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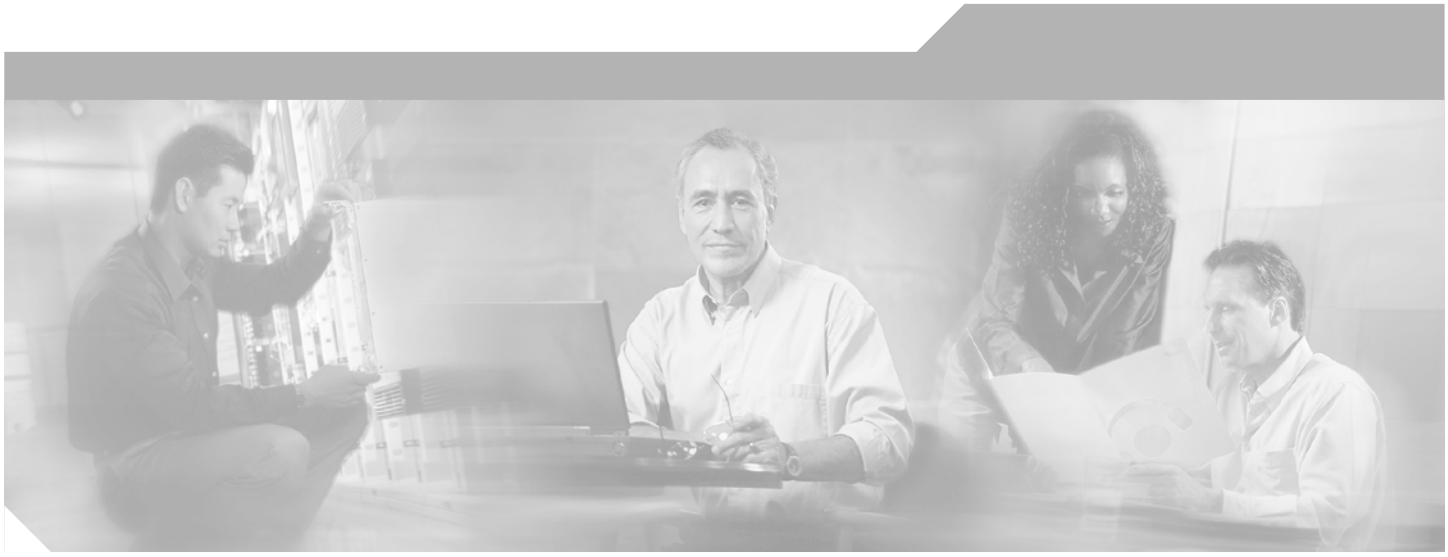

Cisco ONS 15540 ESP
TL1 Command Reference

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Preface

This preface explains the purpose, intended audience, organization, and conventions for the *Cisco ONS 15540 ESP TL1 Command Reference*, and it provides information on how to obtain related documentation.

Purpose

This publication explains the use of TL1 (Transaction Language 1) for the Cisco ONS 15540 ESP. Use this guide in conjunction with the appropriate publications listed in the "Related Documentation" section.

Audience

To use this publication, you should be familiar with Cisco or equivalent optical transmission hardware and cabling, telecommunications hardware and cabling, electronic circuitry and wiring practices, and preferably have experience as a telecommunications technician.

Organization

This Cisco ONS 15540 ESP TL1 Command Reference is organized into the following chapters:

Chapter	Title	Description
Chapter 1	Getting Started	Explains how to gain access to a TL1 session, command syntax, and autonomous messages.
Chapter 2	TL1 Command Components	Describes the components of TL1 commands, including AIDs (access identifiers) and parameter types.
Chapter 3	TL1 Commands	Lists and describes the Cisco ONS 15540 ESP TL1 commands.

Related Documentation

Use this Cisco ONS 15540 ESP TL1 Command Reference in conjunction with the following publications:

- *Regulatory Compliance and Safety Information for the Cisco ONS 15500 Series*
- *Cisco ONS 15540 ESP Planning Guide*
- *Cisco ONS 15540 ESP Hardware Installation Guide*
- *Cisco ONS 15540 ESP Optical Transport Turn-Up and Test Guide*
- *Cisco ONS 15540 ESP Configuration Guide*
- *Cisco ONS 15540 ESP Command Reference*
- *Cisco ONS 15540 ESP System Alarms and Error Messages*
- *Cisco ONS 15540 ESP Troubleshooting Guide*
- *Network Management for the Cisco ONS 15540 ESP*
- *MIB Quick Reference for the Cisco ONS 15500*

Document Conventions

This publication uses the following conventions:

Convention	Application
boldface	Commands and keywords in body text.
italic	Command input that is supplied by the user.
[ ]	Keywords or arguments that appear within square brackets are optional.
{ x | x | x }	A choice of keywords (represented by x) appears in braces separated by vertical bars. The user must select one.
Ctrl	The control key. For example, where Ctrl + D is written, hold down the Control key while pressing the D key.
`screen font`	Examples of information displayed on the screen.
`boldface screen font`	Examples of information that the user must enter.
< >	Command parameters that must be replaced by module-specific codes.

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the document.

Caution Means *reader be careful*. In this situation, the user might do something that could result in equipment damage or loss of data.

Warning **IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the translated safety warnings that accompanied this device.

Note: SAVE THESE INSTRUCTIONS

Safety and Warning Information

For safety and warning information, refer to the *Regulatory Compliance and Safety Information for the Cisco ONS 15500 Series* document that accompanied the product. This document describes the international agency compliance and safety information for the Cisco ONS 15500 series. It also includes translations of the safety warnings that appear in the Cisco ONS 15500 series documentation.

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Getting Started

TL1 (Transaction Language One) is a subset of the input and output messages contained in the ITU (International Telecommunications Union) MML (Man-Machine Language). TL1 provides a standard set of messages that can be used for communicating between operating systems and network elements, and personnel and network elements. The Cisco ONS 15540 ESP can support up to 32 concurrent TL1 sessions. For more information about TL1, refer to Telcordia document GR-833-CORE, *Network Maintenance: Network Element and Transport Surveillance Messages*.

This chapter provides information and procedures for getting started with TL1 including:

1.1 Setting Up TL1 Communication

The period during which a user is logged into the Cisco ONS 15540 ESP is called a session. You can use Telnet to open a session (login). The TL1 PID (password) is masked when accessing a TL1 session. When you logout, you are closing a session. The Cisco ONS 15540 ESP allows a maximum of 32 concurrent TL1 sessions.

1.1.1 Opening a TL1 Session

Use the following procedure to open a TL1 session through Telnet. In the procedure the Activate and Cancel User commands are shown in their input format. For more information about these and other commands and messages, see Chapter 3, "TL1 Commands."

To access TL1 commands in a Telnet session with a PC running Windows, follow these steps:

Step 1 Type **cmd** at the DOS prompt and then click **OK**. (The same steps can also be done from a UNIX prompt.)

Step 2 Type **TELNET <*NODE IP ADDRESS OR NODE NAME*> <*PORT NUMBER*>** and then press **Enter**.

The node IP address or name refers to the IP address or name of the node that you want to communicate with. Port number is the port (2361, 3082, or 3083) where TL1 commands are understood. If the connection is successful, a screen opens with a prompt.

Step 3 Open a TL1 session by typing **ACT-USER:[<TID>]:<UID>:<CTAG>::<PID>;**

Note When the semicolon is typed, the command is issued immediately.

Step 4 Close a TL1 session by typing **CANC-USER:[<TID>]:<USERID>:<CTAG>;**

1.2 TL1 Command Syntax

TL1 commands conform to the following syntax:

a:b:c:d:e: ... z;

where:

“a” is the command code

“b” is the target identifier (TID)

“c” is the access identifier (AID) or the user identifier (UID)

“d” is the correlation tag (CTAG)

“e: ... z;” are other positions required for various commands

The TID, AID, UID, and CTAG route and control the TL1 command. Other parameters provide additional information required to complete the action requested by the command. TL1 command codes, parameter names, and parameter values can be either uppercase or lowercase exclusively or any combination of the two, unless specifically noted in the command description.

The TID is a unique name given to each system when it is installed. The name identifies the particular NE (network element) to which each command is directed. Each TID can have a maximum of 20 ASCII characters limited to letters, digits, and hyphens, but each TID must start with an alphabetic character. The presence of the TID is required in all input commands, but its value can be null (represented by two successive colons). The TID can be null when the operating system directly communicates with the target NE. The recommended value for the TID, when it is used, is the target’s CLLI code.

Note If the TID contains any characters other than letters and digits, such as spaces, the text string form (enclosed in double quotes) must be used.

The AID is an access code used to identify and address specific objects within the Cisco ONS 15540 ESP. These objects include individual pieces of equipment, transport spans, access tributaries, and other objects.

The CTAG is a unique identifier given to each input command by the user. When the Cisco ONS 15540 ESP system responds to a specific command, it includes the command’s CTAG in the reply. Including the CTAG eliminates discrepancies about which response corresponds to which command. Valid CTAG values include strings of up to six characters comprised of identifiers (alphanumeric, beginning with a letter) or decimal numerals (a string of decimal digits with an optional non-trailing “.”).

The following specification characters are used throughout this document as vehicles for defining the syntax:

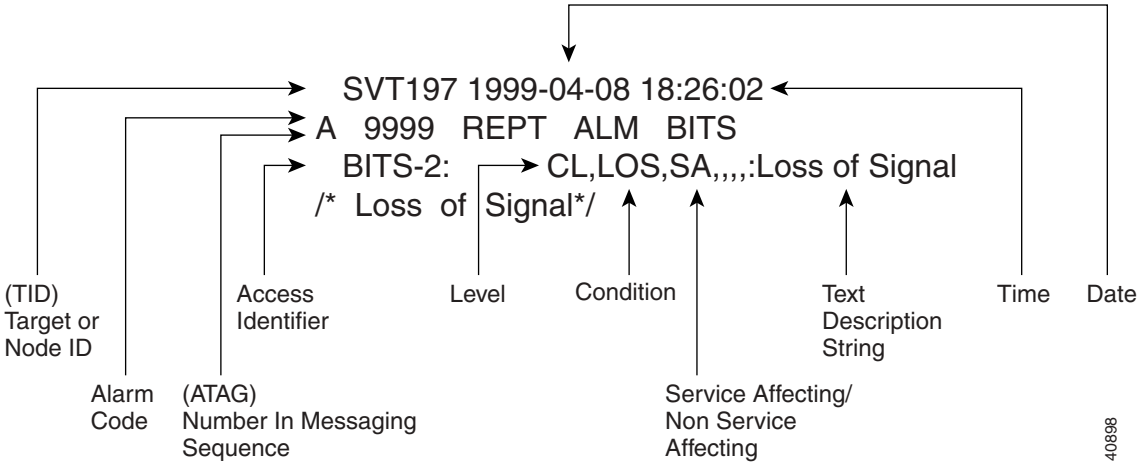
- < > enclose a symbol specifier, for example <CTAG>.
- [ ] enclose an optional symbol, for example [<TID>].
- “ ” enclose a literal character, for example an output format “SLOT-7:PLUGIN,TC,,,,,,,:\“EQUIPMENT PLUG-IN\”,TCC”
- ^ is a space, a literal blank character used only in examples of messages.

1.3 Autonomous Messages

The autonomous TL1 messages are listed alpahbetically in Chapter 2, "TL1 Command Components". Figure 1-1 shows the autonomous message format. The autonomous message tag (ATAG) is used for message sequencing. The number is incremented by one for each autonomous message sent by the Cisco ONS 15540 ESP. The Cisco ONS 15540 ESP uses whole numbers 0000 to 9999.

Note Some autonomous messages (REPT DBCHG and REPT EVT SESSION, for example) differ slightly from the format shown in the third line of Figure 1-1.

Figure 1-1 Autonomous Message Format



1.3.1 Alarm Codes

The alarm code indicates the severity of the autonomous message. Valid values for alarm codes in decreasing order of severity are as follows:

- *C Critical alarm
- ** Major alarm
- *^ Minor alarm
- A^ Non-alarm message

Critical, major, and minor correspond to the reporting of alarmed events. The non-alarm message designation is used when the NE is reporting non-alarmed events, periodic measurements, or results of previously scheduled diagnostics or audits. If multiple alarms are reported in the same message, the alarm code is the highest severity of those being reported.

The following example shows an output message that includes the critical alarm code:

```
   AB7-56 1970-01-01 16:02:10
*C 100.100 REPT ALM EQPT
   "SYSTEM:CR,HITEMP,NSA,,,,:\"High Temperature\",TCC"
```

For more information about alarms, see the "2.4 Errors" section on page 2-8.

1.4 TL1 Commands by User Security

Table 1-1 specifies command access privileges for each user security level.

Table 1-1 Command Access

Command	Superuser	Provisioning	Maintenance	Retrieve
ALW-MSG-SECU	X			
ALW-USER-SECU	X			
APPLY	X			
COPY-RFILE	X			
DLT-USER-SECU	X			
ED-DAT	X			
ED-USER-SECU	X			
ENT-USER-SECU	X			
INH-MSG-SECU	X			
INH-USER-SECU	X			
REPT EVT SECU	X			
DLT-*-*	X	X		
ED-*-*	X	X		
ENT-*-*	X	X		
SET-*-*	X	X		
SET-TOD	X	X		
INIT-*-*	X	X	X	
OPR-*-*	X	X	X	
RLS-*-*	X	X	X	
RMV-*-*	X	X	X	
RST-*-*	X	X	X	
SW-*-*	X	X	X	
ACT-*-*	X	X	X	X
ALW-*-*	X	X	X	X
CANC-*-*	X	X	X	X
ED-PID	X	X	X	X
INH-*-*	X	X	X	X
REPT * *[1]	X	X	X	X
RTRV-*-*	X	X	X	X

1. REPT EVT SECU applies to the Superuser only.

User security levels limit the amount of time a user can leave the system idle before the TL1 session is locked to prevent unauthorized users from making changes. Higher security levels have shorter timeouts. If provisioned, it only affects users who are not currently logged in. A user who is logged in has to log out and log back in before the new timeouts can take effect.

Table 1-2 shows security levels and their default timeouts.

Table 1-2 Security Default Timeouts

Security Level	Default Timeouts
Retrieve	Unlimited
Maintenance	60 minutes
Provisioning	30 minutes
Superuser	15 minutes

1.5 Mixed Mode Timing Support

Although TL1 supports mixed mode timing in this release, we strongly advise against its implementation. Mixed mode timing runs an inherent risk of creating timing loops. Refer to Telcordia document GR-436-CORE, *Digital Network Synchronization Plan*, for recommended synchronization planning.

1.6 TL1 Command Completion Behavior

When you enter a TL1 command, one of three completion codes is returned. The completion codes are: completed (COMPLD), partial (PRTL), and deny (DENY). You can specify an explicit, implicit, or explicit with implicit list as explained in the following sections.

Note The command completion behavior does not apply to the following commands: RTRV-CRS, RTRV-ALM, and RTVR-COND commands.

1.6.1 Explicit List of AIDs - No Wildcards

If a set of AIDs (access identifiers) is explicitly listed, including a set of just one AID, then each AID must complete successfully to return a COMPLD message. If more than one AID is in the set and at least one AID succeeds but all do not, then a PRTL with errors for each failed AID is returned. If all AIDs in the set fail, a DENY with errors for each failed AID is returned.

SLOT-1
FAC-2-1&FAC-3-3&FAC-4-2

1.7 Command Completion Behavior for Retrieval Commands

If you enter a RTRV-CRS command, then one of three completion codes is returned. They are completed (COMPLD), partial (PRTL), and deny (DENY). You can specify an explicit, implicit, or explicit with implicit list as explained in the following sections.

1.7.1 Explicit List of AIDs for Retrieval Commands - No Wildcards

For an explicit list of AIDs on a RTRV-EQPT command, an error code is returned for each AID that fails validation (for example, the user specifies STS-N-13 when SLOT-N only contains an OC-12) or for each AID where no matching cross-connection is found. To determine the completion code, follow the rules from the "1.6.1 Explicit List of AIDs - No Wildcards" section on page 1-6. If the result is either PRTL or COMPLD, then a list of matching cross-connections will accompany the response.

