The **RTRV-FECOM** command can be initiated by general users to retrieve the provisioned state of network element's section data communication channel (DCC) as set by the **ENT-FECOM** command.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the **RTRV-FECOM** request, the following far-end communication output report is given (details on parameter values are as follows):

```
   sid date time
M  ctag COMPLD
   "::rar,roa"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined as follows:

rar Remote activity reporting. This parameter indicates whether the remote activity reporting is enabled or disabled.

roa Remote office alarms. This parameter shows whether the remote office alarms are enabled or disabled.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-FECOM** command output.

```
RTRV-FECOM:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 9-10-26 16:42:11
M  123456 COMPLD
   "::RAR=enabled,ROA=enabled"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

RELATED TL1 COMMANDS/MESSAGES

ENT-FECOM

RTRV-HDR

RTRV-HDR: Retrieve Header

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-HDR*:tid::ctag;*

DESCRIPTION

RTRV-HDR commands can be initiated to request that the network element return a normal completion response.

NOTE:
This command may be used as a "keep-alive" signal.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

The *tid* is a case insensitive character string of up to 20 characters. The allowed ASCII characters are letters "A" through "Z" and "a" through "z", numbers "0" through "9", and special characters: "#" (pound), "%" (percent), "+" (plus), "-" (hyphen), and "." (period).

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

Valid values for *ctag* include strings of up to 6 characters comprised of identifiers (alphanumerics beginning with a letter) or decimal numerals (a string of decimal digits with an optional non-trailing ".").

All position defined parameters (for example, tid and ctag) may be specified by a name=value format, or, as a value only. Therefore, **RTRV-HDR:LT-PF-2000::123;** and **RTRV-HDR:TID=LT-PF-2000::CTAG=123;** and **RTRV-HDR:TID=LT-PF-2000::123;** and **RTRV-HDR:LT-PF-2000::CTAG=123;** are equivalent.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

After receiving this command, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

sid	Source identifier (or Target identifier, *tid*). This is the system name.
date	Date output message is generated. This has the format YY-MM-DD (year-month-day).
time	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
M	This indicates the output message is generated in response to a manual command.
ctag	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
COMPLD	This indicates that the command has been completed.

EXAMPLE INPUT/OUTPUT

```
RTRV-HDR:LT-PF-2000::123456;


   LT-PF-2000 94-10-26 16:42:11
M  123456 COMPLD
;
```

```
RTRV-HDR:LT-OLS::123456;


   LT-OLS 94-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

The following error conditions are not unique to the **RTRV-HDR** command but may apply to any TL1 command received by the network element. When the TL1 security feature is enabled, the GNE only responds for another addressed network element if the user is logged into the GNE; however, a user does not have to be logged into the GNE to get an error response from a remote network element.

If network element receives a command, but cannot parse the command for at least 3 colons (**:**) before the TL1 end-of-message semicolon (**;**), instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the Gateway Network Element:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

If network element receives a command, but can parse the command for more than the maximum number of colons (**:**) allowed for any supported TL1 command before the TL1 end-of-message semicolon (**;**), instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the addressed network element:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

If a GNE receives a command for which a *tid* value (non-null) is *required* but no *tid* value is included, instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the GNE:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, TID must be specified */
;
```

If a GNE receives a command with a syntactically incorrect *tid* value, instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the GNE:

```
   sid date time
M  ctag DENY
   IITA
   /* Invalid TID, unallowed characters or too long */
;
```

If a GNE receives a command (other than **RTRV-HDR**) with valid *tid* value but the addressed remote network element is temporarily unable to communicate with the GNE due to exhaustion of allocated resources at either the GNE or remote network element, instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the addressed network element:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed */
;
```

If the network element receives a command but cannot recognize a valid *ctag* value, instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the addressed network element:

```
   sid date time
M  0 DENY
   IICT
   /* Input, Invalid Correlation Tag (CTAG) */
;
```

If a GNE receives a command with an unknown *tid* value (a *tid* value that does not exist in the GNE's subnetwork), instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the GNE:

```
   sid date time
M  ctag DENY
   IITA
   /* Unknown TID */
;
```

If a GNE receives a command with a valid *tid* value but the addressed remote network element is temporarily unable to communicate with the GNE, instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the addressed remote network element:

```
   sid date time
M  ctag DENY
   IITA
   /* Communication Failure */
;
```

If a network element receives a TL1 command other than those supported, the following error response is returned, using the *sid* value of the addressed network element:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, Network Element does not support
      Command = xxxxxxxxxxxxxxx */
;
```

where *xxxxxxxxxxxxxxx* is the first 16 characters of the command received (up to, but excluding, the first colon [**:**], semicolon [**;**], or null [end of message indicator]).

When the TL1 security feature is enabled, if the network element receives a command requiring a privilege higher than that of the user issuing the command, the following error response is returned, using the *sid* value of the addressed network element:

```
   sid date time
M  ctag DENY
   PICC
   /* Privilege, Illegal Command Code */
;
```

If the network element receives any TL1 command (except **RTRV-PM**) for which it is unable to complete the request due to internal system processing problems, the following error response is returned, using the *sid* value of the addressed network element:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed */
;
```

If a command is received with a *modifier* which is not one of the allowed modifiers for that command, the following error response is returned, using the *sid* value of the addressed network element:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If the network element receives a command with any extra (beyond the command-specific input format specification) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), or if a command with a name-defined parameter block includes an invalid parameter *name* label, the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

NOTE:
The network element does accept and ignore some extra non-null entries in some **RTRV** commands only.

If the network element receives a command with more than 256 characters, the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation, command too long */
;
```

If the network element strips out white space characters from all input commands before beginning to parse that command, it is acceptable if it applies the limit of 256 characters in a command after stripping out the white space characters.

The intent of this requirement is to limit the number of bytes that a TL1-GNE forwards over the DCC or IAO-LAN to a remote network element. The limit of 256 applies to the characters sent in this situation, so if the TL1-GNE strips out white space characters before forwarding, the actual number of accepted input characters

may be greater than 256.

If the X.25 interface of the TL1-GNE is provisioned for a packet size of 128 bytes, this requirement implies that the TL1-GNE will process the more-bit for input commands exceeding 128 characters including the white space characters.

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-LOG

RTRV-LOG: Retrieve Log

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

RTRV-LOG*:tid::ctag;*

DESCRIPTION

The **RTRV-LOG** command can be initiated by users to generate a history log for the NE. This report contains up to 500 of the most recent events. Events include the start and end of alarm and status conditions, and all craft/OS input activities that affect or would affect the state of the network element, successfully completed or denied.

The history log displays the events in last in-first out order, and each event is time stamped.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the command is accepted, the following output message is returned:

```
   sid date time
M  ctag COMPLD
  "aid:opdpb"
  "aid:opdpb"
     .      .
     .      .
     .      .
  "aid:opdpb"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined as follows:

aid The *aid* is a source identifier. For user initiated commands the value is UID and for all other conditions the value is the source address of the event.

opdpb The *OPDPD* is a position defined parameter block to report various attributes. The format will be *value1,value2....* All applicable attributes are reported.

The actual attributes reported are:

date This is the date on which the event occurred. The format used is MM-DD.

Normally the events are displayed in order of date/time-stamp with the most recent event being displayed first and the oldest being displayed last. If the system clock is reset, however the date and time stamps may be displayed in monotonically decreasing order.

time This is the time at which the event occurred. The format used is HH-MM-SS.

almlvl This is the alarm level of the system immediately after the event. It takes one of the following values:

- CR
- MJ
- MN
- ABN
- NE_ACTY
- FE_ACTY

- (if_no_alarm_conditions_exist_in_the_system)

The alarm level reported is not necessarily related to the event or condition described in the report entry. The alarm level reported is the highest alarm level active in the system when the condition is reported. The intention of the information in the history log is to give a system level record of events.

However, the alarm level reported for each condition listed in the Retrieve-Alarm output report is the alarm level associated with that particular condition. The intention of the information in the Retrieve-Alarm output report is to report the severity of EACH active condition so that intelligent priority calls can be made in those circumstances when multiple conditions are active.

evt_desc — This is a brief event description. The description must be enclosed using delimiters. The delimiter to be used is **\"** (that is, backslash followed by double-quotes). Alarm condition descriptions can be found in the `REPT ALM` message page.

EXAMPLE OUTPUT

The following example shows a **RTRV-LOG** command for a network element.

```
rtrv-log:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "tl1-x25:01-01,00-06-20,MJ,\"Login:LT01\""
   "cit-dce:01-01,00-05-40,MJ,\"Login:LT01\""
   "oa-1b:01-01,00-02-48,MJ,\"OA failure-cleared\""
   "tlm-1a:01-01,00-02-38,MJ,\"optical line ID mismatch\""
   "system:01-01,00-02-31,MJ,\"reset in progress-cleared\""
   "system:01-01,00-02-29,MJ,\"OLS system startup in progress\""
   "dccsupr-1b:01-01,00-02-25,MJ,\"inc. (from Supr) DCC failure\""
   "oline-3b:01-01,00-02-22,MJ,\"incoming optical line LOS\""
   "oline-3a:01-01,00-02-22,MJ,\"incoming optical line LOS\""
   "oline-2b:01-01,00-02-22,MJ,\"incoming optical line LOS\""
   "oa-1b:01-01,00-02-21,MJ,\"OA failure\""
   "system:01-01,00-00-08,MJ,\"reset in progress\""
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If a **RTRV-LOG** command is received when any **TEST-AUTO** command is being executed, then the following error response is returned:

```
   sid date time
M  ctag DENY
  SROF
  /* Status, Requested Operation Failed */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-MAP-NETWORK

RTRV-MAP-NETWORK: Retrieve Map Network

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-MAP-NETWORK*:tid::ctag[:[:]];*

DESCRIPTION

The **RTRV-MAP-NETWORK** command is issued to the network element to retrieve the list of all network elements in the local SONET subnetwork, including the communication status, capabilities, the product and NE types and alarm group of each network element reachable via the DCN (SONET DCC on either the optical interfaces or IAO-LAN) from the local network element (that is, the network element to which this command is issued).

When the network element receives a **RTRV-MAP-NETWORK** command from the user, the network element will return a report containing names (target identifiers, or TIDs) of every network element in the local SONET subnetwork (set of all network elements in the same DCC domain as the network element to which the command is addressed), communication status to each one of those network elements from the local network element, the product and network element types, capabilities and alarm group the systems in the local SONET subnetwork.

⚠ CAUTION:
If there is a duplicate **dsne** condition at the time that this command is executed at the addressed network element, the returned report could be incorrect. Be sure such error conditions do not exist while attempting this command.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

In response to a valid **RTRV-MAP-NETWORK** command, the following output report is returned to the user similar to the craft interface output.

```
   sid date time
M  ctag COMPLD
   "spec_block"
    .   .   .   .   .   .   .
    .   .   .   .   .   .   .
   "spec_block"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

spec_block Specific block. This parameter field is used for returning the current equipage information for the slot. Parameters within the specific block are positionally independent and are specified using a name defined construct of: PARAMETER=*value* in a comma separated list. The parameters are listed and explained below.

TID This is the target identifier of the network element. Refer to the **RTRV-HDR** INPUT PARAMETERS section. The character set requirements for *tid* listed there apply to the **TID** also. The **TID** is provisioned by the TL1 command **ENT-SYS**.

DCCSTATUS This field can take on the values of good or FAIL and indicates the status of the Data Communications Channel from the local system. This field can be omitted from the output report if the **DCCSTATUS** is good for the identified systems.

PRODTYPE Product Type. This field is part of the DIB record for each NE in the subnetwork.

PF 2000 NEs shall only output the values for DDM-OC3, DDM-OC12, FTLCT, FTADR48, FTADR192, OLS, DACS IV, SLC-2000, and FbrRch. Any other value shall be reported as a "?".

NETYPE This field can take on the values of DSNE, ASNE, DSNE/ASNE or - (dash) and indicates whether or not the system identified in the **TID** is serving as the

Directory Service Network Element, as an Alarm Server, both or neither. This field can be omitted for the systems in the subnetwork that are not serving as either a **DSNE** or an **ASNE**.

ALARMGRP This field can take on integer values from 0 or 255 and indicates the Alarm Group, or SONET Maintenance Sub-Branch (SMSB), to which the listed network element belongs.

The Alarm Group identifies a set of network elements that exchange remote alarm information via one or more Alarm Gateway Network Elements. The value 0 is specially designated to mean the network element does not share alarm information with any other remote network elements.

Beyond placing the local NE first in the report, ordering of the report is a product-specific matter.

For a closed local (OLS) ring composed of repeaters and dual facing terminals only, the topmost entry in the network map report represents the OLS with the lowest NSAP followed by OLS neighbors connected to "nA" optical lines in transmit direction of side 1 for repeaters and side 2 of dual facing terminals until the ring is completed.

All optical lines in a side have the same orientation:

- For transmission
- Relative to TLM packs

Side 1 for repeaters implies n=1-4. Side 2 for dual facing terminal implies n=2,4 For an open OLS ring, the topmost entry in the network map report represents an end terminal provisioned in "1A-TX","1A-TX-THRU" or "DUAL" mode with only side 2 equipped.. The topmost entry is followed by OLS neighbors connected to transmit direction of "nA" optical lines of side 1 for repeaters/end terminals (non-dual) and side 2 of dual facing terminals. The last entry should be an OLS end terminal in "1A-RCV" ,"1A-RCV-THRU" or "DUAL" mode with only side 1 equipped.

All optical lines in a side have the same orientation:

- For transmission
- Relative to TLM packs

Side 1 for repeaters implies n=1-4. Side 2 for dual facing terminal implies n=2,4. Side 1 for dual facing terminals implies n=1,3.

If an open or closed ring is incomplete, the ring map only reports the local node. This implies all other nodes in the incomplete ring will be displayed like nodes which are not part of local ring.

The other entries in the report represent all other network elements accessible via DCC channels (both OC-48 and OC-3) and / or Intra-Office LANs (IAO-LANs). The entries are sorted first by network element type with FTLCT listed first, followed by FTADR48, FTADR192, OLS, DDM-OC3, DDM-OC12, DACS IV, SLC-2000 and FbrRch, with unrecognized network elements (represented by a question mark) last. They are further sorted within each network element type by TID values in

alphabetical (ASCII) order.

Data which is unavailable for the report will be represented by a question ("?") mark (for example, DCCSTATUS=?).

EXAMPLE INPUT/OUTPUT

The **RTRV-MAP-NETWORK** command is issued at ols-1. The OLS span consists of two end-terminals with three intermediate nodes:

```
rtrv-map-network:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "TID=OLS-1,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=DSNE,ALARMGRP=56"
   "TID=OLS-2,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"
   "TID=OLS-3,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"
   "TID=OLS-4,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"
   "TID=OLS-5,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"
;
```

The **RTRV-MAP-NETWORK** command is issued at ols-1. The OLS span consists of two end-terminals with three intermediate nodes, and there is a failure between two of the repeater sites.

```
rtrv-map-network:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "TID=OLS-1,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=DSNE,ALARMGRP=56"
   "TID=OLS-2,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"
   "TID=OLS-3,DCCSTATUS=FAIL,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"
   "TID=OLS-4,DCCSTATUS=FAIL,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"
   "TID=OLS-5,DCCSTATUS=FAIL,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"
;
```

The following is an example with multiple other network elements present.

```
rtrv-map-network:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "TID=LCT-1,DCCSTATUS=good,PRODTYPE=FTLCT,NETYPE=DSNE,ALARMGRP=56"
   "TID=LCT-2,DCCSTATUS=good,PRODTYPE=FTLCT,NETYPE=-,ALARMGRP=56"
   "TID=ADR-1,DCCSTATUS=good,PRODTYPE=FTADR48,NETYPE=-,ALARMGRP=57"
   "TID=ADR-2,DCCSTATUS=good,PRODTYPE=FTADR48,NETYPE=-,ALARMGRP=57"
   "TID=ADR-3,DCCSTATUS=good,PRODTYPE=FTADR192,NETYPE=-,ALARMGRP=5"
   "TID=OLS-1,DCCSTATUS=good,PRODTYPE=OLS,NETYPE=-,ALARMGRP=55"
   "TID=OLS-2,DCCSTATUS=good,PRODTYPE=OLS,NETYPE=-,ALARMGRP=55"
   "TID=OLS-3,DCCSTATUS=good,PRODTYPE=OLS,NETYPE=-,ALARMGRP=55"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives a **RTRV-MAP-NETWORK** with an otherwise valid set of input parameter values but the command could not be completed by the network element, the following error response is returned:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-SYS

RTRV-SYS

RTRV-MAP-RING

RTRV-MAP-RING

RTRV-MAP-RING: Retrieve Map Ring

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-MAP-RING*:tid::ctag;*

DESCRIPTION

The **RTRV-MAP-RING** command generates a report listing all network elements in the local transmission ring.

INPUT PARAMETERS

tid	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set: [A-Z][a-z][0-9].+-%#
ctag	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

In response to a valid **RTRV-MAP-RING** command, the following output report is returned to the user.

```
   sid date time
M  ctag COMPLD
   "spec_block"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "spec_block"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

spec_block Specific block. This parameter field is used for returning the ring map information of the network. Parameters within the specific block are positionally independent and are specified using a name defined construct of: PARAMETER=*value* in a comma separated list. The parameters are listed and explained below.

It should be noted, however, that the network element will return the parameters within the *spec_block* in the following order: **TID, DSNE, DCCSTATUS, FBRCONN**.

TID This is the target identifier of the network element. Refer to the **RTRV-HDR** INPUT PARAMETERS section. The character set requirements for *tid* listed there apply to the **TID** also. The **TID** is provisioned by the TL1 command **ENT-SYS**.

DSNE This field can take on the values of yes or no and indicates whether or not the system identified in the **TID** is serving as the Directory Service Network Element.

DCCSTATUS This field can take on the values of good or FAIL and indicates the status of the Data Communications Channel from the local system.

FBRCONN Fiber Connection (FBRCONN) helps indicate the direction of traffic carried by optical line 1A in the OLS subnetwork. This field can take on values of {"1A-TX", "1A-TX-THRU","1A-RCV","1A-TX-THRU","-","DUAL"}.

This parameter indicates the direction of transmission for optical lines nA (n=1,4) at each OLS and is crucial in determining the order of entries in the report.

For a closed local (OLS) ring composed of repeaters and dual facing terminals only, the topmost entry in the network map report represents the OLS with the lowest NSAP

followed by OLS neighbors connected to "nA" optical lines in transmit direction of side 1 for repeaters and side 2 of dual facing terminals until the ring is completed.

All optical lines in a side have the same orientation:

- For transmission
- Relative to TLM packs

Side 1 for repeaters implies n=1-4. Side 2 for dual facing terminal implies n=2,4 For an open OLS ring, the topmost entry in the network map report represents an end terminal provisioned in "1A-TX","1A-TX-THRU" or "DUAL" mode with only side 2 equipped.. The topmost entry is followed by OLS neighbors connected to transmit direction of "nA" optical lines of side 1 for repeaters/end terminals (non-dual) and side 2 of dual facing terminals. The last entry should be an OLS end terminal in "1A-RCV" ,"1A-RCV-THRU" or "DUAL" mode with only side 1 equipped.

All optical lines in a side have the same orientation:

- For transmission
- Relative to TLM packs

Side 1 for repeaters implies n=1-4. Side 2 for dual facing terminal implies n=2,4. Side 1 for dual facing terminals implies n=1,3.

The ring map report will display the local OLS system. An OLS system is made of two OLS end terminals and the repeaters between them. For incomplete open or closed OLS rings, only the local node shall be displayed in the report. If, at the OLS end terminal where optical amplifier 1A is receiving traffic, the DIRN value is not 1A-RCV or DUAL and/or the supervisory channels on lines 1A(and 2A in DCC protected configurations) are not entering the telemetry packs, then incoming DCC failure is declared at that end terminal.

In single OA configuration, the supervisory channel on lines 1B is entering telemetry pack in 1A-RCV or DUAL mode.

When this condition exists, the DCCSTATUS and FBRCONN parameters for this end terminal take on the values "FAILED" and "?", respectively, in the reports at all other nodes whose ring maps include the end terminal.

Data which is unavailable for the report will be represented by a question ("?") mark (for example, DCCSTATUS=?).

EXAMPLE OUTPUT

The following OLS example requests the map of an OLS ring. The **RTRV-MAP-RING** command is issued at ols-1, which is also provisioned in "1A-TX" mode. The sub-network consists of two end-terminals with two intermediate nodes:

```
rtrv-map-ring:ols-1::123456;


IP 123456
<


   OLS-1 94-06-15 12:28:133
M  123456 COMPLD
   "TID=OLS-1,DSNE=yes,DCCSTATUS=good,FBRCONN=1A-TX
   "TID=OLS-2,DSNE=no,DCCSTATUS=good,FBRCONN=-
   "TID=OLS-3,DSNE=no,DCCSTATUS=good,FBRCONN=-
   "TID=OLS-5,DSNE=no,DCCSTATUS=good,FBRCONN=1A-RCV"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives a **RTRV-MAP-RING** with an otherwise valid set of input parameter values but the command could not be completed by the network element, the following error response is returned to the user:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-MAP-NETWORK

RTRV-NE-SECU

RTRV-NE-SECU: Retrieve Network_Element Security

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

RTRV-NE-SECU*:tid::ctag;*

DESCRIPTION

The **RTRV-NE-SECU** command can be initiated by users to retrieve network element global security information. The user can determine whether logins are allowed, whether the password aging interval is set and its value, and whether the login aging interval is set and its value.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If there is provisioned security information to report, the following output message is returned:

```
   sid date time
M  ctag COMPLD
   ":,:ONDPB"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined as follows:

ONDPB The *ONDPB* is a name defined parameter block to report various attributes. The format will be *keyword1=value1,keyword2=value2....*. All applicable attributes are reported.

- *alw_uid* Allow user ID. This parameter shows whether or not non-expert logins are allowed to login or not. Expert logins are always allowed. This parameter can take one of the values: "YES", or "NO".
- *page* Password aging interval. This parameter shows the password lifetime interval in days. It can take a value between 7 and 999 days, or 0. The value 0 indicates that the password aging mechanism is disabled.
- *uout* User ID aging interval. This parameter shows the period in days during which each general or report-only user should login at least once to retain the login. It can take a value between 7 and 999 days, or 0. The value 0 indicates that the login aging mechanism is disabled.

EXAMPLE OUTPUT

```
rtrv-ne-secu:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 94-03-22 16:12:12
M  123456 COMPLD
   ":,:ALW_UID=Yes,PAGE=60,UOUT=90"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

RELATED TL1 COMMANDS/MESSAGES

ENT-NE-SECU

RTRV-OCHAN

RTRV-OCHAN: Retrieve Optical_Channel

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-OCHAN*:tid:aid:ctag[:type];*

DESCRIPTION

RTRV-OCHAN command messages can be initiated by a user to retrieve the current provisioned state and current state of the optical channel (OCHAN). This command retrieves all optical channel parameter settings that are provisionable via **ENT-OCHAN** commands pertaining to the addressed OLS, reported one line per optical channel.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the report is requested.

Entity: Optical Channel

Legal Values:(OCHAN)-(ALL), (OCHAN)-(1A,1B,2A,2B,3A,3B,4A,4B)-(ALL,1-16)

CenterLink CIT selection options: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

type Type. A value for this parameter is neither expected nor allowed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-

ALL-port is invalid.

OUTPUT FORMAT

Because the network element supports pre-provisioning of parameters, lines are included for all applicable *aid* values in response to this command, whether or not the present equipage is capable of supporting the type of facility specified.

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

In response to a valid **RTRV-OCHAN** command, the following output report is returned, sorted on OCHAN data, by the *ochan_aid* value.

```
   sid date time
M  ctag COMPLD
   "ochan_aid:::pst"
   "ochan_aid:::pst"
       .       .       .
       .       .       .
       .       .       .
   "ochan_aid:::pst"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

ochan_aid Optical Channel access identifier. This is the optical channel address for which output is being reported.

pst Primary state. This parameter reports the current primary state of the addressed optical channel (OCHAN). The *pst* will have one of the primary states supported by OLS.

The primary state for optical channel will have one of the following values:

IS In service. This specifies that the optical channel addressed by *ochan_aid* is in the in service state.

OOS-MA-AS Out of service, memory administration, assigned. This specifies that the optical channel addressed by *ochan_aid* is in the OLS "AUTO" state and will transition to in-service upon detection of a valid signal.

OOS Out of service. This specifies that the optical channel addressed by *ochan_aid* is in the OLS "NMON" state.

RDNA Requested data not available. If the requested *pst* data for the addressed optical channel is corrupted, this value is reported.

EXAMPLE INPUT/OUTPUT

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

The example below shows the response to a query concerning all optical channels associated with optical line 1a ("`ochan-1a-all`").

```
rtrv-ochan:LT-OLS:ochan-1a-all:123456;


IP 123456
<


   LT-OLS 93-10-26 16:42:11
M  123456 COMPLD
   "ochan-1a-1:::IS"
   "ochan-1a-2:::IS"
   "ochan-1a-3:::IS"
   "ochan-1a-4:::IS"
   "ochan-1a-5:::IS"
   "ochan-1a-6:::IS"
   "ochan-1a-7:::OOS-MA-AS"
   "ochan-1a-8:::OOS-MA-AS"
   "ochan-1a-9:::IS"
   "ochan-1a-10:::RDNA"
   "ochan-1a-11:::IS"
   "ochan-1a-12:::RDNA"
   "ochan-1a-13:::IS"
   "ochan-1a-14:::IS"
   "ochan-1a-15:::OOS-MA-AS"
   "ochan-1a-16:::RDNA"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID missing or inconsistent
      with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   INUP
   /* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-OCHAN

RTRV-OLINE

RTRV-OLINE: Retrieve Optical_Line

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 2.1.

INPUT FORMAT

RTRV-OLINE*:tid:aid:ctag[:type];*

DESCRIPTION

RTRV-OLINE command messages can be initiated by a user to retrieve the channel loading factor (CLF) on all in-service (IS) optical lines.

The measured power output level needs to be calibrated with information about the number of channels as well as the type of channels in the system. The selection of the LBO depends on this information.

This command allows a user to see the current channel loading factor (CLF). The CLF will be calculated by the network element to provide an index into an installation LBO table. This index may be used to identify the correct LBO value in conjunction to other required parameters of the channel being added.

The **RTRV-OLINE** command will allow a user to see the channel loading factor (CLF) on all in-service (IS) optical lines. The equation to compute the CLF is:

CLF= 3*(Number of OC3/OC12/Generic BT channels present [400-700 Mb/s range])
+ 8*(Number of OC48 channels present).

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the report is requested.

Entity: Optical Line
Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

type Type. A value for this parameter is neither expected nor allowed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

In response to a valid **RTRV-OLINE** command, the following output report is returned, sorted by the *oline_aid* value.

```
   sid date time
M  ctag COMPLD
   "oline_aid:::clf"
   "oline_aid:::clf"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "oline_aid:::clf"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

oline_aid Optical line access identifier. This is the optical line address for which output is being reported.

clf Channel Loading Factor. This parameter is the channel loading factor (CLF) threshold for the facility serviced by the addressed optical line port. The *clf* parameter is reported in CLF=*xxx* format.

For single OA configuration, installation procedures will require an upstream login to find the channel loading factor at the mux end OA.

If an OA is not present or if an OA is failed, then the reported value for CLF will be a dash ("-").

EXAMPLE INPUT/OUTPUT

The following example shows the response to a query concerning all optical lines with all OC3/OC12 channel ("oline-all") data.

```
rtrv-oline:LT-PF-2000:oline-all:789012;


IP 789012
<


   LT-PF-2000 93-10-26 16:42:11
M  789012 COMPLD
   "oline-1a:::CLF=48"
   "oline-1b:::CLF=48"
   "oline-2a:::CLF=48"
   "oline-2b:::CLF=48"
   "oline-3a:::CLF=48"
   "oline-3b:::CLF=48"
   "oline-4a:::CLF=48"
   "oline-4b:::CLF=48"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID missing or inconsistent
      with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   INUP
   /* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-OPS

RTRV-OPS: Retrieve OPS

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 3.1.

INPUT FORMAT

RTRV-OPS*:tid::ctag;*

DESCRIPTION

The **RTRV-OPS** command retrieves the current provisioned optical protection switch parameters, which includes all **ENT-OPS** provisioned parameters.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

In response to a valid instance of this command, the following output report is returned:

```
   sid date time
M  ctag COMPLD
":::HOLD_OFF,PROTNMODE,PRIMARY_LINE,OPS_AID,SPODU_AID,OMU_AID,OPSPRMD,
OPSOPMD:"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

hold_off Hold Off Time. The time in milliseconds that an OPS waits to confirm a LOS before initiating a switch.

protnmode Protection Mode. The allowed values are "unidirectional" and "bidirectional":

`unidirectional` The Optical Protection Switch is provisioned for unidirectional switching, that is, single ended.

`bidirectional` The Optical Protection Switch is provisioned for bidirectional switching, that is, dual ended.

Bidirectional switching is implemented by interrupting traffic on the active outgoing line for 4 seconds whenever a switch is executed.

FRCD, APS(SF), and MAN switches shall cause an active outgoing line interruption.

FRCD and MAN switches to the active line, that is, they don't cause a physical switch, shall cause a standby outgoing line interruption.

Note, the OPS does not auto switch, and therefore does not interrupt traffic on the active outgoing line, upon detection of LOS on the active line when there already is an Active Switch Priority (actswprty) present, that is, INH, FRCD, or APS(SF).