TL1 Command Components

This chapter describes the components of TL1 commands and autonomous messages for the Cisco ONS 15540 ESP including:

2.1 Generic Parameter Types

This section provides a description of generic parameter types defined for the TL1 messages used in the Cisco ONS 15540 ESP.

2.1.1 CTAG

The correlation tag (CTAG) is included in each command by the user and is repeated by the NE in the response to allow the user to associate the command and response messages.

Note The valid values for a CTAG are strings of up to 6 characters comprised of identifiers (alphanumeric, beginning with a letter) or decimal numerals (a string of decimal digits with an optional non-trailing ".").

2.1.2 TID

The TID (target identifier) is the name of the NE where the command is addressed. TID is the Telcordia name for the system.

2.2 Parameters Values and Defaults

This section lists the command parameters, the valid values, and the default values.

2.2.1 Parameter Values

Table 2-1 lists the commands parameters and the valid values.

Table 2-1 Command Components

Component	Values
ASSOCTYPE	PEER SERVER
CDP	N Y
CLKPERIOD	0 TO 4294967295 clock ticks (2^{-32} second)
CMDMODE	FRCD NORMAL
CONTYPE	ESS SEFS-S SESS CVRD CDLHEC
CTYPE	1WAY 2WAY
DSCRVY	CDP MANUAL
ENCAP	ESCON FC-1G FC-2G FDDI FE FICON GIGE OC3 OC12 OC48 STM1 STM4 STM16 SYSPLEX-CLO SYSPLEX-ETR SYSPLEX-ISC-COMP SYSPLEX-ISC-PEER UNKNOWN
ENSWOTM	1 to 120 seconds

Table 2-1 Command Components (continued)

Component	Values
ERRTYPE	CDLHEC CVRD CVS
FLC	N Y
FROMDEV	BOOFLASH PCMCIA-0 PCMCIA-1 SBY-BOOTFLASH SBY-PCMCIA-0 SBY-PCMCIA-1
HELLOHLDWN	150 to 30000 milliseconds
HELLOINTV	100 to 10000 milliseconds
HOLDTIME	10 to 255 seconds
INACTFCTR	1 to 50
INDEX	1 to 64
LINKDIRN	BOTH RX TX
LPBKTYPE	FACILITY TERMINAL
LSC	N Y
MASTER	N Y
MAXASSOC	0 TO 4294967295 clock ticks(2^{-32} second)
MODE	FRCD NORMAL
MSGCH	AUTO DCC IP OSC
MSGHOLDCOUNT	2 to 10 messages
MSGHOLDTM	100 to 10000 milliseconds
MSGMAXINTVTM	1 to 120 seconds
MSTRATUM	1 to 16
NTFCNCDE	CR MJ MN
OFC	N Y

Table 2-1 Command Components (continued)

Component	Values
PMSTATE	ON OFF
PSDIRN	BI UNI
RATE	16000 to 2500000 kHz
RVRTM	0 to 720 seconds
SENDVER	1 to 2
THRTYPE	ALMTHR DEGR EVTHR FAIL
TODEV	BOOFLASH PCMCIA-0 PCMCIA-1 SBY-BOOTFLASH SBY-PCMCIA-0 SBY-PCMCIA-1
TRGAPS	N Y
UAP	MAINT PROV RTRV SUPER
UPDATETIME	5 to 254 seconds
UPDCAL	N Y
VALUE	1 to 9
YCABLE	N Y

2.2.2 Default Parameter Values

This section describe the default vales for the different categories of autonomous messages.

2.2.2.1 APS

Table 2-2 lists the default values for the autonomous messages in the APS category.

Table 2-2 APS Default Values

Parameter	Default
PSDIRN	UNI
RVRTV	N
RVRTM	300
YCABLE	N
ENSWOTM	N
MSGCH	AUTO
MSGHOLDTM	5000
MSGMAXINTVTM	15
MSGHOLDCOUNT	2

2.2.2.2 CDP

Table 2-3 lists the default values for the autonomous messages in the CDP category.

Table 2-3 CDP Default Values

Parameter	Default
CDP	Y
UPDATETIME	60

2.2.2.3 Memory Management

Table 2-4 lists the default values for the autonomous messages in the memory management category.

Table 2-4 Memory Management Default Values

Parameter	Default
CMDMODE	NORMAL

2.2.2.4 NTP

Table 2-5 lists the default values for the autonomous messages in the NTP category.

Table 2-5 NTP Default Values

Parameter	Default
MASTER	N
UPDCAL	N

2.2.2.5 OSCP

Table 2-6 lists the default values for the autonomous messages in the OSCP category.

Table 2-6 OSCP Default Values

Parameter	Default
HELLOINTV	100
HELLOHLDWN	3000
INTACTFCTR	5

2.2.2.6 Redundancy

Table 2-7 lists the default values for the autonomous messages in the redundancy category.

Table 2-7 Redundancy Default Values

Parameter	Default
RVRTV	Y
RVTM	5 minutes

2.2.2.7 Security

Table 2-8 lists the default values for the autonomous messages in the security category.

Table 2-8 Security Default Values

Parameter	Default
RVRTV	Y
RVTM	5 minutes
SRVRTV	Y
SRVTM	5 minutes

2.2.2.8 Threshold List Configuration

Table 2-9 lists the default values for the autonomous messages in the threshold list configuration category.

Table 2-9 Threshold List Configuration Default Values

Parameter	Default
TRGAPS	N
INDEX	Lowest available index

2.2.2.9 Topology Neighbor Configuration

Table 2-10 lists the default values for the autonomous messages in the topology neighbor configuration category.

Table 2-10 Topology Neighbor Configuration Default Values

Parameter	Default
LINKDRN	BOTH

2.2.2.10 Transparent Interface Configuration

Table 2-11 lists the default values for the autonomous messages in the transparent interface configuration category.

Table 2-11 Transparent Configuration Default Values

Parameter	Default
CDP	Y
FLC	N
LASERFREQ	The lower laser frequency for the 2.5-Gbps transponder module
LSC	N
OFC	N

2.3 Access Identifiers

The AID code directs an input command to its intended physical or data entity inside the NE. Equipment modules and facilities are typical examples of entities addressed by the access code. Table 2-12 lists the AIDs for the Cisco ONS 15540 ESP.

Table 2-12 AIDs for the Cisco ONS 15540 ESP

AID	Description
Slots	SLOT-[0–11] SLOT-[6–7] SLOT-[2–5, 8–11]-[0–3] SLOT-[0–1]-[0–3]
Interfaces	TRANSPARENT-[2–5, 8–11]-[0–3]-0 WAVE-[2–5, 8–11]-[0–3] WAVE-[0–1] FILTER-[2–5,8–11]-[0–3]-0 FILTER-[2–5,8–11]-[0–3]-[0–1] FILTER-[0–1]-[0–3]-[0–3] FILTER-[0–1]-[0–3]-[0–7] FILTER-[0–1]-[0–3]-[0–15] FILTER-[0–1]-[0–3]-[0–31] FILTERBAND-[0–1]-[0,2]-[0–1] FILTERGROUP-[0–1]-[0,2]-[0–1] OSCFILTER-[0–5,8–11]-[0–3] THRU-[0–1]-[0–3] THRU-[2–5,8–11]-[0–3] WDM-[0–1]-[0–3] WDM-[2–5,8–11]-[0–3] ETHERDCC-[2–5,8–11]-[0–1]-[0–1] FE-0 FE-SBY-0 LOOPBACK-[0–255]
Memory	BOOTFLASH SBY-BOOTFLASH DISK-[0–1] SBY-DISK-[0–1] NVRAM SBY-NVRAM PCMCIA-[0–1] SBY-PCMCIA-[0–1] SYSTEM

2.4 Errors

Errors may be generated by any command or command response message. The format of an error message is as follows:

SID DATE TIME
M CTAG DENY
<ERRCDE>
/* <ERRMSG> */

Table 2-13 lists the error codes and messages.

Table 2-13 Error Codes and Messages

Error Code	Error Message
EANS	Access not supported
EATN	Invalid for access type
EFON	Feature option not provided
EN2T	Not 2-wire terminate and leave
ENAC	Not equipped with alarm cutoff
ENAD	Not equipped with audit capability
ENAR	Not equipped with automatic reconfiguration
ENAT	Request invalid for access type
ENDG	Not equipped with diagnostic capability
ENDS	Not equipped with duplex switching
ENEA	Not equipped with error analysis capability
ENEQ	Not equipped
ENEX	Not equipped with exercise capability
ENFE	Feature not provided
ENFL	Not equipped for fault locating
ENHN	Not hybrid network
ENMB	Not multipoint bridge
ENMD	Not equipped with memory device
ENPM	Not equipped for performance monitoring
ENPS	Not equipped with protection switching
ENRE	Not recognized equipage
ENRI	Not equipped for retrieving specified information
ENRS	Not equipped for restoration
ENSA	Not equipped for scheduling audit
ENSG	Not software generic
ENSI	Not equipped for setting specified information
ENSS	Not equipped with synchronization switching
ENTL	Not terminate and leave
ERLC	Red-lined circuit
ERNS	RTU does not support command
ESPG	Software program
ETNS	TSC does not support command
FNCR	NE fail.-circuit restored to last cond.-mon-term[1]
FNDT	No dial tone detected
FNEC	NTE has lost 8-kHz byte clock
FNSC	NTE has lost 64-kHz bit clock

Table 2-13 Error Codes and Messages (continued)

Error Code	Error Message
FRCE	RTU component or configuration error
FRDA	RTU does not answer the call
FREC	RTU 8-kHz byte clock lost
FRNR	RTU does not reply
IBEX	Block, extra
IBMS	Block, missing
IBNC	Block, not consistent
ICNV[2]	Invalid command
IDMS	Data missing
IDNC	Data not consistent
IDNV	Data invalid
IDRG	Data range error
IEAE	Entity to be created already exists
IENE	Specified object entity does not exist
IIAC	Invalid access identifier (AID)
IICM[3]	Invalid command
IICT	Invalid correlation tag
IIDT	Invalid data parameter
IIFM	Invalid data format
IIPG	Invalid parameter grouping
IISP	Invalid syntax or punctuation
IITA	Invalid target identifier
INAC	Access number not correct
INUP	Non-null unimplemented parameter
IPEX	Parameter extra
IPMS	Parameter missing
IPNC	Parameter not consistent
IPNV	Parameter invalid
ISCH	Syntax invalid character
ISPC	Syntax punctuation
ITSN	Invalid/inactive test session number
PICC	Illegal command code
PIMA	Invalid memory address
PIMF	Invalid memory file
PIUC	Stated user privilege code is illegal
PLNA	Login not active

Table 2-13 Error Codes and Messages (continued)

Error Code	Error Message
RABY	All taps busy
RALB	All units of requested type are busy
RANB	Access network busy
RCBY	Circuit busy
RCIN	Requested circuit ID does not exist
RNAN	Requested NE access number does not exist
RNAU	Requested NE access number unassigned
RNBY	NE is busy
RRCB	Unit specified by routing code busy
RRNG	Requested change exceeds range
RTBY	Requested tap busy
RTEN	Requested tap does not exist
RTUB	Test unit busy
SAAL	Already allowed
SAAS	Already assigned
SABT	Aborted
SACS	Access unit cannot sync on facility signal
SADC	Already disconnected
SADS	Access unit in diagnostic state
SAIN	Already inhibited
SAIS	Already in-service
SAMS	Already in maintenance state
SAOP	Already operated
SAOS	Already out-of-service
SAPF	Access path continuity check failed
SAPR	Already in protection state
SARB	All resources busy
SATF	Automatic test failed
SCAT	Circuit is already connected to another tap
SCBS	Channel busy
SCIS	Circuit in split condition
SCNA	Command not able to be aborted
SCNF	Command not found
SCNS	Circuit not in split condition
SCOS	Channel out-of-service
SCSD	Cannot split DS0B circuit

Table 2-13 Error Codes and Messages (continued)

Error Code	Error Message
SCSN	Invalid command sequence
SDAS	Diagnosis already started
SDBE	Internal data base error
SDFA	Duplex unit failed
SDLD	Duplex unit locked
SDNA	Duplex unit not available
SDNC	Input data is not consistent with NE data
SDNR	Data not ready
SDNS	Diagnosis not started yet
SEOS	NTE is out-of-service
SFAS	Fault locating already started
SFNS	Fault locating not started yet
SFYA	Facility reports yellow alarm
SLNS	Log not started yet
SLOS	TSC to RTU link out-of-service
SNCC	Not cross-connected
SNCN	NTE unable to execute command
SNDS	NTE is in a diagnostic state
SNIM	NTE access complete, circuit was in monitor state
SNIS	Not in service
SNML	No monitor line established
SNNB	NTE could not sync on DS0B signal
SNNS	NTE could not sync on DS1 signal
SNOS	NTE is out-of-service
SNPR	Not in protection state
SNRM	System not in restoration mode
SNRS	Not reserved
SNSR	No switch request outstanding
SNVS	Not in valid state
SNYA	NTE has detected a yellow alarm
SOSE	Operating system error
SOST	Out-of-service, testing
SPFA	Protection unit failed
SPLD	Protection unit locked
SPNA	Process not able to be aborted
SPNF	Process not found

Table 2-13 Error Codes and Messages (continued)

Error Code	Error Message
SRAC	Requested access configuration is invalid
SRAN	Unable to release access system
SRCI	Requested command(s) inhibited
SRCN	Requested condition already exists
SROF	Requested operation failed
SROS	Required RTU out-of-service
SRQN	Invalid request
SRTN	Unable to release tap
SRTO	Reply timeout occurred
SSCE	Systemic (snider) communications error
SSNG	Subrate selected is incorrect
SSNP	Test signal not pseudo-random
SSNQ	Test signal not QRS
SSPN	Speed selected is incorrect
SSRD	Switch request denied
SSRE	System resources exceeded
SSTP	Execution stopped due to hardware or software problem
STAB	Test aborted
STLC	Tap unable to locate channel
STNO	TSC/RTU to TAU link out of service
STOS	Test access unit out of service
STTI	Tap idle
SWFA	Working unit failed
SWLD	Working unit locked

1. Network element failure. The circuit is restored to the last condition, monitor, or terminate and leave.
2. For historical reasons, ICNV and IICM have been left in as valid error codes even though from inspection they are not unique (descriptions for both say Invalid Command). ICNV and IICM are not the preferred error codes for invalid, that is, unsupported commands by a test system controller (TSC) or NE. Where possible, specific DENY messages associated with a particular command should be used. However, when used, the ICNV is appropriate for responses originating from a TSC, and IICM is the choice for an NE.
3. An identical error code found in GR-833-CORE (SNOS STATUS, NOT CURRENTLY OUT OF SERVICE) is omitted here and will be removed from the list of valid error codes in a subsequent issue of GR-833-CORE.

2.5 Commands by Category

Table 2-14 lists the TL1 commands for the Cisco ONS 15540 ESP by category.

Table 2-14 TL1 Commands by Category

Category	Command or Autonomous Message
Alarms and faults	ALW-MSG-ALL INH-MSG-ALL RTRV-ALM-ALL RTRV-ALM-ENV RTRV-COND-ALL RTRV-LOG
APS	ENT-FFP-OCH ED-FFP-OCH RTRV-FFP-OCH DLT-FFP-OCH OPR-PROTNSW-OCH RLS-PROTNSW-OCH
CDP	ED-NE-CDP RST-NE-CDP RTRV-NE-CDP RTRV-CDPNBR-OCH
Generic NE configuration	ED-NE-GEN RTRV-NE-GEN INIT-SYS SET-SID RTRV-HDR ED-DAT RTRV-TOD
IP configuration	ENT-IP ED-IP DLT-IP RTRV-IP ENT-IPROUTE-STATIC DLT-IPROUTE-STATIC RTRV-IPROUTE INIT-REG-ETH
Memory management	CPY-MEM DLT-MEM RST-MEM SQUEEZE-MEM FORMAT-MEM RTRV-MEM RTRV-FILE
NTP	SET-NTP ENT-NTPASSOC DLT-NTPASSOC RTRV-NTPASSOC RTRV-NTP

Table 2-14 TL1 Commands by Category (continued)

Category	Command or Autonomous Message
Optical parameter monitoring	RTRV-PM-rr SET-TH-rr SET-ATTR-rr RTRV-TH-rr RTRV-ATTR-rr
OSCP	ED-NE-OSCP RTRV-NE-OSCP
Patch configuration	ENT-PATCH DLT-PATCH RTRV-PATCH
Redundancy	SW-DX-EQPT ALW-SWDX-EQPT INH-SWDX-EQPT RTRV-EQPT RTRV-PM-EQPT
Security	ENT-USER-SECU ED-USER-SECU DLT-USER-SECU RTRV-USER-SECU ACT-USER CANC-USER ED-PID
Threshold list configuration	ENT-THR-OCH ED-THR-OCH DLT-THR-OCH RTRV-THR-OCH
Topology neighbor commands	ENT-NBR DLT-NBR RTRV-NBR
Transparent interface configuration	ED-OCH RTRV-OCH SET-PMMODE-OCH RTRV-PMMODE-OCH INIT-REG-OCH OPR-LPBK-OCH RLS-LPBK-OCH RTRV-PM-ENCAP

TL1 Commands

This chapter describes the TL1 commands used in the Cisco ONS 15540 ESP environment.

Each TL1 command must be less than or equal to 255 characters. Any command larger than 255 characters must be split into multiple commands

Note TL1 commands that are entered incorrectly are not completed.

3.1 ACT-USER: Activate User

Use this command to log into the NE (network element).

Section	ACT-USER Description
Category	Security
Security	Retrieve
Related Messages	3.4 CANC-USER: Cancel User 3.14 DLT-USER-SECU: Delete User Security 3.24 ED-USER-SECU: Edit User Security 3.32 ENT-USER-SECU: Enter User Security 3.73 RTRV-USER-SECU: Retrieve User Security
Input Format	ACT-USER:[<tid>]:<uid>:<ctag>::<pid>; Where: • <ctag> is the correlation tag. • <uid> is the user identifier. It is a text string with a maximum length of 16 characters. • <pid> is the user login password. It is a text string with a minimum length of six characters. • <tid> is the target identifier.
Input Example	To log into the NE, use the following: ACT-USER:ons155xx:admin:123::mypswd;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.2 ALW-MSG-ALL: Allow Message All

Use the command to transmit all REPT-ALM, REPT-EVT, and REPT-SW autonomous messages.

Section	ALW-MSG-ALL Description
Category	Alarms and faults
Security	Retrieve
Related Messages	3.34 INH-MSG-ALL: Inhibit Message All
Input Format	ALW-MSG-ALL:[<tid>]::<ctag>; • <ctag> is the correlation tag. • <tid> is the target identifier.
Input Example	To transmit all REPT ALM, REPT EVT, and REPT SW autonomous messages, use the following: ALW-MSG-ALL:ons155xx::123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.3 ALW-SWDX-EQPT: Allow Switch Duplex Equipment

Use this command to switch between active and standby processor cards.

Section	ALW-SWDX-EQPT Description
Category	Redundancy configuration
Security	Maintenance
Related Messages	3.35 INH-SWDX-EQPT: Inhibit Switch Duplex Equipment 3.80 SW-DX-EQPT: Switch Duplex Equipment
Input Format	ALW-SWDX-EQPT:[<tid>]:<aid>:<ctag>; Where: • <tid> is the target identifier. • <aid> is the access identifier. Valid values are SLOT-6 or SLOT-7. • <ctag> is the correlation tag.
Input Example	To switch between active and standby processor cards, use the following: ALW-SWDX-EQPT:ons155xx:SLOT-6:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.4 CANC-USER: Cancel User

Use this command to log out of the NE.

Section	CANC-USER Description
Category	Security
Security	Retrieve
Related Messages	3.1 ACT-USER: Activate User 3.14 DLT-USER-SECU: Delete User Security 3.24 ED-USER-SECU: Edit User Security 3.32 ENT-USER-SECU: Enter User Security 3.73 RTRV-USER-SECU: Retrieve User Security
Input Format	CANC-USER:[<tid>]:<uid>:<ctag>; Where: • <tid> is the target identifier. • <uid> is the user identifier. • <ctag> is the correlation tag.
Input Example	To log out of the NE, use the following: CANC-USER:ons155xx:admin:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.5 CPY-MEM: Copy Memory

Use this command to copy the contents from one memory location to another.

The AID of the memory device is specified in the <fromdev> and <todev> fields. Optionally, these fields can be set to NULL and the necessary information can be specified as part of the user defined text string in <frommem> and <tomem>.

Section	CPY-MEM Description
Category	Memory management
Security	Maintenance
Related Messages	3.33 FORMAT-MEM: Format Memory 3.43 RST-MEM: Restore Memory 3.57 RTRV-MEM: Retrieve Memory

Section	CPY-MEM Description
Input Format	CPY-MEM:[<tid>]::<ctag>::<frommem>,[<fromdev>],<tomem>,[<todev>]:[CMDMODE=<mode>]; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <frommem> specifies the name of the source file to copy. • <tomem> specifies the name of the target file to which to copy the contents of the file specified in <frommem>. • <fromdev> indicates the name of the source device from which a file is copied. • <todev> indicates the name of the target device to which a file is copied. • <mode> indicates the mode of operation. Valid values are FRCD or NORMAL. In FRCD mode of operation, any existing file is overwritten. In NORMAL mode of operation, if a file is already present by the name specified in <tomem>, the copy request is denied. The default mode is NORMAL. **Note** If this command is used to copy a file to a TFTP location, then the CMDMODE parameter is ignored and any existing file is overwritten.
Input Example	To copy the configuration from running-config to startup-config, use the following: CPY-MEM:ons155xx::123::“running-config”,,“startup-config”; **Note** The double quotes are optional in the previous example. To copy the configuration from a TFTP location, use the following: CPY-MEM:ons155xx::123::“tftp://172.20.46.50/admin/ons15540-i-mz”,,“bootflash:ons15540-i-mz”; To copy an image over from the bootflash memory to the Flash PC card in slot 0, use the following: CPY-MEM:ons155xx::123::“bootflash:ons15540-i-mz”,,“disk0:ons15540-i-mz”; To use the <fromdev> and <todev> parameters to specify the Flash PC devices involved, use the following: CPY-MEM:ons155xx::123::“ons15540-i-mz”,BOOTFLASH,“ons15540-i-mz”,DISK-0;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.6 DLT-FFP-OCH: Delete Facility Protection OCH

Use this command to delete a facility protection group.

This command behaves as if executed in forced mode. Upon deletion of a protection group, the system switches service to the working line, irrespective of the state of the working line.

Section	DLT-FFP-OCH Description
Category	APS
Security	Retrieve
Related Messages	3.16 ED-FFP-OCH: Edit Facility Protection 3.51 RTRV-FFP-OCH: Retrieve Facility Protection OCH
Input Format	DLT-FFP-OCH:[<tid>]:<wkg_aid>,<prot_aid>:<ctag>; Where: • <tid> is the target identifier. • <wkg_aid> is the working port AID. Valid values are WAVEPATCH-slot-subcard-port or TRANSPARENT-slot-subcard-0. • <prot_aid> is the protection port AID. Valid values are WAVEPATCH-slot-subcard-port or TRANSPARENT-slot-subcard-0. • <ctag> is the correlation tag.
Input Example	To delete a facility protection group, use the following: DLT-FFP-OCH:ons155xx:WAVEPATCH-2-0-0,WAVEPATCH-2-0-1:125;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.7 DLT-IP: Delete IP

Use this command to delete IP related configurations on the network management Ethernet port or the OSC interface.

Section	DLT-IP Description
Category	IP configuration
Security	Retrieve
Related Messages	3.8 DLT-IPROUTE-STATIC: Delete IP Route Static 3.17 ED-IP: Edit IP 3.26 ENT-IP: Enter IP 3.54 RTRV-IP: Retrieve IP 3.55 RTRV-IPROUTE: Retrieve IP Route 3.79 SQUEEZE-MEM: Squeeze Memory
Input Format	DLT-IP:[<tid>]:<aid>:<ctag>; Where: • <tid> is the target identifier. • <aid > is FE-0, FE-SBY-0, WAVE-slot, ETHERDCC-slot-subcard-0, or LOOPBACK-[0-255]. • <ctag> is the correlation tag.

Section	DLT-IP Description (continued)
Input Example	To delete IP-related configurations on the active NME port, use the following: DLT-IP:ons155xx:FE-0:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.8 DLT-IPROUTE-STATIC: Delete IP Route Static

Use this command to delete IP static routes.

Section	DLT-IPROUTE-STATIC Description
Category	IP configuration
Security	Provisioning
Related Messages	3.7 DLT-IP: Delete IP 3.17 ED-IP: Edit IP 3.26 ENT-IP: Enter IP 3.54 RTRV-IP: Retrieve IP 3.55 RTRV-IPROUTE: Retrieve IP Route 3.79 SQUEEZE-MEM: Squeeze Memory
Input Format	DLT-IPROUTE-STATIC:[<tid>]::<ctag>:::PREFIXADDR=<addr>, PREFIXMASK=<mask>, [ROUTEIF=<interface>],[ROUTEADDR=<routeaddr>]; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <addr> is the IP address. • <mask> is the IP subnet mask. • <interface> is the static route interface AID. • <routeaddr> is the static route IP address.
Input Example	To delete IP static routes, use the following: DLT-IPROUTE-STATIC:ons155xx::123:::PREFIXADDR=10.1.0.0, PREFIXMASK=255.255.0.0, ROUTEIF=WAVE-1;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.9 DLT-MEM: Delete Memory

Use this command to delete a file from memory specified by the AID.

The file is simply marked as deleted but not erased from memory.

Section	DLT-MEM Description
Category	Memory Management
Security	Provisioning
Related Messages	3.5 CPY-MEM: Copy Memory 3.43 RST-MEM: Restore Memory 3.57 RTRV-MEM: Retrieve Memory
Input Format	DLT-MEM:[<tid>]:<aid>:<ctag>:::FILENAME=<filename>; Where: • <tid> is the target identifier. • <aid> indicates the memory device from which the file is being deleted. Valid values are BOOTFLASH, DISK-[0–1], PCMCIA-[0–1], SBY-BOOTFLASH, SBY-DISK-[0–1], or SBY-PCMCIA-[0–1]. • <ctag> is the correlation tag. • <filename> is the filename.
Input Example	To delete a file from memory specified by the AID, use the following: DLT-MEM:ons155xx:DISK-0:123::“ons15540-i-mz”;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.10 DLT-NBR: Delete Neighbor

Use this command to delete neighbor entries for a port or to disable learning through CDP on a port.

If LINKDIRN is specified, then only the neighbor entry for that particular direction is deleted. Otherwise, all neighbor entries on the port are deleted.

Note When neighbors are discovered through CDP, LINKDIRN is always both and the value specified in LINKDIRN is ignored.

Section	DLT-NBR Description
Category	Topology neighbor configuration
Security	Maintenance
Related Messages	3.28 ENT-NBR: Enter Neighbor 3.58 RTRV-NBR: Retrieve Neighbor

Section	DLT-NBR Description (continued)
Input Format	DLT-NBR:[<tid>]:<aid>:<ctag>:::[LINKDIRN=<linkdirn>]; Where: • <aid> identifies the interface and can be one of the following: – TRANSPARENT-slot-subcard-0 – WDM-slot-subcard • <linkdirn > is the link direction. Both transmit and receive links of this port are connected to the neighbor specified by the rest of the command. – BOTH - The neighbor is on both the transmit and receive link of this port. BOTH is the default. – TX - The neighbor is on the transmit link of this port. – RX - The neighbor is on the receive link of this port. For direct links between nodes, LINKDIRN is set to BOTH because there is only one neighbor connected to the port. For configurations with an EDFA connected in one direction, use TX or RX, as appropriate, for the EDFA or neighboring node connected to the port.
Input Example	To delete a physical neighbor in the transmit direction, use the following: DLT-NBR:ons155xx:WDM-0-0:125:::LINKDIRN=TX;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.11 DLT-NTPASSOC: Delete NTP Associations

Use this command to delete an existing NTP association.

Section	DLT-NTPASSOC Description
Category	NTP
Security	Provisioning
Related Messages	3.29 ENT-NTPASSOC: Enter NTP Associations 3.62 RTRV-NTP: Retrieve NTP 3.63 RTRV-NTPASSOC: Retrieve NTP Associations
Input Format	DLT-NTPASSOC:[<tid>]::<ctag>:::ASSOCTYPE=<assoctype>, ASSOCIPADDR=<associpaddr>; • <tid> is the target identifier. • <ctag> is the correlation tag. • <assoctype> is the association type. Valid values are PEER or SERVER. • <associpaddr> is the association IP address.
Input Example	To delete an existing NTP association, use the following: DLT-NTPASSOC:ons155xx::123:::ASSOCTYPE=SERVER, ASSOCIPADDR=172.16.246.1;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.12 DLT-PATCH: Delete Patch

Use this command to delete a patch configuration.

The CTYPE value for an existing patch cannot be edited. You must delete the patch and create a new patch with the new CTYPE value.

Section	DLT-PATCH Description
Category	Patch configuration
Security	Provisioning
Related Messages	3.30 ENT-PATCH: Enter Patch 3.65 RTRV-PATCH: Retrieve Patch
Input Example	DLT-PATCH:<tid>:<from_aid>,<to_aid>:<ctag>; • <tid> is the target identifier. • <from_aid> identifies the port patched from, to the port identified by <to_aid>. Valid values for <from_aid> are as follows: – FILTER-slot-subcard-0 – OSCFILTER-slot-subcard – THRU-slot-subcard – WAVE-slot – WAVEPATCH-slot-subcard-port – WDM-slot-subcard • <to_aid> identifies the port patched to, from the port identified by <from_aid>. Valid values for <to_aid> are as follows: – FILTER-slot-subcard-0 – OSCFILTER-slot-subcard – THRU-slot-subcard – WAVE-slot – WAVEPATCH-slot-subcard-port – WDM-slot-subcard • <ctag> is the correlation tag.
Input Example	To delete a patch configuration, use the following: DLT-PATCH:ons155xx:WDM-0-0,THRU-0-0:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.13 DLT-THR-OCH: Delete Threshold OCH

Use this command to delete either a complete alarm threshold list or particular thresholds within a list.

When deleting particular thresholds from a list, both the ERRTYPE and THRTYPE parameters must be specified.

Section	DLT-THR-OCH Description
Category	Threshold list configuration
Security	Provisioning Maintenance
Related Messages	3.31 ENT-THR-OCH: Enter Thresholds OCH 3.70 RTRV-THR-OCH: Retrieve Thresholds OCH 3.71 RTRV-TH-rr: Retrieve Threshold 3.78 SET-TH-OCH: Set Optical Threshold
Input Format	DLT-THR-OCH:[<tid>]:<thrlistname>:<ctag>:::[ERRTYPE=<errtype>, THRTYPE=<thrtype>]; Where: • <tid> is the target identifier. • <thrlistname> specifies the threshold list. • <ctag> is the correlation tag. • <errtype> indicates the type of error counter to which the threshold applies. Valid values are as follows: – CVS - SONET/SDH section CV errors – CVRD - 8B/10B code violations and running disparity errors – CDLHEC - CDL HEC errors – CRC - Cyclic redundancy check errors • <thrtype> indicates the threshold type. Valid values are as follows: – DEGR - Indicates that a signal degrade condition has been reached. Use this threshold type only when <errtype> is CVS. – FAIL - Indicates that a signal failure conditionhas been reached. Use this threshold type only when <errtype> is CVS. – EVTTHR - Indicates that a non-service affecting condition has been reached. Use this threshold type when <errtype> is not CVS. – ALMTHR - Indicates that a service affecting condition has been reached. Use this threshold type when <errtype> is not CVS.
Input Example	To delete the threshold list or particular thresholds, use the following: DLT-THR-OCH:ons155xx:sonet-cvs:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.14 DLT-USER-SECU: Delete User Security

Use this command to delete an existing user account.