Both end terminals should have the same provisioned PROTNMODE value to ensure proper system operation.

primary_line Primary Line. The Legal values are "1" and "2". PRIMARY_LINE is the line number of the OAs which are connected to the OPS Primary input and output.

NOTE:
For the two end terminals at either end of a pair of OPS protected lines, PRIMARY_LINE should be 1 in one of them and 2 in the other.

ops_aid Access Identifier. This is the address of the optical protection switch.

spodu_aid This is the Access Identifier of the ODU which the OPS feeds.

omu_aid This is the Access Identifier of the OMU which feeds the OPS.

opsprmd OPS Provisioned Mode. Allowed values are "enabled" and "disabled".

opsopmd OPS Operating Mode. The allowed values are "enabled" and "disabled". The network element configuration becomes the OPS Configuration only when the OPS Operating Mode is ENABLED.

The OPSOPMD becomes ENABLED if:

- OPSPRMD (OPS Provisioned Mode) is ENABLED,
- The slot specified by OPS_AID is in the EQ state and equipped with an OPS circuit pack,
- The slot specified by SPODU_AID is in the EQ state and equipped with a SPODU circuit pack,
- The slot specified by OMU_AID is in the EQ state and equipped with an OMU or SPOMU circuit pack,
- It is equipped the same as a 2_OA dual facing shelf except for ODU (and OMU if SPOMU is indicated in the OMU_AID), and
- It is an end terminal as determined by detection of an EQ OTCTL during the system's most recent reset or execution of INIT-SYS.

The OPSOPMD becomes DISABLED if any of the conditions, just listed, are not met.

If the OPSPRMD is ENABLED but the OPSOPMD is DISABLED, the network element shall raise an 'OPS configuration error' condition.

A LOS at an OPS is reported only if the OPSOPMD is ENABLED and only if that OPS circuit pack with the LOS is equipped (EQ) in the OPS_AID slot. For switch events, this includes all events, regardless of whether they are automatic, manual or forced.

If OPSOPMD is ENABLED, the system shall turn off both the incoming line 1 and the incoming line 2 OA when the SPODU temperature is out of operating range.

The OPS Operating Mode only affects the behavior of lines 1 and 2. The behavior of lines 3 and 4 is not affected by the OPS feature.

Phase 3 System Initialization is required to activate OPS Operating Mode changes made by execution of this command. OPS switching, that is, forced, auto, or manual, can occur independent of OPSPRMD and OPSOPMD. When the OPS Operating Mode (OPSOPMD) is ENABLED, OTPS associations made to the OCHANs in the OA line associated with the Primary OPS line shall automatically be extended to the OCHANs in the OA line associated with the Secondary OPS line and the OTPS

associations made to the OCHANs in the OA line associated with the Secondary OPS line shall be ignored.

However, **RTRV-ASSOC-OTPS** shall always report the provisioned values.

When OPSOPMD is DISABLED, the OTPS associations made to the OCHANs in the OA line associated with the Secondary OPS line shall not be ignored.

EXAMPLE INPUT/OUTPUT

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

```
rtrv-ops:LT-PF2000::123456;


IP 123456
<


   LT-PF2000 97-07-11 13:43:12
M  123456 COMPLD
   ":::HOLD_OFF=50,PROTNMODE=bidirectional,PRIMARY_LINE=1,
OPS_AID=OTU-1-11,SPODU_AID=OTU-1-13,
    OMU_AID=OTU-1-15,OPSPRMD=enabled,OPSOPMD=enabled:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-OPS

OPR-PROTNSW-OPS

RLS-PROTNSW-OPS

RTRV-OTPS

RTRV-OTPS: Retrieve OT_Port_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

RTRV-OTPS*:tid:aid:ctag;*

DESCRIPTION

RTRV-OTPS command messages can be initiated by a user to retrieve the current provisioned state of port parameters related to optical translator port signal (OTPS) facilities. This command retrieves all parameter settings that are provisionable via **ENT-OTPS** commands.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access Identifier. This is the address of the optical translator port for which the command is intended. The aid **all** is allowed. When used, it will retrieve the OTU and OTPM port information.

Entity: All
Legal Values: (ALL)

Entity: Port (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)-(1)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)-(1)

Entity: Port (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)-(1)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)-(1)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

Because the network element supports pre-provisioning of parameters, lines are included for all applicable *aid* values in response to this command, whether or not the present equipage is capable of supporting the type of facility specified.

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

In response to a valid **RTRV-OTPS** command, the following output report is returned, sorted on port data by *port_aid* value.

```
   sid date time
M  ctag COMPLD
   "port_aid:::level,lsbbrate,ntfcncde,optlinecde,wavlnth:pst"
   "port_aid:::level,lsbbrate,ntfcncde,optlinecde,wavlnth:pst"
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
       .       .       .       .       .       .       .
   "port_aid:::level,lsbbrate,ntfcncde,optlinecde,wavlnth:pst"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

level Signal Level. This parameter reports the signal type, which is one of the following values:

- **OC3** An OC3 signal
- **OC12** An OC12 signal
- **OC48** An OC48 signal
- **STM1** An STM1 signal
- **STM4** An STM4 signal
- **STM16** An STM16 signal
- **LSBB** A Low Speed Broad Band signal

lsbbrate Low Speed Broad Band Bit Rate. This parameter reports the bit rate for the Low Speed Broad Band (LSBB) OTPM. The valid values are `High_Band` and `Low_Band`.

No *lsbbrate* value is reported for OTU port signals.

ntfcncde Notification code. This parameter is the alarm level provisioned for failures of facilities serviced by the addressed port. The *ntfcncde* parameter is reported in NTFCNCDE=*xx* format where *xx* has one of the following values:

CR	Critical (if provisioned for SONET)
MJ	Major (if provisioned for SONET)
MN	Minor (if provisioned for SONET)
NA	Not alarmed (if provisioned for SONET)
NR	Not reported (if provisioned for SONET) (No autonomous report will be generated.)
NO	Ignored (if provisioned for SONET) (No autonomous or on-demand report will be generated.)
Critical	Critical (if provisioned for SDH)
Prompt	Prompt (if provisioned for SDH)
Deferred	Deferred (if provisioned for SDH)
No_Alarm	No Alarm (if provisioned for SDH)
No_Report	No Report (if provisioned for SDH) (No autonomous report will be generated.)
Not_Indicated	Not Indicated (if provisioned for SDH) (No autonomous or on-demand report will be generated.)

If the level=EXT or QOTU, this parameter should display a "-".

optlinecde Optical Line coding. The line coding parameter is only reported in the specific block for OC-48 lines, optical low speed ports, OTUs, or OTPMs. It specifies the type of optical line coding used on the Optical Interface. The *optlinecde* parameter is reported in OPTLINECDE=*xx* format where *xx* is:

NRZ Non-return to Zero.

No *optlinecde* value is reported for unequipped slots, ports, or lines. If the level=EXT, OTU, or QOTU, this parameter should display a "-".

wavlnth Optical Wavelength. The optical wavelength parameter is only reported in the specific block for OTUs and OTPMs. It specifies the optical wavelength used on the LSBB, OC-48/STM-16, OC-12/STM-4,or OC-3/STM-1 Optical Interface. The *wavlnth* parameter is reported in WAVLNTH=*xxxx.xx* format where *xxxx.xx* is (expressed in nanometers):

No *wavlnth* value is reported for unequipped slots, OTUs, or OTPMs. If the level=EXT, OTU, or QOTU, this parameter should display a "-".

pst Primary state. This parameter reports the current primary state of the addressed port. The *pst* will have one of the primary states supported by the network element.

The primary port state for OTUs and OTPMs will have one of the following values:

IS In service. This specifies that the low speed port addressed by *port_aid* is in the in service state.

OOS-MA-AS Out of service, memory administration, assigned. This specifies that the low speed port addressed by *port_aid* is in the "AUTO" state.

OOS Out of service. This specifies that the low speed port addressed by *port_aid* is in the "NMON" state.

RDNA Requested data not available. If the requested *pst* data for the addressed low speed port is corrupted, this value is reported.

EXAMPLE INPUT/OUTPUT

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

The following example shows the response to a query concerning all ports contained in the Optical Translator ("all").

```
rtrv-otps:LT-PF-2000:all:789012;


IP 789012
<


   LT-PF-2000 93-10-26 16:42:11
M  789012 COMPLD
   "otu-1-1-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-2-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-3-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-4-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1549.32:IS"
   "otu-1-5-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-6-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-7-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1550.12:IS"
   "otu-1-8-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1551.72:IS"
   "otu-1-9-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-10-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-11-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1552.52:IS"
   "otu-1-12-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1553.33:IS"
   "otu-1-13-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1548.51:IS"
   "otu-1-14-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1549.32:IS"
   "otu-1-15-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-16-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-17-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1550.12:IS"
   "otu-1-18-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1551.72:IS"
   "otu-1-19-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-20-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-21-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-22-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-23-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1548.51:IS"
   "otu-1-24-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1549.32:IS"
   "otu-1-25-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
```

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```
   "otu-1-26-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-27-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1550.12:IS"
   "otu-1-28-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1551.72:IS"
   "otu-1-29-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-30-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-31-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1552.52:IS"
   "otu-1-32-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1553.33:IS"
   "otpm-1-1-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-1-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-1-3-1:::LEVEL=LSBB,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-1-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-3-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-3-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-3-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-3-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-5-1-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-5-2-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-5-3-1:::LEVEL=LSBB,LSBBRATE=Low_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-5-4-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-7-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-7-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-7-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-7-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-9-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
```

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```
   "otpm-1-9-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-9-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-9-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-11-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-11-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-11-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-11-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-13-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-13-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-13-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-13-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-15-1-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-15-2-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-15-3-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-15-4-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-17-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-17-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-17-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-17-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-19-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-19-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-19-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
```

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```
   "otpm-1-19-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-21-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-21-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-21-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-21-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-23-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-23-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-23-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-23-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-25-1-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-25-2-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-25-3-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-25-4-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-27-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-27-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-27-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-27-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-29-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-29-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-29-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-29-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:IS"
   "otpm-1-31-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
```

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```
   "otpm-1-31-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-31-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-1-31-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otu-2-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=-,OPTLINECDE=-,
WAVLNTH=-:OOS"
   "otu-2-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=-,OPTLINECDE=-,
WAVLNTH=-:OOS"
        ...
        ...
        ...
   "otpm-2-31-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
   "otpm-2-31-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:IS"
;
```

The following example shows the response to a query concerning all OC48 OTU ports contained in OT bay 1 ("`otu-1-all`"), of which there are fourteen equipped with OC48 Optical Translator interfaces and five with QUAD OTUs.

```
rtrv-otps:LT-PF-2000:otu-1-all:789012;


IP 789012
<


   LT-PF-2000 93-10-26 16:42:11
M  789012 COMPLD
   "otu-1-1-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-2-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-3-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1550.12:OOS"
   "otu-1-4-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1549.32:OOS"
   "otu-1-5-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-6-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-7-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1559.79:OOS"
   "otu-1-8-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1554.94:OOS"
   "otu-1-9-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-10-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-11-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1555.75:OOS"
   "otu-1-12-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1557.36:OOS"
   "otu-1-13-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1550.92:OOS"
   "otu-1-14-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1549.32:OOS"
   "otu-1-15-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-16-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-17-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1559.79:OOS"
   "otu-1-18-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1554.94:OOS"
   "otu-1-19-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-20-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=-,OPTLINECDE=-,WAVLNTH=-:OOS"
   "otu-1-21-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1555.75:OOS"
   "otu-1-22-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1557.36:OOS"
   "otu-1-23-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1550.92:OOS-MA-AS"
```

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```
   "otu-1-24-1:::LEVEL=OC48,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=NRZ,
WAVLNTH=1549.32:OOS-MA-AS"
   "otu-1-25-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=MN,OPTLINECDE=-,
WAVLNTH=-:OOS-MA-AS"
   "otu-1-26-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=MN,OPTLINECDE=-,
WAVLNTH=-:OOS-MA-AS"
   "otu-1-27-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=-,
WAVLNTH=-:OOS-MA-AS"
   "otu-1-28-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=-,
WAVLNTH=-:OOS-MA-AS"
   "otu-1-29-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=MN,OPTLINECDE=-,
WAVLNTH=-:OOS-MA-AS"
   "otu-1-30-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=MN,OPTLINECDE=-,
WAVLNTH=-:OOS-MA-AS"
   "otu-1-31-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=-,
WAVLNTH=-:OOS-MA-AS"
   "otu-1-32-1:::LEVEL=-,LSBBRATE=-,NTFCNCDE=MJ,OPTLINECDE=-,
WAVLNTH=-:OOS-MA-AS"
;
```

The following example shows the response to a query concerning all OTPM ports contained in the OT, bay 1 ("`otpm-1-all`").

```
rtrv-otps:LT-PF-2000:otpm-1-all:789012;


IP 789012
<


   LT-PF-2000 93-10-26 16:42:11
M  789012 COMPLD
   "otpm-1-1-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-1-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-1-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-1-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-3-1-1:::LEVEL=LSBB,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-3-2-1:::LEVEL=LSBB,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-3-3-1:::LEVEL=LSBB,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-3-4-1:::LEVEL=LSBB,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-5-1-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS"
   "otpm-1-5-2-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS
   "otpm-1-5-3-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS
   "otpm-1-5-4-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS
   "otpm-1-7-1-1:::LEVEL=LSBB,LSBBRATE=Low_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
   "otpm-1-7-2-1:::LEVEL=LSBB,LSBBRATE=Low_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
   "otpm-1-7-3-1:::LEVEL=LSBB,LSBBRATE=Low_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
   "otpm-1-7-4-1:::LEVEL=LSBB,LSBBRATE=Low_Band,NTFCNCDE=MN,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS
   "otpm-1-9-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
   "otpm-1-9-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
```

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```
   "otpm-1-9-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
   "otpm-1-9-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
   "otpm-1-11-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-11-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-11-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-11-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-13-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-13-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-13-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-13-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-15-1-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS"
   "otpm-1-15-2-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS
   "otpm-1-15-3-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS
   "otpm-1-15-4-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS
   "otpm-1-17-1-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS"
   "otpm-1-17-2-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS
   "otpm-1-17-3-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS
   "otpm-1-17-4-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS
   "otpm-1-19-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
   "otpm-1-19-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
   "otpm-1-19-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
   "otpm-1-19-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1554.94:OOS-MA-AS"
```

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```
   "otpm-1-21-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-21-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-21-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-21-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-23-1-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-23-2-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-23-3-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-23-4-1:::LEVEL=OC3,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1560.61:OOS"
   "otpm-1-25-1-1:::LEVEL=OC12,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=NRZ,WAVLNTH=1550.12:OOS"
   "otpm-1-25-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=-,WAVLNTH=-:OOS
   "otpm-1-25-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=-,WAVLNTH=-:OOS
   "otpm-1-25-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MN,
OPTLINECDE=-,WAVLNTH=-:OOS
   "otpm-1-27-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-27-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-27-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-27-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-29-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS-MA-AS"
   "otpm-1-29-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS-MA-AS"
   "otpm-1-29-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS-MA-AS"
   "otpm-1-29-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS-MA-AS"
   "otpm-1-31-1-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-31-2-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
```

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```
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   "otpm-1-31-3-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
   "otpm-1-31-4-1:::LEVEL=-,LSBBRATE=High_Band,NTFCNCDE=MJ,
OPTLINECDE=-,WAVLNTH=-:OOS"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

If the network element receives a **RTRV** command with an invalid command code modifier, the following error response is returned:

```
   sid date time
M  ctag DENY
   ICNV
   /* Input, Command Not Valid, invalid modifier */
;
```

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID missing or inconsistent
      with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   INUP
   /* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-OTPS

RTRV-PM-ALL

RTRV-PM-ALL: Retrieve Performance_Monitoring All

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available beginning in OLS Release 1.0.

INPUT FORMAT

RTRV-PM-ALL*:tid:aid:ctag::[montype],[monlev],[locn],*
[dirn],[tmper],[mondat][,montm];

NOTE:
The above single-line command is presented as two lines for ease of reading.

DESCRIPTION

WARNING:
Use of this command may have a detrimental effect on the OS/network element network bandwidth. Lucent Technologies does not recommend the use of this command. Upon receiving this command, the network element could be required to transmit over 1 Megabyte of data from its performance-monitoring bins to report for one network element Terminal. Furthermore, Bellcore **strongly suggests** to NMA users via SR-STS-001665, Issue 2, that this command construct **not** be used due to the potential strain it may place on the OS/network element network bandwidth.

The **RTRV-PM-ALL** command is initiated by an OS or OS user to request the network element to send the current and/or historical performance-monitoring (PM) data associated with all facilities of any type.

Performance monitoring data is retrieved for all optical channels, optical lines, the supervisory signal, and optical translator port signals.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the facility for which the performance-monitoring data is requested.

Entity: All
Legal Values: (ALL)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a

string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype This is the PM parameter type for which PM data is requested.

This parameter must be specified for one of the following values:

"LBC-P1" (Laser Bias Current for Pump 1),
"LBC-P2" (Laser Bias Current for Pump 2),
"LBFC-P1" (Laser Backface Current for Pump 1),
"LBFC-P2" (Laser Backface Current for Pump 2),
"TOPR-OL" (Total Received Power - Optical Line),
"SPR-C" (Optical Channel Signal Power),
"CVL" (Coding violation count - Line Near End),
"ESL" (Errored second count - Line Near End),
"SESL" (Severely errored second count - Line Near End),
"UASL" (Unavailable second count - Line Near End),
"SPR-SU" (Signal power - Supervisory),
"LBC-SU" (Laser Bias Current - Supervisory).
"LBCL" (Laser Bias Current - Line).
"OPT" (Optical power transmitted - optics)
"OPR" (Optical power received - optics)
"CVS" (Coding violation count - Section Near End),
"ESS" (Errored second count - Section Near End),
"SESS" (Severe errored second count - Section Near End),
"SEFS" (Severe errored framing seconds count - Section Near End OOF), or
"ALL" (all applicable montype values).

If no value is provided for *montype*, the network element will respond with all performance monitoring data applicable to the *aid*.

monlev Monitored parameter level. This provides the level and direction which are used to discriminate which performance monitoring data is being requested. This parameter, if specified, must have one of the following values: "1-UP" or "0-UP".

1-UP A **1-UP** *monlev* value means that the network element reports only positive, non-zero data.

0-UP A **0-UP** *monlev* value means that the network element reports data on all requested PM parameters without regard for their value.

NOTE 1:
All the network element PM data can have only non-negative values. If no value is provided for this parameter, **1-UP** is assumed.

dirn Direction of monitoring. This parameter indicates the direction for which the performance data is being retrieved and is relative to the facility identified by the AID. This parameter, if specified, must have one of the following values: "NA", "RCV", or "AZ".

NA Not applicable (default)

RCV Receive direction of transmission

AZ A-Z direction which is functionally the same as RCV

If no value is provided for this parameter, *NA* is assumed.

tmper Time period. This parameter requests performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

ALL This requests PM data both in 15-minute and daily intervals (default).

If no value is provided for this parameter, the network element responds using **ALL**.

When TMPER is **ALL**, the value for both MONDAT and MONTM will be assumed to be **ALL**.

mondat Monitored date. This requests the beginning date of the interval for which the PM data is to be reported. For a *tmper* value of 15-MIN, the maximum allowable range of valid dates supported by *mondat* include only the current day. Note: [The maximum number of 15-MIN periods of data stored is 32 periods. This equates to 8 hours of contiguous 15-MIN periods. Therefore the allowable range for *mondat* is the current 15-MIN period plus the immediate previous 8 hours of 15-MIN data. Fifteen minute data that is outside the 8 hour window is not stored in the system. Therefore, previous day's data is available only if the previous day's data is within 8 hours of the current period.]

For a *tmper* value of **1-DAY**, the maximum allowable range of valid dates supported by *mondat* include the current and previous six days. This parameter, if specified, must have the values of ALL or in the format of MM-DD (month-day).

MM-DD Month-day.

ALL Current and previous day(s), as described in the previous paragraphs.

If no value is entered for *mondat*, the current date is assumed. If the *mondat* specifies a date other than the current date or the previous day(s)'s date, as described in the previous paragraph, the network element responds to the user using the current date as the *mondat* value. If no value is entered for *mondat*, the current date is assumed.

montm Monitored time. This specifies the beginning time of day of the requested performance-monitoring period specified in *tmper*. This parameter, if specified, must have the values of ALL or has the format HOD-MOH (hour of day-minute of hour), where HOD ranges from 00 to 23 and MOH ranges from 00 to 59.

HOD-MOH Hour of day-minute of hour.

ALL All applicable beginning times for the given *mondat* value.

If no value is entered for *montm*, the current HOD-MOH is assumed. If the *montm* value provided does not correspond exactly to the network element PM reporting boundary, the value is *rounded down* to the last applicable boundary (for example, **01-03** for a 15-minute PM data is rounded down to **01-00**). If the *tmper* value is **1-DAY** then the *montm* parameter is not used.

The following table specifies the performance-monitoring data output based on the input values of *tmper*, *mondat*, and *montm* parameters. The term, "other" is used to refer to any input value that is not covered by another entry for the subject parameter. The term, "any" is used to refer to any input value, including "other" and no value, for the subject parameter.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
15-MIN	**ALL**	any	15 min. data from the present time to the previous 8.25 hours
15-MIN	current day or no value	**ALL**	15 min. data from the present time to the previous midnight or 8.25 earlier than the present, whichever is more recent.
15-MIN	current day or no value	no value	15 min. data for the current interval HOD-MOH for the current day(see also REQ RTRV_PM-montm).
15-MIN	previous day	no value	15 min. data beginning at MONDAT for the current interval HOD-MOH (see also REQ RTRV_PM-montm).
15-MIN	previous day	**ALL**	15 min. data from the previous midnight to 8 hours earlier than the present time. If the current time is later than 8:15 A.M., return an error response (invalid MONTM).
15-MIN	previous day, current day, or no value	value of MONDAT and MONTM within 8.25 hours of current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN	current day, previous day, or no value	value of MONDAT and MONTM outside of the 8.25 hours of	return error response (invalid MONTM)

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
		current time, or other	
15-MIN	other	any	return error response (invalid MONDAT)
1-DAY	**ALL**	any	current and previous 1-day data
1-DAY	current day or no value	any	current 1-day data
1-DAY	any one of the previous six days	any	appropriate previous 1-day data
1-DAY	other	any	return error response (invalid MONDAT)
other	any	any	return error response (invalid TMPER)
ALL or no value	any	**ALL**	return error response (invalid MONDAT)
ALL or no value	**ALL**	any	return error response (invalid MONTM)
ALL or no value	**ALL**	**ALL**	data from current and previous six days plus 15 min. data from the present time to the previous midnight or 8.25 hour earlier than the present time, whichever is more recent

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may have a detrimental effect on the OS/network element network bandwidth. Lucent Technologies does not recommend the use of this command. Upon receiving this command, the network element could be required to transmit over 1 Megabyte of data from its performance-monitoring bins to report for one network element Terminal. Furthermore, Bellcore **strongly suggests** to NMA users via SR-STS-001665, Issue 2, that this command construct **not** be used due to the potential strain it may place on the OS/network element network bandwidth.

OUTPUT FORMAT

After receiving a valid command and having data to report, the following output message is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:montype,monval,[stat],[locn],,tmper,mondat[,montm]"
          .         .         .         .         .
          .         .         .         .         .
          .         .         .         .         .
   "aid,aidtype:montype,monval,[stat],[locn],,tmper,mondat[,montm]"
;
```

The following conditions will result in no data being reported:

- Requested MONLEV=1-up and there are no non-zero counts.
- Mismatch between the slot equipage and the command modifier (e.g., RTRV-PM-T3 executed for slot equipped with OC3 pack).
- LNCT failure/removal
- Circuit pack removal

If there is no data to return for the given valid command, the following message is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the facility for which the PM data is being reported.

aidtype Access identifier type. This has one of the following values:

OLINE This reports performance-monitoring information at the optical lines for an OLS terminal.

OCHAN This reports performance-monitoring information at the optical channels for an OLS terminal.

SUPR This reports performance-monitoring information at the supervisory channel which is in OC3 format for an OLS terminal.

OTPS This reports performance-monitoring information at the optical translator and OT port modules for an OT bay.

montype Monitored parameter type.

Digital PM parameters include: CVL, ESL, SESL, and UASL; they are collected per 15 min. bin, and 1 day bin for each SUPR channel so that each has 2 values for each supervisory channel. Optical parameters include: SPR-SU and LBC-SU, and are collected on a per channel basis.

monval Monitored value. This contains the measured value of the parameter specified in *montype*. For OLS PM parameters which do not accumulate over time, the PM monitored value shall be frozen when the threshold is reached (and TCA reported) until the current 15-minute time interval expires and the next bin becomes active.

stat Status indicator. This indicates the validity of the PM data or if threshold has been exceeded by the PM data. This parameter, if specified, must have one of the following values:

NA Data is not available. This includes counts not available because of trouble conditions that cause performance-monitoring to be suspended. *stat* shall be set to NA when data has not yet been collected.

OVFL This indicates counts that overflow their registers.

TCA Threshold Crossing Alert.

PRTL Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.

If the status is not specified, the data is valid and below the threshold level for that parameter.

For **stat**, *OVFL* has a higher priority than *TCA* and *TCA* has a higher priority than *PRTL*.

locn Location. The location field, if specified, must have the value (NEND). The following table illustrates the software implementation for the **LOCN** parameter in OLS:

OLS ochan,oline,supr Input	OLS ochan,oline,supr Output
NEND	NEND
*	*
null	null

* FEND is not a valid input value for EC1/OC-N/OTPS.

dirn Direction. This specifies the direction in which the PM data is to be retrieved and is relative to the facility identified by the AID.

tmper Time period. This parameter has the value 15-MIN or 1-DAY.

mondat Monitored date. This is the beginning date of the interval for which PM data is reported. This parameter has the format MM-DD (month-day).

montm Monitored time. This is the beginning time of the interval for which the PM data is reported. This parameter has the format HOD-MOH (hour of day-minute of hour).

MOH Is in quarter hour increments (that is, 00, 15, 30 and 45).

EXAMPLE INPUT/OUTPUT

The command to retrieve performance monitoring data for all optical lines, optical and supervisory channels is:

```
rtrv-pm-all:LT-OLS:all:123456::,,,,,,;


IP 123456
<


   LT-OLS 97-08-08 17:32:01
M  123456 COMPLD
   "oline-1a,oline:LBC-P1,1.03,,,,15-MIN,08-08,17-00"
   "oline-1a,oline:LBC-P2,1.00,,,,15-MIN,08-08,17-00"
   "oline-1a,oline:LBFC-P1,1.01,,,,15-MIN,08-08,17-00"
   "oline-1a,oline:LBFC-P2,1.01,,,,15-MIN,08-08,17-00"
   "oline-1a,oline:TOPR-OL,80,,,,15-MIN,08-08,17-00"
   "oline-1b,oline:LBC-P1,1.03,,,,15-MIN,08-08,17-00"
   "oline-1b,oline:LBC-P2,1.00,,,,15-MIN,08-08,17-00"
   "oline-1b,oline:LBFC-P1,1.00,,,,15-MIN,08-08,17-00"
   "oline-1b,oline:LBFC-P2,1.00,,,,15-MIN,08-08,17-00"
   "oline-1b,oline:TOPR-OL,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-1,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-2,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-3,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-4,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-5,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-6,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-7,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-8,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-9,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-10,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-11,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-12,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-13,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-14,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-15,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-16,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1b-1,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-2,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-3,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-4,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-5,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-6,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-7,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-8,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-9,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-10,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
```

Screen continues on next page.

Screen continued from previous page.

```
   "ochan-1b-11,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-12,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-13,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-14,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-15,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-16,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "supr-1a,supr:LBC-SU,0.99,,,,15-MIN,08-08,17-00"
   "supr-1a,supr:SPR-SU,0,,,,15-MIN,08-08,17-00"
;
```

The command to retrieve performance monitoring data for all optical lines, optical and supervisory channels, and optical translator port states is:

```
rtrv-pm-all:LT-OLS:all:123456::,,,,,,;


IP 123456
<


   LT-OLS 97-08-08 17:32:01
M  123456 COMPLD
   "oline-1a,oline:LBC-P1,1.03,,,,15-MIN,08-08,17-00"
   "oline-1a,oline:LBC-P2,1.00,,,,15-MIN,08-08,17-00"
   "oline-1a,oline:LBFC-P1,1.01,,,,15-MIN,08-08,17-00"
   "oline-1a,oline:LBFC-P2,1.01,,,,15-MIN,08-08,17-00"
   "oline-1a,oline:TOPR-OL,80,,,,15-MIN,08-08,17-00"
   "oline-1b,oline:LBC-P1,1.03,,,,15-MIN,08-08,17-00"
   "oline-1b,oline:LBC-P2,1.00,,,,15-MIN,08-08,17-00"
   "oline-1b,oline:LBFC-P1,1.00,,,,15-MIN,08-08,17-00"
   "oline-1b,oline:LBFC-P2,1.00,,,,15-MIN,08-08,17-00"
   "oline-1b,oline:TOPR-OL,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-1,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-2,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-3,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-4,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-5,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-6,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-7,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-8,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-9,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-10,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-11,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1a-12,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-13,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-14,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-15,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1a-16,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"
   "ochan-1b-1,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-2,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-3,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-4,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-5,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-6,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-7,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-8,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-9,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
   "ochan-1b-10,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
```

Screen continues on next page.

Screen continued from previous page.

```
"ochan-1b-11,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
"ochan-1b-12,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
"ochan-1b-13,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
"ochan-1b-14,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
"ochan-1b-15,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
"ochan-1b-16,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"
"supr-1a,supr:LBC-SU,0.99,,,,15-MIN,08-08,17-00"
"supr-1a,supr:SPR-SU,80,,,,15-MIN,08-08,17-00"
"otu-1-1-1,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-2,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-3,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-4,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-5,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-6,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-7,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-8,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-9,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-10,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-11,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-12,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-13,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-14,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-15,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-16,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-17,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-18,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-19,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-20,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-21,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-22,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-23,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-24,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-25,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-26,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-27,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-28,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-29,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-30,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-31,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otu-1-1-32,otps:LBCL,1.00,,,,15-MIN,08-08,17-00"
"otpm-1-1-1-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-1-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-1-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-1-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
```

Screen continues on next page.

Screen continued from previous page.

```
"otpm-1-1-3-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-3-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-3-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-3-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-5-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-5-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-5-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-5-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-7-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-7-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-7-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-7-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-9-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-9-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-9-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-9-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-11-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-11-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-11-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-11-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-13-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-13-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-13-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-13-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-15-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-15-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-15-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-15-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-17-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-17-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-17-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-17-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-19-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-19-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-19-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-19-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-21-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-21-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-21-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-21-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-23-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-23-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-23-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
"otpm-1-1-23-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
```

Screen continues on next page.

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```
   "otpm-1-1-25-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-25-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-25-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-25-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-27-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-27-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-27-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-27-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-29-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-29-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-29-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-29-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-31-1,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-31-2,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-31-3,otps:ESS,25,,,,15-MIN,08-08,17-00"
   "otpm-1-1-31-4,otps:ESS,25,,,,15-MIN,08-08,17-00"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If the network element receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

If the network element receives this command with a *montype* value that is not supported by the network element, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

If the network element receives this command with an invalid *tmper*, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

If the network element receives this command with a *monlev* which is any value other than **0-UP** or **1-UP**, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONLEV */
;
```

If the network element receives this command with a invalid *dirn* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid DIRN */
;
```

If the network element receives this command with an invalid *montm* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTM */
;
```

If the network element receives this command with an invalid *mondat* format, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONDAT */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-TH-ALL

RTRV-PM-xxx

REPT EVT

RTRV-PM-OCHAN

RTRV-PM-OCHAN: Retrieve Performance_Monitoring Optical_Channel

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available beginning in OLS Release 1.0.

INPUT FORMAT

RTRV-PM-OCHAN*:tid:aid:ctag::[montype],[monlev],[locn],*
[dirn],[tmper],[mondat][,montm];

NOTE:
The above single-line command is presented as two lines for ease of reading.

DESCRIPTION

The **RTRV-PM-OCHAN** command is initiated by an OS or OS user to request the network element to send the current and/or historical performance-monitoring (PM) data associated with one or more optical channels for an OLS terminal.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the facility for which the performance-monitoring data is requested.

Entity: Optical Channel

Legal Values:(OCHAN)-(ALL), (OCHAN)-(1A,1B,2A,2B,3A,3B,4A,4B)-(ALL,1-16)

CenterLink CIT selection options: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype This is the PM parameter type for which PM data is requested.

This parameter must be specified for one of the following values:

"SPR-C" (Optical Channel Signal Power),
"ALL" (all applicable montype values).

If no value is provided for *montype*, the network element will respond with all performance monitoring data applicable to the *aid*.

monlev Monitored parameter level. This provides the level and direction which are used to discriminate which performance monitoring data is being requested. This parameter, if specified, must have one of the following values: "1-UP" or "0-UP".

1-UP A **1-UP** *monlev* value means that the network element reports only positive, non-zero data.

0-UP A **0-UP** *monlev* value means that the network element reports data on all requested PM parameters without regard for their value.

NOTE 1:
All the network element PM data can have only non-negative values. If no value is provided for this parameter, **1-UP** is assumed.

locn Location. This parameter indicates the location being monitored for performance. This parameter may have the following value, "NEND".

dirn Direction of monitoring. This parameter indicates the direction for which the performance data is being retrieved and is relative to the facility identified by the AID. This parameter, if specified, must have one of the following values: "NA", "RCV", or "AZ".

NA Not applicable (default)

RCV Receive direction of transmission

AZ A-Z direction which is functionally the same as RCV

If no value is provided for this parameter, *NA* is assumed.

tmper Time period. This parameter requests performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

ALL This requests PM data both in 15-minute and daily intervals (default).

If no value is provided for this parameter, the network element responds using **ALL**.

When TMPER is **ALL**, the value for both MONDAT and MONTM will be assumed to be **ALL**.

mondat Monitored date. This requests the beginning date of the interval for which the PM data is to be reported. For a *tmper* value of 15-MIN, the maximum allowable range of valid dates supported by *mondat* include only the current day. Note: [The maximum number of 15-MIN periods of data stored is 32 periods. This equates to 8 hours of contiguous 15-MIN periods. Therefore the allowable range for *mondat* is the current

15-MIN period plus the immediate previous 8 hours of 15-MIN data. Fifteen minute data that is outside the 8 hour window is not stored in the system. Therefore, previous day's data is available only if the previous day's data is within 8 hours of the current period.]

For a *tmper* value of **1-DAY**, the maximum allowable range of valid dates supported by *mondat* include the current and previous six days. This parameter, if specified, must have the values of ALL or in the format of MM-DD (month-day).

MM-DD Month-day.

ALL Current and previous day(s), as described in the previous paragraphs.

If no value is entered for *mondat*, the current date is assumed. If the *mondat* specifies a date other than the current date or the previous day(s)'s date, as described in the previous paragraph, the network element responds to the user using the current date as the *mondat* value. If no value is entered for *mondat*, the current date is assumed.

montm Monitored time. This specifies the beginning time of day of the requested performance-monitoring period specified in *tmper*. This parameter, if specified, must have the values of ALL or has the format HOD-MOH (hour of day-minute of hour), where HOD ranges from 00 to 23 and MOH ranges from 00 to 59.

HOD-MOH Hour of day-minute of hour.

ALL All applicable beginning times for the given *mondat* value.

If no value is entered for *montm*, the current HOD-MOH is assumed. If the *montm* value provided does not correspond exactly to the network element PM reporting boundary, the value is *rounded down* to the last applicable boundary (for example, **01-03** for a 15-minute PM data is rounded down to **01-00**). If the *tmper* value is **1-DAY** then the *montm* parameter is not used.

The following table specifies the performance-monitoring data output based on the input values of *tmper*, *mondat*, and *montm* parameters. The term, "other" is used to refer to any input value that is not covered by another entry for the subject parameter. The term, "any" is used to refer to any input value, including "other" and no value, for the subject parameter.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
15-MIN	**ALL**	any	15 min. data from the present time to the previous 8.25 hours
15-MIN	current day or no value	**ALL**	15 min. data from the present time to the previous midnight or 8.25 earlier than the present, whichever is more recent.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
15-MIN	current day or no value	no value	15 min. data for the current interval HOD-MOH for the current day(see also REQ RTRV_PM-montm).
15-MIN	previous day	no value	15 min. data beginning at MONDAT for the current interval HOD-MOH (see also REQ RTRV_PM-montm).
15-MIN	previous day	**ALL**	15 min. data from the previous midnight to 8 hours earlier than the present time. If the current time is later than 8:15 A.M., return an error response (invalid MONTM).
15-MIN	previous day, current day, or no value	value of MONDAT and MONTM within 8.25 hours of current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN	current day, previous day, or no value	value of MONDAT and MONTM outside of the 8.25 hours of current time, or other	return error response (invalid MONTM)
15-MIN	other	any	return error response (invalid MONDAT)
1-DAY	**ALL**	any	current and previous 1-day data
1-DAY	current day or no value	any	current 1-day data
1-DAY	any one of the previous six days	any	appropriate previous 1-day data
1-DAY	other	any	return error response (invalid MONDAT)
other	any	any	return error response (invalid TMPER)
ALL or no value	any	**ALL**	return error response (invalid MONDAT)
ALL or no value	**ALL**	any	return error response (invalid MONTM)
ALL or no value	**ALL**	**ALL**	data from current and previous six days plus 15 min. data from the present time to the previous midnight or 8.25 hour earlier than the present time, whichever is more recent

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

After receiving a valid command and having data to report, the following output message is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:montype,monval,[stat],[locn],,tmper,mondat[,montm]"
          .         .         .         .         .
          .         .         .         .         .
          .         .         .         .         .
   "aid,aidtype:montype,monval,[stat],[locn],,tmper,mondat[,montm]"
;
```

The following conditions will result in no data being reported:

- Requested MONLEV=1-up and there are no non-zero counts.
- Mismatch between the slot equipage and the command modifier (e.g., RTRV-PM-T3 executed for slot equipped with OC3 pack).
- LNCT failure/removal
- Circuit pack removal

Applicable output lines are ordered as follows:

1. By *aid* in order corresponding to the shelf architecture.
2. By requested time intervals, starting with the current time interval.
3. By applicable PM parameters per *aid*.

If there is no data to return for the given valid command, the following message is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the facility for which the PM data is being reported.

aidtype Access identifier type.

OCHAN This reports performance-monitoring information at the optical channels for an OLS terminal.

montype Monitored parameter type.

This parameter must be specified for one of the following values:

"SPR-C" (Optical Channel Signal Power),
"ALL" (all applicable montype values).

Digital PM parameters include: CVL, ESL, SESL, and UASL; they are collected per 15 min. bin, and 1 day bin for each SUPR channel so that each has 2 values for each supervisory channel. Optical parameters include: SPR-SU and LBC-SU, and are collected on a per channel basis.

monval Monitored value. This contains the measured value of the parameter specified in *montype*. For OLS PM parameters which do not accumulate over time, the PM monitored value shall be frozen when the threshold is reached (and TCA reported) until the current 15-minute time interval expires and the next bin becomes active. The optical line, and its constituent optical channel(s), DEMUXed at a single OA OLS End Terminal is not directly monitored because there is no OA directly preceding the ODU.

stat Status indicator. This indicates the validity of the PM data or if threshold has been exceeded by the PM data. This parameter, if specified, must have one of the following values:

NA Data is not available. This includes counts not available because of trouble conditions that cause performance-monitoring to be suspended. *stat* shall be set to NA when data has not yet been collected.

OVFL This indicates counts that overflow their registers.

TCA Threshold Crossing Alert.

PRTL Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.

If the status is not specified, the data is valid and below the threshold level for that parameter.

For **stat**, *OVFL* has a higher priority than *TCA* and *TCA* has a higher priority than *PRTL*.

locn Location. The location field, if specified, must have the value (NEND). The following table illustrates the software implementation for the **LOCN** parameter in OLS:

OLS ochan,oline,supr Input	OLS ochan,oline,supr Output
NEND	NEND
*	*
null	null

* FEND is not a valid input value for EC1/OC-N/OTPS.

dirn Direction. The direction field will always be no value.

tmper Time period. This parameter has the value 15-MIN or 1-DAY.

mondat Monitored date. This is the beginning date of the interval for which PM data is reported. This parameter has the format MM-DD (month-day).

montm Monitored time. This is the beginning time of the interval for which the PM data is reported. This parameter has the format HOD-MOH (hour of day-minute of hour).

EXAMPLE INPUT/OUTPUT

The command to retrieve the optical channel signal power (SPR-C) performance monitoring data for ochan-1a-4 for a Single OA is:

```
rtrv-pm-ochan:LT-OLS:ochan-1a-4:123456::all,,,,,,;


IP 123456
<



   LT-OLS 97-07-10 13:02:07
M  123456 COMPLD
   "ochan-1a-4,ochan:SPR-C,,,,,15-MIN,07-10,15-00"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If the network element receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

If the network element receives this command with a *montype* value that is not supported by the network element, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

If the network element receives this command with an invalid *tmper*, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

If the network element receives this command with a *monlev* which is any value other than **0-UP** or **1-UP**, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONLEV */
;
```

If the network element receives this command with a invalid *dirn* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid DIRN */
;
```

If the network element receives this command with an invalid *montm* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTM */
;
```

If the network element receives this command with an invalid *mondat* format, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONDAT */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-PM-OLINE

RTRV-PM-OLINE: Retrieve Performance_Monitoring Optical_Line

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available beginning in OLS Release 1.0.

INPUT FORMAT

RTRV-PM-OLINE*:tid:aid:ctag::[montype],[monlev],[locn],*
[dirn],[tmper],[mondat][,montm];

NOTE:
The above single-line command is presented as two lines for ease of reading.

DESCRIPTION

The **RTRV-PM-OLINE** command is initiated by an OS or OS user to request the network element to send the current and/or historical performance-monitoring (PM) data associated with one or more optical lines for an OLS terminal.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the facility for which the performance-monitoring data is requested.

Entity: Optical Line
Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype This is the PM parameter type for which PM data is requested.

This parameter must be specified for one of the following values:

"LBC-P1" (Laser Bias Current for Pump 1),
"LBC-P2" (Laser Bias Current for Pump 2),
"LBFC-P1" (Laser Backface Current for Pump 1),
"LBFC-P2" (Laser Backface Current for Pump 2),
"TOPR-OL" (Total Received Power - Optical Line), or
"ALL" (all applicable montype values).

If no value is provided for *montype*, the network element will respond with all performance monitoring data applicable to the *aid*.

monlev Monitored parameter level. This provides the level and direction which are used to discriminate which performance monitoring data is being requested. This parameter, if specified, must have one of the following values: "1-UP" or "0-UP".

1-UP A **1-UP** *monlev* value means that the network element reports only positive, non-zero data.

0-UP A **0-UP** *monlev* value means that the network element reports data on all requested PM parameters without regard for their value.

NOTE 1:
All the network element PM data can have only non-negative values. If no value is provided for this parameter, **1-UP** is assumed.

locn Location. This parameter indicates the location being monitored for performance. This parameter may have the following value, "NEND".

dirn Direction of monitoring. This parameter indicates the direction for which the performance data is being retrieved and is relative to the facility identified by the AID. This parameter, if specified, must have one of the following values: "NA", "RCV", or "AZ".

NA Not applicable (default)

RCV Receive direction of transmission

AZ A-Z direction which is functionally the same as RCV

If no value is provided for this parameter, *NA* is assumed.

tmper Time period. This parameter requests performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

ALL This requests PM data both in 15-minute and daily intervals (default).

If no value is provided for this parameter, the network element responds using **ALL**.

When TMPER is **ALL**, the value for both MONDAT and MONTM will be assumed to be **ALL**.

mondat Monitored date. This requests the beginning date of the interval for which the PM data is to be reported. For a *tmper* value of 15-MIN, the maximum allowable range of valid dates supported by *mondat* include only the current day. Note: [The maximum number of 15-MIN periods of data stored is 32 periods. This equates to 8 hours of contiguous 15-MIN periods. Therefore the allowable range for *mondat* is the current

15-MIN period plus the immediate previous 8 hours of 15-MIN data. Fifteen minute data that is outside the 8 hour window is not stored in the system. Therefore, previous day's data is available only if the previous day's data is within 8 hours of the current period.]

For a *tmper* value of **1-DAY**, the maximum allowable range of valid dates supported by *mondat* include the current and previous six days. This parameter, if specified, must have the values of ALL or in the format of MM-DD (month-day).

MM-DD Month-day.

ALL Current and previous day(s), as described in the previous paragraphs.

If no value is entered for *mondat*, the current date is assumed. If the *mondat* specifies a date other than the current date or the previous day(s)'s date, as described in the previous paragraph, the network element responds to the user using the current date as the *mondat* value. If no value is entered for *mondat*, the current date is assumed.

montm Monitored time. This specifies the beginning time of day of the requested performance-monitoring period specified in *tmper*. This parameter, if specified, must have the values of ALL or has the format HOD-MOH (hour of day-minute of hour), where HOD ranges from 00 to 23 and MOH ranges from 00 to 59.

HOD-MOH Hour of day-minute of hour.

ALL All applicable beginning times for the given *mondat* value.

If no value is entered for *montm*, the current HOD-MOH is assumed. If the *montm* value provided does not correspond exactly to the network element PM reporting boundary, the value is *rounded down* to the last applicable boundary (for example, **01-03** for a 15-minute PM data is rounded down to **01-00**). If the *tmper* value is **1-DAY** then the *montm* parameter is not used.

The following table specifies the performance-monitoring data output based on the input values of *tmper*, *mondat*, and *montm* parameters. The term, "other" is used to refer to any input value that is not covered by another entry for the subject parameter. The term, "any" is used to refer to any input value, including "other" and no value, for the subject parameter.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
15-MIN	**ALL**	any	15 min. data from the present time to the previous 8.25 hours
15-MIN	current day or no value	**ALL**	15 min. data from the present time to the previous midnight or 8.25 earlier than the present, whichever is more recent.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
15-MIN	current day or no value	no value	15 min. data for the current interval HOD-MOH for the current day(see also REQ RTRV_PM-montm).
15-MIN	previous day	no value	15 min. data beginning at MONDAT for the current interval HOD-MOH (see also REQ RTRV_PM-montm).
15-MIN	previous day	**ALL**	15 min. data from the previous midnight to 8 hours earlier than the present time. If the current time is later than 8:15 A.M., return an error response (invalid MONTM).
15-MIN	previous day, current day, or no value	value of MONDAT and MONTM within 8.25 hours of current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN	current day, previous day, or no value	value of MONDAT and MONTM outside of the 8.25 hours of current time, or other	return error response (invalid MONTM)
15-MIN	other	any	return error response (invalid MONDAT)
1-DAY	**ALL**	any	current and previous 1-day data
1-DAY	current day or no value	any	current 1-day data
1-DAY	any one of the previous six days	any	appropriate previous 1-day data
1-DAY	other	any	return error response (invalid MONDAT)
other	any	any	return error response (invalid TMPER)
ALL or no value	any	**ALL**	return error response (invalid MONDAT)
ALL or no value	**ALL**	any	return error response (invalid MONTM)
ALL or no value	**ALL**	**ALL**	data from current and previous six days plus 15 min. data from the present time to the previous midnight or 8.25 hour earlier than the present time, whichever is more recent

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

After receiving a valid command and having data to report, the following output message is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:montype,monval,[stat],[locn],,tmper,mondat[,montm]"
          .         .         .         .         .
          .         .         .         .         .
          .         .         .         .         .
   "aid,aidtype:montype,monval,[stat],[locn],,tmper,mondat[,montm]"
;
```

The following conditions will result in no data being reported:

- Requested MONLEV=1-up and there are no non-zero counts.
- Mismatch between the slot equipage and the command modifier (e.g., RTRV-PM-T3 executed for slot equipped with OC3 pack).
- LNCT failure/removal
- Circuit pack removal

Applicable output lines are ordered as follows:

1. By *aid* in order corresponding to the shelf architecture.
2. By requested time intervals, starting with the current time interval.
3. By applicable PM parameters per *aid*.

If there is no data to return for the given valid command, the following message is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the facility for which the PM data is being reported.

aidtype Access identifier type.

OLINE This reports performance-monitoring information at the optical lines for an OLS terminal.

montype Monitored parameter type.

This parameter must be specified for one of the following values:

"LBC-P1" (Laser Bias Current for Pump 1),
"LBC-P2" (Laser Bias Current for Pump 2),
"LBFC-P1" (Laser Backface Current for Pump 1),
"LBFC-P2" (Laser Backface Current for Pump 2),
"TOPR-OL" (Total Received Power - Optical Line), or
"ALL" (all applicable montype values).

Digital PM parameters include: CVL, ESL, SESL, and UASL; they are collected per 15 min. bin, and 1 day bin for each SUPR channel so that each has 2 values for each supervisory channel. Optical parameters include: SPR-SU and LBC-SU, and are collected on a per channel basis.

monval Monitored value. This contains the measured value of the parameter specified in *montype*. For OLS PM parameters which do not accumulate over time, the PM monitored value shall be frozen when the threshold is reached (and TCA reported) until the current 15-minute time interval expires and the next bin becomes active. The optical line, and its constituent optical channel(s), DEMUXed at a single OA OLS End Terminal is not directly monitored because there is no OA directly preceding the ODU.

stat Status indicator. This indicates the validity of the PM data or if threshold has been exceeded by the PM data. This parameter, if specified, must have one of the following values:

NA Data is not available. This includes counts not available because of trouble conditions that cause performance-monitoring to be suspended. *stat* shall be set to NA when data has not yet been collected.

OVFL This indicates counts that overflow their registers.

TCA Threshold Crossing Alert.

PRTL Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.

If the status is not specified, the data is valid and below the threshold level for that parameter.

For **stat**, *OVFL* has a higher priority than *TCA* and *TCA* has a higher priority than *PRTL*.

locn Location. The location field, if specified, must have the value (NEND). The following table illustrates the software implementation for the **LOCN** parameter in OLS:

OLS ochan,oline,supr Input	OLS ochan,oline,supr Output
NEND	NEND
*	*
null	null

* FEND is not a valid input value for EC1/OC-N/OTPS.

dirn Direction. The direction field will always be no value.

tmper Time period. This parameter has the value 15-MIN or 1-DAY.

mondat Monitored date. This is the beginning date of the interval for which PM data is reported. This parameter has the format MM-DD (month-day).

montm Monitored time. This is the beginning time of the interval for which the PM data is reported. This parameter has the format HOD-MOH (hour of day-minute of hour).

EXAMPLE INPUT/OUTPUT

In the following example, the **RTRV-PM-OLINE** command returns Total optical power (TOPR-L) performance monitoring data for optical lines 1a, 1b, 2a, 2b at 15 minute intervals on Oct.26, starting at 17:00.

```
rtrv-pm-oline:LT-OLS:oline-all:314152::TOPR-OL,,,,15-MIN,10-26;



IP 314152
>


   LT-PF-2000 91-10-26 17:12:31
M  314152 COMPLD
   "oline-1a,OLINE:TOPR-OL,70,,,,15-MIN,10-26,17-00"
   "oline-1b,OLINE:TOPR-OL,70,,,,15-MIN,10-26,17-00"
   "oline-2a,OLINE:TOPR-OL,80,TCA,,,15-MIN,10-26,17-00"
   "oline-2b,OLINE:TOPR-OL,60,,,,15-MIN,10-26,17-00"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If the network element receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided,

the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

If the network element receives this command with a *montype* value that is not supported by the network element, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

If the network element receives this command with an invalid *tmper*, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

If the network element receives this command with a *monlev* which is any value other than **0-UP** or **1-UP**, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONLEV */
;
```

If the network element receives this command with a invalid *dirn* value, the

following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid DIRN */
;
```

If the network element receives this command with an invalid *montm* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTM */
;
```

If the network element receives this command with an invalid *mondat* format, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONDAT */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-PM-OTPS

RTRV-PM-OTPS: Retrieve Performance_Monitoring OT_Port_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available beginning in OLS Release 3.0.

INPUT FORMAT

RTRV-PM-OTPS*:tid:aid:ctag::[montype],[monlev],[locn],*
[dirn],[tmper],[mondat][,montm];

NOTE:
The above single-line command is presented as two lines for ease of reading.

DESCRIPTION

The **RTRV-PM-OTPS** 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 optical translator units (OTU) or port modules (OTPM).

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the facility for which the performance-monitoring data is requested. The aid **all** is allowed. When used, it will retrieve the OTU and OTPM port information.

Entity: All
Legal Values: (ALL)

Entity: Port (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)-(1)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)-(1)

Entity: Port (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)-(1)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)-(1)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype This is the PM parameter type for which PM data is requested.

This parameter must be specified for one of the following values:

"LBCL" (Laser bias current (line) - optics), (OC48/STM16 only)
"OPT" (Optical power transmitted - optics), (OC48/STM16 only)
"OPR" (Optical power received - optics), (OC48/STM16 only)
"CVS" (Coding violation count - Section Near End),
"ESS" (Errored second count - Section Near End),
"SESS" (Severe errored second count - Section Near End),
"SEFS" (Severe errored framing seconds count - Section Near End OOF), or
"ALL" (all applicable montype values).

If no value is provided for *montype*, the network element will respond with all performance monitoring data applicable to the *aid*.

monlev Monitored parameter level. This provides the level and direction which are used to discriminate which performance monitoring data is being requested. This parameter, if specified, must have one of the following values: "1-UP" or "0-UP".

1-UP A **1-UP** *monlev* value means that the network element reports only positive, non-zero data.

0-UP A **0-UP** *monlev* value means that the network element reports data on all requested PM parameters without regard for their value.

NOTE 1:
All the network element PM data can have only non-negative values. If no value is provided for this parameter, **1-UP** is assumed.

locn Location. This parameter indicates the location being monitored for performance. This parameter may have the following value, "NEND".

dirn Direction of monitoring. This parameter indicates the direction for which the performance data is being retrieved and is relative to the facility identified by the AID. This parameter, if specified, must have one of the following values: "NA", "RCV", or "AZ".

NA Not applicable (default)

RCV Receive direction of transmission

AZ A-Z direction which is functionally the same as RCV

If no value is provided for this parameter, *NA* is assumed.

NOTE:
In the implementation, the use of the NA, RCV and the AZ values for *dirn* are functionally the same. Bellcore TR-833, Issue 3 used the term AZ to specify the "A-to-Z" direction, and other (*ZA*) to specify the "Z-to-A" direction of collection of performance monitoring. In an attempt to clarify their usage, TR-833, Issue 4 uses the terms RCV and *TRMT* to accomplish the same thing. To

maintain full compatibility with surveillance OSs designed to be compliant to TR-833, our product supports (and equates) both AZ and RCV.

In general, all monitored parameters for the network element apply strictly to the RCV direction of transmission.

tmper Time period. This parameter requests performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

ALL This requests PM data both in 15-minute and daily intervals (default).

If no value is provided for this parameter, the network element responds using **ALL**.

When TMPER is **ALL**, the value for both MONDAT and MONTM will be assumed to be **ALL**.

mondat Monitored date. This requests the beginning date of the interval for which the PM data is to be reported. For a *tmper* value of 15-MIN, the maximum allowable range of valid dates supported by *mondat* include only the current day. Note: [The maximum number of 15-MIN periods of data stored is 32 periods. This equates to 8 hours of contiguous 15-MIN periods. Therefore the allowable range for *mondat* is the current 15-MIN period plus the immediate previous 8 hours of 15-MIN data. Fifteen minute data that is outside the 8 hour window is not stored in the system. Therefore, previous day's data is available only if the previous day's data is within 8 hours of the current period.]

For a *tmper* value of **1-DAY**, the maximum allowable range of valid dates supported by *mondat* include the current and previous six days. This parameter, if specified, must have the values of ALL or in the format of MM-DD (month-day).

MM-DD Month-day.

ALL Current and previous day(s), as described in the previous paragraphs.

If no value is entered for *mondat*, the current date is assumed. If the *mondat* specifies a date other than the current date or the previous day(s)'s date, as described in the previous paragraph, the network element responds to the user using the current date as the *mondat* value.

montm Monitored time. This specifies the beginning time of day of the requested performance-monitoring period specified in *tmper*. This parameter, if specified, must have the values of ALL or has the format HOD-MOH (hour of day-minute of hour), where HOD ranges from 00 to 23 and MOH ranges from 00 to 59.

HOD-MOH Hour of day-minute of hour.

ALL All applicable beginning times for the given *mondat* value.

If no value is entered for *montm*, the current HOD-MOH is assumed. If the *montm* value provided does not correspond exactly to the network element PM reporting boundary, the value is *rounded down* to the last applicable boundary (for example, **01-03** for a 15-minute PM data is rounded down to **01-00**). If the *tmper* value is **1-DAY** then the *montm* parameter is not used.

The following table specifies the performance-monitoring data output based on the input values of *tmper*, *mondat*, and *montm* parameters. The term, "other" is used to refer to any input value that is not covered by another entry for the subject parameter. The term, "any" is used to refer to any input value, including "other" and no value, for the subject parameter.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
15-MIN	**ALL**	any	15 min. data from the present time to the previous 8.25 hours
15-MIN	current day or no value	**ALL**	15 min. data from the present time to the previous midnight or 8.25 earlier than the present, whichever is more recent.
15-MIN	current day or no value	no value	15 min. data for the current interval HOD-MOH for the current day(see also REQ RTRV_PM-montm).
15-MIN	previous day	no value	15 min. data beginning at MONDAT for the current interval HOD-MOH (see also REQ RTRV_PM-montm).
15-MIN	previous day	**ALL**	15 min. data from the previous midnight to 8 hours earlier than the present time. If the current time is later than 8:15 A.M., return an error response (invalid MONTM).
15-MIN	previous day, current day, or no value	value of MONDAT and MONTM within 8.25 hours of current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN	current day, previous day, or no value	value of MONDAT and MONTM outside of the 8.25 hours of	return error response (invalid MONTM)

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
		current time, or other	
15-MIN	other	any	return error response (invalid MONDAT)
1-DAY	**ALL**	any	current and previous 1-day data
1-DAY	current day or no value	any	current 1-day data
1-DAY	any one of the previous six days	any	appropriate previous 1-day data
1-DAY	other	any	return error response (invalid MONDAT)
other	any	any	return error response (invalid TMPER)
ALL or no value	any	**ALL**	return error response (invalid MONDAT)
ALL or no value	**ALL**	any	return error response (invalid MONTM)
ALL or no value	**ALL**	**ALL**	data from current and previous six days plus 15 min. data from the present time to the previous midnight or 8.25 hour earlier than the present time, whichever is more recent

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

After receiving a valid **RTRV-PM-OTPS** command, the following output message is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:montype,monval,[stat],[locn],,tmper,mondat[,montm]"
          .         .         .         .         .
          .         .         .         .         .
          .         .         .         .         .
   "aid,aidtype:montype,monval,[stat],[locn],,tmper,mondat[,montm]"
;
```

Applicable output lines are ordered as follows:

1. By *aid* in order corresponding to the shelf architecture.
2. By requested time intervals, starting with the current time interval.
3. By applicable PM parameters per *aid*.