Section	DLT-USER-SECU Description
Category	Security
Security	Retrieve
Related Messages	3.1 ACT-USER: Activate User 3.4 CANC-USER: Cancel User 3.24 ED-USER-SECU: Edit User Security 3.32 ENT-USER-SECU: Enter User Security 3.73 RTRV-USER-SECU: Retrieve User Security
Input Format	DLT-USER-SECU:[<tid>]:<uid>:<ctag>; Where: • <tid> is the target identifier. • <uid> is the user identifier. • <ctag> is the correlation tag.
Input Example	To delete an existing user account, use the following: DLT-USER-SECU:ons155xx:admin:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.15 ED-DAT: Edit Date

Use this command to edit the date and time on the NE.

Section	ED-DAT Description
Category	Generic NE configuration
Security	Provisioning
Related Messages	3.53 RTRV-HDR: Retrieve Header 3.72 RTRV-TOD: Retrieve Time of Day
Input Format	ED-DAT:[<tid>]::<ctag>::[<date>],[<time>]; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <date> is the current date. The format is YY-MM-DD. • <time> is the current time. The format is HH-MM-SS.
Input Example	To edit the date and time on the NE, use the following: ED-DAT:ons155xx::123::03-02-11;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.16 ED-FFP-OCH: Edit Facility Protection

Use this command to edit the attributes associated with an already created optical 1+1 protection channel and to put the protection group in-service or out-of-service. When the protection group is put out-of-service, then the currently active path continues to remain as the active path.

Section	ED-FFP-OCH Description
Category	APS
Security	Retrieve
Related Messages	3.6 DLT-FFP-OCH: Delete Facility Protection OCH 3.51 RTRV-FFP-OCH: Retrieve Facility Protection OCH
Input Format	ED-FFP-OCH:[<tid>]:<wkg_aid>,<prot_aid>:<ctag>:::[PROTID=<protid>], [PSDIRN=<psdirn>], [RVRTV=<rvrtv>],[RVRTM=<rvrtm>], [YCABLE=<ycable>],[ENSWOTM=<enswotm>], [MSGCH=<msgch>], [MSGHOLDTM=<msgholdtm>], [MSGHOLDCOUNT=<msgholdcount>], [MSGMAXINTVTM=<msgmaxintvtm>], [FENDPROTID=<fendprotid>], [FENDIPADDR=<fendipaddr>]: [<pst>]; Where: • <tid> is the target identifier. • <wkg_aid> is the working port AID. Valid values are WAVEPATCH-slot-subcard-port or TRANSPARENT-slot-subcard-0. • <prot_aid> is the protection port AID. Valid values are WAVEPATCH-slot-subcard-port or TRANSPARENT-slot-subcard-0. • <ctag> is the correlation tag. • <protid> is the protection group identifier. It is a case-sensitive string and can have a maximum of 32 characters. If <protid> is not specified, a protection group name is created with the name of the <wkg_aid>. • <psdirn> is the protection switch direction. Switching mode. Valid values are UNI (unidirectional) and BI (bidirectional). The default is UNI. • <rvrtv> specifies the revertive mode. This feature applies only to y-cable protection. Valid values are Y or N. The default is N. • <rvrtm> is the revertive timer, which applies only if the revertive mode is enabled. The revertive timer specifies the interval to wait before performing a r revertive switch. The range is 0 to 720 seconds. The default is 300 seconds. • <ycable> specifies the y-cable mode. This parameter indicates whether the type of protection is y-cable or not. Valid values are Y or N. The default is N. • <enswotm> is the switchover enable timer. This timer is used to delay reenabling of auto-failover to prevent rapid switching between the standby and active links. The range of values is1 to 120 seconds. The default is 2 seconds.

Section	ED-FFP-OCH Description (continued)
Input Format (continued)	• <msgch> APS Message Channel. This parameter is used to configure the type of transport channel used to exchange APS protocol messages. Valid values are as follows: – DCC - APS messages are transmitted over the data communications channels (DCCs) in the overhead of the associated channels. – OSC - APS messages are transmitted over the Optical Supervisory Channel. – AUTO - APS automatically selects a transport mechanism to send APS messages. The DCC and OSC transport mechanisms are attempted. – IP - APS messages are transmitted over IP. The IP network can consist of any combination of DCCs, OSCs and out-of-band data communication networks (DCNs). The default is AUTO. • <msgholdtm> is the APS message channel holddown timer. This parameter specifies the minimum time between successive event-triggered APS messages, in units of milliseconds. The range is 100 to 10,000 milliseconds. The default is 5000 milliseconds. • <msgholdcount> is the APS channel message holddown count. This parameter is specifies the maximum number of APS messages that can be sent within one MSGHOLDTM interval. The range is 2 to 10 messages. The default is 2 messages. • <msgmaxintvtm> is the APS channel message maximum interval timer. An APS message is sent unconditionally, whenever the interval specified has elapsed since the last transmission of an APS message. The range is 1 to 120 seconds. The default is 15 seconds. • <fendprotid> is the far-end protection ID. This parameter is a case-sensitive string specifying the APS group at the far-end NE to which the message is being sent over DCC, IP, or OSC message channels. • <fendipaddr> is the far-end IP Address. This parameter is specifies the IP address of the far-end NE, which is used as destination address when APS messages are transmitted over IP message channel. • <pst> is the primary state, used to administratively control the state of the interface, whether it is IS (in-service) or OOS (out-of-service). It also controls the state of the laser on this interface. The default value is IS. When an interface is administratively shut down, the laser on the interface still sends management and control information. The laser needs to be shut down explicitly. To shut down the interface alone, use OOS-MA as the PST value. To shut down the laser as well, use the PST value of OOS-MA and SST value of LASERSHUT.
Input Example	To enable a previously configured APS group, use the following: ED-FFP-OCH:ons155xx:WAVEPATCH-2-0-0,WAVEPATCH-2-0-1:123:::: IS;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.17 ED-IP: Edit IP

Use this command to edit the IP address and mask on the network management Ethernet port or the OSC wave interface.

Note This command cannot be used to change an unnumbered interface configuration. To modify an unnumbered interface configuration, delete the existing configuration using the DLT-IP command and reconfigure using the ENT-IP command.

Section	ED-IP Description
Category	IP configuration
Security	Retrieve
Related Messages	3.7 DLT-IP: Delete IP 3.8 DLT-IPROUTE-STATIC: Delete IP Route Static 3.26 ENT-IP: Enter IP 3.54 RTRV-IP: Retrieve IP 3.55 RTRV-IPROUTE: Retrieve IP Route 3.79 SQUEEZE-MEM: Squeeze Memory
Input Format	ED-IP:[<tid>]:<aid>:<ctag>:::IPADDR=<addr>,IPMASK=<mask>; Where: • <tid> is the target identifier. • <aid> is the access identifier. Valid values are FE-0, SBY-FE-0, or WAVE-slot. • <ctag> is the correlation tag. • <addr> is the IP address. • <mask> is the IP subnet mask.
Input Example	Assuming that an IP address was previously configured on the FE-0 interface, to change the address and mask values, use the following: ED-IP:ons155xx:FE-0:123:::IPADDR=172.16.30.10, IPMASK=255.255.0.0;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.18 ED-NE-CDP: Edit Network Element CDP

Use this global level CDP command to edit CDP attributes for the entire system.

Section	ED-NE-CDP Description
Category	CDP
Security	Provisioning
Related Messages	3.59 RTRV-NE-CDP: Retrieve Network Element CDP

Section	ED-NE-CDP Description (continued)
Input Format	ED-NE-CDP:[<tid>]::<ctag>:::[CDP=<cdp>],[UPDATETIME=<updatetime>], [HOLDTIME=<holdtime>],[SENDVER=<sendver>]; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <cdp> enables or disables CDP at the NE level. Valid values are Y or N. The default value is Y. • <updatetime> specifies how often the NE sends CDP packets. Valid values range from 5 to 254 seconds. The default value is 60 seconds. • <holdtime> sets the time for which a received CDP packet must be held before discarding. Valid values range from 10 to 255 seconds. The default value is 180 seconds. **Note** The holdtime should not be set to a value less than the updatetime value. • <sendver> indicates the highest version of CDP packets being sent. Valid values are 1 or 2. If SENDVER is 2, then both CDP version 1 and version 2 are sent by the NE. If SENDVER is 1, then only CDP version 1 packets are sent by the NE. The default is 2.
Input Example	To edit CDP attributes for the NE, use the following: ED-NE-CDP:ons155xx::123::UPDATETIME=30,HOLDTIME=90;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.19 ED-NE-GEN: Edit Network Element General

Use this command for generic NE configurations.

Section	ED-NE-GEN Description
Category	Generic NE configuration
Security	Retrieve
Related Messages	3.60 RTRV-NE-GEN: Retrieve Generic NE Configuration Values
Input Format	ED-NE-GEN:[<tid>]::<ctag>:::[CFGREG=<configregval>]; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <cfgregval> is the string value that specifies the configuration register setting in hexadecimal.

Section	ED-NE-GEN Description (continued)
Input Example	To edit general NE configurations, use the following: ED-NE-GEN:ons155xx::123:::CFGREG=0x0;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.20 ED-NE-OSCP: Edit Network Element OSCP

Use this command to configure the OSCP protocol.

Section	ED-NE-OSCP Description
Category	OSCP
Security	Provisioning
Related Messages	3.61 RTRV-NE-OSCP: Retrieve Network Element OSCP
Input Format	ED-NE-OSCP:[<tid>]::<ctag>:::[HELLOINTV=<hello_intv>],[HELLOHLDWN=<hldwn_time>],[INACTFCTR=<factor>]; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <hello_intv> is the Hello interval. It is the time between successive Hello packets in msec. Valid values range from 100 to 10,000 milliseconds. The default value is 200 milliseconds. • <hldwn_time> is the Hello hold down timer. It is the time interval for which no more than one Hello packet can be sent. Valid values range from 150 to 30,000 milliseconds. The default value is 3000 milliseconds. • <factor> is the inactivity factor. It is the number of Hello intervals to wait before declaring a link as down. Valid values range from 1 to 150. The default value is 5.
Input Example	To configure OSCP protocol parameters, use the following: ED-NE-OSCP:ons155xx::123:::HELLOINTV=500,HELLOHLDWN=200,INACTFCTR=10;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.21 ED-OCH: Edit Optical Channel

Use this command to configure attributes on a transparent interface.

Section	ED-OCH Description
Category	Transparent interface configuration
Security	Provisioning

Section	ED-OCH Description (continued)
Related Messages	3.64 RTRV-OCH: Retrieve Optical Channel 3.39 OPR-LPBK-OCH: Operate Loopback OCH 3.64 RTRV-OCH: Retrieve Optical Channel
Input Format	ED-OCH:[<tid>]:<aid>:<ctag>:::[ENCAP=<encap>],[RATE=<rate>],[FLC=<flc>,[LSC=<lsc>],[OFC=<ofc>],[THRLISTNAME=<name>],[CDP=<cdp>],[LASERFREQ=<laserfreq>]:[<pst>]; Where: • <tid> is the target identifier. • <aid> indicates the interface configured. Valid values of AID are TRANSPARENT-slot-subcard-0, WAVE-slot-subcard, WAVE-slot, WAVEPATCH-slot-subcard-port and ETHERDCC-slot-subcard-port. • <encap> indicates the protocol encapsulation configured on the transparent interface only. Valid values are as follows: – OC3 – OC12 – OC48 – STM1 – STM4 – STM16 – ESCON – FE – FDDI – FICON-1G – FICON-2G – FC-1G – FC-2G – SYSPLEX-CLO – SYSPLEX-ETR – SYSPLEX-ISC-COMP – SYSPLEX-ISC-PEER – GIGE – UNKNOWN **Note** The default value is UNKNOWN. This parameter can be modified only when the interface is in the OOS state or when it is being brought down to OOS state in the same command. • <rate> indicates the clock rate being configured on a transparent interface. This parameter is configured only when the encapsulation is set to UNKNOWN.

Section	ED-OCH Description (continued)
Related Messages	3.64 RTRV-OCH: Retrieve Optical Channel 3.39 OPR-LPBK-OCH: Operate Loopback OCH 3.64 RTRV-OCH: Retrieve Optical Channel
Input Format	ED-OCH:[<tid>]:<aid>:<ctag>:::[ENCAP=<encap>],[RATE=<rate>],[FLC=<flc>,[LSC=<lsc>],[OFC=<ofc>],[THRLISTNAME=<name>],[CDP=<cdp>],[LASERFREQ=<laserfreq>]:[<pst>]; Where: • <tid> is the target identifier. • <aid> indicates the interface configured. Valid values of AID are TRANSPARENT-slot-subcard-0, WAVE-slot-subcard, WAVE-slot, WAVEPATCH-slot-subcard-port and ETHERDCC-slot-subcard-port. • <encap> indicates the protocol encapsulation configured on the transparent interface only. Valid values are as follows: – OC3 – OC12 – OC48 – STM1 – STM4 – STM16 – ESCON – FE – FDDI – FICON-1G – FICON-2G – FC-1G – FC-2G – SYSPLEX-CLO – SYSPLEX-ETR – SYSPLEX-ISC-COMP – SYSPLEX-ISC-PEER – GIGE – UNKNOWN **Note** The default value is UNKNOWN. This parameter can be modified only when the interface is in the OOS state or when it is being brought down to OOS state in the same command. • <rate> indicates the clock rate being configured on a transparent interface. This parameter is configured only when the encapsulation is set to UNKNOWN.

Section	ED-OCH Description (continued)
Input Format (continued)	• <flc> enables and disables forward laser control. If forward laser control is enabled, the transmit laser is shut down when the cross connect receive port on the switch is in alarm condition. Valid values are Y or N. The default is N. • <lsc> enables or disables laser safety control. The LSC parameter can be configured on wave interfaces only when the carrier boards have no optical splitter. If laser safety control is enabled, the transmit laser on the trunk side is shut down when the receive signal is not available on the fiber. Valid values are Y or N. The default value is N. • <ofc> enables or disables the OFC (open fibre control) safety protocol. The OFC parameter can be modified only when the encapsulation is FC-1G, FC-2G, or FICON and applies to transparent interfaces only. Valid values are Y or N. The default value is N. • <thrlistname> refers to the name entered using the ENT-THR-OCH command. The threshold list sets thresholds for errors monitored on this interface. The ampersand (&) operator associates multiple threshold lists with an interface. To delete a threshold list from an interface, a null value should be passed for that particular list, using the ED-OCH command. • <cdp> enables or disables CDP (Cisco Discovery Protocol) on this port. It applies to the WAVE-slot (OSC) and ETHERDCC ports only. Valid values are Y or N. The default is Y. • <laserfreq> specifies the transmit frequency transponder modules capable of generating more than one laser frequency. The frequency is represented in GHz. This parameter applies only to WAVE-slot-subcard AIDs and can be modified only when the interface is in the OOS (out-of-service) state or when it is brought down to OOS state with this command. The default is the lower frequency for the transponder module. • <pst> is the primary state. The value set in this state determines if the interface is shut down or active. IS (in-service) renders the interface administratively up. OOS is used to administratively shut down the interface. The default value is OOS.

Section	ED-OCH Description (continued)
Input Example	To configure SONET OC-12 service, enable FLC, and associate the threshold list named “sonet-cvs” on the transparent interface in slot 3, subcard 0, use the following: ED-OCH:ons155xx:TRANSPARENT-3-0-0:123:::ENCAP=OC12,FLC=Y, THRLISTNAME=sonet-cvs; To configure wave interface in slot 2, subcard 0, with FLC and LSC enabled, use the following: ED-OCH:ons155xx:WAVE-2-0:123:::THRLISTNAME=sonet-cvs,FLC=Y, LSC=Y, LASERFREQ=159800; To configure an unknown protocol with a rate of 125,000 Kbps on a transparent interface in slot 2, subcard 0, use the following: ED-OCH:ons155xx:TRANSPARENT-2-0-0:123:::ENCAP=UNKNOWN, RATE=125000; To enable or disable OFC safety protocol on a transparent interface in slot 2, subcard 0, use the following: ED-OCH:ons155xx:TRANSPARENT-2-0-0:123:::ENCAP=FC-1G,OFC=Y;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.22 ED-PID: Edit Password

Use this command to edit your own password.