If there is no data to return for the given valid command, the following message is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the facility for which the PM data is being reported.

aidtype Access identifier type.

OTPS The optical translator port states encompass the AID types for OTU, QOTU, and OTPM packs.

montype Monitored parameter type.

This parameter must be specified for one of the following values:

"CVS" (Coding violation count - Section Near End),
"ESS" (Errored second count - Section Near End),
"SESS" (Severe errored second count - Section Near End),
"SEFS" (Severe errored framing seconds count - Section Near End OOF), or
"ALL" (all applicable montype values).

monval Monitored value. This contains the measured value of the parameter specified in *montype*.

stat Status indicator. This indicates the validity of the PM data or if threshold has been exceeded by the PM data. This parameter, if specified, must have one of the following values:

NA Data is not available. This includes counts not available because of trouble conditions that cause performance-monitoring to be suspended. *stat* shall be set to NA when data has not yet been collected.

OVFL This indicates counts that overflow their registers.

TCA Threshold Crossing Alert.

PRTL Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.

If the status is not specified, the data is valid and below the threshold level for that parameter.

For **stat**, *OVFL* has a higher priority than *TCA* and *TCA* has a higher priority than *PRTL*.

locn Location. The location field, if specified, must have the value (NEND). The following table illustrates the software implementation for the **LOCN** parameter in OLS:

OLS ochan,oline,supr Input	OLS ochan,oline,supr Output
NEND	NEND
*	*
null	null

* FEND is not a valid input value for EC1/OC-N/OTPS.

tmper Time period. This parameter has the value 15-MIN, 1-DAY, or ALL.

mondat Monitored date. This is the beginning date of the interval for which PM data is reported. This parameter has the format MM-DD (month-day).

montm Monitored time. This is the beginning time of the interval for which the PM data is reported. This parameter has the format HOD-MOH (hour of day-minute of hour).

EXAMPLE INPUT/OUTPUT

In the following example, the **RTRV-PM-OTPS** command returns coding violation (CVS) performance monitoring data for all OTPMs on slot 1, bay 1 at 15-minute intervals on Oct.26, starting at 17:00.

```
rtrv-pm-otps:LT-OLS:otpm-1-1-all:314152::CVS,0-UP,,,15-MIN,10-26;



IP 314152
>


   LT-PF-2000 91-10-26 17:12:31
M  314152 COMPLD
   "otpm-1-1-1,OTPS:CVS,0,,,,15-MIN,10-26,17-00"
   "otpm-1-1-2,OTPS:CVS,0,,,,15-MIN,10-26,17-00"
   "otpm-1-1-3,OTPS:CVS,0,TCA,,,15-MIN,10-26,17-00"
   "otpm-1-1-4,OTPS:CVS,0,,,,15-MIN,10-26,17-00"
;
```

In the following example, the **RTRV-PM-OTPS** command returns section coding violations (CV-S) performance monitoring data for the OTU in bay 1, slot 1, at 15 minute intervals on Oct.26, ending at 17:00.

```
rtrv-pm-otps:LT-PF-2000:otu-1-1:314152::CVS,,,,15-MIN,10-26;


IP 314152
>


   LT-PF-2000 91-10-26 17:12:31
M  314152 COMPLD
   "otu-1-1,OC48:CVS,7,,,15-MIN,10-26,17-00"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If the network element receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

If the network element receives this command with a *montype* value that is not supported by the network element, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

If the network element receives this command with an invalid *tmper*, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

If the network element receives this command with a *monlev* which is any value other than **0-UP** or **1-UP**, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONLEV */
;
```

If the network element receives this command with an invalid *dirn* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid DIRN */
;
```

If the network element receives this command with an invalid *montm* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTM */
;
```

If the network element receives this command with an invalid *mondat* format, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONDAT */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-PM-STIME

RTRV-PM-STIME Retrieve Performance_Monitoring Start_Time

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

RTRV-PM-STIME*:tid::ctag;*

DESCRIPTION

The **RTRV-PM-STIME** command can be initiated by all users to retrieve the start time for measuring the day bins.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

When reporting the provisioning information, the following output message is returned:

```
   sid date time
M  ctag COMPLD
  ":start_hour"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below.

start_hour *START_HOUR* is a position defined parameter to report the start hour for day bin measurements. It is reported in HH-00 format.

EXAMPLE OUTPUT

The following example shows a command *tid* for a network element.

```
rtrv-pm-stime:LT-PF-2000::CTAG;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  CTAG COMPLD
":23-00"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

RELATED TL1 COMMANDS/MESSAGES

SET-PM-STIME

RTRV-PM-SUPR

RTRV-PM-SUPR: Retrieve Performance_Monitoring Supervisory

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available beginning in OLS Release 1.0.

INPUT FORMAT

RTRV-PM-SUPR*:tid:aid:ctag::[montype],[monlev],[locn],*
[dirn],[tmper],[mondat][,montm];

NOTE:
The above single-line command is presented as two lines for ease of reading.

DESCRIPTION

The **RTRV-PM-SUPR** command is initiated by an OS or OS user to request the network element to send the current and/or historical performance-monitoring (PM) data associated with the supervisory channel, which is in OC3 format, for an OLS terminal.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the facility for which the performance-monitoring data is requested.

Entity: Supervisory Channel [End terminals and Repeaters]
Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype This is the PM parameter type for which PM data is requested.

This parameter must be specified for one of the following values:

"CVL" (Coding violation count - Line Near End),
"ESL" (Errored second count - Line Near End),
"SESL" (Severely errored second count - Line Near End),
"UASL" (Unavailable second count - Line Near End)
"SPR-SU" (Signal Power - Supervisory)
"LBC-SU" (Laser Bias Current - Supervisory), or

"ALL" (all applicable montype values).

If no value is provided for *montype*, the network element will respond with all performance monitoring data applicable to the *aid*.

monlev Monitored parameter level. This provides the level and direction which are used to discriminate which performance monitoring data is being requested. This parameter, if specified, must have one of the following values: "1-UP" or "0-UP".

1-UP A **1-UP** *monlev* value means that the network element reports only positive, non-zero data.

0-UP A **0-UP** *monlev* value means that the network element reports data on all requested PM parameters without regard for their value.

NOTE 1:
All the network element PM data can have only non-negative values. If no value is provided for this parameter, **1-UP** is assumed.

locn Location. This parameter indicates the location being monitored for performance. This parameter may have the following value, "NEND".

dirn Direction of monitoring. This parameter indicates the direction for which the performance data is being retrieved and is relative to the facility identified by the AID. This parameter, if specified, must have one of the following values: "NA", "RCV", or "AZ".

NA Not applicable (default)

RCV Receive direction of transmission

AZ A-Z direction which is functionally the same as RCV

If no value is provided for this parameter, *NA* is assumed.

tmper Time period. This parameter requests performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

ALL This requests PM data both in 15-minute and daily intervals (default).

If no value is provided for this parameter, the network element responds using **ALL**.

When TMPER is **ALL**, the value for both MONDAT and MONTM will be assumed to be **ALL**.

mondat Monitored date. This requests the beginning date of the interval for which the PM data is to be reported. For a *tmper* value of 15-MIN, the maximum allowable range of valid dates supported by *mondat* include only the current day. Note: [The maximum number of 15-MIN periods of data stored is 32 periods. This equates to 8 hours of contiguous 15-

MIN periods. Therefore the allowable range for *mondat* is the current 15-MIN period plus the immediate previous 8 hours of 15-MIN data. Fifteen minute data that is outside the 8 hour window is not stored in the system. Therefore, previous day's data is available only if the previous day's data is within 8 hours of the current period.]

For a *tmper* value of **1-DAY**, the maximum allowable range of valid dates supported by *mondat* include the current and previous six days. This parameter, if specified, must have the values of ALL or in the format of MM-DD (month-day).

MM-DD Month-day.

ALL Current and previous day(s), as described in the previous paragraphs.

If no value is entered for *mondat*, the current date is assumed. If the *mondat* specifies a date other than the current date or the previous day(s)'s date, as described in the previous paragraph, the network element responds to the user using the current date as the *mondat* value. If no value is entered for *mondat*, the current date is assumed.

montm Monitored time. This specifies the beginning time of day of the requested performance-monitoring period specified in *tmper*. This parameter, if specified, must have the values of ALL or has the format HOD-MOH (hour of day-minute of hour), where HOD ranges from 00 to 23 and MOH ranges from 00 to 59.

HOD-MOH Hour of day-minute of hour.

ALL All applicable beginning times for the given *mondat* value.

If no value is entered for *montm*, the current HOD-MOH is assumed. If the *montm* value provided does not correspond exactly to the network element PM reporting boundary, the value is *rounded down* to the last applicable boundary (for example, **01-03** for a 15-minute PM data is rounded down to **01-00**). If the *tmper* value is **1-DAY** then the *montm* parameter is not used.

The following table specifies the performance-monitoring data output based on the input values of *tmper*, *mondat*, and *montm* parameters. The term, "other" is used to refer to any input value that is not covered by another entry for the subject parameter. The term, "any" is used to refer to any input value, including "other" and no value, for the subject parameter.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
15-MIN	**ALL**	any	15 min. data from the present time to the previous 8.25 hours
15-MIN	current day or no value	**ALL**	15 min. data from the present time to the previous midnight or 8.25 earlier than the present,

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
			whichever is more recent.
15-MIN	current day or no value	no value	15 min. data for the current interval HOD-MOH for the current day(see also REQ RTRV_PM-montm).
15-MIN	previous day	no value	15 min. data beginning at MONDAT for the current interval HOD-MOH (see also REQ RTRV_PM-montm).
15-MIN	previous day	**ALL**	15 min. data from the previous midnight to 8 hours earlier than the present time. If the current time is later than 8:15 A.M., return an error response (invalid MONTM).
15-MIN	previous day, current day, or no value	value of MONDAT and MONTM within 8.25 hours of current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN	current day, previous day, or no value	value of MONDAT and MONTM outside of the 8.25 hours of current time, or other	return error response (invalid MONTM)
15-MIN	other	any	return error response (invalid MONDAT)
1-DAY	**ALL**	any	current and previous 1-day data
1-DAY	current day or no value	any	current 1-day data
1-DAY	any one of the previous six days	any	appropriate previous 1-day data
1-DAY	other	any	return error response (invalid MONDAT)
other	any	any	return error response (invalid TMPER)
ALL or no value	any	**ALL**	return error response (invalid MONDAT)
ALL or no value	**ALL**	any	return error response (invalid MONTM)
ALL or no value	**ALL**	**ALL**	data from current and previous six days plus 15 min. data from the present time to the previous midnight or 8.25 hour earlier than the present time,

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
			whichever is more recent

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

After receiving a valid command and having data to report, the following output message is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:montype,monval,[stat],[locn],,tmper,mondat[,montm]"
          .         .         .         .         .
          .         .         .         .         .
          .         .         .         .         .
   "aid,aidtype:montype,monval,[stat],[locn],,tmper,mondat[,montm]"
;
```

The following conditions will result in no data being reported:

- Requested MONLEV=1-up and there are no non-zero counts.
- Mismatch between the slot equipage and the command modifier (e.g., RTRV-PM-T3 executed for slot equipped with OC3 pack).
- LNCT failure/removal
- Circuit pack removal

Applicable output lines are ordered as follows:

1. By *aid* in order corresponding to the shelf architecture.
2. By requested time intervals, starting with the current time interval.
3. By applicable PM parameters per *aid*.

If there is no data to return for the given valid command, the following message is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

aid Access identifier. This is the address of the facility for which the PM data is being reported.

aidtype Access identifier type.

SUPR This reports performance-monitoring information at the supervisory channel, which is in OC3 format, for an OLS terminal.

montype Monitored parameter type.

This parameter must be specified for one of the following values:

"CVL" (Coding violation count - Line Near End),
"ESL" (Errored second count - Line Near End),
"SESL" (Severely errored second count - Line Near End),
"UASL" (Unavailable second count - Line Near End)
"SPR-SU" (Signal Power - Supervisory)
"LBC-SU" (Laser Bias Current - Supervisory), or
"ALL" (all applicable montype values).

monval Monitored value. This contains the measured value of the parameter specified in *montype*. For OLS PM parameters which do not accumulate over time, the PM monitored value shall be frozen when the threshold is reached (and TCA reported) until the current 15-minute time interval expires and the next bin becomes active.

stat Status indicator. This indicates the validity of the PM data or if threshold has been exceeded by the PM data. This parameter, if specified, must have one of the following values:

NA Data is not available. This includes counts not available because of trouble conditions that cause performance-monitoring to be suspended. *stat* shall be set to NA when data has not yet been collected.

OVFL This indicates counts that overflow their registers.

TCA Threshold Crossing Alert.

PRTL Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.

If the status is not specified, the data is valid and below the threshold level for that parameter.

For **`stat`**, *`OVFL`* has a higher priority than *`TCA`* and *`TCA`* has a higher priority than *`PRTL`*.

`locn` Location. The location field, if specified, must have the value (`NEND`). The following table illustrates the software implementation for the **`LOCN`** parameter in OLS:

OLS ochan,oline,supr Input	OLS ochan,oline,supr Output
NEND	NEND
*	*
null	null

* FEND is not a valid input value for EC1/OC-N/OTPS.

`dirn` Direction. The direction field will always be no value.

`tmper` Time period. This parameter has the value `15-MIN` or `1-DAY`.

`mondat` Monitored date. This is the beginning date of the interval for which PM data is reported. This parameter has the format MM-DD (month-day).

`montm` Monitored time. This is the beginning time of the interval for which the PM data is reported. This parameter has the format HOD-MOH (hour of day-minute of hour).

EXAMPLE INPUT/OUTPUT

The command to retrieve performance monitoring data for supr-1a is:

```
rtrv-pm-supr:LT-OLS:supr-1a:123456::,,,,,,;


IP 123456
<



   LT-OLS 97-08-29 15:03:15
M  123456 COMPLD
   "supr-1a,supr:LBC-SU,1.01,,,,15-MIN,01-02,08-00"
   "supr-1a,supr:SPR-SU,0,,,,15-MIN,01-02,08-00"
;
```

ERROR RESPONSES

Refer to the **`RTRV-HDR`** ERROR RESPONSES section. The error responses listed there also apply to this command. If the network element receives this command without an *`aid`* value or with an *`aid`* value that is invalid for the *`modifier`* provided,

the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

If the network element receives this command with a *montype* value that is not supported by the network element, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

If the network element receives this command with an invalid *tmper*, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

If the network element receives this command with a *monlev* which is any value other than **0-UP** or **1-UP**, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONLEV */
;
```

If the network element receives this command with a invalid *dirn* value, the

following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid DIRN */
;
```

If the network element receives this command with an invalid *montm* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTM */
;
```

If the network element receives this command with an invalid *mondat* format, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONDAT */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

RTRV-RELSPR

RTRV-RELSPR: Retrieve Relative_Signal_Power

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

RTRV-RELSPR*:tid:aid:ctag;*

DESCRIPTION

The **RTRV-RELSPR** command can be initiated by users to report instanteneous signal power of each channel in an optical line relative to the strongest signal in a scale of 0 to 100. The command can be applied at any site, but the report is meaningful only for the end terminals with OMU.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the optical line. The *aid* value may also be **all**(default value).

Entity: Optical Line
Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

The following output message is returned if a valid input command is issued:

```
   sid date time
M  ctag COMPLD
  "aid:OPDDB"
  "aid:OPDDB"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined as follows:

aid Access Identifier. This is the address of an optical line.

OPDDB The *OPDDB* is a position defined block to report various attributes. The format will be *value1:value2:....*. All applicable attributes are reported.

- *stime* Start Time. This parameter indicates the time when the relative signal power per channel is measured. It is reported as hh-mm.
- *relspr_c* Relative Signal Power per Channel. This parameter indicates the measured signal power of a channel relative to the strongest signal. It is reported in a scale of 0 to 100. If *relspr_c* data are requested on optical channels and the corresponding optical line is IS but the OA circuit pack is not inserted (or removed and no Update command issued), then the "-" will be shown in the data fields. If *relspr_c* data are requested on optical lines that are not equipped, then the "-" will be shown in the data fields. The optical line, and its constituent optical channel(s), DEMUXed at a single OA OLS End Terminal is not directly monitored because there is no OA directly preceding the ODU.

EXAMPLE OUTPUT

The following example shows the results of a **RTRV-RELSPR** command:

```
rtrv-relspr:LT-OLS:all:123456;


IP 123456
<


   LT-OLS 97-09-16 15:35:00
M  123456 COMPLD
   "ochan-1a-1:08-29:-"
   "ochan-1a-2:08-29:-"
   "ochan-1a-3:08-29:-"
   "ochan-1a-4:08-29:-"
   "ochan-1a-5:08-29:-"
   "ochan-1a-6:08-29:-"
   "ochan-1a-7:08-29:-"
   "ochan-1a-8:08-29:-"
   "ochan-1a-9:08-29:-"
   "ochan-1a-10:08-29:-"
   "ochan-1a-11:08-29:-"
   "ochan-1a-12:08-29:-"
   "ochan-1a-13:08-29:-"
   "ochan-1a-14:08-29:-"
   "ochan-1a-15:08-29:-"
   "ochan-1a-16:08-29:-"
   "ochan-1b-1:08-29:0"
   "ochan-1b-2:08-29:0"
   "ochan-1b-3:08-29:0"
   "ochan-1b-4:08-29:100"
   "ochan-1b-5:08-29:0"
   "ochan-1b-6:08-29:0"
   "ochan-1b-7:08-29:0"
   "ochan-1b-8:08-29:0"
   "ochan-1b-9:08-29:0"
   "ochan-1b-10:08-29:0"
   "ochan-1b-11:08-29:0"
   "ochan-1b-12:08-29:0"
   "ochan-1b-13:08-29:0"
   "ochan-1b-14:08-29:0"
   "ochan-1b-15:08-29:0"
   "ochan-1b-16:08-29:0"
   "ochan-2a-1:08-29:-"
   "ochan-2a-2:08-29:-"
   "ochan-2a-3:08-29:-"
   "ochan-2a-4:08-29:-"
```

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```
"ochan-2a-5:08-29:-"
"ochan-2a-6:08-29:-"
"ochan-2a-7:08-29:-"
"ochan-2a-8:08-29:-"
"ochan-2a-9:08-29:-"
"ochan-2a-10:08-29:-"
"ochan-2a-11:08-29:-"
"ochan-2a-12:08-29:-"
"ochan-2a-13:08-29:-"
"ochan-2a-14:08-29:-"
"ochan-2a-15:08-29:-"
"ochan-2a-16:08-29:-"
"ochan-2b-1:08-29:0"
"ochan-2b-2:08-29:0"
"ochan-2b-3:08-29:0"
"ochan-2b-4:08-29:100"
"ochan-2b-5:08-29:0"
"ochan-2b-6:08-29:0"
"ochan-2b-7:08-29:0"
"ochan-2b-8:08-29:0"
"ochan-2b-9:08-29:0"
"ochan-2b-10:08-29:0"
"ochan-2b-11:08-29:0"
"ochan-2b-12:08-29:0"
"ochan-2b-13:08-29:0"
"ochan-2b-14:08-29:0"
"ochan-2b-15:08-29:0"
"ochan-2b-16:08-29:0"
"ochan-3a-1:08-29:-"
"ochan-3a-2:08-29:-"
"ochan-3a-3:08-29:-"
"ochan-3a-4:08-29:-"
"ochan-3a-5:08-29:-"
"ochan-3a-6:08-29:-"
"ochan-3a-7:08-29:-"
"ochan-3a-8:08-29:-"
"ochan-3a-9:08-29:-"
"ochan-3a-10:08-29:-"
"ochan-3a-11:08-29:-"
"ochan-3a-12:08-29:-"
"ochan-3a-13:08-29:-"
"ochan-3a-14:08-29:-"
"ochan-3a-15:08-29:-"
"ochan-3a-16:08-29:-"
```

Screen continues on next page.

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```
"ochan-3b-1:08-29:-"
"ochan-3b-2:08-29:-"
"ochan-3b-3:08-29:-"
"ochan-3b-4:08-29:-"
"ochan-3b-5:08-29:-"
"ochan-3b-6:08-29:-"
"ochan-3b-7:08-29:-"
"ochan-3b-8:08-29:-"
"ochan-3b-9:08-29:-"
"ochan-3b-10:08-29:-"
"ochan-3b-11:08-29:-"
"ochan-3b-12:08-29:-"
"ochan-3b-13:08-29:-"
"ochan-3b-14:08-29:-"
"ochan-3b-15:08-29:-"
"ochan-3b-16:08-29:-"
"ochan-4a-1:08-29:-"
"ochan-4a-2:08-29:-"
"ochan-4a-3:08-29:-"
"ochan-4a-4:08-29:-"
"ochan-4a-5:08-29:-"
"ochan-4a-6:08-29:-"
"ochan-4a-7:08-29:-"
"ochan-4a-8:08-29:-"
"ochan-4a-9:08-29:-"
"ochan-4a-10:08-29:-"
"ochan-4a-11:08-29:-"
"ochan-4a-12:08-29:-"
"ochan-4a-13:08-29:-"
"ochan-4a-14:08-29:-"
"ochan-4a-15:08-29:-"
"ochan-4a-16:08-29:-"
"ochan-4b-1:08-29:-"
"ochan-4b-2:08-29:-"
"ochan-4b-3:08-29:-"
"ochan-4b-4:08-29:-"
"ochan-4b-5:08-29:-"
"ochan-4b-6:08-29:-"
"ochan-4b-7:08-29:-"
"ochan-4b-8:08-29:-"
"ochan-4b-9:08-29:-"
"ochan-4b-10:08-29:-"
"ochan-4b-11:08-29:-"
"ochan-4b-12:08-29:-"
```

Screen continues on next page.

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```
   "ochan-4b-13:08-29:-"
   "ochan-4b-14:08-29:-"
   "ochan-4b-15:08-29:-"
   "ochan-4b-16:08-29:-"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If a **RTRV-RELSPR** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OCHAN

RTRV-SECTRC

RTRV-SECTRC Retrieve Section_Trace

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

RTRV-SECTRC*:tid:aid:ctag;*

DESCRIPTION

RTRV-SECTRC commands can be initiated to retrieve the provisioned transmit and receive section traces, the status of the STS-48 section trace, and the actual receive STS-48 section trace, if available. This command retrieves section trace information pertaining to the addressed section terminating entity in a line-by-line format.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the entity for which the report is requested.

Entity: Port (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)-(1)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)-(1)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If there is section trace information to report, the following output message is returned:

```
   sid date time
M  ctag COMPLD
   "aid:::status=x,ntfcncde=xx,
   INCSECTRC=\"xxxxxxxxxxxxxxx\",
   EXPSECTRC=\"xxxxxxxxxxxxxxx\""
        .       .       .       .       .       .
        .       .       .       .       .       .
        .       .       .       .       .       .
   "aid:::status=x,ntfcncde=xx,
   INCSECTRC=\"xxxxxxxxxxxxxxx\",
   EXPSECTRC=\"xxxxxxxxxxxxxxx\""
;
```

The output message line length is limited to 15 characters irrespective of the length of the section trace to be reported.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

`aid` Access Identifier. This is the address of the signal for which the section trace is to be retrieved.

`status` Section Trace Status. This is a status report of the incoming section trace. For **RTRV_SECTRC** messages `status` can take one of the following values:

- **GOOD** Good. This indicates that the `INCSECTRC` and the `EXPSECTRC` match.
- **MISMATCH** Mismatch. This indicates that the `INCSECTRC` and the `EXPSECTRC` do not match.
- **UNAVAILABLE** Unavailable. This indicates that there is no `INCSECTRC` because there has been a section interruption.
- **NOT_APPLICABLE** Not Applicable. This indicates that : the `aid` chosen does not have a trace capability.

`ntfcncde` Notification code. This parameter is the alarm level provisioned for failures of facilities serviced by the addressed port. The *`ntfcncde`* parameter is reported in `NTFCNCDE=`*`xx`* format where *`xx`* has one of the following values:

- **CR** Critical (if provisioned for SONET)
- **MJ** Major (if provisioned for SONET)

MN	Minor (if provisioned for SONET)
NA	Not alarmed (if provisioned for SONET)
NR	Not reported (if provisioned for SONET) (No autonomous report will be generated.)
NO	Ignored (if provisioned for SONET) (No autonomous or on-demand report will be generated.)
Critical	Critical (if provisioned for SDH)
Prompt	Prompt (if provisioned for SDH)
Deferred	Deferred (if provisioned for SDH)
No_Alarm	No Alarm (if provisioned for SDH)
No_Report	No Report (if provisioned for SDH) (No autonomous report will be generated.)
Not_Indicated	Not Indicated (if provisioned for SDH) (No autonomous or on-demand report will be generated.)

INCSECTRC Incoming Section trace message. This indicates the incoming Section Trace (J0) content. The INCSECTRC is a string of 15 ASCII characters received in the Section trace bytes (J0) of the SONET signal.

If the INCSECTRC is UNAVAILABLE, 15 question marks ("?") are reported for the INCSECTRC.

The section trace is unavailable when there has been a section interruption.

If the INCSECTRC is NOT_APPLICABLE, 15 dashes ("-") are reported for the INCSECTRC.

The section trace is NOT_APPLICABLE when the aid chosen does not have the section trace capability.

With the exception of the default section trace byte which is a sequence of 16 consecutive representations of binary one, if the INCSECTRC contains non-printable charcters, the non-printable characters will be reported as question marks ("?"). The default section trace byte is represented as "RESET_SECTRC".

EXPSECTRC Expected incoming Section trace message. This indicates the expected Section Trace (J0) content. The EXPSECTRC is a string of the first 15 ASCII characters received in the Section trace bytes (J0) of the SONET/SDH signal.

ITU Recommendation G.707 (ITU) defines the J0 as follows:

- The section access point identifier may use either a single byte (containing the code 0-255)

- The access point identifier format as defined in section 3 of ITU-T Recommendation G.831 and ITU-T Recommendation G.707.

The received section trace is as follows:

The Network Element must have the capability to recognized both types of J0 section trace formats:

- In the receive end, when the network element receives any single constant byte string in the J0 bye position of the Section Overhead of the first STS-1 of an STS-N, the network element has the capability to recognize it as a valid string. The software has the capability to compare the value of of this constant incoming string against the original parameter of **EXPSECTRC**.

  When the user provisions the parameter **EXPSECTRC** as "RESET_SECTRC", the software causes the Network Element to expect a constant single byte in the J0 bye position of the Section Overhead of the first STS-1 of an STS-N, whose Hex representation value is 00000001 (1 is the LEAST Significant Bit). This constant string is the original value of **EXPSECTRC**.

- If the user enters any other string than "RESET_SECTRC" as the value for **EXPSECTRC**, the software causes the Network Element to expect to receive the J0 byte string in accordance with ITU recommendation G.831 (16 byte, first byte used for CRC7 calculation other 15 bytes used to transmit the J0 byte information according to recommendation T.50 and ITU-T Recommendations G.831 and G.707).

If there are invalid characters `EXPSECTRC`, the `status` will be set to `MISMATCH`.

The ASCII characters allowed for the section trace are letters "A" through "Z" and "a" through "z", numbers "0" through "9", and special characters: "#" (pound), "" (dollar), "%" (percent), "&" (ampersand), "*" (asterisk), "(" (open parenthesis), ")" (close parenthesis), "+" (plus), "|" (pipe), "-" (hyphen), "[" (open square bracket), "]" (close square bracket), "{" (open bracket), "}" (close bracket), "´" (apostrophe), "`" (grave accent), ". " (period), "/" (slash), "<" (less than), and ">" (greater than).

These are the valid characters.

Each one of the 15 characters of the J0 section trace byte has a unique 0X01 hex 7 bit representation as described by the T.50 standard. Any character whose 0x01 hex 7 bit representation does not correspond to one of the allowed characters in the trace messages will be mapped to question mark ("?") in the output. Nulls and spaces will be displayed as space ("˜").

If the section trace is MISMATCH (status=MISMATCH) and the OTU port state changes to NMON, the following changes must take place:

- The section trace status should change from status=MISMATCH to status=UNAVAILABLE and

- INCSECTRC must display INCSECTRC=

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-SECTRC** command with the system equipped with an Optical Translator Unit. The first shelf of the Optical Translator is equipped with an OTU. Only Slots 13 and 14 are equipped.

```
rtrv-sectrc:LT-PF-2000:otu-1-all-1:789012;


IP 789012
<


   LT-PF-2000 93-10-26 16:42:11
M  789012 COMPLD
   "otu-1-1-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-2-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-3-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-4-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-5-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-6-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-7-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-8-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-9-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-10-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-11-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-12-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
```

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```
   "otu-1-13-1:::status=MISMATCH,ntfcncde=NA,
 INCSECTRC=\"AID1Expect#*%<(\",
 EXPSECTRC=\"AID1xxxxxxxxxxy\""
   "otu-1-14-1:::status=NOT_AVAILABLE,ntfcncde=NA,
 INCSECTRC=\"??????????????\",
 EXPSECTRC=\"AID1xxxxxxxxxxz\""
   "otu-1-15-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-16-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-17-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-18-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-19-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-20-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-21-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-22-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-23-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-24-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-25-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-26-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-27-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
```

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```
EXPSECTRC=\"RESET_SECTRC\""
  "otu-1-28-1:::status=NOT_APPLICABLE,ntfcncde=NA,
INCSECTRC=\"---------------\",
EXPSECTRC=\"RESET_SECTRC\""
  "otu-1-29-1:::status=NOT_APPLICABLE,ntfcncde=NA,
INCSECTRC=\"---------------\",
EXPSECTRC=\"RESET_SECTRC\""
  "otu-1-30-1:::status=NOT_APPLICABLE,ntfcncde=NA,
INCSECTRC=\"---------------\",
EXPSECTRC=\"RESET_SECTRC\""
  "otu-1-31-1:::status=NOT_APPLICABLE,ntfcncde=NA,
INCSECTRC=\"---------------\",
EXPSECTRC=\"RESET_SECTRC\""
  "otu-1-32-1:::status=NOT_APPLICABLE,ntfcncde=NA,
INCSECTRC=\"---------------\",
EXPSECTRC=\"RESET_SECTRC\""
```

The following example shows a **RTRV-SECTRC** command with the system equipped with an OTU. This command can always be issued regardless whether the system is equipped with an OTU. The first shelf of the Optical Line Syetem is equipped with an OTU. Only Slots 13 and 14 are equipped.

For slot 13 EXPSECTRC is the default-value and INCSECTRC matches EXPSECTRC.

For slot 14 EXPSECTRC is the default-value and INCSECTRC does not match EXPSECTRC.