Section	ED-PID Description
Category	Security
Security	Provisioning
Related Messages	3.1 ACT-USER: Activate User, page 3-1
Input Format	ED-PID:[<tid>]:<uid>:<ctag>::<oldpid>,<newpid>; Where: • <tid> is the target identifier. • <uid> is the user identifier, a string value with a maximum size of 64 characters. • <ctag> is the correlation tag. • <oldpid> is the old password, which is a string with a maximum size of 25 characters. • <newpid> is the new user login password which is a string with a maximum size of 25 characters.
Input Example	To edit your own password, use the following: ED-PID:ons155xx:admin:123::mypswd,newpswd;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.23 ED-THR-OCH: Edit Thresholds OCH

Use this command to edit the parameters for an existing threshold in a list.

Section	ED-THR-OCH Description
Category	Threshold list configuration
Security	Retrieve
Related Messages	3.70 RTRV-THR-OCH: Retrieve Thresholds OCH 3.78 SET-TH-OCH: Set Optical Threshold
Input Format	ED-THR-OCH:[<tid>]:<thrlistname>:<ctag>:::ERRTYPE=<errtype>, THRTYPE=<thrtype>, [VALUE=<value>], [TRGAPS=<trgaps>], [DESCR=<descr>]; where: • <tid> is the target identifier. • <thrlistname> indicates the name of the threshold list being edited. • <ctag> is the correlation tag. • <errtype> indicates the type of error counter to which the threshold applies. Possible values are as follows: – CVS – SONET section CV errors – CVRD – 8B/10B code violations and running disparity errors – CDLHEC – CDL HEC errors – CRC – Cyclic redundancy check errors • <thrtype> indicates the threshold type. Valid values are as follows: – DEGR - Indicates that a signal degrade condition has been reached. Use this threshold type only when <errtype> is CVS. – FAIL - Indicates that a signal failure conditionhas been reached. Use this threshold type only when <errtype> is CVS. – EVTTHR - Indicates that a non-service affecting condition has been reached. Use this threshold type when <errtype> is not CVS. – ALMTHR - Indicates that a service affecting condition has been reached. Use this threshold type when <errtype> is not CVS. • <value> specifies the threshold. If the value assigned here is x, the actual threshold is in the form of 10^{-x}. • <trgaps> is a trigger APS, such as protection switch on threshold exceeding. Valid values are Y or N. The default value is Y when ERRTYPE is CVS and is N for all other ERRTYPE values. • <index> is an integer value used to uniquely identify a particular threshold within a list of thresholds. The range is 1 to 64. When no value is specified for this parameter, the index for the threshold being created defaults to the lowest available index in that threshold list. • <descr> is a string used to assign a description to the threshold that is being configured. The maximum length of this string is 255 characters.

Section	ED-THR-OCH Description (continued)
Input Example	To edit the parameters for an existing threshold in a list, use the following: ED-THR-OCH:ons155xx:sonet-cvs:123:::ERRTYPE=CVS,THRTYPE=DEG, VALUE=5;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.24 ED-USER-SECU: Edit User Security

Use this command to edit the user identifier, password, or privilege levels associated with a user.

Note Only a superuser can perform this function.

Section	ED-USER-SECU Description
Category	Threshold list configuration
Security	Retrieve
Related Messages	3.1 ACT-USER: Activate User 3.14 DLT-USER-SECU: Delete User Security 3.32 ENT-USER-SECU: Enter User Security 3.73 RTRV-USER-SECU: Retrieve User Security
Input Format	[<tid>]:<uid>:<ctag>::<newuid>,<newpid>,,<uap>; Where: • <tid> is the target identifier. • <uid> user identifier, a string value with a maximum size of 64 characters. • <ctag> is the correlation tag. • <newuid> is the new value of the user identifier. It replaces the old value indicated by the <uid>. This field has the same format as the <uid> field. • <uap> is the user access privilege level. Valid values are as follows: – MAINT - maintenance level – PROV - provisioning level – RTRV - retrieve level – SUPER - superuser level
Input Example	To edit the user identifier, password, or privilege levels associated with a user, use the following: ED-USER-SECU:ons155xx:admin:123::sonalm,password,,PROV;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.25 ENT-FFP-OCH: Enter Optical Protection

Use this command to configure splitter protection, line card protection, and trunk fiber based protection.

Section	ENT-FFP-OCH Description
Category	APS
Security	Retrieve
Related Messages	3.6 DLT-FFP-OCH: Delete Facility Protection OCH 3.51 RTRV-FFP-OCH: Retrieve Facility Protection OCH
Input Format	ENT-FFP-OCH:[<tid>]:<wkg_aid>,<prot_aid>:<ctag>:::[PROTID=<protid>], [PSDIRN=<psdirn>], [RVRTV=<rvrtv>],[RVRTM=<rvrtm>], [YCABLE=<ycable>],[ENSWOTM=<enswotm>], [MSGCH=<msgch>],[MSGHOLDTM=<msgholdtm>], [MSGHOLDCOUNT=<msgholdcount>], [MSGMAXINTVTM=<msgmaxintvtm>], [FENDPROTID=<fendprotid>], [FENDIPADDR=<fendipaddr>]: [<pst>]; Where: • <tid> is the target identifier. • <wkg_aid> is the working port AID. For splitter protection, the AID is in the form WAVEPATCH-slot-subcard-port, where port equals 0 or 1. For y-cable protection, the AID is of the form TRANSPARENT-slot-subcard-0. • <prot_aid> is the protection port AID. For splitter protection, the AID refers to the wavepatch interface. Hence, the AID is of the form wavepatch-slot-subcard-port, where port equals 0 or 1. For the y-cable protection scheme, the AID is of the form TRANSPARENT-slot-subcard-0. • <ctag> is the correlation tag. • <protid> is the protection group identifier or protection group name. The string can have a maximum of 32 characters. If <protid> is not specified, a protection group name is created with the name of the wkg_aid. • <psdirn> is the switching mode. Valid values are UNI (unidirectional) and BI (bidirectional). The default is UNI. • <rvrtv> is the revertive mode that applies only if monitoring in the standby state is supported. Valid values are Y or N. The default is N. If the value is Y, then the protection switching system reverts service to the active line after restoration. • <rvrtm> is the revertive timer that applies only if the mode is revertive and specifies the wait interval for revertive switching. The range is 0 to 720 seconds. The default is 300 seconds. • <ycable> specifies whether the type of protection is y-cable or not. Valid values are Y or N. The default is N. • <enswotm> specifies the switchover-enable timer. The timer delays re-enabling of auto-failover (to prevent rapid switching between standby and active states). The range is 1 to 120 seconds and the default is two seconds.

Section	ENT-FFP-OCH Description (continued)
Input Format (continued)	• <msgch> specifies the APS message channel. This parameter configures the type of transport channel used to exchange APS protocol messages. Valid values are as follows: – DCC - APS messages are transmitted over the data communications channels (DCCs) in the overhead of the associated channels. – OSC - APS messages are transmitted over the optical supervisory channel. – AUTO - APS automatically selects a transport mechanism to send APS messages. DCC and OSC are attempted. – IP - APS messages are transmitted over IP. The IP network can consist of any combination of DCCs, OSCs and out-of-band Data Communication Networks (DCNs). The default is AUTO. • <msgholdtm> specifies the APS message channel holddown time. This parameter specifies the minimum time between successive event-triggered APS messages in units of milliseconds. The range is 100 to 10000 milliseconds. The default is 5000 milliseconds. • <msgholdcount> specifies APS channel message holddown count. This parameter specifies the maximum number of APS messages that can be sent within one MSGHOLDTM interval. The range is 2 to 10 messages.The default is 2 messages. • <msgmaxintvtm> specifies the APS channel message maximum interval time. An APS message is sent unconditionally whenever the amount of time specified by this object has elapsed since the last transmission of an APS message. The range is 1 to 120 seconds. The default is 15. • <fendprotid> is the far-end protection identifier. This parameter is a case-sensitive string specifying the APS group at the far-end NE to which the message is being sent over DCC, IP, or OSC message channels. • <fendipaddr> specifies the far end IP address This parameter specifies the IP address of the far end, which is used as the destination address when APS messages are transmitted. • <pst> is the primary state. It sets the protection group to be in service or out of service, upon creation. Valid values are IS (in-service) and OOS (out-of-service). OOS-MA (OOS for maintenance) is implied. The default is IS.
Input Example	To configure splitter protection, use the following: ENT-FFP-OCH:ons155xx:WAVEPATCH-2-0-0,WAVEPATCH-2-0-1:123::: PROTID=switch1-aps,PSDIRN=BI:OOS; To configure y-cable protection, use the following: ENT-FFP-OCH:ons155xx:TRANSPARENT-3-0-0,TRANSPARENT-4-0-0::: PROTID=switch2-aps,RVRTV=Y,RVRTM=6,ENSWOTM=10,YCABLE=Y;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.26 ENT-IP: Enter IP

Use this command to configure the network management Ethernet port or the OSC interface.

Section	ENT-IP Description
Category	IP configuration
Security	Retrieve
Related Messages	3.7 DLT-IP: Delete IP 3.8 DLT-IPROUTE-STATIC: Delete IP Route Static 3.17 ED-IP: Edit IP 3.27 ENT-IPROUTE-STATIC: Enter Static Routes 3.54 RTRV-IP: Retrieve IP
Input Format	ENT-IP:[<tid>]:<aid>:<ctag>:::IPADDRTYPE=<addr_type>,[IPADDR=<addr>],[IPMASK=<mask>],[IPUNIF=<interface>]; Where: • <tid> is the target identifier. • <aid > is the access identifier. Valid values are FE-0, FE-SBY-0, WAVE-slot, ETHERDCC-slot-subcard-0, or LOOPBACK-[0-255]. If the AID is LOOPBACK-port, then the loopback interface is created and the parameters are assigned to it. • <ctag> is the correlation tag. • <addr_type> specifies the address type. This parameter has one of the following values: – ADDR indicates that the IP address is specified. – UNMBR indicates that the unnumbered interface is specified. • <addr> indicates the IP address. This parameter is mandatory if IPADDRTYPE is set to ADDR. • <mask> indicates the IP address subnet mask and is mandatory if IPADDRTYPE is set to ADDR. • <interface> shows the AID of the unnumbered interface and is mandatory if IPADDRTYPE is set to UNMBR. Applicable interfaces are as explained in the earlier <aid> description. **Note** If the unnumbered and LOOPBACK-0 combination is used, the AID can be only WAVE-slot or ETHERDCC-slot-subcard-0.
Input Example	To configure an IP address on a network management interface, use the following: ENT-IP:ons155xx:FE-0:123:::IPADDRTYPE=ADDR, IPADDR=172.16.42.110, IPMASK=255.255.255.0; To unnumber WAVE-1-0 to LOOPBACK-0 interface, use the following: ENT-IP:ons155xx:WAVE-1-0:123:::IPADDRTYPE=UNMBR, IPUNIF=LOOPBACK-0;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.27 ENT-IPROUTE-STATIC: Enter Static Routes

Use this command to create static routes.

Section	ENT-IPROUTE-STATIC Description
Category	IP configuration
Security	Retrieve
Related Messages	3.8 DLT-IPROUTE-STATIC: Delete IP Route Static 3.55 RTRV-IPROUTE: Retrieve IP Route
Input Format	ENT-IPROUTE-STATIC:[<tid>]:<ctag>:::PREFIXADDR=<addr>, PREFIXMASK=<mask>, [ROUTEIF=<interface>], [ROUTEADDR=<routeaddr>]; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <addr> specifies the prefix IP address for the static route. • <mask> specifies the prefix mask. • <interface> specifies the AID of the routing interface. • <routeaddr > specifies the IP address of the routing interface **Note** At least one of the two parameters, ROUTEIF or ROUTEADDR, needs to be specified. There is no Edit command associated with the Enter command. If any of the parameters associated with the static route needs to be changed, the entire route needs to be deleted and a new route created.
Input Example	To configure a static route for a particular address through the OSC WAVE-0 port, use the following: ENT-IPROUTE-STATIC:ons155xx::123:::PREFIXADDR=10.1.0.0, PREFIXMASK=255.255.0.0, ROUTEIF=WAVE-0;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.28 ENT-NBR: Enter Neighbor

Use this command to configure a physical neighbor on a port.

Section	ENT-NBR Description
Category	Topology neighbor configuration
Security	Provisioning
Related Messages	3.10 DLT-NBR: Delete Neighbor 3.58 RTRV-NBR: Retrieve Neighbor

Section	ENT-NBR Description (continued)
Input Format	ENT-NBR:[<tid>]:<aid>:<ctag>:::DSCVRY=<dscvry>, [LINKDIRN=<linkdirn>], [NBRNAME=<nbrname>], [NBRPORT=<nbrport>], [NBRAGENTIP=<nbragentip>], [PRXYPORT=<prxyport>]; Where: • <tid> is the target identifier. • <aid> identifies the interface and can be one of the following: – TRANSPARENT-slot-subcard-0 – WDM-slot-subcard • <dscvry> specifies the means of discovery of this neighbor. It could have one of the following values: – CDP - The neighbor information learned dynamically through CDP. – MANUAL - The neighbor information manually entered by the user. **Note** When CDP is specified, LINKDIRN defaults to both and other parameters should not be entered. • <linkdirn > is the link direction. Both transmit and receive links of this port are connected to the neighbor specified by the rest of the command. – TX - The neighbor is on the transmit link of this port. – RX - The neighbor is on the receive link of this port. For direct links between nodes, the LINKDIRN is both and there can be only one neighbor configured on the port. If an EDFA is connected to one direction of the port, there can be two neighbors, one configured for LINKDIRN = TX and the other for LINKDIRN = RX. • <nbrname> is the name of the neighbor NE. The string has a maximum 64 characters and is suggested that this be the <tid> of the neighbor NE. • <nbrport> is the name of the port on the neighbor NE. The string has a maximum 32 characters and is suggested that this be the <aid> of the port to which the local port is connected. • <nbragentip> is the IP address of the management agent on the neighbor. String has a maximum of 32 characters. • <prxyport> specifies the AID of the proxy port. This parameter is valid only when DSCVRY = CDP. In the case of external ports that do not run CDP on their own, but are intranode connected to a port running CDP, then physical topology on the external port can be learned through CDP running on the proxy port specified through this parameter. Valid AIDs are as follows: – WAVE-slot (the OSC wave port) – ETHERNETDCC-slot-subcard-port.

Section	ENT-NBR Description (continued)
Input Example	To manually configure a physical neighbor on a port, use the following: ENT-NBR:ons155xx:WDM-0-0:123:::DSCVRY=MANUAL,LINKDIRN=RX, NBRNAME=shelf2,NBRPORT=WDM-0-0, NBRAGENTIP=172.16.20.1; To discover a physical neighbor enabling CDP on a port, use the following: ENT-NBR:ons155xx:WDM-0-0:100:::DSCVRY=CDP, PRXYPORT=WAVE-0;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.29 ENT-NTPASSOC: Enter NTP Associations

Use this command to configure NTP associations for synchronizing system clocks over the network. Two types of associations can be created:

- Peer - The system synchronizes to a peer system and allows the peer to synchronize as well.
- Server - The system synchronizes to the server, but not the other way around.

Note More than one association can be specified through multiple invocations of this command.

Section	ENT-NTPASSOC Description
Category	NTP
Security	Provisioning
Related Messages	3.11 DLT-NTPASSOC: Delete NTP Associations 3.63 RTRV-NTPASSOC: Retrieve NTP Associations
Input Format	ENT-NTPASSOC:[<tid>]::<ctag>:::ASSOCTYPE=<assoctype>, ASSOCIPADDR=<associpaddr>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <assoctype> indicates the type of association. Valid values are SERVER and PEER. • <associpaddr> specifies the IP address of the server or peer.
Input Example	To configure an NTP server association, use the following: ENT-NTPASSOC:ons155xx::123:::ASSOCTYPE=SERVER, ASSOCIPADDR=172.16.246.1;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.30 ENT-PATCH: Enter Patch

Use this command to configure patches between ports on the same network element.

Section	ENT-PATCH Description
Category	Patch configuration
Security	Provisioning
Related Messages	3.12 DLT-PATCH: Delete Patch 3.65 RTRV-PATCH: Retrieve Patch
Input Format	ENT-PATCH:[<tid>]:<from_aid>,<to_aid>:<ctag>::[<ctype>]; Where: • <tid> is the target identifier. • <from_aid> identifies the port you patched from to the port identified by <to_aid>. Valid values for <from_aid> are as follows: – FILTER-slot-subcard-0 – OSCFILTER-slot-subcard – THRU-slot-subcard – WAVE-slot – WAVEPATCH-slot-subcard-port – WDM-slot-subcard • <to_aid> identifies the port you patched from the port identified by <from_aid>. Valid values for <to_aid> are as follows: – FILTER-slot-subcard-0 – OSCFILTER-slot-subcard – THRU-slot-subcard – WAVE-slot – WAVEPATCH-slot-subcard-port – WDM-slot-subcard • <ctag> is the correlation tag. • <ctype> is a position defined parameter and can be either 2WAY or 1WAY. When 1WAY is specified, then the patch is from the <from_aid> port to the <to_aid> port is either transmit or receive. 2WAY implies both transmit and receive patches between the two ports. The default is 2WAY.
Input Example	To create a bidirectional patch between the wavepatch port in slot 2, subcard 0, port 0, and the filter port in slot 0, subcard 0, port 0, use the following: ENT-PATCH:ons155xx:WAVEPATCH-2-0-0,FILTER-0-0-0:123::;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.31 ENT-THR-OCH: Enter Thresholds OCH

Use this command to set thresholds for errors that are being monitored on an interface. This command is used every time a new threshold is added to a threshold list.

Section	ENT-THR-OCH Description
Category	Threshold list configuration
Security	Provisioning
Related Messages	3.13 DLT-THR-OCH: Delete Threshold OCH 3.70 RTRV-THR-OCH: Retrieve Thresholds OCH 3.71 RTRV-TH-rr: Retrieve Threshold 3.78 SET-TH-OCH: Set Optical Threshold

Section	ENT-THR-OCH Description (continued)
Input Format	ENT-THR-OCH:[<tid>]:<THRLISTNAME>:<ctag>:::ERRTYPE=<errtype>, THRTYPE=<thrtype>, VALUE=<value>, [TRGAPS=<trgaps>], [INDEX=<index>], [DESCR=<descr>]; Where: • <tid> is the target identifier. • <thrlistname> indicates the name of the threshold list being created. • <ctag> is the correlation tag. • <errtype> indicates the type of error counter to which the threshold applies. Valid values are as follows: – CVS - SONET section CV errors – CVRD - 8B/10B code violations and running disparity errors – CDLHEC - CDL HEC errors – CRC - Cyclic Redundancy Check errors • <thrtype> indicates the threshold type. Valid values are as follows: – DEGR - Indicates that a signal degrade condition has been reached. Use this threshold type only when <errtype> is CVS. – FAIL - Indicates that a signal failure conditionhas been reached. Use this threshold type only when <errtype> is CVS. – EVTTHR - Indicates that a non-service affecting condition has been reached. Use this threshold type when <errtype> is not CVS. – ALMTHR - Indicates that a service affecting condition has been reached. Use this threshold type when <errtype> is not CVS. • <value> specifies the threshold value as 10^{-x}, where <value> is x. The range is 3 to 9. • <trgaps> is a trigger APS, such as protection switch on threshold exceeding. Valid values are Y or N. The default value is Y when ERRTYPE is CVS and is N for all other ERRTYPE values. • <index> is an integer value used to uniquely identify a particular threshold within a list of thresholds. The range is 1 to 64. When no value is specified for this parameter, the index for the threshold being created defaults to the lowest available index in that threshold list. • <descr> is a string used to assign a description to the threshold that is being configured. The maximum length of this string is 255 characters.
Input Example	To configure the SONET section CV threshold and add it to the threshold list sonet-cvs, use the command: ENT-THR-OCH:ons155xx:sonet-cvs:123:::ERRTYPE=CVS,THRTYPE=DEGR, VALUE=7, INDEX=1;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.32 ENT-USER-SECU: Enter User Security

Use this command to create a user ID and set security parameters.

Section	ENT-USER-SECU Description
Category	Security
Security	Retrieve
Related Messages	3.1 ACT-USER: Activate User 3.4 CANC-USER: Cancel User 3.14 DLT-USER-SECU: Delete User Security 3.24 ED-USER-SECU: Edit User Security l3.73 RTRV-USER-SECU: Retrieve User Security
Input Format	ENT-USER-SECU:[<tid>]:<uid>:<ctag>::<pid>,,<uap>; Where: • <tid> is the target identifier. • <uid> is the user identifier, a string value with a maximum size of 64 characters. • <ctag> is the correlation tag. • <pid> is the user login password, a string value with a maximum length of 25 characters. • <uap> is the user access privilege level. Valid values are as follows: – MAINT - Maintenance level – PROV - Provisioning level – RTRV - Retrieve level – SUPER - Superuser level
Input Example	To create a user ID and set security parameters, use the following: ENT-USER-SECU:ons155xx:admin:123::psword,,PROV;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.33 FORMAT-MEM: Format Memory

Use this command to permanently format a Flash PC device.

Section	FORMAT-MEM Description
Category	Memory management
Security	Retrieve
Related Messages	3.5 CPY-MEM: Copy Memory l3.43 RST-MEM: Restore Memory 3.57 RTRV-MEM: Retrieve Memory

Section	FORMAT-MEM Description (continued)
Input Format	FORMAT-MEM:[<tid>]:<aid>:<ctag>:::[CMDMODE=<mode>]; Where: • <tid> is the target identifier. • <aid> indicates the memory device that is being formatted. Valid values are BOOTFLASH, DISK-[0–1], PCMCIA-[0–1], SBY-BOOTFLASH, SBY-DISK-[0–1], or SBY-PCMCIA-[0–1] • <ctag> is the correlation tag. • <mode> indicates the mode of operation. Valid values are FRCD and NORMAL. In FRCD mode, any files that may be present on the Flash PC device, are permanently erased as part of the format operation. If any files are present on the Flash PC device in NORMAL mode, the format request is denied. The default mode is NORMAL.
Input Example	To permanently format a Flash PC device, use the following: FORMAT-MEM:ons155xx:BOOTFLASH:123:::CMDMODE=FRCD;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.34 INH-MSG-ALL: Inhibit Message All

Use this command to disable autonomous messages from being transmitted.

Section	INH-MSG-ALL Description
Category	Alarms and faults
Security	Retrieve
Related Messages	3.2 ALW-MSG-ALL: Allow Message All
Input Format	INH-MSG-ALL:[<tid>]::<ctag>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag.
Input Example	To disable autonomous messages from being transmitted, use the following: INH-MSG-ALL:ons155xx::123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.35 INH-SWDX-EQPT: Inhibit Switch Duplex Equipment

Use this command to inhibit automatic or manual switching from the active to the standby processor card. It also disables configuration syncs between the two processor cards. This command is usually used when performing software upgrades.

Section	INH-SWDX-EQPT Description
Category	Redundancy configuration
Security	Maintenance
Related Messages	3.3 ALW-SWDX-EQPT: Allow Switch Duplex Equipment 3.80 SW-DX-EQPT: Switch Duplex Equipment
Input Format	INH-SWDX-EQPT:[<tid>]:<aid>:<ctag>; Where: • <tid> is the target identifier. • <aid> is the access identifier. Valid values are SLOT-6 or SLOT-7. • <ctag> is the correlation tag.
Input Example	To inhibit automatic or manual switching from the active to the standby processor card, or disable configuration syncs between the two processor cards, use the following: INH-SWDX-EQPT:ons155xx:SLOT-6:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.36 INIT-REG-ETH: Initialize Register Ethernet

Use this command to clear the counters associated with a specific Ethernet AID.

Note Issuing this command clears all counters.

Section	INIT-REG-ETH Description
Category	IP configuration
Security	Retrieve
Related Messages	3.17 ED-IP: Edit IP 3.54 RTRV-IP: Retrieve IP
Input Format	INIT-REG-ETH:[<tid>]:<aid>:<ctag>; Where: • <tid> is the target identifier. • <aid > indicates the interface where counters are being cleared. Valid values are FE-0 and FE-SBY-0. • <ctag> is the correlation tag.

Section	INIT-REG-ETH Description (continued)
Input Example	To clear the counters associated with a specific Ethernet facility, use the following: INIT-REG-ETH:ons155xx:FE-0:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.37 INIT-REG-OCH: Initialize Register OCH

Use this command to clear the counters associated with a specific OCH facility.

Note Issuing this command clears all counters.

Section	INIT-REG-OCH Description
Category	Transparent interface configuration
Security	Maintenance
Related Messages	3.64 RTRV-OCH: Retrieve Optical Channel, page 3-63
Input Format	INIT-REG-OCH:[<tid>]:<aid>:<ctag>; Where: • <tid> is the target identifier. • <aid> indicates interface on which counters are being cleared. Valid values are TRANSPARENT-slot-subcard-0 and WAVE-slot-subcard. • <ctag> is the correlation tag.
Input Example	To clear the counters associated with transparent port in slot 2, subcard 0, use the following: INIT-REG-OCH:ons155xx:TRANSPARENT-2-0-0:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.38 INIT-SYS: Initialize System

Use this command to initialize or reset a processor card on the system.

Section	INIT-SYS Description
Category	Generic NE configuration
Security	Retrieve
Related Messages	3.77 SET-SID: Set System Identification

Section	INIT-SYS Description (continued)
Input Format	INIT-SYS:[<tid>]:<aid>:<ctag>::; Where: • <tid> is the target identifier. • <aid> identifies the card that needs to be reset. Valid values are SLOT-6 or SLOT-7. • <ctag> is the correlation tag.
Input Example	To initialize or reset the processor card in slot 6, use the following: INIT-SYS:ons155xx:SLOT-6:123::;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.39 OPR-LPBK-OCH: Operate Loopback OCH

Use this command to operate a specific type of loopback on the port specified by the AID.

Section	OPR-LPBK-OCH Description
Category	Transparent interface configuration
Security	Maintenance
Related Messages	3.41 RLS-LPBK-OCH: Release Loopback OCH
Input Format	OPR-LPBK-OCH:[<tid>]:<aid>:<ctag>::,,,<lpbktype>; Where: • <tid> is the target identifier. • <aid> indicates the interface on which the loopback is being created. Valid values are TRANSPARENT-slot-subcard-0 and WAVE-slot-subcard. • <ctag> is the correlation tag. • <lpbktype> indicates the type of loopback that is being created. Valid values are as follows: – FACILITY - The signal from the receive input is looped back to the transmit output. – TERMINAL - The signal bound for the transmit output is looped back to the receive input. This is an internal loopback used for hardware debug and diagnostics.
Input Example	To create a facility loopback on the transparent interface in slot 2, subcard 0, use the following: OPR-LPBK-OCH:ons155xx:TRANSPARENT-2-0-0:123::,,,FACILITY;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.40 OPR-PROTNSW-OCH: Operate Protection Switch OCH

Use this command to enable the NE to perform a protection switch or a lockout.

Section	OPR-PROTNSW-OCH Description
Category	APS
Security	Maintenance
Related Messages	3.42 RLS-PROTNSW-OCH: Release Protection Switch OCH
Input Format	OPR-PROTNSW-OCH:[<tid>]:<aid>:<ctag>:<sc> Where: • <aid> is the working or protection port AID to which a switch request is directed. Valid values are TRANSPARENT-slot-subcard-0 or WAVEPATCH-slot-subcard-port. If the AID identifies the working line, then service is switched from working to protection. If the AID identifies the protection line, then service is switched back to the working line. • <sc> is the switch command. Valid values are as follows: – MAN - Switch from working or back to working is done based on the AID specified unless a request of equal or higher priority is in effect. – FRCD - Switch from working or back to working is done based on the AID specified unless a request of equal or higher priority is in effect. – LOCKOUT - Lockout all switchovers to the protection facility. If the protection facility is currently active, then the lockout request is denied. The lockout request has the highest priority and takes effect regardless of signal condition. The forced switch command is the next highest priority. The manual switchover request has the lowest priority and only completes if there is no protection path lockout or forced switchover is in effect, or the signal has failed or degraded.
Input Example	To enable the NE to perform a protection switch or a lockout, use the following: OPR-PROTNSW-OCH:ons155xx:WAVEPATCH-2-0-1:123::FRCD;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.41 RLS-LPBK-OCH: Release Loopback OCH

Use this command to release a specific type of loopback on the port specified by the AID.

Section	RLS-LPBK-OCH Description
Category	Transparent interface configuration
Security	Maintenance
Related Messages	3.39 OPR-LPBK-OCH: Operate Loopback OCH

Section	RLS-LPBK-OCH Description (continued)
Input Format	RLS-LPBK-OCH:[<tid>]:<aid>:<ctag>::,,,<lpbktype>; Where: • <tid> is the target identifier. • <aid> indicates the interface on which the loopback is being released. Valid values are TRANSPARENT-slot-subcard-0 and WAVE-slot-subcard. • <ctag> is the correlation tag. • <lpbktype> indicates the type of loopback that is being released. FACILITY is the valid value, where the signal from the receive input is looped back to the transmit output.
Input Example	To release a facility loopback on the transparent interface in slot 2, subcard 0, use RLS-LPBK-OCH:ons155xx:TRANSPARENT-2-0-0:123::,,,FACILITY;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.42 RLS-PROTNSW-OCH: Release Protection Switch OCH

Use this command to clear the previous switchover request.

Note A lockout or a forced or manual switchover request stays in effect until the system reboots.

Section	RLS-PROTNSW-OCH Description
Category	APS
Security	Maintenance
Related Messages	3.40 OPR-PROTNSW-OCH: Operate Protection Switch OCH
Input Format	RLS-PROTNSW-OCH:[<tid>]:<aid>:<ctag>::; Where: • <tid> is the target identifier. • <aid> is the port AID to which the switch request is directed. Valid values are TRANSPARENT-slot-subcard-0 or WAVEPATCH-slot-subcard-port.
Input Example	To clear the previous request, use the following: RLS-PROTNSW-OCH:ons155xx:WAVEPATCH-2-0-1:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.43 RST-MEM: Restore Memory

Use this command to recover a file that was previously deleted, but not erased, using the DLT-MEM command.

Note A deleted file cannot be recovered if a valid one with the same name exists. The existing file needs to be deleted before the already deleted one can be recovered. If two files with the same name were deleted, the index is used to uniquely identify the file to be recovered.

Section	RST-MEM Description
Category	Memory Management
Security	Retrieve
Related Messages	3.5 CPY-MEM: Copy Memory 3.33 FORMAT-MEM: Format Memory 3.57 RTRV-MEM: Retrieve Memory
Input Format	RST-MEM:[<tid>]:<aid>:<ctag>:::INDEX=<index>; Where: • <tid> is the target identifier. • <aid> indicates the memory device from which the file is being recovered. Valid values are BOOTFLASH, DISK-[0–1], PCMCIA-[0–1], SBY-BOOTFLASH, SBY-DISK-[0–1], or SBY-PCMCIA-[0–1]. • <ctag> is the correlation tag. • <index> specifies the index number associated with the deleted file. This is an integer value and can be obtained by using the RTRV-MEM command.
Input Example	To recover a file that was previously deleted, but not erased, using the DLT-MEM command, use the following: RST-MEM:ons155xx:BOOTFLASH:123::INDEX=4;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.44 RST-NE-CDP: Restore Global CDP Attributes

Use this command to restore all global CDP attribute settings to their default values.