```
rtrv-sectrc:LT-PF-2000:otu-1-all-1:789012;


IP 789012
<


   LT-PF-2000 93-10-26 16:42:11
M  789012 COMPLD
   "otu-1-1-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-2-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-3-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-4-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-5-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-6-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-7-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-8-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-9-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-10-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-11-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-12-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
```

Screen continues on next page.

Screen continued from previous page.

```
   "otu-1-13-1:::status=MATCH,ntfcncde=NA,
 INCSECTRC=\"RESET_SECTRC\"
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-14-1:::status=MISMATCH,ntfcncde=NA,
 INCSECTRC=\"???xyzuv???????",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-15-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-16-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-17-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-18-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-19-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-20-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-21-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-22-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-23-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-24-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-25-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-26-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-27-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
```

Screen continues on next page.

Screen continued from previous page.

```
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-28-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-29-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-30-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-31-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
   "otu-1-32-1:::status=NOT_APPLICABLE,ntfcncde=NA,
 INCSECTRC=\"---------------\",
 EXPSECTRC=\"RESET_SECTRC\""
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If a **RTRV-PTHXMTSECTRC** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

If the network element receives this command with an otherwise valid *aid* value but for which the command is directed to an unequipped slot (slot in AUTO state), or a slot equipped with circuit packs which do not support reading or writing the J0 Section Trace Byte, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, AID value inconsistent with current
equipage */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-SECTRC

ENT-OCHAN

RTRV-STATE

RTRV-STATE

RTRV-STATE: Retrieve State

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

RTRV-STATE*:tid:[aid]:ctag;*

DESCRIPTION

The **RTRV-STATE** command can be initiated by users to retrieve slot, port, tributary, and line protection switching state and also switch priority information for the network element.

The slot numbering for the OTU, QOTU, and OTPMs is consecutive. Each OTU slot is reported in ascending order from 1-32. If an OTU slot contains the first slot of a QOTU, the QOTU is reported, followed by each port module in ascending order from 1-4, followed by the extension (EXT) slot.

In the output of this command, every slot is displayed. If the slot is equipped, the port state associated with the slot will appear. The OTPS port aids are not displayed in RTRV-STATE.

The initial QOTU slot and its extension (EXT) slot will display the same information in the same order. Only equipped OTPM slots will be displayed.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the slot, port, tributary, or line for which this command is intended. The *aid* value may also be **all** or unspecified. If an *aid* is not sent to the network element, the network element responds as if the *aid* was all.

Entity: All
Legal Values: (ALL)

Entity: CMS Port [End Terminals and Repeaters]
Legal Values: (CMS)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

Entity: Optical Line
Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

Entity: Optical Channel

Legal Values:(OCHAN)-(ALL), (OCHAN)-(1A,1B,2A,2B,3A,3B,4A,4B)-(ALL,1-16)

CenterLink CIT selection options: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)

Entity: Supervisory Channel [End terminals and Repeaters]
Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

Entity: Slot (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)

Entity: Slot (OPS)
Legal Values: (OTU)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

Entity: Self Powered OU Slot(OU)
Legal Values: (OTU)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

```
   sid date time
M ctag COMPLD
  "aid,[cptype]:[port_state_in],[port_state_out],[sw_state],
[actswprty],[queswprty]"
          .             .             .             .            .
          .             .             .             .            .
  "aid,[cptype]:[port_state_in],[port_state_out],[sw_state],
[actswprty],[queswprty]"
;
```

The output report is sorted as follows:

1. CMS port data
2. Optical line data
3. Supervisory channel data
4. Optical channel data
5. OTU/QOTU/OTPM slot data
6. SPODU, SPOMU, and OPS slot data

Within each group, the entries are sorted by *aid* values.

If the user selects **ochan-all**, where applicable, the output must include the following:

ochan-1a-1,
ochan-1b-1,
.
.
.
ochan-4b-16.

The valid OT cptype values are OTU, QOTU, EXT, OTPM, OPS, SPODU, and SPOMU.

For slots with cptype = EXT, SPODU, or SPOMU, the following output parameters are reported with empty values:

— *port_state_in*

— *port_state_out*

— *sw_state*

— *actswprty*

— *queswprty*

In addition, port_state_in and port_state_out are reported with an empty values for cptype = OPS slots.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined as follows:

aid — Access identifier. This is the address of the slot, port, tributary, or line for which state information is given. If a user requests an OTU and the slot is empty, the CPTYPE field will be blank.

cptype — Circuit Pack Type. This is the mnemonic name of the circuit pack. For example, tg3 is the mnemonic name of the timing generator circuit pack. 'RDNA' is a valid value, and indicates "Requested data not available". If the requested 'cptype' data for the addressed entity is corrupted, this value is reported. A null value implies that the slot is not equipped or the

parameter does not apply.

port_state_in Port State In. This is the port state in the "in" direction. Valid values are IS, OOS-MA-AS, or OOS corresponding to the "IS", "AUTO", or "NMON" states. 'RDNA' is a valid value, and indicates "Requested data not available". If the requested 'port_state_in' data for the addressed entity is corrupted, this value is reported.

This parameter is blank if it does not apply for a given *aid*. In a single OA configuration, optical channels *port_state_in* parameter at the demux end is reported as "RDNA". However, if the optical channel port is provisoned as "OOS", *port_state_in* parameter is reported as "OOS". The supr-1b of an OLS end terminal transitions from AUTO to IS when the terminal is provisioned as "1A-TX-THRU" or "1A-RCV-THRU". The supr-1b of an OLS end terminal transitions from IS to AUTO when supervisory signal is removed and the terminal is no longer provisioned as "1A-TX-THRU" or "1A-RCV-THRU".

port_state_out Port State Out. This is the port state in the "out" direction. Valid values are IS, OOS-MA-AS, or OOS corresponding to the "IS", "AUTO", or "NMON" states. 'RDNA' is a valid value, and indicates "Requested data not available". If the requested 'port_state_out' data for the addressed entity is corrupted, this value is reported.

This parameter is blank if it does not apply for a given *aid*.

sw_state Switch State. This is the switch state of the addressed switchable entity. This parameter will have one of the following values:

PRIMARY Primary. The addressed entity is selecting its primary input.

SECONDARY Secondary. The addressed entity is selecting its secondary input.

RDNA Requested data not available. If the requested *sw_state* data for the addressed entity is corrupted, this value is reported.

actswprty Active Switch Priority. This field is reported for addressed switchable entities in the case of a protection switch being in effect. It specifies the current active protection switching request. If non-null, the *actswprty* parameter has one of the following values (for clarity, the values applicable to a given entity are grouped together and listed in the order of priority of request):

INH Inhibit. This specifies that an inhibit protection switching request is active.

FRCD Forced. This specifies that a forced protection switching

request is active.

APS(SF)	Automatic protection switch (Signal Fail). This specifies that an automatic protection switching request is active.
RDNA	Requested data not available. If the requested *actswprty* data for the addressed entity is corrupted, this value is reported.

The APS(SF) conditions remains active until the Signal Fail (LOS in the case of OPS), which caused the Automatic Protection Switch, clears.

queswprty Queued Switch Priority. This field is reported in the case of a protection switch being in effect. It specifies the current queued protection switching request. If non-null, it has one of the following values (for clarity, the values applicable to a given entity are grouped together and listed in the order of priority of request):

APS(SF)	Automatic protection switch (Signal Fail). This specifies that an automatic protection switching request is queued.
RDNA	Requested data not available. If the requested *queswprty* data for the addressed entity is corrupted, this value is reported.

EXAMPLE INPUT/OUTPUT

The following examples show a **RTRV-STATE** command with the system configured as End Terminal with only the optical lines 1a, 1b, 2a, and 2b equipped and other optical lines are not equipped.

Also the terminal is in single OA configuration.

```
RTRV-STATE:LT-PF-2000:ALL:CTAG;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "cms-1a,:,IS,,,"
   "cms-2a,:,IS,,,"
   "cms-3a,:,,,,"
   "cms-4a,:,,,,"
   "oline-1a,:IS,,,,"
   "oline-1b,:IS,,,,"
   "oline-2a,:IS,,,,"
   "oline-2b,:IS,,,,"
   "oline-3a,:,,,,"
   "oline-3b,:,,,,"
   "oline-4a,:,,,,"
   "oline-4b,:,,,,"
   "supr-1a,:IS,,,,"
   "supr-1b,:IS,,,,"
   "supr-2a,:IS,,,,"
   "supr-2b,:IS,,,,"
   "supr-3a,:,,,,"
   "supr-3b,:,,,,"
   "supr-4a,:,,,,"
   "supr-4b,:,,,,"
   "ochan-1a-1,:RDNA,,,,"
   "ochan-1a-2,:RDNA,,,,"
   "ochan-1a-3,:RDNA,,,,"
   "ochan-1a-4,:RDNA,,,,"
   "ochan-1a-5,:RDNA,,,,"
   "ochan-1a-6,:RDNA,,,,"
   "ochan-1a-7,:RDNA,,,,"
   "ochan-1a-8,:RDNA,,,,"
   "ochan-1a-9,:RDNA,,,,"
   "ochan-1a-10,:RDNA,,,,"
   "ochan-1a-11,:RDNA,,,,"
   "ochan-1a-12,:RDNA,,,,"
   "ochan-1a-13,:RDNA,,,,"
   "ochan-1a-14,:RDNA,,,,"
   "ochan-1a-15,:RDNA,,,,"
   "ochan-1a-16,:RDNA,,,,"
```

Screen continues on next page.

Screen continued from previous page.

```
"ochan-1b-1,:IS,,,"
"ochan-1b-2,:IS,,,"
"ochan-1b-3,:IS,,,"
"ochan-1b-4,:IS,,,"
"ochan-1b-5,:IS,,,"
"ochan-1b-6,:IS,,,"
"ochan-1b-7,:IS,,,"
"ochan-1b-8,:IS,,,"
"ochan-1b-9,:IS,,,"
"ochan-1b-10,:IS,,,"
"ochan-1b-11,:IS,,,"
"ochan-1b-12,:IS,,,"
"ochan-1b-13,:IS,,,"
"ochan-1b-14,:IS,,,"
"ochan-1b-15,:IS,,,"
"ochan-1b-16,:IS,,,"
"ochan-2a-1,:RDNA,,,"
"ochan-2a-2,:RDNA,,,"
"ochan-2a-3,:RDNA,,,"
"ochan-2a-4,:RDNA,,,"
"ochan-2a-5,:RDNA,,,"
"ochan-2a-6,:RDNA,,,"
"ochan-2a-7,:OOS,,,"
"ochan-2a-8,:RDNA,,,"
"ochan-2a-9,:RDNA,,,"
"ochan-2a-10,:RDNA,,,"
"ochan-2a-11,:RDNA,,,"
"ochan-2a-12,:RDNA,,,"
"ochan-2a-13,:RDNA,,,"
"ochan-2a-14,:RDNA,,,"
"ochan-2a-15,:OOS,,,"
"ochan-2a-16,:RDNA,,,"
"ochan-2b-1,:IS,,,"
"ochan-2b-2,:IS,,,"
"ochan-2b-3,:IS,,,"
"ochan-2b-4,:IS,,,"
"ochan-2b-5,:IS,,,"
"ochan-2b-6,:IS,,,"
"ochan-2b-7,:OOS,,,"
"ochan-2b-8,:IS,,,"
"ochan-2b-9,:IS,,,"
"ochan-2b-10,:IS,,,"
"ochan-2b-11,:IS,,,"
"ochan-2b-12,:IS,,,"
```

Screen continues on next page.

Screen continued from previous page.

```
"ochan-2b-13,:IS,,,"
"ochan-2b-14,:IS,,,"
"ochan-2b-15,:OOS,,,"
"ochan-2b-16,:IS,,,"
"ochan-3a-1,:,,,"
"ochan-3a-2,:,,,"
"ochan-3a-3,:,,,"
"ochan-3a-4,:,,,"
"ochan-3a-5,:,,,"
"ochan-3a-6,:,,,"
"ochan-3a-7,:,,,"
"ochan-3a-8,:,,,"
"ochan-3a-9,:,,,"
"ochan-3a-10,:,,,"
"ochan-3a-11,:,,,"
"ochan-3a-12,:,,,"
"ochan-3a-13,:,,,"
"ochan-3a-14,:,,,"
"ochan-3a-15,:,,,"
"ochan-3a-16,:,,,"
"ochan-3b-1,:,,,"
"ochan-3b-2,:,,,"
"ochan-3b-3,:,,,"
"ochan-3b-4,:,,,"
"ochan-3b-5,:,,,"
"ochan-3b-6,:,,,"
"ochan-3b-7,:,,,"
"ochan-3b-8,:,,,"
"ochan-3b-9,:,,,"
"ochan-3b-10,:,,,"
"ochan-3b-11,:,,,"
"ochan-3b-12,:,,,"
"ochan-3b-13,:,,,"
"ochan-3b-14,:,,,"
"ochan-3b-15,:,,,"
"ochan-3b-16,:,,,"
"ochan-4a-1,:,,,"
"ochan-4a-2,:,,,"
"ochan-4a-3,:,,,"
"ochan-4a-4,:,,,"
"ochan-4a-5,:,,,"
"ochan-4a-6,:,,,"
"ochan-4a-7,:,,,"
"ochan-4a-8,:,,,"
```

Screen continues on next page.

Screen continued from previous page.

```
   "ochan-4a-9,:,,,,"
   "ochan-4a-10,:,,,,"
   "ochan-4a-11,:,,,,"
   "ochan-4a-12,:,,,,"
   "ochan-4a-13,:,,,,"
   "ochan-4a-14,:,,,,"
   "ochan-4a-15,:,,,,"
   "ochan-4a-16,:,,,,"
   "ochan-4b-1,:,,,,"
   "ochan-4b-2,:,,,,"
   "ochan-4b-3,:,,,,"
   "ochan-4b-4,:,,,,"
   "ochan-4b-5,:,,,,"
   "ochan-4b-6,:,,,,"
   "ochan-4b-7,:,,,,"
   "ochan-4b-8,:,,,,"
   "ochan-4b-9,:,,,,"
   "ochan-4b-10,:,,,,"
   "ochan-4b-11,:,,,,"
   "ochan-4b-12,:,,,,"
   "ochan-4b-13,:,,,,"
   "ochan-4b-14,:,,,,"
   "ochan-4b-15,:,,,,"
   "ochan-4b-16,:,,,,"
;
```

The following example shows a **RTRV-STATE** command with the system configured as End Terminal and an Optical Translator. On the End Terminal, only the optical lines 1a, 1b, 2a, and 2b are equipped, and other optical lines are not equipped. The first shelf of the Optical Translator is equipped.

```
RTRV-STATE:LT-PF-2000:ALL:CTAG;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "cms-1a,:,IS,,,"
   "cms-2a,:,IS,,,"
   "cms-3a,:,,,,"
   "cms-4a,:,,,,"
   "oline-1a,:IS,,,,"
   "oline-1b,:IS,,,,"
   "oline-2a,:IS,,,,"
   "oline-2b,:IS,,,,"
   "oline-3a,:,,,,"
   "oline-3b,:,,,,"
   "oline-4a,:,,,,"
   "oline-4b,:,,,,"
   "supr-1a,:IS,,,,"
   "supr-1b,:IS,,,,"
   "supr-2a,:IS,,,,"
   "supr-2b,:IS,,,,"
   "supr-3a,:,,,,"
   "supr-3b,:,,,,"
   "supr-4a,:,,,,"
   "supr-4b,:,,,,"
   "ochan-1a-1,:RDNA,,,,"
   "ochan-1a-2,:RDNA,,,,"
   "ochan-1a-3,:RDNA,,,,"
   "ochan-1a-4,:RDNA,,,,"
   "ochan-1a-5,:RDNA,,,,"
   "ochan-1a-6,:RDNA,,,,"
   "ochan-1a-7,:RDNA,,,,"
   "ochan-1a-8,:RDNA,,,,"
   "ochan-1a-9,:RDNA,,,,"
   "ochan-1a-10,:RDNA,,,,"
   "ochan-1a-11,:RDNA,,,,"
   "ochan-1a-12,:RDNA,,,,"
   "ochan-1a-13,:RDNA,,,,"
   "ochan-1a-14,:RDNA,,,,"
   "ochan-1a-15,:RDNA,,,,"
   "ochan-1a-16,:RDNA,,,,"
```

Screen continues on next page.

Screen continued from previous page.

```
"ochan-1b-1,:IS,,,"
"ochan-1b-2,:IS,,,"
"ochan-1b-3,:IS,,,"
"ochan-1b-4,:IS,,,"
"ochan-1b-5,:IS,,,"
"ochan-1b-6,:IS,,,"
"ochan-1b-7,:IS,,,"
"ochan-1b-8,:IS,,,"
"ochan-1b-9,:IS,,,"
"ochan-1b-10,:IS,,,"
"ochan-1b-11,:IS,,,"
"ochan-1b-12,:IS,,,"
"ochan-1b-13,:IS,,,"
"ochan-1b-14,:IS,,,"
"ochan-1b-15,:IS,,,"
"ochan-1b-16,:IS,,,"
"ochan-2a-1,:RDNA,,,"
"ochan-2a-2,:RDNA,,,"
"ochan-2a-3,:RDNA,,,"
"ochan-2a-4,:RDNA,,,"
"ochan-2a-5,:RDNA,,,"
"ochan-2a-6,:RDNA,,,"
"ochan-2a-7,:OOS,,,"
"ochan-2a-8,:RDNA,,,"
"ochan-2a-9,:RDNA,,,"
"ochan-2a-10,:RDNA,,,"
"ochan-2a-11,:RDNA,,,"
"ochan-2a-12,:RDNA,,,"
"ochan-2a-13,:RDNA,,,"
"ochan-2a-14,:RDNA,,,"
"ochan-2a-15,:OOS,,,"
"ochan-2a-16,:RDNA,,,"
"ochan-2b-1,:IS,,,"
"ochan-2b-2,:IS,,,"
"ochan-2b-3,:IS,,,"
"ochan-2b-4,:IS,,,"
"ochan-2b-5,:IS,,,"
"ochan-2b-6,:IS,,,"
"ochan-2b-7,:OOS,,,"
"ochan-2b-8,:IS,,,"
"ochan-2b-9,:IS,,,"
"ochan-2b-10,:IS,,,"
"ochan-2b-11,:IS,,,"
"ochan-2b-12,:IS,,,"
```

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```
"ochan-2b-13,:IS,,,"
"ochan-2b-14,:IS,,,"
"ochan-2b-15,:OOS,,,"
"ochan-2b-16,:IS,,,"
"ochan-3a-1,:,,,"
"ochan-3a-2,:,,,"
"ochan-3a-3,:,,,"
"ochan-3a-4,:,,,"
"ochan-3a-5,:,,,"
"ochan-3a-6,:,,,"
"ochan-3a-7,:,,,"
"ochan-3a-8,:,,,"
"ochan-3a-9,:,,,"
"ochan-3a-10,:,,,"
"ochan-3a-11,:,,,"
"ochan-3a-12,:,,,"
"ochan-3a-13,:,,,"
"ochan-3a-14,:,,,"
"ochan-3a-15,:,,,"
"ochan-3a-16,:,,,"
"ochan-3b-1,:,,,"
"ochan-3b-2,:,,,"
"ochan-3b-3,:,,,"
"ochan-3b-4,:,,,"
"ochan-3b-5,:,,,"
"ochan-3b-6,:,,,"
"ochan-3b-7,:,,,"
"ochan-3b-8,:,,,"
"ochan-3b-9,:,,,"
"ochan-3b-10,:,,,"
"ochan-3b-11,:,,,"
"ochan-3b-12,:,,,"
"ochan-3b-13,:,,,"
"ochan-3b-14,:,,,"
"ochan-3b-15,:,,,"
"ochan-3b-16,:,,,"
"ochan-4a-1,:,,,"
"ochan-4a-2,:,,,"
"ochan-4a-3,:,,,"
"ochan-4a-4,:,,,"
"ochan-4a-5,:,,,"
"ochan-4a-6,:,,,"
"ochan-4a-7,:,,,"
"ochan-4a-8,:,,,"
```

Screen continues on next page.

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```
"ochan-4a-9,:,,,,"
"ochan-4a-10,:,,,,"
"ochan-4a-11,:,,,,"
"ochan-4a-12,:,,,,"
"ochan-4a-13,:,,,,"
"ochan-4a-14,:,,,,"
"ochan-4a-15,:,,,,"
"ochan-4a-16,:,,,,"
"ochan-4b-1,:,,,,"
"ochan-4b-2,:,,,,"
"ochan-4b-3,:,,,,"
"ochan-4b-4,:,,,,"
"ochan-4b-5,:,,,,"
"ochan-4b-6,:,,,,"
"ochan-4b-7,:,,,,"
"ochan-4b-8,:,,,,"
"ochan-4b-9,:,,,,"
"ochan-4b-10,:,,,,"
"ochan-4b-11,:,,,,"
"ochan-4b-12,:,,,,"
"ochan-4b-13,:,,,,"
"ochan-4b-14,:,,,,"
"ochan-4b-15,:,,,,"
"ochan-4b-16,:,,,,"
"otu-1-1,OTU:IS,,,,"
"otu-1-2,OTU:IS,,,,"
"otu-1-3,OTU:IS,,,,"
"otu-1-4,OTU:IS,,,,"
"otu-1-5,QOTU:,,,,"
"otpm-1-5-1,OTPM:IS,,,,"
"otpm-1-5-2,OTPM:OOS,,,,"
"otpm-1-5-3,OTPM:IS,,,,"
"otpm-1-5-4,OTPM:IS,,,,"
"otu-1-6,EXT:,,,,"
"otu-1-7,OTU:OOS,,,,"
"otu-1-8,:,,,,"
"otu-1-9,:,,,,"
"otu-1-10,:,,,,"
"otu-1-11,:,,,,"
"otu-1-12,:,,,,"
"otu-1-13,:,,,,"
"otu-1-14,:,,,,"
"otu-1-15,QOTU:,,,,"
"otu-1-16,EXT:,,,,"
```

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```
"otu-1-17,OTU:IS,,,"
"otu-1-18,:,,,"
"otu-1-19,:,,,"
"otu-1-20,:,,,"
"otu-1-21,:,,,"
"otu-1-22,:,,,"
"otu-1-23,:,,,"
"otu-1-24,:,,,"
"otu-1-25,QOTU:,,,"
"otpm-1-25-1,OTPM:IS,,,"
"otpm-1-25-2,OTPM:IS,,,"
"otu-1-26,EXT:,,,"
"otu-1-27,OTU:IS,,,"
"otu-1-28,OTU:IS,,,"
"otu-1-29,OTU:IS,,,"
"otu-1-30,OTU:IS,,,"
"otu-1-31,OTU:IS,,,"
"otu-1-32,OTU:IS,,,"
"otu-2-1,:,,,"
"otu-2-2,:,,,"
"otu-2-3,:,,,"
"otu-2-4,:,,,"
"otu-2-5,:,,,"
"otu-2-6,:,,,"
"otu-2-7,:,,,"
"otu-2-8,:,,,"
"otu-2-9,:,,,"
"otu-2-10,:,,,"
"otu-2-11,:,,,"
"otu-2-12,:,,,"
"otu-2-13,:,,,"
"otu-2-14,:,,,"
"otu-2-15,:,,,"
"otu-2-16,:,,,"
"otu-2-17,:,,,"
"otu-2-18,:,,,"
"otu-2-19,:,,,"
"otu-2-20,:,,,"
"otu-2-21,:,,,"
"otu-2-22,:,,,"
"otu-2-23,:,,,"
"otu-2-24,:,,,"
"otu-2-25,:,,,"
"otu-2-26,:,,,"
```

Screen continues on next page.

Screen continued from previous page.

```
   "otu-2-27,:,,,,"
   "otu-2-28,:,,,,"
   "otu-2-29,:,,,,"
   "otu-2-30,:,,,,"
   "otu-2-31,:,,,,"
   "otu-2-32,:,,,,"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If a **RTRV-STATE** command is received with an invalid *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-PROT-xxx
ENT-xxx
OPR-PROTNSW-OC3
OPR-PROTNSW-OC12
OPR-PROTNSW-OC48
OPR-PROTNSW-SWFBR
OPR-PROTNSW-xxx
RLS-PROTNSW-OC3
RLS-PROTNSW-OC12
RLS-PROTNSW-OC48
RLS-PROTNSW-SWFBR
RLS-PROTNSW-xxx
RTRV-PROT-xxx
SET-ATTR-xxx

RTRV-SUPR

RTRV-SUPR: Retrieve Supervisory

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-SUPR*:tid:aid:ctag[:type];*

DESCRIPTION

RTRV-SUPR command messages can be initiated by a user to retrieve the current provisioned state and current state of the supervisory (SUPR) channel. This command retrieves all supervisory channel parameter settings that are provisionable via **ENT-SUPR** commands pertaining to the addressed OLS, reported one line per supervisory channel.

INPUT PARAMETERS

tid	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set: [A-Z][a-z][0-9].+-%#
aid	Access identifier. This is the address of the entity for which the report is requested. Entity: Supervisory Channel [End terminals and Repeaters] Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
ctag	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
type	Type. A value for this parameter is neither expected nor allowed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

Because the network element supports pre-provisioning of parameters, lines are included for all applicable *aid* values in response to this command, whether or not

the present equipage is capable of supporting the type of facility specified.

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

In response to a valid **RTRV-SUPR** command, the following output report is returned, sorted on SUPR channel data by the *supr_aid* value.

```
   sid date time
M  ctag COMPLD
   "supr_aid:::[level,]ntfcncde,sdthr"
   "supr_aid:::[level,]ntfcncde,sdthr"
       .       .       .
       .       .       .
       .       .       .
   "supr_aid:::[level,]ntfcncde,sdthr"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

supr_aid Supervisory channel access identifier. This is the supervisory channel address for which output is being reported.

ntfcncde Notification code. This parameter is the alarm level provisioned for failures of facilities serviced by the addressed port. The *ntfcncde* parameter is reported in NTFCNCDE=*xx* format where *xx* has one of the following values:

CR	Critical (if provisioned for SONET)
MJ	Major (if provisioned for SONET)
MN	Minor (if provisioned for SONET)
NA	Not alarmed (if provisioned for SONET)
NR	Not reported (if provisioned for SONET) (No autonomous report will be generated.)
NO	Ignored (if provisioned for SONET) (No autonomous or on-demand report will be generated.)
Critical	Critical (if provisioned for SDH)
Prompt	Prompt (if provisioned for SDH)
Deferred	Deferred (if provisioned for SDH)
No_Alarm	No Alarm (if provisioned for SDH)
No_Report	No Report (if provisioned for SDH) (No autonomous report will be generated.)

Not_Indicated Not Indicated (if provisioned for SDH) (No autonomous or on-demand report will be generated.)

sdthr Signal degrade threshold. This parameter is the signal degrade Bit Error Rate (BER) threshold for the facility serviced by the addressed supervisory channel. The *sdthr* parameter is reported in SDTHR=*xx* format where *xx* has one of the following values:

-9 This signifies that the signal degrade threshold is set at a BER of 10^{-9}.

-8 This signifies that the signal degrade threshold is set at a BER of 10^{-8}.

-7 This signifies that the signal degrade threshold is set at a BER of 10^{-7}.

-6 This signifies that the signal degrade threshold is set at a BER of 10^{-6}.

-5 This signifies that the signal degrade threshold is set at a BER of 10^{-5}.

EXAMPLE INPUT/OUTPUT

Line wrapping is not supported in the OUTPUT FORMAT. Output lines are broken here **only** for the convenience of the reader.

The following example shows the response to a query concerning all supervisory channels associated with all optical lines (`supr-all`) for an OLS End Terminal.

```
rtrv-supr:LT-OLS:supr-all:123456;


IP 123456
<


   LT-OLS 93-10-26 16:42:11
M  123456 COMPLD
   "supr-1a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-2a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-3a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-4a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
;
```

The following example shows the response to a query concerning all supervisory channels associated with all optical lines (`supr-all`) for an OLS Repeater.

```
rtrv-supr:LT-OLS:supr-all:123456;


IP 123456
<


   LT-OLS 93-10-26 16:42:11
M  123456 COMPLD
   "supr-1a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-1b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-2a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-2b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-3a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-3b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-4a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
   "supr-4b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

```
   sid date time
M  ctag DENY
   IISP
   /* Input, Invalid Syntax or Punctuation */
;
```

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID missing or inconsistent
      with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   INUP
   /* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-SUPR

SET-ATTR-SUPR

RTRV-SYS

RTRV-SYS: Retrieve System

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-SYS*:tid::ctag;*

DESCRIPTION

Execution of the **RTRV-SYS** command on a network element retrieves the attributes associated with that network element's system or X.25 or CIT port. The system level and X.25 port attributes are the information that is provisioned by the **set-network element** CIT-PC command. The CIT port attributes are provisioned via the **set-security-port** CIT-PC command.

Execution of this command on a network element retrieves the attributes associated with that network element's system or X.25 ports. The system level and X.25 port attributes are the information that is provisioned by the **set-network element** CIT-PC command.

The **RTRV-SYS** command can be initiated by a user to retrieve network element attributes associated with that network element at the system level or with the X.25 or CIT port parameters that are currently in effect.

The **RTRV-SYS** command can be initiated by a user to retrieve network element attributes associated with that network element at the system level or with the X.25 port parameters that are currently in effect.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If there is system information to report, the following output message is returned:

```
   sid date time
M  ctag COMPLD
   "tid=system_name,dsne=x,x25ps=x"
   "dirn=x,std=x,apsd=x"
   "almgrp=x,agne=x"
   "side1_sys=x,side1_opr=x,side2_sys=x,side2_opr=x"
   "eth_adrs=x"
;
```

OUTPUT PARAMETERS

tid	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set: [A-Z][a-z][0-9].+-%# The initial value for *tid* is LT-FT-2000.
dsne	The *dsne* indicates whether or not the network element identified by the *tid* is serving as the Directory Service-Network Element in a Self Healing Ring or subnetwork. It takes the values *yes* and *no*.
x25ps	X.25 Packet Size. *x25ps* may have a value of 256 or 128. This parameter determines the TL1 packet size for the X.25 interface.
almgrp	Alarm Group, [also known as Sonet Maintenance Sub-Branch or SMSB]. *almgrp* may have an integer value between 0 and 255, inclusive. This parameter determines the set of remote NEs with which the local NE can exchange remote alarm information. 0 value indicates that no remote alarm information is exchanged.
agne	Alarm Gateway Network Element. *agne* may have a value of "YES" or "NO". This parameter determines whether the local network element serves its Alarm Group or SMSB as an AGNE or not. [For further details on an AGNE's role, refer to the PF-2000 Interworking Specification Document, Section 4.4.]
dirn	Direction. For end terminals, *dirn* has a value of 1A-TX,1A-TX-THRU,1A-RCV,1A-RCV-THRU or DUAL. 1A-TX indicates that the optical lines 1A, 2A, 3A, and 4A are carrying traffic in the transmit direction (out of OLS) and optical lines 1B, 2B, 3B and 4B are carrying traffic in receive direction (that is, into

OLS). The factory default value of the parameter is 1A-TX. This parameter is significant in OLS end terminals, but not in OLS repeaters. An OLS end terminal provisioned as 1A-TX indicates that the output from the telemetry pack is connected to (for example,) OA-1A pack and the input is connected to OA-1B pack i.e optical line 1A is carrying traffic in transmit direction. At the other end terminal the telemetry pack should have reverse orientation in the sense, that as it is receiving traffic on line 1A its input should be connected to 1A OA circuit pack and its output should be connected to OA-1B circuit pack. Therefore, this particular end terminal should be provisioned as 1A-RCV.

1A-TX-THRU also indicates that the optical lines 1A, 2A, 3A and 4A are carrying traffic in the transmit direction (out of OLS) and optical lines 1B, 2B, 3B and 4B are carrying traffic in receive direction (that is, into Also the output from the telemetry pack in slot TLM-1A is connected to the The only difference in 1A-TX-THRU provisioned end terminal is that the telemetry pack 1B is equipped and its input/output are connected to output/input of another 1B telemetry pack of adjacent OLS terminal.

1A-RCV-THRU indicates that the optical lines 1B, 2B, 3B and 4B are carrying traffic in the transmit direction (out of OLS) and optical lines 1A, 2A, 3A and 4A are carrying traffic in receive direction (that is, into OLS). 1A-RCV-THRU provisioned end terminal also has an equipped TLM-1B with its input/output connected to output/input of another TLM-1B pack of adjacent OLS terminal.

For dual facing end terminals, *dirn* has the value DUAL. DUAL indicates that the optical line 1B/3B is carrying traffic in the transmit direction (out of OLS) on side 1 (east) and that the optical line 2A/4A is carrying traffic in the transmit direction (out of OLS) on side 2 (west). Also, optical line 1A/3A is carrying traffic in receive direction (that is, into OLS) on side 1 and optical line 2B/4B is carrying traffic in receive directions (that is, into OLS) on side 2. An OLS end terminal reported as DUAL indicates that the optical lines 1 and 3 and TLM 1A/3A are connected as in "1A-RCV" mode while optical lines 2 and 4 and TLM 2A/4A are connected as in "1A-TX" mode.

The single OA configuration is an exception to above definition. For single OA configuration, a terminal in "1A-TX" mode has the telemetry output from TLM xA going to OA in oa-xB slot. Here x=1-4 for non dual terminals and x=2,4 for dual facing terminals. Similarily, a terminal in "1A-RCV" mode has the telemetry output from TLM yA going to OA in oa-yA slot. Here y=1-4 for non dual end terminals, y=1,3 for dual facing terminals.

However, in a single OA the relative placement of OMU/ODU and OAs remains same as in a two OA configuration.

NOTE:
A **RTRV-SYS** report on an OLS operating in the repeater mode would return dirn=-, indicating that no valid provisioned value exists.

side1_sys Side 1 System Type. This parameter reports the provisioned system configuration of side 1 of network element. Side 1 of of a network element refers to optical line pairs 1-4 on a regular end terminal or repeater. It refers to optical line pairs 1 and 3 if the terminal is provisioned as "DUAL". This parameter can have the following values: A,B,1_OA. The value **A** sets all optical amplifiers in side 1 in their default mode. The value **B** sets side 1 of system to support mode "B" if all requirements to transition in operating mode **B** are satisfied. The value of **1_OA** sets side 1 to support single OA configuration if all requirements to transition in single OA mode are satisfied.

side1_opr Side 1 operating system type. This parameter reports the actual operating system configuration. The reported values are "1_OA" and "2_OA". For side 1 (of dual and non dual terminals) provisoned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 1 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

For side 2 (of dual facing terminal) provisioned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 2 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

If a side is operating in single OA mode, the operating mode is reported as "1_OA".

An LEA105 in a side operating in single OA mode, assumes pump power setting consistent with single OA mode. If a side provisioned as single OA is not operating in single OA mode, an alarm is raised.

The alarm suppresses the equipage inconsistent with provisioned mode alarm for OA pack associated with ODU thru back plane.

The operating mode is reported as "2_OA". If operating mode is inconsistent with provisioned mode, all OAs in the side operate with unchanged settings. On booting for the first time, the packs will assume original value settings. A side provisioned to operate in any configuration except single OA shall always report operating mode as "2_OA".

For these configurations, operating mode is always consistent with provisioned mode.

side2_sys Side 2 System Type. This parameter reports the provisioned mode for side 2 of network element. Side 2 implies optical line pairs 2 and 4 on a terminal provisioned as a dual facing terminal. This parameter can have the following values: A,B,1_OA. The value **A** sets all optical amplifiers in side 2 in their default mode. The value **B** sets side 2 to support mode "B" if all requirements to transition in operating mode **B** are satisfied. The value of **1_OA** sets side 2 to support single OA configuration if all requirements to transition in single OA mode are satisfied.

side2_opr Side 2 operating system type. This parameter reports the actual operating system configuration. The reported values are "1_OA" or "2_OA". For side 1 (of dual and non dual terminals) provisoned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 1 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

For side 2 (of dual facing terminal) provisioned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 2 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

If a side is operating in single OA mode, the operating mode is reported as "1_OA".

An LEA105 in a side operating in single OA mode, assumes pump power setting consistent with single OA mode. If a side provisioned as single OA is not operating in single OA mode, an alarm is raised.

The alarm suppresses the equipage inconsistent with provisioned mode alarm for OA pack associated with ODU thru back plane.

The operating mode is reported as "2_OA". If operating mode is inconsistent with provisioned mode, all OAs in the side operate with unchanged settings. On booting for the first time, the packs will assume original value settings. A side provisioned to operate in any configuration except single OA shall always report operating mode as "2_OA".

For these configurations, operating mode is always consistent with provisioned mode.

std Standard. This parameter reports if the NE is configured for operation in SONET or SDH environment.

apsd Automatic power shut down. This parameter reports if the APSD feature has been enabled or disabled. When enabled APSD feature brings down all power outputs of OLS to safe levels in case of fiber cuts, equipment failure or removed connectors.

eth_adrs Ethernet Address. This entry in the report indicates the MAC address of the ethernet-based LAN. It is a six byte value, displayed in the hexadecimal format of FF-FF-FF-FF-FF-FF.

EXAMPLE OUTPUT

```
RTRV-SYS:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "tid=LT-PF-2000, dsne=yes, x25ps=256, dirn=1A-TX"
   "almgrp=10, agne=yes"
   "dce=tl1, baud_tl1-dce=9600, dte=cit"
;
```

```
RTRV-SYS:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "tid=LT-PF-2000, dsne=yes, x25ps=256, dirn=1A-TX"
   "almgrp=10, agne=yes"
;
```

```
RTRV-SYS:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "tid=LT-PF-2000, dsne=yes, x25ps=256, dirn=1A-TX"
   "almgrp=10, agne=yes"
   "side1_sys=, side1_opr=1_OA, side2_sys=, side2_opr=1_OA"
   "eth_adrs=FF-ED-3D-60-67-89"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

RELATED TL1 COMMANDS/MESSAGES

ENT-SYS

INIT-SYS

RTRV-TH-ALL

RTRV-TH-ALL: Retrieve Threshold All

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-TH-ALL*:tid:aid:ctag::[montype],[locn][,tmper];*

DESCRIPTION

⚠ WARNING:
Use of this command may have a detrimental effect on the OS/network element network bandwidth. Lucent Technologies does not recommend the use of this command. Upon receiving this command, the network element could be required to transmit over 1 Megabyte of data from its performance-monitoring bins to report for one network element Terminal. Furthermore, Bellcore **strongly suggests** to NMA users via SR-STS-001665, Issue 2, that this command construct **not** be used due to the potential strain it may place on the OS/network element network bandwidth.

The **RTRV-TH-ALL** command instructs a network element to send the current threshold level and TCA autonomous reporting status of one or more monitored parameters for which violation will trigger an automatic message for all signal types (OLINE, OCHAN, SUPR, and OTPS types).

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This identifies the facilities for which threshold levels are being retrieved. The only valid value for this parameter is **ALL**.

Entity: All
Legal Values: (ALL)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype Monitored parameter type. This is the PM parameter type for which a threshold is being retrieved.

This parameter must be specified for one of the following values:

"LBC-P1" (Laser Bias Current for Pump 1),
"LBC-P2" (Laser Bias Current for Pump 2),
"LBFC-P1" (Laser Backface Current for Pump 1),
"LBFC-P2" (Laser Backface Current for Pump 2),
"TOPR-OL" (Total Received Power - Optical Line),
"SPR-C" (Optical Channel Signal Power),
"CVL" (Coding violation count - Line Near End),
"ESL" (Errored second count - Line Near End),
"SESL" (Severely errored second count - Line Near End),
"UASL" (Unavailable second count - Line Near End),
"SPR-SU" (Signal power - Supervisory),
"LBC-SU" (Laser Bias Current - Supervisory),
"CVS" (Coding violation count - Section Near End),
"ESS" (Errored second count - Section Near End),
"SESS" (Severe errored second count - Section Near End),
"SEFS" (Severe errored framing seconds count - Section Near End OOF),
"LBCL" (Laser Bias Current - Line),
"OPT" (Optical Power Transmitted - Optics)
"OPR" (Optical Power Received - Optics), or
"ALL" (all applicable montype values).

If no value is provided for this parameter, the value of **ALL** is assumed.

locn Location. This is the location where the threshold is being retrieved and refers to the facility identified by the *aid*. The only valid location for this parameter is: "NEND".

dirn

tmper Time period. This requests performance monitoring data information for a specified time interval. This parameter, if specified, must have the value of "ALL".

ALL This requests all PM data for the specified facilities.

If no value is provided for this parameter, *ALL* is assumed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may have a detrimental effect on the OS/network element network bandwidth. Lucent Technologies does not recommend the use of this command. Upon receiving this command, the network element could be required to transmit over 1 Megabyte of data from its performance-monitoring bins to report for one network element Terminal. Furthermore, Bellcore **strongly suggests** to NMA users via SR-STS-001665, Issue 2, that this command construct **not** be used due to the potential strain it may place on the OS/network element network bandwidth.

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
        .       .       .       .
        .       .       .       .
        .       .       .       .
   "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

aid Access identifier. This identifies the facility for which threshold levels are being retrieved.

aidtype The type of access identifier. Valid values for *aidtype* are as follows:

- OCHAN The optical channels for OLS.
- OLINE The optical line for OLS.
- SUPR The OC3 level supervisory channel for OLS.
- OTPS The optical translator port states encompass the AID types for OTU, QOTU, and OTPM packs.

montype Monitored parameter for which threshold level is being retrieved. The threshold value of a *montype* will not be displayed in the output report unless it is user provisionable.

locn Location. This is the location where the threshold is to be retrieved and refers to the facility identified by the AID. The valid location is:

- **NEND** Near-end

dirn Direction. This specifies the direction in which the PM data is to be retrieved and is relative to the facility identified by the AID.

thlev Current threshold level for the monitored parameter.

Parameter 'thlev' for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

tmper Accumulation time period for the PM information.

tcarpt TCA report. This parameter indicates if threshold crossing alert (TCA) autonomous reporting has been enabled or disabled for the specified *montype* for the given *tmper*. A value of ENABLE means TCA autonomous reporting is enabled and a value of DISABLE indicates TCA autonomous reporting is disabled.

EXAMPLE INPUT/OUTPUT

The command to retrieve the cvl threshold parameter for all signal types is:

```
rtrv-th-all:LT-FT-2000:all:123456::cvl,nend,1-day;


IP 123456
<


   LT-FT-2000 94-03-22 16:12:12
M  123456 COMPLD
   "supr-1a,SUPR:CVL,NEND,NA,140,1-DAY,DISABLE"
;
```

The command to retrieve the cvs threshold parameter TCA autonomous reporting status for all signal types in shelf 1 is:

```
rtrv-th-all:LT-FT-2000:all:123456::cvs,nend,1-day;


IP 123456
<


   LT-FT-2000 94-03-22 16:12:12
M  123456 COMPLD
   "otpm-1-1-3-1,OTPS:CVS,NEND,NA,-6,1-DAY,DISABLE"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID  missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is not supported.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

The network element returns the following error response if the *locn* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid LOCN */
;
```

The network element returns the following error response if the *tmper* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-ALL

SET-TH-xxx

REPT EVT

RTRV-TH-OCHAN

RTRV-TH-OCHAN: Retrieve Threshold Optical_Channel

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-TH-OCHAN*:tid:aid:ctag::[montype],[locn][,tmper];*

DESCRIPTION

The **RTRV-TH-OCHAN** command instructs a network element to send the current threshold level and TCA autonomous reporting status of one or more monitored parameters for which violation will trigger an automatic message for optical channel signal types.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This identifies the facility for which threshold levels are being retrieved.

Entity: Optical Channel

Legal Values:(OCHAN)-(ALL), (OCHAN)-(1A,1B,2A,2B,3A,3B,4A,4B)-(ALL,1-16)

CenterLink CIT selection options: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype Monitored parameter type. This is the PM parameter type for which a threshold is being retrieved. This parameter must be specified for one of the following values:

"SPR-C" (Optical Channel Signal Power), or
"ALL" (all applicable montype values).

If no value is provided for this parameter, the value of **ALL** is assumed.

Applicable output lines are ordered as follows:

1. By applicable PM parameters/*montype*s per *aid*.

   The output order of *montype*s the same as in the RTRV-PM report.

2. By requested time intervals (*tmper*)s, starting with the current time interval. The output order of (CItmper is the same as in the RTRV-PM command.

locn Location. This is the location where the threshold is being retrieved and refers to the facility identified by the *aid*. The only valid location for this parameter is: "NEND".

tmper Time period. This requests PM data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

ALL This requests all PM data for the selected facilities.

If no value is provided for *tmper*, *15-MIN* is assumed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
        .       .       .       .
        .       .       .       .
        .       .       .       .
   "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

aid Access identifier. This identifies the facility for which threshold levels are being retrieved.

aidtype The type of access identifier.

OCHAN The optical channels for OLS.

montype Monitored parameter for which threshold level is being retrieved. The threshold value of a *montype* will not be displayed in the output report unless it is user provisionable.

locn Location. This is the location where the threshold is to be retrieved and refers to the facility identified by the AID. The valid location is:

NEND Near-end

dirn Direction. This specifies the direction in which the PM data is to be retrieved and is relative to the facility identified by the AID.

thlev Current threshold level for the monitored parameter.

Parameter 'thlev' for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT. Threshold value for the optical parameter is independent of the bins. As a result, the output *thlev* value for the *montype* must be the same for the 15-minute and 1-day bins.

tmper Accumulation time period for the PM information.

tcarpt TCA report. This parameter indicates if threshold crossing alert (TCA) autonomous reporting has been enabled or disabled for the specified *montype* for the given *tmper*. A value of ENABLE means TCA autonomous reporting is enabled and a value of DISABLE indicates TCA autonomous reporting is disabled.

EXAMPLE INPUT/OUTPUT

The command to retrieve the optical channel's SPR-C threshold parameter for ochan-1a-1 is:

```
rtrv-th-ochan:LT-OLS:ochan-1a-1:123456::spr-c,,15-min;


IP 123456
<


   LT-OLS 97-07-09 10:47:56
M  123456 COMPLD
   "ochan-1a-1,OCHAN:SPR-C,NEND,NA,60,15-MIN,ENABLE"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID  missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is not supported.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

The network element returns the following error response if the *locn* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid LOCN */
;
```

The network element returns the following error response if the *tmper* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OCHAN

SET-TH-OCHAN

REPT EVT OCHAN

RTRV-TH-OLINE

RTRV-TH-OLINE: Retrieve Threshold Optical_Line

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-TH-OLINE*:tid:aid:ctag::[montype],[locn][,tmper];*

DESCRIPTION

The **RTRV-TH-OLINE** command instructs a network element to send the current threshold level and TCA autonomous reporting status of one or more monitored parameters for which violation will trigger an automatic message for optical line signal types.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This identifies the facility for which threshold levels are being retrieved.

Entity: Optical Line
Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype Monitored parameter type. This is the PM parameter type for which a threshold is being retrieved.

This parameter must be specified for one of the following values:

"TOPR-OL" (Total Received Power - Optical Line),
"ALL" (all applicable montype values).

If no value is provided for this parameter, the value of **ALL** is assumed.

Applicable output lines are ordered as follows:

1. By applicable PM parameters/*montype*s per *aid*.

   The output order of *montype*s the same as in the RTRV-PM report.

2. By requested time intervals (*tmper*)s, starting with the current time interval. The output order of (CItmper is the same as in the RTRV-PM command.

locn Location. This is the location where the threshold is being retrieved and refers to the facility identified by the *aid*. The only valid location for this parameter is: "NEND".

tmper Time period. This requests PM data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

ALL This requests all PM data for the selected facilities.

If no value is provided for *tmper*, *15-MIN* is assumed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
        .       .       .       .
        .       .       .       .
        .       .       .       .
   "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

aid Access identifier. This identifies the facility for which threshold levels are being retrieved.

aidtype The type of access identifier.

OLINE The optical line for OLS.

montype Monitored parameter for which threshold level is being retrieved. The threshold value of a *montype* will not be displayed in the output report

unless it is user provisionable.

locn Location. This is the location where the threshold is to be retrieved and refers to the facility identified by the AID. The valid location is:

NEND Near-end

dirn Direction. This specifies the direction in which the PM data is to be retrieved and is relative to the facility identified by the AID.

thlev Current threshold level for the monitored parameter.

Parameter 'thlev' for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT. Threshold value for the optical parameter is independent of the bins. As a result, the output *thlev* value for the *montype* must be the same for the 15-minute and 1-day bins.

tmper Accumulation time period for the PM information.

tcarpt TCA report. This parameter indicates if threshold crossing alert (TCA) autonomous reporting has been enabled or disabled for the specified *montype* for the given *tmper*. A value of ENABLE means TCA autonomous reporting is enabled and a value of DISABLE indicates TCA autonomous reporting is disabled.

EXAMPLE INPUT/OUTPUT

The command to retrieve the optical oline's TOPR-OL threshold parameter for oline-1a is:

```
rtrv-th-oline:LT-OLS:oline-1a:123456::topr-ol,,1-day;


IP 123456
<


   LT-OLS 97-07-09 11:42:10
M  123456 COMPLD
   "oline-1a,OLINE:TOPR-OL,NEND,NA,60,1-DAY,ENABLE"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID  missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is not supported.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

The network element returns the following error response if the *locn* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid LOCN */
;
```

The network element returns the following error response if the *tmper* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OLINE

SET-TH-OLINE

REPT EVT OLINE

RTRV-TH-OTPS

RTRV-TH-OTPS: Retrieve Threshold OT_Port_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

RTRV-TH-OTPS*:tid:aid:ctag::[montype],[locn][,tmper];*

DESCRIPTION

The **RTRV-TH-OTPS** command instructs a network element to retrieve the current threshold level and TCA autonomous reporting status of one or more monitored parameters of OTUs or OTPMs.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This identifies the facility for which threshold levels are being retrieved. The aid **all** is allowed. When used, it will retrieve the OTU and OTPM port information.

Entity: All
Legal Values: (ALL)

Entity: Port (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)-(1)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)-(1)

Entity: Port (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)-(1)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)-(1)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype Monitored parameter type. This is the PM parameter type for which a threshold is being retrieved.

This parameter must be specified for one of the following values:

"CVS" (Coding violation count - Section Near End),
"ESS" (Errored second count - Section Near End),
"SESS" (Severe errored second count - Section Near End),
"SEFS" (Severe errored framing seconds count - Section Near End OOF), or
"ALL" (all applicable montype values).

If no value is provided for this parameter, the value of **ALL** is assumed.

tmper Time period. This requests PM data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

ALL This requests all PM data for the selected facilities.

If no value is provided for *tmper*, *15-MIN* is assumed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
        .       .       .       .
        .       .       .       .
        .       .       .       .
   "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

aid Access identifier. This identifies the facility for which threshold levels are being retrieved.

aidtype Access identifier type.

OTPS The optical translator port states encompass the AID types for OTU, QOTU, and OTPM packs.

The type of access identifier. This parameter reports the signal type for the CVS value, which is one of the following values:

OC3 An OC3 signal.

OC12 An OC12 signal.

OC48 An OC48 signal.

STM1 An STM1 signal.

STM4 An STM4 signal.

STM16 An STM16 signal.

montype Monitored parameter for which threshold level is being retrieved. The threshold value of a *montype* will not be displayed in the output report unless it is user provisionable.

locn Location. This is the location where the threshold is to be retrieved and refers to the facility identified by the AID. The valid location is:

NEND Near-end

dirn Direction. This specifies the direction in which the PM data is to be retrieved and is relative to the facility identified by the AID.

thlev Current threshold level for the monitored parameter.

Parameter 'thlev' for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

tmper Accumulation time period for the PM information.

tcarpt TCA report. This parameter indicates if threshold crossing alert (TCA) autonomous reporting has been enabled or disabled for the specified *montype* for the given *tmper*. A value of ENABLE means TCA autonomous reporting is enabled and a value of DISABLE indicates TCA autonomous reporting is disabled.

EXAMPLE INPUT/OUTPUT

The command to retrieve the cvs threshold parameter TCA autonomous reporting status for slot 1, port 3 in shelf 1 is:

```
rtrv-th-otps:LT-FT-2000:otpm-1-1-3-1:123456::cvs,nend,1-day;


IP 123456
<


   LT-FT-2000 94-03-22 16:12:12
M  123456 COMPLD
   "otpm-1-1-3-1,OC3:CVS,NEND,NA,1344,1-DAY,DISABLE"
   "otpm-1-1-3-1,OC12:CVS,NEND,NA,5375,1-DAY,DISABLE"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID  missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is not supported.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

The network element returns the following error response if the *locn* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid LOCN */
;
```

The network element returns the following error response if the *tmper* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OTPS

SET-TH-OTPS

REPT EVT OTPS

RTRV-TH-SUPR

RTRV-TH-SUPR: Retrieve Threshold Supervisory

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-TH-SUPR*:tid:aid:ctag::[montype],[locn][,tmper];*

DESCRIPTION

The **RTRV-TH-SUPR** command instructs a network element to send the current threshold level and TCA autonomous reporting status of one or more monitored parameters for which violation will trigger an automatic message for optical carrier signal level 3 (OC-3) supervisory channel signals.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This identifies the facility for which threshold levels are being retrieved.

Entity: Supervisory Channel [End terminals and Repeaters]
Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype Monitored parameter type. This is the PM parameter type for which a threshold is being retrieved.

This parameter must be specified for one of the following values:

"CVL" (Coding violation count - Line Near End),
"ESL" (Errored second count - Line Near End),
"SESL" (Severely errored second count - Line Near End),
"UASL" (Unavailable second count - Line Near End), or
"ALL" (all applicable montype values).

If no value is provided for this parameter, the value of **ALL** is assumed.

Applicable output lines are ordered as follows:

1. By applicable PM parameters/*montype*s per *aid*.

   The output order of *montype*s the same as in the RTRV-PM report.

2. By requested time intervals (*tmper*)s, starting with the current time interval. The output order of (CItmper is the same as in the RTRV-PM command.

locn Location. This is the location where the threshold is being retrieved and refers to the facility identified by the *aid*. The only valid location for this parameter is: "NEND".

tmper Time period. This requests PM data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

ALL This requests all PM data for the selected facilities.

If no value is provided for *tmper*, *15-MIN* is assumed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
        .       .       .       .
        .       .       .       .
        .       .       .       .
   "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

aid Access identifier. This identifies the facility for which threshold levels are being retrieved.

aidtype The type of access identifier. Valid values for *aidtype* are as follows:

SUPR The OC3 level supervisory channel for OLS.

montype Monitored parameter for which threshold level is being retrieved. The threshold value of a *montype* will not be displayed in the output report unless it is user provisionable.

locn Location. This is the location where the threshold is to be retrieved and refers to the facility identified by the AID. The valid location is:

NEND Near-end

dirn Direction. This specifies the direction in which the PM data is to be retrieved and is relative to the facility identified by the AID.

thlev Current threshold level for the monitored parameter.

Parameter 'thlev' for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

tmper Accumulation time period for the PM information.

tcarpt TCA report. This parameter indicates if threshold crossing alert (TCA) autonomous reporting has been enabled or disabled for the specified *montype* for the given *tmper*. A value of ENABLE means TCA autonomous reporting is enabled and a value of DISABLE indicates TCA autonomous reporting is disabled.

EXAMPLE INPUT/OUTPUT

```
rtrv-th-supr:LT-FT-2000:supr-1a:123456::cvl,nend,1-day;


IP 123456
<



   LT-FT-2000 94-03-22 16:12:12
M  123456 COMPLD
   "supr-1a,SUPR:CVL,NEND,NA,140,1-DAY,DISABLE"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID  missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is not supported.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

The network element returns the following error response if the *locn* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid LOCN */
;
```

The network element returns the following error response if the *tmper* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-SUPR

SET-TH-SUPR

REPT EVT SUPR

RTRV-USER-SECU

RTRV-USER-SECU: Retrieve User Security

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

RTRV-USER-SECU*:tid:[uid]:ctag;*

DESCRIPTION

The **RTRV-USER-SECU** command is used by an appropriate administrator to retrieve the security parameters associated with a user, except for the user's password, which cannot be retrieved.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

uid This is the User Identifier of a user. If specified, the valid value is a single uid. If omitted, this command retrieves user security parameters for all the existing user identification.

The word "all" could be used as a uid.

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element has user identifiers to report, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "uid:,uap,vst,lastlog,expdat"
;
```

When multiple users' security parameters are displayed, the entries are sorted by "uid" values in alphabetical (ASCII) order.

If the network element receives a **RTRV-USER-SECU** command with a non-existing *uid*, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

uid User Identifier. This is included in the command by the OS and enables the OS to retrieve user authorization information that exists on the NE. Valid values are a case sensitive alphanumeric string of 1 to 10 characters. If the network element receives a **RTRV-USER-SECU** with a null value for *uid*, it returns all the user accounts with privileged users first, followed by general users, then reports-only users.

uap User Access Privilege. It is displayed in the format of Cw&Fx&PMy&Sz. where: C, F, PM, S are function categories, and where: w, x, y, z are value 1 to 5 for user authorization level.

See the OUTPUT FORMAT section for **ACT-USER** for more information.

vst Visitor. This indicates that this User Identifier is assigned for temporary access to the network element. If there is a visitor user identifier, indicate yes and, if not, indicate no.

lastlog Last logged in. This is the date and time of the last session established by this *uid*. It is output in the format "MM-DD HH-MM-SS" with the date and time separated by one space. If no information is available regarding the last login session for this *uid* (for example, this is the first login session), this output field is not populated.

expdat Expiration Date. This is the **EXPDAT** that is associated with a visitor's login in the following format: YY-MM-DD, where YY is the last two digits of the year ranging from 00 to 99; MM is the month of the year ranging from 01 to 12; and DD is the day of the month ranging from 01 to 31.

If there is no visitor, the expiration date is not populated.