Section	RST-NE-CDP Description
Category	CDP
Security	Maintenance
Related Messages	3.18 ED-NE-CDP: Edit Network Element CDP 3.59 RTRV-NE-CDP: Retrieve Network Element CDP
Input Format	RST-NE-CDP:[<tid>]::<ctag>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag.

Section	RST-NE-CDP Description (continued)
Input Example	To restore all global CDP attribute settings to their default values, use the following: RST-NE-CDP:ons155xx::123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.45 RTRV-ALM-ALL: Retrieve Alarms All

Use this command to retrieve alarms for a given facility, card, or module.

Note Only alarms with severities critical, major, or minor can be retrieved using this command.

Section	RTRV-ALM-ALL Description
Category	Alarms and faults
Security	Retrieve
Related Messages	3.2 ALW-MSG-ALL: Allow Message All
Input Format	RTRV-ALM-ALL:[<tid>]:[<aid>]:<ctag>::[<ntfcncde>]; Where: • <tid> is the target identifier. • <aid> is the access identifier. Valid values are SLOT-slot and SLOT-slot-subcard. • <ctag> is the correlation tag. • <ntfcncde> indicates the type of notification generated on the NE when a threshold is exceeded or cleared. Valid values are CR, MJ, or MN.
Input Example	To retrieve alarms for the module in slot 2, subcard 0, use the following: RTRV-ALM-ALL:ons155xx:SLOT-2-0:123::MJ; To retrieve alarms for the client port in slot 2, subcard 0, use the following: RTRV-ALM-ALL:ons155xx:TRANSPARENT-2-0-0:123::MJ;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:<severity>,<alarm>,SA,,,,,:\"<text>\"" ;

Section	RTRV-ALM-ALL Description (continued)
Output Example	The output if no alarm condition exists: SID DATE TIME M 123 COMPLD ; The output if a matching alarm condition exists: SID DATE TIME M 123 COMPLD "TRANSPARENT-2-0-0:MJ,LOF,SA,,,,,:\"Loss Of Frame\"" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.46 RTRV-ALM-ENV: Retrieve Alarms Environmental

Use this command to retrieve environmental alarms on the system.

Section	RTRV-ALM-ENV Description
Category	Alarms and faults
Security	Retrieve
Related Messages	3.45 RTRV-ALM-ALL: Retrieve Alarms All, page 3-40
Input Format	RTRV-ALM-ENV:[<tid>]:[<aid>]:<ctag>::[<ntfcncde>]; Where: • <tid> is the target identifier. • <aid> is the access identifier. • <ctag> is the correlation tag. • <ntfcncde> indicates the type of notification generated on the NE when a threshold is exceeded or cleared. Valid values are CR, MJ, or MN.
Input Example	To retrieve major environmental alarms, use the following: RTRV-ALM-ENV:ons155xx::123::MJ;
Output Format	SID DATE TIME M CTAG COMPLD ":<severity>,<alarm>,,,\"<text>\"" ;
Output Example	The output if a matching alarm condition exists: SID DATE TIME M 123 COMPLD "Chassis:MJ,HITEMP,,,\"Chassis temperature too high\"" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.47 RTRV-ATTR-OCH: Retrieve Attributes

Use this command to retrieve the severity levels assigned to the threshold values configured on the wavepatch interfaces.

Section	RTRV-ATTR-OCH Description
Category	Alarms and faults
Security	Retrieve
Related Messages	3.44 RST-NE-CDP: Restore Global CDP Attributes 3.74 SET-ATTR-OCH: Set Attributes
Input Format	RTRV-ATTR-OCH [<tid>]:[<aid>]:<ctag>::[<ntfcncde>],[<condtype>],, [<dirn>]; Where: • <tid> is the target identifier. • <aid> is the access identifier. The valid value is WAVEPATCH-slot-subcard-port. • <ctag> is the correlation tag. • <ntfcncde> is indicates the type of notification generated on the NE when a threshold is exceeded or cleared. Valid values are CR, MJ, or MN. • <condtype> is monitored condition type. Valid values are as follows: – OPRHA - Receive optical power level corresponding to the high alarm threshold. If the optical power level is greater than the threshold associated with this parameter, an alarm is generated. – OPRLA - Receive optical power level corresponding to the low alarm threshold. If the optical power level is less than the threshold associated with this parameter, an alarm is generated. – OPRHW - Receive optical power level corresponding to the high warning threshold. If the optical power level is greater than the threshold associated with this parameter, a warning is generated that may be reported using REPT EVT. – OPRLW - Receive optical power level corresponding to the low warning threshold. If the optical power level is less than the threshold associated with this parameter, a warning is generated that may be reported using REPT EVT. • <dirn> is the direction associated with the information. Valid values are RCV or TRMT. The default is both directions.
Input Example	To retrieve the severity levels assigned to the threshold values configured on wavepatch interfaces on the transponder cards, use the following: RTRV-ATTR-OCH:ons155xx:WAVEPATCH-8-0-0:123::,OPRHA;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:<severity>,<condtype>,,<dirn>" ;

Section	RTRV-ATTR-OCH Description (continued)
Output Example	The output for wavepatch interfaces: SID DATE TIME M 123 COMPLD "WAVEPATCH-8-0-0:MJ,OPRHA,,RCV" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.48 RTRV-CDPNBR-OCH: Retrieve CDP Neighbor OCH

Use this command to retrieve neighbor information discovered by CDP on a specific port in the NE or on all ports of the NE.

Section	RTRV-CDPNBR-OCH Description
Category	CDP
Security	Retrieve
Related Messages	3.10 DLT-NBR: Delete Neighbor 3.28 ENT-NBR: Enter Neighbor 3.58 RTRV-NBR: Retrieve Neighbor
Input Format	RTRV-CDPNBR-OCH:[<tid>]:[<aid>]:<ctag>; Where: • <tid> is the target identifier. • <aid> specifies the port AID to retrieve information for the neighbor on that port only. NULL retrieves information on all neighbors. • <ctag> is the correlation tag.
Input Example	To retrieve neighbor information discovered by CDP on a specific port in the NE or on all ports of the NE, use the following: RTRV-CDPNBR-OCH:ons155xx::123;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:NBRNAME=<nbrname>,NBRPORT=<nbrport>, CAPABILITY=<capability>,TTL=<ttl>" ;

Section	RTRV-CDPNBR-OCH Description (continued)
Output Example	SID DATE TIME M 123 COMPLD "WAVE-1-0:NBRNAME=Switch2,NBRPORT=PORT-0,CAPABILITY=S, TTL=158" ; Where: • <NBRNAME> shows the name of the neighboring device, typically, the SID of that device. The maximum size is 255 characters. • <NBRPORT> is the name of the neighboring port. Typically, the AID of that port. • <CAPABILITY> indicates the capability of the neighboring device. It is a string formed by the concatenation of one or more of the following values: – R - Router, – T - Trans bridge – B - Source route bridge – S - Switch – H - Host – I - IGMP – r - Repeater • <TTL> Time To Live value. This is the amount of time in seconds before this neighbor information is discarded unless the NE receives another packet on this port with the same information.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.49 RTRV-COND-ALL: Retrieve Condition All

Use this command to retrieve current standing conditions associated with specified equipment or facility. This command retrieves conditions with all severities.

Section	RTRV-COND-ALL Description
Category	Alarms and faults
Security	Retrieve
Related Messages	3.45 RTRV-ALM-ALL: Retrieve Alarms All 3.46 RTRV-ALM-ENV: Retrieve Alarms Environmental
Input Format	RTRV-COND-ALL:[<tid>]:[<aid>]:<ctag>; Where: • <tid> is the target identifier. • <aid> is the access identifier. • <ctag> is the correlation tag.
Input Example	To retrieve current standing conditions associated with specified equipment or facility, use the following: RTRV-COND-ALL:ons155xx:TRANSPARENT-8-0-0:123::;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>,<encap>:<severity>,<condtype>,NSA,,,,,\"<text>\"" ;
Output Example	The output for conditions on the transparent interface: SID DATE TIME M 123 COMPLD "TRANSPARENT-8-0-0,OC3:MN,CVS,NSA, ,,,,\"Code Violation- Section - Exceed Degrade\"" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.50 RTRV-EQPT: Retrieve Equipment

Use this command to retrieve the redundancy configurations. It also retrieves inventory information for the specified module.

The PST and SST values in the last position defined block also indicate the redundancy states, when the AID specified in this command is SLOT-6 or SLOT-7. The values of PST-PSTQ and SST are reported under different operating conditions.

Active processor card states are as follows:

- For normal active, PST=IS-NR.
- For active processor card in fault state, PST=IS-ANR, SST=FLT,ACT.

Standby processor card states are as follows:

- If standby peer has hardware state missing, PST=OOS-AU, SST=UEQ.

- If standby peer has hardware state non-participant, PST=OOS-AU, SST=AINS.
- If standby peer has hardware state of standby, PST=IS-ANR, SST=STBYC.
- If standby is in fault state, PST=IS-ANR, SST=FLT, STBYC or STBYH (depending on software redundancy state.)
- If the standby is normal and in hot standby state, PST=IS-NR, SST=STBYH.

Under maintenance mode (when an INH-SWDX command has been issued for standby processor card):

- If hardware state is missing, PST=OOS-AUMA, SST=UEQ,STBYI.
- If hardware state is non-participant and software redundancy state is disabled, PST=OOS-AURST, SST=AINS,STBYI.

For all other software redundancy states like unknown, negotiating, or standby cold, PST=IS-RST, SST=STBYI.

In addition to these values, two SST values indicate the synchronization status on the running and startup configurations.

- NRCSYNC - Running config is not in sync
- NSCSYNC - Startup config is not in sync

Section	RTRV-EQPT Description
Category	Redundancy configuration
Security	Retrieve
Related Messages	3.35 INH-SWDX-EQPT: Inhibit Switch Duplex Equipment 3.80 SW-DX-EQPT: Switch Duplex Equipment
Input Format	RTRV-EQPT:[<tid>]:[<aid>]:<ctag>; Where: • <tid> is the target identifier. • <aid> is the access identifier. The value is SLOT-slot. The default is all AIDs. • <ctag> is the correlation tag.
Input Example	To retrieve inventory information for the CPU switch module in slot 6, use the following: RTRV-EQPT:ons155xx:SLOT-6:123; To retrieve inventory information for modules in card in slot 8, use the following: RTRV-EQPT:ons155xx:SLOT-8:123;

Section	RTRV-EQPT Description (continued)
Output Format	Output format for processor cards: SID DATE TIME M CTAG COMPLD "<aid>:<clei>:PN=<pn>,SN=<sn>,OPN=<opn>,HWVER=<hwver>, SWVER=<swver>,FWVER=<fwver>,BOOTLDR=<bootldr>, ROMMONVER=<rommonver>,HWREDSTATE=<hwredstate>, SWREDSTATE=<swredstate>,,:<pst>,<sst>,<sst>"; Output format for 2.5-Gbps transponder modules: SID DATE TIME M CTAG COMPLD "<aid>:<clei>:PN=<pn>,SN=<sn>,OPN=<opn>,HWVER=<hwver>,, FSWVER=<fwver>,,,,,LASERFREQLOW=<laserfreqlow>, LASERFREQHIGH=<laserfreqhigh>:<pst>,<sst>,<sst>" ; Output format for10-GE transponder modules: SID DATE TIME M CTAG COMPLD "<aid>:<clei>:PN=<pn>,SN=<sn>,OPN=<opn>,HWVER=<hwver>,, FSWVER=<fwver>,,,,,LASERFREQ=<laserfreq>:<pst>,<sst>,<sst>" ;

Section	RTRV-EQPT Description (continued)
Output Example	SID DATE TIME M 123 COMPLD "SLOT-5:CLIE:PN=73-5656-03,SN=CAB0516HK2,OPN=N/A, HWVER=2.0,SWVER=12.1,FWVER=1.24, BOOTLDR=12.1(7a)EY2,ROMMONVER=12.1(7r)EY, HWREDSTATE=ACT,SWREDSTATE=ACT :IS-NR,NRCSYNC,NSCSYNC" ; Where: • PN is a string that shows part number, maximum length is 32 characters. • SN is a string that shows serial number, maximum length is 32 characters. • OPN is a string that shows the orderable product number, maximum length is 32 characters. • HWVER is a string that shows the hardware version number, maximum length is 32 characters. • SWVER is a string that shows the image version running on this processor card, maximum length is 32 characters • FWVER is a string that shows functional software image version running on this module, maximum length is 32 characters. • BOOTLDR is a string that shows the bootloader image version, maximum length is 32 characters. This parameter is applicable to processor card only. • ROMMONVER is a string that shows the ROMMON version and has a maximum length of 32 characters. This parameter is applicable to processor cards only. • SWREDSTATE shows software redundancy state. This parameter is applicable to processor cards only. Valid values are as follows: – NK - Not known – DSBL - Disabled – INIT - Initialization – SBYC - StandbyCold – SBYCC - StandbyColdConfig – SBYCF - StandbyColdFileSys – SBYCB - StandbyColdBulk – SBYH - StandbyHot – ACTF - ActiveFast – ACTD - ActiveDrain – ACTPR - ActivePreConfig – ACTPS - ActivePostConfig – ACT - Active

Section	RTRV-EQPT Description (continued)
Output Example (continued)	• HWREDSTATE shows the hardware redundancy state. This parameter is applicable to processor cards only. Valid values are as follows: – NP - Nonparticipant – ACT - Active – SBY - Standby – MISS - Missing – ERR - Errored To retrieve inventory information for a 2.5-Gbps transponder module in slot 8: SID DATE TIME M 123 COMPLD "SLOT-8:CLEI:PN=73-5656-03,SN=CAB0516HK2,OPN=N/A,HWVER=2.0, SWVER=12.1,FWVER=1.89,LASERFREQLOW=194500, LASERFREQHIGH=198500:IS-NR,," ; Where: • LASERFREQLOW indicates the lower ITU grid laser frequency that this card is capable of generating. This parameter applies only to transponder cards that are capable of generating one or more laser frequencies. • LASERFREQHIGH indicates the higher ITU grid laser frequency that this card is capable of generating. This parameter applies only to transponder cards that are capable of generating one or more laser frequencies.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.51 RTRV-FFP-OCH: Retrieve Facility Protection OCH

Use this command to retrieve optical facility protection information.