EXAMPLE INPUT/OUTPUT

```
RTRV-USER-SECU:LT-PF-2000:kjlee:123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
   "kjlee:,C4&F3&PM1&S2,yes,12-23 18-31-17,96-12-27"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives a **RTRV-USER-SECU** command with an invalid *uid*, the following error response is returned:

```
   sid date time
M  ctag DENY
   PIUI
   /* Privilege, Illegal User Identity, invalid UID */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-USER-SECU

ED-USER-SECU

DLT-USER-SECU

SET-ATTR-ALM

SET-ATTR-ALM: Set Attribute Alarm

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

SET-ATTR-ALM*:tid::ctag[:::spec_block];*

DESCRIPTION

The **SET-ATTR-ALM** command can be executed to provision the incoming signal alarm delay and the alarm clear delay intervals.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

spec_block Specific block. Parameters included within the specific block are positionally independent and are specified using a name-defined construct of: PARAMETER=*value*. The specific block may have one, more than one or none of the following parameters specified within it in a comma-separated list. Furthermore, each parameter listed below can appear at most once within the specific block for a single **SET-ATTR-ALM** command. The parameters are listed in alphabetic order.

almdel Alarm delay. This is the incoming signal alarm delay parameter. Legal values are 0-120 (seconds) or it may be omitted, in which case the value of the parameter is left unchanged.

clrdel Alarm clear delay. This is the alarm clear delay parameter. Legal values are 0-120 (seconds) or it may be omitted, in which case the value of the parameter is left unchanged.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the **SET-ATTR-ALM** request, the following normal completion response is returned.

```
   sid date time
M  ctag COMPLD
;
```

If the **SET-ATTR-ALM** command does not alter the existing attributes, the network element will not deny the command. Instead the system will respond with the completion message (shown in the previous screen display).

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example shows a **SET-ATTR-ALM** command that provisions the incoming signal delay to 10 seconds and provision the alarm clear delay to 30 seconds.

```
SET-ATTR-ALM:LT-PF-2000::123456:::almdel=10,clrdel=30;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

The following example shows a **SET-ATTR-ALM** command that provisions the alarm clear delay to 14 seconds.

```
SET-ATTR-ALM:LT-PF-2000::123456:::clrdel=14;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If a **SET-ATTR-ALM** command is received with an invalid almdel parameter, the following error response is returned:

```
   sid date time
M  ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid almdel parameter */
;
```

If a **SET-ATTR-ALM** command is received with an invalid clrdel parameter, the following error response is returned:

```
   sid date time
M  ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid clrdel parameter */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-ATTR-ALM

SET-ATTR-CONT

SET-ATTR-CONT: Set Attribute Control

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

SET-ATTR-CONT*:tid:aid:ctag::conttype;*

DESCRIPTION

The **SET-ATTR-CONT** command can be executed to provision (define) the description associated with an external control.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. The *aid* identifies the external miscellaneous discrete control for which attributes are being set. An *aid* value must be provided.

Entity: Single Point (Control)
Legal Values: (CONT)-(1-36)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

conttype Control Type. The *conttype* is the text string associated with the selected miscellaneous discrete control. It is an alphanumeric string, upper and lower case, spaces and periods allowed, up to 26 characters long. *conttype* is case sensitive and is enclosed with escaped quotes (**"**). A conttype entry is required.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the **SET-ATTR-CONT** request, the following normal completion response is returned.

```
   sid date time
M   ctag COMPLD
;
```

If the **SET-ATTR-CONT** command does not alter the already provisioned description, the network element will not deny the command. Instead the system will respond with the completion message (shown in the previous screen display).

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example shows a **SET-ATTR-CONT** command that provisions the text string for miscellaneous discrete control 3 to l*"fan3*l*"* for a PF-2000 system:

```
SET-ATTR-CONT:LT-PF-2000:CONT-3:123456::\"fan3\";


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If a **SET-ATTR-CONT** command is received with an invalid access identifier, the following error response is returned:

```
   sid date time
M  ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If a **SET-ATTR-CONT** command is entered with an unimplemented parameter, the following (representative) error response is returned:

```
   sid date time
M  ctag DENY
  INUP
  /* Input, Non-null Unimplemented Parameter */
;
```

If a **SET-ATTR-CONT** command is entered with an invalid conttype parameter the following error response is returned:

```
   sid date time
M  ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid CONTTYPE */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-ATTR-CONT

SET-ATTR-ENV

SET-ATTR-ENV: Set Attribute Environment

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

SET-ATTR-ENV*:tid:aid:ctag::[ntfcncde],,almmsg;*

DESCRIPTION

SET-ATTR-ENV commands can be initiated to request the network element to set the notification code (alarm level) and alarm message (condition description) associated with environmental alarm/status points.

Environmental *alarm* conditions are reported by TL1 autonomous `REPT ALM ENV` messages. Environmental *status* conditions are reported by TL1 autonomous `REPT EVT COM` messages and periodically via `REPT COND`. The provisioned notification code, alarm type, and alarm message are included in the TL1 messages reporting the occurrence of an environmental condition.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the environmental points to be provisioned.

Entity: Single Point (Environmental)

Legal Values: (ENV)-(1-144)

A null value is not permitted with this parameter.

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

ntfcncde Notification code. This is the alarm level to be associated with the addressed environmental point and may have one of the following values: "CR", "MJ", "MN", "NA", "NR", "NO", "CR_Critical", "MJ_Prompt", "MN_Deferred", "NA_No_Alarm", "NR_No_Report", or "NO_Not_Indicated".

CR Critical. If provisioned as **CR**, the alarm level associated with the environmental point shall be

CR.

MJ	Major. If provisioned as **MJ**, the alarm level associated with the environmental point shall be MJ.
MN	Minor. If provisioned as **MN**, the alarm level associated with the environmental point shall MN.
NA	Not alarmed. If provisioned as **NA**, a status condition will be reported when the environmental point becomes active.
NR	Not reported. If provisioned as **NR**, no condition/alarm is reported when the addressed environmental point becomes active.
NO	Not Indicated. The active environmental point will result in no failure indication being generated whatsoever for the underlying failure condition. No report, autonomous or otherwise will be generated and sent to the user.
MJ_Prompt	Major/Prompt. If provisioned as **MJ_Prompt**, the alarm level associated with the environmental point shall be Prompt (for SDH) or MJ (for SONET).
MN_Deferred	Minor/Deferred. If provisioned as **MN_Deferred**, the alarm level associated with the environmental point shall be Deferred (for SDH) or MN (for SONET).
NA_No_Alarm	Not Alarmed(for SONET)/No Alarm(for SDH). If provisioned as **NA_No_Alarm**, a status condition will be reported when the environmental point becomes active.
NR_No_Report	Not Reported(for SONET)/No Report(for SDH). If provisioned as **NR_No_Report**, no condition/alarm is reported when the addressed environmental point becomes active.
NO_Not_Indicated	Not Indicated(for SONET and SDH) The active environmental point will result in no failure indication being generated whatsoever for the underlying failure condition. No report, autonomous or otherwise will be generated and sent to the user.

almmsg Alarm message. This is the condition description to be associated with the addressed environmental point. The description may be a string of up to 26 characters consisting of case-sensitive (upper-case and lower-case) alphanumerics, spaces, and "." (periods). The description must be enclosed using delimiters. The delimiter to be used is **\"** [that is, backslash followed by double-quotes].

This parameter is an exception to the general rule of TL1 input parameters being case-insensitive.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

Alarm Message must be enclosed within delimiters. The delimiter is backslash followed by double quotes, that is: <back slash>"desired alarm message text<back slash>".

OUTPUT FORMAT

If the network element fully complies with the set attribute environment request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

If the network element receives a valid **SET-ATTR-ENV** command, but the command does not alter the existing alarm attributes, the network element provides a normal completion response.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the OUTPUT PARAMETERS section for **RTRV-HDR**.

EXAMPLE INPUT/OUTPUT

```
SET-ATTR-ENV:LT-FT-2000:env-10:123456::MJ,,\"environment 10\";



IP 123456
<


   LT-FT-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to the **SET-ATTR-ENV** command.

If the network element receives a **SET-ATTR-ENV** command with an invalid or missing *aid* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier */
;
```

If the network element receives a **SET-ATTR-ENV** command with an invalid *ntfcncde* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

If the network element is provisioned as SDH and receives this command with a SONET *NTFCNCDE* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid NTFCNCDE */
;
```

If the network element receives a **SET-ATTR-ENV** command with an invalid *almmsg* value, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid ALMMSG */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-ATTR-ENV

SET-PM-STIME

SET-PM-STIME Set Performance_Monitoring Start_Time

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 2.0.

INPUT FORMAT

SET-PM-STIME*:tid::ctag::start_hour;*

DESCRIPTION

The **SET-PM-STIME** command specifies the start time for the measurement of all twenty-four hour performance monitoring parameters.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

start_hour Start Hour. The *start_hour* is a position defined parameter which specifies the start hour for day bin measurements. It can take the value of an integer between 0 and 23.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Execution of this command may corrupt performance monitoring data.

OUTPUT FORMAT

If the network element fully complies with the **SET-PM-STIME** request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

If the **SET-PM-STIME** command does not alter the existing attributes, the network element will not deny the command. Instead the system will respond with the completion message (shown in the previous screen display).

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example shows a command **SET-PM-STIME** for the network element.

```
set-pm-stime:LT-PF-2000::CTAG::22;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  CTAG COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command. If a **SET-PM-STIME** command is received with an invalid START_HOUR value, the following error response is returned:

```
   sid date time
M  ctag DENY
  IDNV
  /* Input, Data Not Valid, Invalid START_HOUR */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-STIME

SET-SID

SET-SID: Set Source_Identification

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

SET-SID*:tid::ctag::sid;*

DESCRIPTION

CAUTION:
Network element access is affected by this command.

The **SET-SID** command can be initiated by a user to change the target/source identification of the network element.

When the network element receives a **SET-SID** command, the network element will update its target/source identifier as requested.

The target/source identifier remains active until changed (for example, by the TL1 command **ENT-SYS** command or by the appropriate network element Craft Interface Terminal (CIT) command.

INPUT PARAMETERS

tid Target identifier. This is the currently active name of the network element to which the command is addressed.

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

sid Target identifier. This is the new name of the network element to which the command is addressed.

NOTE:
For proper operation of the TL1 interfaces, the *sid* must be unique for each network element within a subnetwork.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Execution of this command may affect service. Network element access may be affected. The operation of other nodes in the ring may be affected. Active X.25 links may be reset and may have to be reestablished.

NOTE: After provisioning a new TID, either locally or remotely, or when changing the DSNE status, CenterLink must be restarted. This is accomplished by closing the window (click 'X' in upper right corner). Then close NEServer on the task bar, by right clicking and selecting close. Then from the task bar select Start button, Programs, Lucent Technologies, NEServer to restart the NEserver. Then click on the CenterLink icon on the desktop to get to the CenterLink Launch Console.

OUTPUT FORMAT

Refer to the **RTRV-HDR** OUTPUT FORMAT section. The requirements listed there also apply to the **SET-SID** command.

If the requested **SET-SID** command does not alter the existing condition, the network element shall not DENY the command. Instead the network element shall respond with a COMPLD message.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example requests a change of the target identifier to LT-FT-2000 from LT-PF-2000:

```
set-sid:LT-PF-2000::123456::LT-FT-2000;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The requirements listed there also apply to the **SET-SID** command.

If the network element receives a **SET-SID** with an otherwise valid set of input parameter values but the *sid* specified in the command is syntactically incorrect, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid SID */
;
```

If the network element receives a **SET-SID** without the *sid* parameter, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, missing SID */
;
```

If the network element receives a **SET-SID** with an otherwise valid set of input parameter values but the command could not be completed by the network element, the following error response is returned:

```
   sid date time
M  ctag DENY
   SROF
   /* Status, Requested Operation Failed */
;
```

RELATED TL1 COMMANDS/MESSAGES

ENT-SYS

RTRV-SYS

SET-TH-OCHAN

SET-TH-OCHAN: Set Threshold Optical_Channel

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

SET-TH-OCHAN*:tid:aid:ctag::montype,[thlev],[locn],[dirn],*
[tmper][,tcarpt];

NOTE:
The above single-line command is presented as two lines for ease of reading.

DESCRIPTION

The **SET-TH-OCHAN** command instructs a network element to set the threshold level for optical channel monitored parameters.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This identifies the facility to which the threshold applies.

Entity: Optical Channel

Legal Values:(OCHAN)-(ALL), (OCHAN)-(1A,1B,2A,2B,3A,3B,4A,4B)-(ALL,1-16)

CenterLink CIT selection options: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype Monitored parameter type. This is the PM parameter type for which a threshold is being set. This parameter must be specified for one of the following values:

"SPR-C" (Optical Channel Signal Power), or

thlev Threshold level. This is the threshold level to be set for the particular *montype*.

The value of *thlev* for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

Valid and original (that is, as set in the factory) threshold values for the applicable OCHAN *montype* are given as follows:

montype	Legal Range for 15-MIN and 1-DAY tmper	Original Value for 15-MIN and 1-DAY tmper
SPR-C	0 - 100 (by 10's)	60

locn Location. This is the location where the threshold is to be set and refers to the facility identified by the AID. The valid location is: "NEND" (that is, Near-end)

If null, the default value is **NEND**.

dirn Direction. This specifies the direction in which the threshold is to be set and is relative to the facility identified by the access identifier. The value of direction, if specified, must be the following value: "NA". If no value is provided for *dirn*, *NA* is assumed.

tmper Time period. The threshold is set for performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

If no value is entered for *tmper*, **15-MIN** is assumed by the network element. The threshold setting of optical parameters in OLS is independent of bins. As a result, any change in threshold value for these parameters shall affect both 15-MIN and 1-DAY PM bin reporting.

tcarpt TCA report. This parameter is used to enable/disable threshold crossing alert (TCA) autonomous reporting of the specified *montype* for the specified *tmper*. This parameter, if specified, must have one of the following values: "ENABLE" or "DISABLE" where **ENABLE** enables TCA autonomous reporting and **DISABLE** disables TCA autonomous reporting. If no value is provided for *tcarpt*, it means "no changes" to this parameter value.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may affect the automatic reporting of performance monitoring threshold crossing alerts (TCAs).

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

If the requested command does not alter the existing condition, the network element shall respond with a COMPLD message.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

This message will set the quarter-hour bin threshold for SPR-C for optical channel 2 in optical line 2A of the network element.

```
set-th-ochan:LT-OLS:ochan-2a-2:123456::spr-c,,,,,;


IP 123456
<


   LT-OLS 97-07-09 01:16:46
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID  missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is missing or not supported.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

The network element returns the following error response if the *thlev* value is out of range.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid THLEV */
;
```

The network element returns the following error response if the *locn* value is invalid or inconsistent with montype.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid LOCN */
;
```

The network element returns the following error response if the *tcarpt* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TCARPT */
;
```

The network element returns the following error response if the *dirn* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid DIRN */
;
```

The network element returns the following error response if the *tmper* value is invalid or conflicts with the command code modifier.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OCHAN

RTRV-TH-OCHAN

REPT EVT OCHAN

SET-TH-OLINE

SET-TH-OLINE: Set Threshold Optical_Line

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

SET-TH-OLINE*:tid:aid:ctag::montype,[thlev],[locn],[dirn],*
[tmper][,tcarpt];

NOTE:
The above single-line command is presented as two lines for ease of reading.

DESCRIPTION

The **SET-TH-OLINE** command instructs a network element to set the threshold level for optical line monitored parameters.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This identifies the facility to which the threshold applies.

Entity: Optical Line
Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype Monitored parameter type. This is the PM parameter type for which a threshold is being set.

This parameter must be specified for the following value:

"**TOPR-OL**" (Total Received Power - Optical Line),

thlev Threshold level. This is the threshold level to be set for the particular *montype*.

The value of *thlev* for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

Valid and original (that is, as set in the factory) threshold values for the applicable OLINE *montype* are given as follows:

montype	Legal Range for 15-MIN and 1-DAY tmper	Original Value for 15-MIN and 1-DAY tmper
TOPR-OL	0 - 100 (by 10's)	60

locn Location. This is the location where the threshold is to be set and refers to the facility identified by the AID. The valid location is: "NEND" (that is, Near-end)

If null, the default value is **NEND**.

dirn Direction. This specifies the direction in which the threshold is to be set and is relative to the facility identified by the access identifier. The value of direction, if specified, must be the following value: "NA". If no value is provided for *dirn*, *NA* is assumed.

tmper Time period. The threshold is set for performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

If no value is entered for *tmper*, **15-MIN** is assumed by the network element. The threshold setting of optical parameters in OLS is independent of bins. As a result, any change in threshold value for these parameters shall affect both 15-MIN and 1-DAY PM bin reporting.

tcarpt TCA report. This parameter is used to enable/disable threshold crossing alert (TCA) autonomous reporting of the specified *montype* for the specified *tmper*. This parameter, if specified, must have one of the following values: "ENABLE" or "DISABLE" where **ENABLE** enables TCA autonomous reporting and **DISABLE** disables TCA autonomous reporting. If no value is provided for *tcarpt*, it means "no changes" to this parameter value.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may affect the automatic reporting of performance monitoring threshold crossing alerts (TCAs).

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

If the requested command does not alter the existing condition, the network element shall respond with a COMPLD message.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

The optical PM parameters are not collected based on time periods.

Set the quarter hour bin threshold for TOPR-OL for the optical line 1 and enable TCA autonomous reporting.

```
set-th-oline:LT-OLS:oline-1a:123456::topr-ol,60,nend,,15-min,disable;



IP 123456
<


   LT-OLS 94-03-22 16:12:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID  missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is missing or not supported.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

The network element returns the following error response if the *thlev* value is out of range.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid THLEV */
;
```

The network element returns the following error response if the *locn* value is invalid or inconsistent with montype.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid LOCN */
;
```

The network element returns the following error response if the *tcarpt* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TCARPT */
;
```

The network element returns the following error response if the *dirn* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid DIRN */
;
```

The network element returns the following error response if the *tmper* value is invalid or conflicts with the command code modifier.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OLINE

RTRV-TH-OLINE

REPT EVT OLINE

SET-TH-OTPS

SET-TH-OTPS: Set Threshold OT_Port_Signal

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 3.0.

INPUT FORMAT

SET-TH-OTPS*:tid:aid:ctag::montype,[thlev],[locn],[dirn],*
[tmper][,tcarpt];

NOTE:
The above single-line command is presented as two lines for ease of reading.

DESCRIPTION

The **SET-TH-OTPS** command instructs a network element to set the threshold level for optical translator unit (OTU) and optical translator port module (OTPM) monitored parameters.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This identifies the facility to which the threshold applies.

Entity: Port (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)-(1)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)-(1)

Entity: Port (OT Port Module)
Legal Values: (OTPM)-(ALL), (OTPM)-(1,2)-(ALL,1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)-(ALL,1-4)-(1)
CenterLink CIT selection options: (OTPM)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)-(ALL, 1-4)-(1)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype Monitored parameter type. This is the PM parameter type for which a threshold is being set.

This parameter must be specified for one of the following values:

"CVS" (Coding violation count - Section Near End),
"ESS" (Errored second count - Section Near End),
"SESS" (Severe errored second count - Section Near End), or
"SEFS" (Severe errored framing seconds count - Section Near End OOF).

thlev Threshold level. This is the threshold level to be set for the particular *montype*.

The value of *thlev* for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

Valid and original (that is, as set in the factory) threshold values for each applicable OTU and OTPM *montype* are given as follows:

montype	Legal Range for 15-MIN tmper	Original Value for 15-MIN tmper	Legal Range for 1-DAY tmper	Original Value for 1-DAY tmper
CVS (count)	1 - 223949*	140	13 - 21499084**	1344
CVS (BER)	-11 - -7	-9	-12 - -7	-10
ESS	1 - 900	25	1 - 65535	250
SESS	1 - 63	10	1 - 4095	40
SEFS	1 - 63	5	1 - 4095	10

Note: Both BER and count threshold values are listed for CVs, however, FT-2000 only enters CVs by BER format and reports by CV count. Future enhancement may support both CV formats for input and output.

The CVS -11 to -7 range for the 15 minute time period is acceptable for OC-3 as well. If the user provisions -11 for OC-3, the request will not be rejected. However, a TCA would not be generated since an OC-3 signal cannot generate that many errors in 15-MIN.

locn Location. This is the location where the threshold is to be set and refers to the facility identified by the AID. The valid location is: "NEND" (that is, Near-end)

If null, the default value is **NEND**.

dirn Direction. This specifies the direction in which the threshold is to be set and is relative to the facility identified by the access identifier. The value of direction, if specified, must be the following value: "NA". If no value is provided for *dirn*, *NA* is assumed.

tmper Time period. The threshold is set for performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

If no value is entered for *tmper*, **15-MIN** is assumed by the network element.

tcarpt TCA report. This parameter is used to enable/disable threshold crossing alert (TCA) autonomous reporting of the specified *montype* for the specified *tmper*. This parameter, if specified, must have one of the following values: "ENABLE" or "DISABLE" where **ENABLE** enables TCA autonomous reporting and **DISABLE** disables TCA autonomous reporting. If no value is provided for *tcarpt*, it means "no changes" to this parameter value.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may affect the automatic reporting of performance monitoring threshold crossing alerts (TCAs).

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

Set the threshold to -9 for the day bin for CV-Ss, for the port for otpm 1 in otu-2-1 when equipped with an OTPM module:

```
set-th-otps:LT-FT-2000:otpm-2-1-1-1:123456::cvs,-9,nend,,1-day;



IP 123456
<


   LT-FT-2000 94-03-22 16:12:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID  missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is missing or not supported.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

The network element returns the following error response if the *thlev* value is out of range.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid THLEV */
;
```

The network element returns the following error response if the *locn* value is invalid or inconsistent with montype.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid LOCN */
;
```

The network element returns the following error response if the *tcarpt* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TCARPT */
;
```

The network element returns the following error response if the *dirn* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid DIRN */
;
```

The network element returns the following error response if the *tmper* value is invalid or conflicts with the command code modifier.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OTPS

RTRV-TH-OTPS

REPT EVT OTPS

SET-TH-SUPR

SET-TH-SUPR: Set Threshold Supervisory

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

SET-TH-SUPR*:tid:aid:ctag::montype,[thlev],[locn],[dirn],*
[tmper][,tcarpt];

NOTE:
The above single-line command is presented as two lines for ease of reading.

DESCRIPTION

The **SET-TH-SUPR** command instructs a network element to set the threshold level for supervisory channel monitored parameters.

The supervisory channel parameters also assess the customer maintenance signal (CMS) when present, via PM monitoring of the CMS being received at the telemetry pack.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This identifies the facility to which the threshold applies.

The supervisory channel is provisionable in both the 1A and 1B directions at the OLS End Terminals, though the supervisory signal is applicable to only one direction (1A or 1B) at the OLS End Terminals. In addition, there is only one telemetry pack in slot 1A.

Entity: Supervisory Channel [End terminals and Repeaters]
Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

montype Monitored parameter type. This is the PM parameter type for which a threshold is being set.

This parameter must be specified for one of the following values:

"CVL" (Coding violation count - Line Near End),
"ESL" (Errored second count - Line Near End),
"SESL" (Severely errored second count - Line Near End),
"UASL" (Unavailable second count - Line Near End).

thlev Threshold level. This is the threshold level to be set for the particular *montype*.

The value of *thlev* for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

Valid and original (that is, as set in the factory) threshold values for each applicable SUPR *montype* are given as follows:

montype	Legal Range for 15-MIN tmper	Original Value for 15-MIN tmper	Legal Range for 1-DAY tmper	Original Value for 1-DAY tmper
CVL (count)	14 - 13997	140	1 - 1343693	1344
CVL (BER)	-10 - -7	-9	-12 - -7	-10
ESL	1 - 900	25	1 - 65535	250
SESL	1 - 63	10	1 - 4095	40
UASL	1 - 63	10	1 - 4095	10

Note: Both BER and count threshold values are listed for CVs. However, CVs are entered only in BER format and are reported only in CV count format.

locn Location. This is the location where the threshold is to be set and refers to the facility identified by the AID. The valid location is: "NEND" (that is, Near-end)

If null, the default value is **NEND**.

dirn Direction. This specifies the direction in which the threshold is to be set and is relative to the facility identified by the access identifier. The value of direction, if specified, must be the following value: "NA". If no value is provided for *dirn*, *NA* is assumed.

tmper Time period. The threshold is set for performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".

15-MIN This requests PM data in 15-minute intervals.

1-DAY This requests daily PM data.

If no value is entered for *tmper*, **15-MIN** is assumed by the network element.

The threshold setting of optical parameters in OLS is independent of bins. As a result, any change in threshold value for these parameters shall affect both 15-MIN and 1-DAY PM bin reporting.

tcarpt TCA report. This parameter is used to enable/disable threshold crossing alert (TCA) autonomous reporting of the specified *montype* for the specified *tmper*. This parameter, if specified, must have one of the

following values: "ENABLE" or "DISABLE" where **ENABLE** enables TCA autonomous reporting and **DISABLE** disables TCA autonomous reporting. If no value is provided for *tcarpt*, it means "no changes" to this parameter value.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may affect the automatic reporting of performance monitoring threshold crossing alerts (TCAs).

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

If the requested command does not alter the existing condition, the network element shall respond with a COMPLD message.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

In the *tmper* input parameter of this command, the digital PM parameters of SUPR channel are collected on a per-bin basis for each SUPR channel, whereas the optical PM parameters are not collected based on time periods. Set the quarter-hour bin threshold for CVL for the supervisory channel-2a to -9.

```
set-th-supr:LT-OLS:supr-2a:123456::cvl,-9,nend,,15-min,enable;


IP 123456
<


   LT-OLS 97-07-09 17:26:14
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
   sid date time
M  ctag DENY
   IIAC
   /* Input, Invalid Access Identifier, AID  missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is missing or not supported.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MONTYPE */
;
```

The network element returns the following error response if the *thlev* value is out of range.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid THLEV */
;
```

The network element returns the following error response if the *locn* value is invalid or inconsistent with montype.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid LOCN */
;
```

The network element returns the following error response if the *tcarpt* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TCARPT */
;
```

The network element returns the following error response if the *dirn* value is invalid.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid DIRN */
;
```

The network element returns the following error response if the *tmper* value is invalid or conflicts with the command code modifier.

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid TMPER */
;
```

RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-SUPR

RTRV-TH-SUPR

REPT EVT SUPR

TEST-ALM

TEST-ALM: Test Alarm

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.1.

INPUT FORMAT

TEST-ALM*:tid::ctag::[mode][,repeat];*

DESCRIPTION

The **TEST-ALM** command provides for specific and general tests of the audible and visible office alarms. The corresponding User Panel LEDs shall be illuminated simultaneously with each office alarm.

When the **TEST-ALM** command is entered, the system will exercise the audible and visible office alarms.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

mode Mode. This is the mode of the alarm test. This parameter can have one of the following values: "ALL", "CR", "MJ", or "MN". If no value is provided for this parameter, then **ALL** is assumed.

repeat (1-10) Repeat. This indicates the number of times the test will be repeated. This parameter must be an integer between 1 and 10. If no value is provided for this parameter, **1** is assumed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

```
TEST-ALM:LT-PF-2000::123456::MODE=CR,1;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives a **TEST-ALM** command with an invalid *mode*, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MODE */
;
```

If the network element receives this command with an invalid *repeat*, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid REPEAT */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

TEST-AUTO-LOCAL

TEST-AUTO-LOCAL: Test Auto Local

The privilege level for this command is PRIVILEGED.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.1.

INPUT FORMAT

TEST-AUTO-LOCAL*:tid:aid:ctag;*

DESCRIPTION

The **TEST-AUTO-LOCAL** command is used for turnup testing of the network element in an automated manner. This checks the internal node transmission paths that require cabling between packs. This test verifies transmission through the telemetry channel via the optical amplifiers and telemetry pack and also verifies transmission through the Customer Maintenance Signal (CMS) channel via the telemetry pack.

The output of this command is an indication of whether the test passed or failed.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. This is the address of the telemetry slot for which this command is intended.

Entity: Signal (SUPR, CMS) [End Terminals and Repeaters]
Legal Values: (SUPR, CMS)-(ALL, 1, 2, 3, 4)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: This command interrupts transmission on the circuits being tested. It must only be run on out-of-service circuits.

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

In response to a valid instance of this command, the following output report is returned.

```
   sid date time
M  ctag COMPLD
   "aid::spec_block"
       .       .       .
       .       .       .
   "aid::spec_block"
;
```

Both the OLS end and repeater terminals verify transmission through all supervisory channels via the optical amplifiers and telemetry packs. The end and repeater terminals have four lines in service.

For an End Terminal (ET) under supervisory (SUPR) test with a TLM 1B pack in the slot, the SUPR output signal is looped back on to the SUPR input signal.

Also, for an ET under CMS test with a TLM 1B pack in the slot, the CMS output signal is looped back on to the CMS input signal. The CMS test is currently being done for Repeaters.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

aid Slot access identifier. This is the address of the slot for which the test result is being reported. Valid values are for the address of the slot through which the requested SUPR and CMS signals go through.

spec_block Specific block. This parameter field is used in a positionally independent comma separated list for returning a name defined parameter of: PARAMETER=*value*. The parameter(s) is (are) listed and explained as follows:

result_status The result status field is used for returning the result of the test and it takes on the following values:

good Test result was good or successful.

FAIL Test result failed or was unsuccessful.

\''-\''	The entity was not tested.

EXAMPLE INPUT/OUTPUT

The following example shows the response to the request for all supervisory channels via the optical amplifiers and the telemetry packs for the end ("supr-all") terminal.

```
test-auto-local:LT-OLS:supr-all:789012;


IP 789012
<


   LT-OLS 93-10-26 16:42:11
M  789012 COMPLD
    "tlm-1a::result_status=good"
    "tlm-2a::result_status=good"
    "tlm-3a::result_status=good"
    "tlm-4a::result_status=good"
    "tlm-1b::result_status=\"-\""
    "tlm-2b::result_status=\"-\""
    "tlm-3b::result_status=\"-\""
    "tlm-4b::result_status=\"-\""
;
```

The following example shows the response to the request for all supervisory channels via the optical amplifiers and the telemetry packs for the repeater ("supr-all") terminal.

```
test-auto-local:LT-OLS:supr-all:789012;


IP 789012
<


   LT-OLS 93-10-26 16:42:11
M  789012 COMPLD
    "tlm-1a::result_status=good"
    "tlm-2a::result_status=good"
    "tlm-3a::result_status=good"
    "tlm-4a::result_status=good"
    "tlm-1b::result_status=good"
    "tlm-2b::result_status=good"
    "tlm-3b::result_status=good"
    "tlm-4b::result_status=good"
;
```

The following example shows the response to the request for all supervisory channels via the optical amplifiers and the telemetry packs for an ET ("`supr-all`") provisioned in 1A-TX-THRU mode.

```
test-auto-local:LT-OLS:supr-all:789012;


IP 789012
<


   LT-OLS 93-10-26 16:42:11
M  789012 COMPLD
    "tlm-1a::result_status=good"
    "tlm-2a::result_status=good"
    "tlm-3a::result_status=good"
    "tlm-4a::result_status=good"
    "tlm-1b::result_status=good"
    "tlm-2b::result_status=good"
    "tlm-3b::result_status=good"
    "tlm-4b::result_status=good"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid access identifier, the following error response is returned:

```
   sid date time
M  ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

A condition may occur that (a) is not associated with the entity under test, and (b) would cause NE-ACTY to be lighted if the test wasn't running. Such conditions include the absence of a line controller in the case that the test is directed to a single line without a line controller, and the preemption of the high speed switch. In these cases the command shall be denied with error code (ECMD_ABORTED_FAULT):

```
   sid date time
M  ctag DENY
   FNEA
   /* Fault, Near End Activity
   The requested test can not be completed because of a condition
   (or conditions) giving rise to Near End Activity. */
;
```

If a test is addressed to a slot in the AUTO state, the command shall be denied with error code (ECMD_AUTO):

```
   sid date time
M  ctag DENY
   SNVS
   /* Status, Not in Valid State
   The requested command can not be executed because of the improper
   status of the specified entity. */
;
```

RELATED TL1 COMMANDS/MESSAGES

TEST-AUTO-DSX

TEST-LED

TEST-LED: Test LED

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.1.

INPUT FORMAT

TEST-LED*:tid:[aid]:ctag[::repeat];*

DESCRIPTION

The **TEST-LED** command provides for testing of the LEDs of the whole system or of each circuit pack.

The LED(s) under test is turned on for 10 seconds, then off for 10 seconds, after which it reverts to its normal operation. This command does not affect the operation of the office alarms.

The definition of "normal" is the state of the indicator immediately before the test was executed. After the test is executed, "normal" also includes any state changes during the test.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

aid Access identifier. *aid* determines the slot or operations interface address whose LED is to be tested. If no value is provided for this field, **all** is assumed.

Entity: All
Legal Values: (ALL)

Entity: Slot (TOHCTL)
Legal Values: (TOHCTL)

Entity: Operations Interface (User Panel)
Legal Values: (USER)-(PANEL)

Entity: Slot (SYSCTL)
Legal Values: (SYSCTL)

Entity: Slot (SYSMEM)
Legal Values: (SYSMEM)

Entity: Slot (OA)
Legal Values: (OA)-(ALL, 1A-4B)

Entity: Slot (TLM) [End terminals and Repeaters]
Legal Values: (TLM)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

Entity: Slot (OTU)
Legal Values: (OTU)-(ALL), (OTU)-(1,2)-(ALL,1-32)
CenterLink CIT selection options: (OTU)-(ALL, 1, 2)-(ALL, 1-32)

Entity: Slot (OTCTL)
Legal Values: (OTCTL)-(ALL, 1, 2)

Entity: Slot (OPS)
Legal Values: (OTU)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

Entity: Self Powered OU Slot(OU)
Legal Values: (OTU)-(ALL, 1, 2)-(ALL, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

repeat (1-10) Repeat. This indicates the number of times the test will be repeated. This parameter must be an integer between 1 and 10. If no value is provided for this parameter, **1** is assumed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

```
TEST-LED:LT-PF-2000:sysmem:123456::REPEAT=1;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If this command is received with an invalid access identifier, the following error response is returned:

```
   sid date time
M  ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If the network element receives this command with an invalid *repeat*, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid REPEAT */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

TEST-TLM-PAR

TEST-TLM-PAR: Test Telemetry Parallel

The privilege level for this command is GENERAL.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.1.

INPUT FORMAT

TEST-TLM-PAR*:tid::ctag::[mode][,repeat];*

DESCRIPTION

The **TEST-TLM-PAR** command provides for general and specific tests of the parallel telemetry and miscellaneous discrete points. The general test turns all parallel telemetry and miscellaneous points on for 20 seconds, then off for 20 seconds, and then reverts to normal operation. The specific test performs similarly, but on one parallel telemetry or miscellaneous discrete point.

The definition of "normal" is the state of the indicator immediately before the test was executed. After the test is executed, "normal" also includes any state changes during the test.

INPUT PARAMETERS

tid Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

ctag Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

mode Mode. This is the mode or the name of the point being tested. Valid values are:

ALL	Default value, ALL
CRNE	CRitical-Near End
MJNE	MaJor-Near End
MNNE	MiNor-Near End
CRFE	CRitical-Far End
MJFE	MaJor-Far End
MNFE	MiNor-Far End

CONT1-CONT36 Control Point One through Control Point Thirty-six, inclusive

repeat (1-10) Repeat. This indicates the number of times the test will be repeated. This parameter must be an integer between 1 and 10. If no value is provided for this parameter, **1** is assumed.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

```
TEST-TLM-PAR:LT-PF-2000::123456::MODE=CRNE,1;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives a **TEST-TLM-PAR** command with an invalid *mode*, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid MODE */
;
```

If the network element receives this command with an invalid *repeat*, the following error response is returned:

```
   sid date time
M  ctag DENY
   IDNV
   /* Input, Data Not Valid, invalid REPEAT */
;
```

RELATED TL1 COMMANDS/MESSAGES

None

UPD-SYS

UPD-SYS: Update System

The privilege level for this command is GENERAL.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

INPUT FORMAT

UPD-SYS*:tid::ctag;*

DESCRIPTION

⚠ CAUTION:
Execution of this command may affect service on a protected line or slot if the associated circuit packs are missing.

The **UPD-SYS** command updates the network element data base to reflect the existing configuration and incoming signals.

INPUT PARAMETERS

tid	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set: [A-Z][a-z][0-9].+-%#
ctag	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command can interrupt service on a protected line or slot if the associated circuit packs are missing.

OUTPUT FORMAT

If the network element fully complies with this command, the following output message is returned:

```
   sid date time
M  ctag COMPLD
;
```

The network element will return a COMPLD whenever it is completed even if the update resulted in no change to the database of the network element.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** OUTPUT PARAMETERS section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example illustrates the command/response associated with an update:

```
upd-sys:LT-PF-2000::123456;


IP 123456
<


   LT-PF-2000 93-10-26 16:42:11
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** ERROR RESPONSES section. The error responses listed there also apply to this command.

If the network element receives an **UPD-SYS** command while the SYSCTL and SYSMEM have incompatible software versions, the following error response is returned:

```
   sid date time
M  ctag DENY
   SSTP
   /* Status, SToPped
      The execution of this command stopped because SYSCTL and SYSMEM
      have incompatible software versions.
   */
;
```

RELATED TL1 COMMANDS/MESSAGES

INIT-SYS

Optical Line System (OLS) Parallel Telemetry

4

Contents

Overview 4-1

Introduction 4-1

Parallel Telemetry Test 4-2

Optical Line System (OLS) Parallel Telemetry

4

Overview

This section presents information on parallel telemetry interfaces to the operations system (OS). This includes information on provisioning and alarm and status points.

Introduction

The OLS also supports parallel telemetry. The OLS parallel telemetry interface is dependent on the wiring of individual (parallel) leads to the telemetry remote.

Table 4-1 summarizes the OLS parallel telemetry points for SONET.

Table 4-1. SONET OLS Parallel Telemetry Points

Point Name	Type (Note)	Point Description
CR-NE	SA	Critical Alarm - Near End
CR-FE	SA	Critical Alarm - Far End
MJ-NE	NSA	Major Alarm - Near End
MJ-FE	NSA	Major Alarm - Far End
MN-NE	NSA	Minor Alarm - Near End
MN-FE	NSA	Minor Alarm - Far End

Note: SA = service affecting; NSA = non-service affecting

Table 4-2 summarizes the OLS parallel telemetry points for SDH.

Table 4-2. SDH OLS Parallel Telemetry Points

Point Name	Type (Note)	Point Description
CR-NE	SA	Critical Alarm - Near End
CR-FE	SA	Critical Alarm - Far End
PROMPT-NE	NSA	Prompt Alarm - Near End
PROMPT-FE	NSA	Prompt Alarm - Far End
DEFR-NE	NSA	Deferred Alarm - Near End
DEFR-FE	NSA	Deferred Alarm - Far End

Note: SA = service affecting; NSA = non-service affecting

Parallel telemetry wiring to a telemetry remote is only necessary at one end or the other of an Optical Line System point-to-point application, because either OLS end terminal can report the parallel telemetry for the other. The parallel telemetry updates are exchanged using the supervisory signal. Thus, a far-end OLS parallel telemetry alarm and status information is forwarded to the telemetry remote by the near-end OLS.

There are four cases when parallel telemetry updates will not be exchanged between OLSs in a subnetwork:

a. If the remote activity reporting is disabled

b. If the supervisory channel fails, or if any of the equipment which carries it fails

c. If OLSs belong to different alarm groups

d. Network element Status Comm Failure when AGNE cannot communicate with subordinates

Parallel Telemetry Test

The OLS supports parallel telemetry testing via the **TEST-TLM-PAR** command. The parallel telemetry test consists of setting the user-specified parallel telemetry points “on” for 20 seconds and then “off” for 20 seconds. The same test may be repeated up to ten times. The user can include any one point or all points in a test.

Glossary

Numerics

1A-TX
: 1A-Transmit — When the direction parameter of an Optical Line System end terminal is provisioned 1A-TX, the "A" optical lines are used in the transmit direction.

1A-RCV
: 1A-Receive — When the direction parameter of an Optical Line System end terminal is provisioned 1A-RCV, the "A" optical lines are used in the receive direction.

A

ABN
: Abnormal — A light emitting diode (LED) on the indicator strip and user panel that is lighted when a temporary condition potentially affecting transmission exists.

ACO
: Alarm Cutoff — A push-button switch on the indicator strip and user panel that can be used to retire the active audible office alarm. If another alarmable condition occurs while the ACO is active, the highest level audible alarm is activated. The alarm cutoff function is also available from the CIT and from an operations system.

AGNE
: Alarm Gateway Network Element — A network element that receives remote network element status information from other network elements in an alarm group and rebroadcasts the information to all network elements in the alarm group. Using AGNEs makes it unnecessary for each network element in the alarm group to communicate directly with all other network elements in the alarm group.

AID
: Access Identifier — A unique identifier used to address circuit pack slots, ports, and tributaries.

AIM
: Alarm Indication Message — A maintenance message transmitted downstream in a digital network that shows that an upstream failure has been detected and alarmed by some upstream equipment, if the upstream alarm has not been suppressed.

Alarm
A contact closure to the office alarm grid.

Alarm Group
A group of network elements that share remote alarm information through an alarm gateway network element (AGNE). Also refer to AGNE.

ANSI
American National Standards Institute — An organization consisting of producer, consumer, and general interest groups that establishes the procedures by which accredited organizations create and maintain voluntary industry standards in the United States.

APD
Avalanche Photodiode — A highly sensitive optical detector.

AS&C
Alarm, Status, and Control

ASCII
American Standard Code for Information Interchange — A standard 8-bit code used for exchanging information among data processing systems and associated equipment.

Asynchronous
Refers to network elements that are not timed from references traceable to a single timing source.

AUTO
Automatic — One possible state of a slot, customer maintenance signal (CMS) port, or optical channel. When a CMS port or optical channel is in the automatic state and the presence of a good signal is detected, the port or optical channel is automatically placed in the in-service (IS) state. When a slot is in the automatic state and the presence of a circuit pack is detected, the slot is automatically placed in the equipped (EQ) state.

Autonomous Indicators
Autonomous indicators are those indicators that are subject to incoming signal alarm delay. These include office alarm outputs, parallel telemetry outputs, TL1 autonomous messages, the alarm LEDs (CR, MJ, and MN) on the indicator strip/user panel, and the network element status field in the upper left-hand corner of the CIT.

B

BCLAN
Board Controller Local Area Network — The internal local area network that provides communications between the Line Controller circuit pack and board controllers on the circuit packs associated with an optical line.

BDFB
Battery Distribution and Fuse Bay

BER
Bit Error Rate — The ratio of bits received in error to bits sent.

C

CCITT
International Telephone and Telegraph Consultative Committee — An international advisory committee under United Nations sponsorship that has composed and recommended for adoption worldwide standards for international communications. Recently changed to the International Telecommunications Union (ITU) Telecommunication Standardization Sector (TSS).

CDRH
Center for Devices and Radiological Health

CenterLink
A new software application for OLS Release 2.1 running under the Windows 95 operating system.

CEV
Controlled Environment Vault

CIT
Craft Interface Terminal — A personal computer loaded with CenterLink software that meets Optical Line System minimum requirements.

CO
Central Office — A telephone company building where switching and/or transmission system equipment is located.

Condition
Conditions persist in time and indicate that there is something abnormal about the system.

CMS
See Customer Maintenance Signal.

CR
Critical (alarm)

Current Value
The value currently assigned to a provisionable parameter.

Customer Maintenance Signal
The 155-Mb/s optical signal originating from the customer supplied equipment. It is carried as part of the supervisory signal. Also see "Supervisory Signal."

D

Data
A collection of system parameters and their associated values.

dB
Decibels — A dimensionless unit used to express the ratio between input and output voltages, powers, currents, or sound intensities.

DCE
Data Circuit Equipment — The equipment that provides the signal conversion and coding between the data terminating equipment and the line. The DCE may be separate equipment or a part of the data terminating equipment.

DCMS
Design Change Management System — The Design Change Management System is used to issue product change notifications (PCNs) to customers.

DDM-2000 Multiplexers
Lucent Technologies' SONET-ready network multiplexers that can function as a lightwave terminal. It is designed primarily for loop feeder and interoffice applications that will work in existing asynchronous as well as the emerging SONET networks.

Demultiplexing
A process applied to a multiplexed signal for recovering signals combined within it and for restoring the distinct individual channels of these signals.

DFB
Distributed Feedback

Doping
The addition of impurities in a substance to achieve desired properties.

DRAM
Dynamic Random Access Memory — Semiconductor random-access memory that requires short interval refreshing to retain its contents.

Drop Side Signal
An OC-48 optical signal suitable for transmission over the Optical Line System.

DSNE
Directory Service Network Element — The single reference point in an Optical Line System network. The Directory Service Network Element stores the IDs of the other network elements and updates the other network elements after configuration changes. The Directory Service Network Element is responsible for administering a data base that maps network element names (TIDs) to addresses (NSAPs). Also see NSAP and TID.

DTE
Data Terminating Equipment — The equipment that originates data for transmission and accepts transmitted data.

DWDM
Dense Wavelength Division Multiplexing — Allows customers to multiplex up to eight different wavelengths of drop side signals (OC-48 signals from FT-2000 OC-48 Large Capacity Terminals) onto a single fiber.

E

ECI
Equipment Catalog Item

EDFA
Erbium Doped Fiber Amplifier — A form of optical amplification in which an optical signal passes through a section of erbium doped fiber and is amplified by a laser pump diode.

EEPROM
Electrically Erasable Programmable Read-Only Memory — Readable memory that is nonvolatile in nature, erased electrically, and programmed externally from the processor that uses it.

EIA
Electronic Industries Association — A trade association of the electronics industry that establishes electrical and functional standards.

EMC
Electromagnetic Compatibility

EMI
Electromagnetic Interference — High-energy, electrically induced magnetic fields that cause data corruption in cables passing through the fields.

End Terminal Site
The location of the Optical Line System equipment that terminates the optical line signals.

EPROM
Erasable Programmable Read-Only Memory — Readable memory that is nonvolatile in nature, erased by exposure to intense ultraviolet light, and programmed externally from the processor that uses it.

EQ
Equipped — A memory administrative state for OA and TLM circuit pack slots. EQ refers to an OA or TLM circuit pack slot that is fully monitored and alarmed.

Erbium
A soft, rare earth element used in metallurgy and nuclear research.

ES
Errored Seconds — A second in which one or more coding violations are detected. Errored seconds are monitored for the optical line.

ESD
Electrostatic Discharge — The discharge of static electricity into equipment that potentially causes component damage and logic errors.

Event
Events happen at a particular time (do not persist in time).

Executable Code
The "program" that controls the operation of the system.

F

FDA
Food and Drug Administration

FE ACTY
Far-End Activity — An LED on the indicator strip and user panel that is lighted when an alarm or status condition exists at a remote network element.

FIT
Failures in Time — Circuit pack failure rates per 10^9 hours as calculated using the method described in TR-TSY-000332, Issue 3, *Reliability Prediction Procedure for Electronic Equipment (RPP).*

Flash EPROM
A new technology that combines the nonvolatility of EPROM with the in-circuit reprogrammability of electrically-erasable PROM (EEPROM).

G

Gb/s
Gigabits (10^9 bits) per second

GNE
Gateway Network Element — A network element that serves as a single interface to the local X.25 message-based operations system for all the Optical Line System End Terminals and Repeaters in a network.

H

Hardware Ready
The shelf, connector, and backplane have been designed to accept hardware (circuit packs) that is not available yet. Additional cables may be required.

I

I/O
Input/Output

IS
In-Service — A memory administrative state for CMS ports and optical channels. IS refers to a CMS port or optical channel that is fully monitored and alarmed.

ITU
International Telecommunications Union — An international advisory committee under United Nations sponsorship that has composed and recommended for adoption worldwide standards for international communications. Also refer to CCITT.

K

Krypton Line
A standard laser source and a krypton line at 1.54782 μm are used as the standard for the wavelengths accepted by the Optical Line System. The frequency of the krypton line is 193.68622 Terahertz (THz).

L

LAN
Local Area Network

LBC
Laser Bias Current — A performance-monitoring parameter.

LBFC
Laser Backface Current — A performance-monitoring parameter.

LBO
Line Buildout — An equalizer network that guarantees the proper signal level. Also see optical line buildout.

LCT
FT-2000 OC-48 Large Capacity Terminal

LED
Light-Emitting Diode

Line
A bidirectional optical transmission line. In T1/Bellcore terminology, "line" refers to a transmission medium, together with the associated high-speed equipment, required to provide the means of transporting information between two consecutive network elements, one of which originates the line signal and the other terminates the line signal.

LOF
Loss of Frame — A failure to synchronize to an incoming signal.

LOS
Loss of Signal — The absence of an adequate incoming signal.

M

µm
Micrometer — 10^{-6} meters

Menu
A set of possible values for a parameter.

MJ
Major (alarm)

MN
Minor (alarm)

MTBF
Mean Time Between Failures

MTBMA
Mean Time Between Maintenance Activities

Multiplexing
The process of combining several distinct digital signals into a single composite digital signal.

N

NCDRH
National Center for Devices and Radiological Health

NE
Network Element — Refers to an Optical Line System End Terminal or Optical Line System Repeater in a network.

NE ACTY
Near-End Activity — An LED on the indicator strip and user panel that is lighted when an alarm or status condition exists at the local network element.

NEBS
Network Equipment-Building System

nm
Nanometer — 10^{-9} meters

NMA
Network Monitoring and Analysis System — Bellcore's alarm surveillance operations system.

NMON
Not Monitored — A memory administrative state for CMS ports and optical channels. This refers to a CMS port or optical channel that is not monitored and will not transition to the IS state if a good signal is detected.

Nonautonomous Indicators
The nonautonomous indicators are those indicators that are not subject to incoming signal alarm delay. These indicators include the circuit pack FAULT LEDs, all CIT reports, TL1 command response messages, and the LEDs on the indicator strip and user panel (except CR, MJ, and MN).

NRZ
Nonreturn to Zero

NSA
Non-Service Affecting

NSAP
Network Services Access Point — An automatically assigned number (address) that uniquely identifies a network element for the purposes of routing data communications channel messages.

Null Modem
A null modem cable allows a CIT local access to the Optical Line System via the DTE port on the interconnection panel of the End Terminal and Repeater Shelves.

O

O&M
Operation and Maintenance

OA
The Optical Line System Optical Amplifier circuit pack optically amplifies an optical line signal and provides an add/drop function for the supervisory signal.

OALAN
Overhead Access Local Area Network — The internal local area network that provides communications between the System Controller circuit pack and the Overhead Controller - Tributary circuit pack.

OAM&P
Operations, Administration, Maintenance, and Provisioning

OC, OC-n
Optical Carrier — The optical signal that results from an optical conversion of an STS signal; that is, OC-1 from STS-1 and OC-n from STS-n.

ODU
The Optical Line System Optical Demultiplexing Unit provides an interface between an incoming wavelength division multiplexed optical line signal and up to eight outgoing OC-48 drop side signals.

OLS
Optical Line System — See Optical Line System.

Operations Interface
Any interface that provides information on the system behavior or control. These include the equipment LEDs, indicator strip/user panel, CIT, office alarms, and all telemetry interfaces.

OMU
The Optical Line System Optical Multiplexing Unit provides an interface between up to eight incoming OC-48 drop side signals and an outgoing wavelength division multiplexed optical line signal.

Operations Interworking
The capability to access, operate, provision, and administer remote systems through CIT access from any site in a SONET network or from a centralized operations system.

Optical Channel
A single OC-48 signal within the optical line signal. There are eight optical channels (OC-48 signals) within one optical line signal.

Optical Line Buildout
: An equalizer network between the Optical Line System and the lightguide cross-connect panel (or equivalent). It guarantees the proper received signal level at the Optical Amplifier circuit pack.

Optical Line ID
: The part of the supervisory signal that identifies optical lines to prevent misconnections between sites.

Optical Line Signal
: A wavelength division multiplexed optical signal that consists of up to eight optical channels and one supervisory channel.

Optical Line System
: The Optical Line System is a flexible, high-capacity, analog lightwave system that transports digitally encoded information contained in up to eight different wavelengths of SONET OC-48 signals (up to 32,256 voice channels each) through standard single-mode or *Truewave*® optical fibers.

Optical Section
: The part of the optical line that exists between adjacent end terminal and repeater sites or between adjacent repeater sites.

Original Value
: The value given to a CIT provisionable parameter at the factory.

Original Value Provisioning
: The original values are the values given to CIT provisionable parameters at the factory. At system start-up, the original values are copied and become the current values. These current values can be changed using local or remote provisioning. The original values can never be changed.

OS
: Operations System — A central computer-based system used to provide operations, administration, and maintenance functions.

OSI
: Open Systems Interconnection — Referring to the OSI reference model, a logical structure for network operations standardized by the International Standards Organization (ISO).

Order Wire
: The part of the supervisory signal that is used for communications between sites.

P

Parameter
: A characteristic of the system that affects its operation.

PC
Personal Computer

PCN
Product Change Notification — Product change notifications are issued to notify customers that in-service product changes are required to correct an existing or potential problem. Product change notifications are issued through the Design Change Management System.

Platform
In the Optical Line System, a platform is a family of equipment and software configurations designed to support a particular set of applications.

PM
Performance Monitoring — Measures the quality of service and identifies degrading or marginally operating systems (before an alarm would be generated).

POH
Path Overhead — Overhead assigned to and transported with the payload until the payload is demultiplexed. It is used for functions that are necessary to transport the payload.

Preprovisioning
The capability to provision a slot before installing a circuit pack.

Proactive Maintenance
Refers to the process of detecting degraded conditions not severe enough to initiate protection switching or alarming, but indicative of an impending signal fail or signal degrade defect.

Provisioning
Assigning a value to a parameter in memory.

PWR
Power

R

Reactive Maintenance
Refers to detecting defects/failures and clearing them.

Repeater Site
The location of the Optical Line System equipment that optically amplifies the optical line signals.

Revertive Switching
In revertive switching, there is a service and protection high-speed line, DCC, etc. When a protection switch occurs, the protection line, DCC, etc., is selected. When the fault clears, service "reverts" back to the original service line. Also see 1x1 Line Protection.

RF
Radio Frequency

RMS
Root Mean Square

RPP
Reliability Prediction Procedure

RTAC
Regional Technical Assistance Center — A Lucent Technologies organization that helps customers maintain installed systems.

RZ
Return to Zero

S

SA
Service Affecting

SDH
Synchronous Digital Hierarchy

SES
Severely Errored Seconds — A second in which the coding violations detected reach a fixed threshold. The severely errored seconds are monitored for the supervisory line.

Single-Ended Operations
The capability to perform operations, administration, maintenance, and provisioning of remote network elements on a centralized basis.

Site Address
The unique address of each end terminal and repeater site in an optical line.

SLM
Single Longitudinal Mode

Software Ready
The software that runs on the Optical Line System will accept, run, boot, and operate normally when future hardware (circuit packs) is installed.

SONET
Synchronous Optical Network — The American National Standards Institute's optical signal standard for broadband transmission.

Status
Status means a condition that does not raise an alarm.

Subnetwork
A group of interconnected/interrelated network elements.

Supervisory Channel
A single 155-Mb/s channel within the optical line signal.

Supervisory Signal
An optical signal originating at the Telemetry Controller circuit pack that is used to communicate maintenance information. The supervisory signal consists of the supervisory overhead and the customer maintenance payload. The supervisory signal is wavelength division multiplexed onto the optical line by the Optical Amplifier circuit pack.

SYSCTL
The System Controller and System Memory circuit packs provide the highest level of system control for the Optical Line System. The System Controller circuit pack provides overall administrative control of the system.

SYSMEM
The System Memory and System Controller circuit packs provide the highest level of system control for the Optical Line System. The System Memory circuit pack provides memory support for the SYSCTL circuit pack.

T

T1X1 and T1M1
The ANSI committees responsible for telecommunications standards.

TA
Technical Advisory

TCA
Threshold-Crossing Alert — A condition set when a counter exceeds a user-selected high or low threshold. A TCA does not generate an alarm but is available on demand through the CIT.

TEC
Thermo-Electric Cooler

THz
Terahertz — 10^{12} hertz

TID
Target Identifier — A provisionable parameter used to identify an Optical Line System network element.

TL1
Transaction Language 1 — A machine-to-machine communications language that is a subset of ITU-T's human-machine language.

TLM
The Optical Line System Telemetry Controller circuit pack provides a bidirectional interface between an IS-3 customer maintenance signal and the supervisory signal. The TLM circuit pack also performs maintenance functions that are used to monitor the performance of the optical line.

TOHCTL
The Optical Line System Overhead Controller - Tributary circuit pack provides user access to the data communications channel (DCC) bytes.

Tone
An amplitude-modulated signal in the 5- to 30-kHz range that is superimposed on the drop side signal at the end terminal site.

TR
Technical Reference

TSO
Technical Support Organization — A Lucent Technologies organization that provides troubleshooting/installation technical support.

U

UAS
Unavailable Seconds — A second during which the monitored facility is unavailable. The unavailable seconds are monitored for the supervisory line.

Upgrade
An upgrade is the addition of new capabilities (features) to an existing platform. This requires new software and may require new hardware.

V

Value
A number, text string, or other menu selection associated with a parameter.

Index

C

COACH, xxii
COACH user's guide, xxiv
compatibility data, xxiv
Customer Training and Information Products (CTIP) Organization, xvii

D

diagnostic dictionary, xxiv
Document, x
Document ordering, xvi
Documentation
  electronic, xv
Documentation Support, xv
Documents, x
Drawings, xii
drawings, xii

E

electronic, xv
Electronic Documentation, xv
engineering and installation services, xx

H

How to comment on this document, xxv
How to order documents, xvi
How to request standing orders for documents, xvi
How to Use This Document, x

I

Intended audience, ix
Introduction to Operations Systems Interfaces, 1-1

N

news and bulletins, xxii
NMA, 2-1

O

OLS parallel telemetry, 4-1
ordering guides, xxii

P

Parallel telemetry test, 4-2
PCNs, xxv
Product change notifications, xxv
Product support
  engineering and installation services, xx
  technical, xxii

R

Reason for Reissue, ix
Related documentation, x
  documents, x
  drawings, xii
  related equipment, xiii
RTAC, xxii

S

Support
  COACH, xxii
  documents, x
  drawings, xii
  engineering and installation services, xx
  RTAC, xxii
  technical, xxii
  training courses, xvii

T

technical, xx
Technical Support, xx
Technical support
  COACH, xxii
  COACH user', xxiv
  compatibility data, xxiv
  diagnostic dictionary, xxiv
  news and bulletins, xxiv
  ordering guides, xxiv
  RTAC, xxii
TL1/X.25 Interface, 2-1
TL1/X.25 interface, EIA-232D Pin Connections, 2-3
TL1/X.25 Interface — LAPB Link Layer Parameters, 2-2
TL1/X.25 Interface — X.25 Packet Layer Parameters, 2-2
Training courses, xvii

X

X.25 Interface, 2-1
X.25 technical specifications, 2-2