Section	RTRV-FFP-OCH Description
Category	APS
Security	Retrieve
Related Messages	3.6 DLT-FFP-OCH: Delete Facility Protection OCH 3.16 ED-FFP-OCH: Edit Facility Protection 3.25 ENT-FFP-OCH: Enter Optical Protection, page 3-23

Section	RTRV-FFP-OCH Description (continued)
Input Format	RTRV-FFP-OCH:[<tid>]:[<wkg_aid>],[<prot_aid>]:<ctag>:::[PROTID=<protid>]; Where: • <tid> is the target identifier. • <wkg_aid> is the working access identifier. Valid values are WAVEPATCH-slot-subcard-port or TRANSPARENT-slot-subcard-0 • <prot_aid> is the protection access identifier. Valid values are WAVEPATCH-slot-subcard-port or TRANSPARENT-slot-subcard-0 • <ctag> is the correlation tag. • <protid> is the protection group identifier. It is a case-sensitive string and can have a maximum of 32 characters.
Input Example	To retrieve optical facility protection information, use the following: RTRV-FFP-OCH:ons155xx:WAVEPATCH-2-0-0,WAVEPATCH-2-0-1:123;
Output Format	SID DATE TIME M CTAG COMPLD "<wkg_aid>,<prot_aid>:ACTIVE=<active>,STANDBY=<standby>, PROTID=<protid>, PSDIRN=<psdirn>,RVRTV=<rvrtv>,RVRTM=<rvrtm>, ENSWOTM=<enswotm>,SRCHUPMIN=<srchupmin>, SRCHUPMAX=<srchupmax>,FENDDIRN=<fenddirn>,MSGCH=<msgch>, MSGCHCUR=<msgchcur>,MSGHOLDTM=<msgholdtm>, MSGCHST=<msgchst>,MSGHOLDCOUNT=<msgholdcount>, MSGMAXTM=<msgmaxtm>:<pst>" ;

Section	RTRV-FFP-OCH Description (continued)
Output Example	SID DATE TIME M 123 COMPLD "WAVEPATCH-2-0-0,WAVEPATCH-2-0-1:ACTIVE=WAVEPATCH-2-0-0, STANDBY=WAVEPATCH-2-0-1,PROTID=switch1-aps,PSDIRN=BI, RVRTV=Y,RVRTM=300,ENSWOTM=10,SRCHUPMIN=2, SRCHUPMAX=32,FENDDIRN=UNI,MSGCH=AUTO,MSGCHCUR=DCC, MSGHOLDTM=1500,MSGCHST=IS,MSGHOLDCOUNT=2, MSGMAXTM=15:IS" ; Where: • ACTIVE indicates the AID of the currently active interface. • STANDBY indicates the AID of the interface in standby. • FENDDIRN indicates the switching mode of the remote facility. Valid values are as follows: – UNI - Unidirectional – BI - Bidirectional – UNKNOWN - Unknown **Note** If switching mode of this (near end) facility, that is PSDIRN is configured as UNI, then its active switching mode will always be UNI. If PSDIRN is configured as BI, then the active switching mode is BI only if the FENDDIRN is BI. If FENDDIRN is UNI, then the active switching mode becomes UNI. • MSGCHCUR indicates the currently used message channel. This parameter applies only when MSGCH is set to AUTO. • MSGCHST indicates if the message channel is up or down. Valid values are as follows: – IS - in service – OOS - out-of-service
Errors	Errors are listed in Table 2-13 on page 2-9.

3.52 RTRV-FILE: Retrieve File

Use this command to retrieve the contents of the configuration files.

Section	RTRV-FILE Description
Category	Memory Management
Security	Retrieve
Related Messages	3.56 RTRV-LOG: Retrieve Log 3.74 SET-ATTR-OCH: Set Attributes

Section	RTRV-FILE Description (continued)
Input Format	RTRV-FILE:[<tid>]:<aid>:<ctag>:::FILENAME=<filename>,[LINES=<lines>], [OFFSET=<offset>]; Where: • <tid> is the target identifier. • <aid> indicates the memory device from which the file is to be retrieved. Valid values are BOOTFLASH, DISK-[0–1], PCMCIA-[0–1], NVRAM, SBY-NVRAM, SBY-BOOTFLASH, SBY-DISK-[0–1], or SBY-PCMCIA-[0–1]. • <ctag> is the correlation tag. • <filename> is a string that shows the name of the configuration file whose contents are to be retrieved. The maximum string length is 255 characters. • <lines> is an optional parameter. It is an integer value that indicates the number of lines to retrieve at a time. If this parameter is not configured, the entire file is retrieved as is. • <offset> is an optional parameter. It is an integer value that indicates the offset within a file. The contents of the file starting at this offset is retrieved. The default value is zero, which means that the contents from the beginning of the file are retrieved.
Input Example	To retrieve the contents of the configuration files, use the following: RTRV-FILE:ons155xx::123:::FILENAME=running-config,LINES=24;
Output Format	SID DATE TIME M CTAG COMPLD "<text>" ;

Section	RTRV-FILE Description (continued)
Output Example	SID DATE TIME M 123 COMPLD "version 12.1 no service pad service timestamps debug uptime service timestamps log uptime no service password-encryption service internal service compress-config ! hostname snmp-man ! boot system bootflash:ons15540-i-mz.tirth redundancy keepalive-threshold 12 associate group bb associate group aa aps working Transparent8/0/0 aps protection Transparent8/1/0 aps y-cable aps enable aps timer switchover min-interval 20 enable password lab ! ! threshold-list abc" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.53 RTRV-HDR: Retrieve Header

Use this command to request that an NE simply reply with a normal response indicating COMPLD.

The information of interest in the reply is the reply itself, along with information that the NE has about itself, specifically <source_identifier>, <date>, and <time>.

Section	RTRV-HDR Description
Category	Generic NE configuration
Security	Retrieve
Related Messages	3.15 ED-DAT: Edit Date, page 3-11 3.72 RTRV-TOD: Retrieve Time of Day, page 3-75
Input Format	RTRV-HDR:[<tid>]::<ctag>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag.

Section	RTRV-HDR Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.54 RTRV-IP: Retrieve IP

Use this command to retrieve IP configurations.

Section	RTRV-IP Description
Category	IP configuration
Security	Retrieve
Related Messages	3.7 DLT-IP: Delete IP 3.8 DLT-IPROUTE-STATIC: Delete IP Route Static 3.17 ED-IP: Edit IP 3.26 ENT-IP: Enter IP 3.55 RTRV-IPROUTE: Retrieve IP Route
Input Format	RTRV-IP:[<tid>]:[<aid>]:<ctag>; Where: • <tid> is the target identifier. • <aid> is the access identifier. • <ctag> is the correlation tag.
Input Example	To retrieve IP configurations, use the following: RTRV-IP:ons155xx:FE-0:123;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:IPADDRTYPE=<ipaddrtype>,IPADDR=<ipaddr>, IPMASK=<ipmask>" ;
Output Example	SID DATE TIME M 123 COMPLD "FE-0:IPADDRTYPE=ADDR,IPADDR=172.16.42.110, IPMASK=255.255.255.0" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.55 RTRV-IPROUTE: Retrieve IP Route

Use this command to retrieve IP routing information.

Section	RTRV-IPROUTE Description
Category	IP configuration
Security	Retrieve
Related Messages	3.8 DLT-IPROUTE-STATIC: Delete IP Route Static 3.17 ED-IP: Edit IP 3.26 ENT-IP: Enter IP
Input Format	RTRV-IPROUTE:[<tid>]::<ctag>:::ROUTETYPE=<routetype>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <routetype> indicates if the route is a static route or is learned dynamically from a routing protocol. Valid values are STATIC and DYNAMIC. The only value currently supported is STATIC.
Input Example	To retrieve IP routing information, use the following: RTRV-IPROUTE:ons155xx::123:::ROUTETYPE=STATIC;
Output Format	SID DATE TIME M CTAG COMPLD "ROUTETYPE=<routetype>,PREFIXADDR=<prefixaddr>, PREFIXMASK=<prefixmask>,ROUTEIF=<routeif>" ;
Output Example	SID DATE TIME M 123 COMPLD "ROUTETYPE=STATIC,PREFIXADDR=10.1.0.0, PREFIXMASK=255.255.0.0, ROUTEIF=WAVE-0-0" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.56 RTRV-LOG: Retrieve Log

Use this command to retrieve the console buffer log on the NE.

Section	RTRV-LOG Description
Category	Alarms and faults
Security	Retrieve

Section	RTRV-LOG Description (continued)
Related Messages	3.2 ALW-MSG-ALL: Allow Message All, page 3-2 3.3 ALW-SWDX-EQPT: Allow Switch Duplex Equipment, page 3-2 3.34 INH-MSG-ALL: Inhibit Message All, page 3-33 3.35 INH-SWDX-EQPT: Inhibit Switch Duplex Equipment, page 3-34 3.45 RTRV-ALM-ALL: Retrieve Alarms All, page 3-40 3.46 RTRV-ALM-ENV: Retrieve Alarms Environmental, page 3-41
Input Format	RTRV-LOG:[<tid>]::<ctag>::[<lognm>]; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <lognm> specifies the name of the log to be retrieved. Only the value SYSLOG is currently supported. The default is SYSLOG.
Input Example	To retrieve the console buffer log on the NE, use the following: RTRV-LOG:ons155xx::123::;
Output Format	SID DATE TIME M CTAG COMPLD "<text>" ; /* RTRV-LOG */
Output Example	SID DATE TIME M 123 COMPLD "SYSLOG::00:00:23: %LINK-3-UPDOWN: Interface Transparent7/0/0, changed state to down" "SYSLOG::00:00:24: %LINEPROTO-5-UPDOWN: Line protocol on Interface Transparent7/0/0, changed state to down" "SYSLOG::00:00:38: %LCMDC-3-MIB_ICDRLK_ALM: Ingress CDR Locking error CLEAR MAJOR Tran7/0/0" ; /* RTRV-LOG */
Errors	Errors are listed in Table 2-13 on page 2-9.

3.57 RTRV-MEM: Retrieve Memory

Use this command to retrieve information on all the files that are present on the Flash device.

Section	RTRV-MEM Description
Category	Memory Management
Security	Retrieve

Section	RTRV-MEM Description (continued)
Related Messages	3.9 DLT-MEM: Delete Memory 3.5 CPY-MEM: Copy Memory 3.43 RST-MEM: Restore Memory 3.79 SQUEEZE-MEM: Squeeze Memory
Input Format	RTRV-MEM:[<tid>]:[<aid>]:<ctag>:::[FILENAME=<file>],[STATUS=<status>]; Where: • <tid> is the target identifier. • <aid> indicates the memory device from which the file is being retrieved. Valid values are BOOTFLASH, DISK-[0–1], PCMCIA-[0–1], NVRAM, SBY-NVRAM, SBY-BOOTFLASH, SBY-DISK-[0–1], or SBY-PCMCIA-[0–1]. • <ctag> is the correlation tag. • <file> specifies a filename. This is a string with a maximum of 255 characters. • <status> filters the files that are retrieved. Valid values are ACTIVE, DELETED, or ALL. ACTIVE refers to all the files that are currently undeleted. DELETED refers to files that have been marked deleted. ALL is used to retrieves all files. The default value is ALL.
Input Example	To retrieve information on all the files that are present on the Flash device, use the following: RTRV-MEM:ons155xx:DISK-0:123;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:INDEX=<index>,ACCESS=<access>,SIZE=<size>,DATE=<date>, TIME=<time>,FILENAME=<filename>,STATUS=<status>" ;
Output Example	SID DATE TIME M 123 COMPLD "BOOTFLASH:INDEX=1,ACCESS=RW,SIZE=145678,DATE=12-115.01, TIME=10-22-00,FILENAME=ons15540-i-mz,STATUS=ACTIVE" "BOOTFLASH:INDEX=2,ACCESS=RW,SIZE=146140,DATE=12-115.01, TIME=13-10-00,FILENAME=ons15540-i-mz.temp,STATUS=DELETED" ; Where: • INDEX shows the index number associated with the deleted file. • ACCESS shows the permissions on that file. Valid values are RW (read/write) and RO (read-only). • SIZE shows the size of the file in bytes. • DATE is the string that shows the date of the file. The format is MM-DD-YY. • TIME is the string that shows the time on the file. The format is HH-MM-SS. • NAME is the string that shows the name of the file. The maximum length is 255 characters.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.58 RTRV-NBR: Retrieve Neighbor

Use this command to retrieve the neighbor information on port(s).

If the AID value is not provided, then information about all the neighbors discovered (for all of the ports) is retrieved.

Section	RTRV-NBR Description
Category	Topology neighbor configuration
Security	Retrieve
Related Messages	3.10 DLT-NBR: Delete Neighbor 3.28 ENT-NBR: Enter Neighbor
Input Format	RTRV-NBR:[<tid>]:[<aid>]:<ctag>; • <tid> is the target identifier. • <aid> identifies the interface and can be one of the following: – TRANSPARENT-slot-subcard-0 – WDM-slot-subcard • <ctag> is the correlation tag.
Input Example	To retrieve the neighbor information on ports, use the following: RTRV-NBR:ons155xx:WDM-0-0:123;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:DSCVRY=<dscrvy>,LINKDIRN=<linkdirn>,NBRNAME=<nbrname>, NBRPORT=<nbrport>,NBRAGENTIP=<nbragentip>" ;
Output Example	SID DATE TIME M 123 COMPLD "WDM-0-0:DSCVRY=MANUAL,LINKDIRN=RX, NBRNAME=shelf2,NBRPORT=WDM-0-0, NBRAGENTIP=172.16.20.1" "WDM-0-0:DSCVRY=MANUAL,LINKDIRN=TX, NBRNAME=edfa_box1,NBRPORT=in_port, NBRAGENTIP=172.16.20.9" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.59 RTRV-NE-CDP: Retrieve Network Element CDP

Use this command to retrieve global CDP information.

Section	RTRV-NE-CDP Description
Category	CDP
Security	Retrieve
Related Messages	3.18 ED-NE-CDP: Edit Network Element CDP, page 3-14

Section	RTRV-NE-CDP Description (continued)
Input Format	RTRV-NE-CDP:[<tid>]::<ctag>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag.
Input Example	To retrieve global CDP information, use the following: RTRV-NE-CDP:ons155xx::123;
Output Format	SID DATE TIME M CTAG COMPLD "CDP=<cdp>,UPDATETIME=<updatetime>,HOLDTIME=<holdtime>, SENDVER=<sendver>" ;
Output Example	SID DATE TIME M 123 COMPLD "CDP=Y,UPDATETIME=60,HOLDTIME=180,SENDVER=2" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.60 RTRV-NE-GEN: Retrieve Generic NE Configuration Values

Use this command to retrieve generic NE configuration values.

Section	RTRV-NE-GEN Description
Category	Generic NE configuration
Security	Retrieve
Related Messages	3.19 ED-NE-GEN: Edit Network Element General, page 3-15
Input Format	RTRV-NE-GEN:[<tid>]::<ctag>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag.
Input Example	To retrieve generic NE configuration values, use the following: RTRV-NE-GEN:ons155xx::123;
Output Format	SID DATE TIME M CTAG COMPLD "CURCFGREG=<curcfgreg>,NEWCFGREG=<newcfgreg>, SWVER=<swver>,SWNAME=<swname>,SYSFILE=<sysfile>, CMPLTIME=<cmpltime>,CMPLBY=<cmplby>,BOOTLDR=<bootldr>" ;

Section	RTRV-NE-GEN Description (continued)
Output Example	SID DATE TIME M 123 COMPLD "CURCFGREG=0x0,NEWCFGREG=0x2,SWVER=12.1, SWNAME=ONS15540-I-M, SYSFILE=bootflash:ons15540-i-mz, CMPLTIME=01-10-11-19-33,CMPLBY=hqluong" ; Where: • CURCFGREG shows the current configuration register setting in hexadecimal. • NEWCFGREG shows the new (the value that takes effect on next reload) configuration register setting in hexadecimal. • SWVER indicates the software version; maximum length is 32 characters • SWNAME indicates the name of the software image, maximum length is 64 characters. • SYSFILE indicates the system image file; maximum length is 255 characters. • CMPLTIME indicates the compiled time. The format of this string is YY-MM-DD-HH-MM. • CMPLBY indicates the username of person who compiled this software image; maximum length is 8 characters.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.61 RTRV-NE-OSCP: Retrieve Network Element OSCP

Use this command to retrieve the configurations for OSCP.

Section	RTRV-NE-OSCP Description
Category	OSCP
Security	Retrieve
Related Messages	3.20 ED-NE-OSCP: Edit Network Element OSCP
Input Format	RTRV-NE-OSCP:[<tid>]::<ctag>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag.
Input Example	To retrieve the configurations for OSCP, use the following: RTRV-NE-OSCP:ons155xx::123;
Output Format	SID DATE TIME M CTAG COMPLD "HELLOINTV=<hellointv>,HELLOHLDWN=<hellohldwn>, INACTFCTR=<inactfctr>" ;

Section	RTRV-NE-OSCP Description (continued)
Output Example	SID DATE TIME M 123 COMPLD "HELLOINTV=500,HELLOHLDWN=200,INACTFCTR=10" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.62 RTRV-NTP: Retrieve NTP

Use this command to retrieve the NTP status parameters for the system.

Section	RTRV-NTP Description
Category	NTP
Security	Retrieve
Related Messages	3.11 DLT-NTPASSOC: Delete NTP Associations 3.29 ENT-NTPASSOC: Enter NTP Associations
Input Format	RTRV-NTP:[<tid>]::<ctag>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag.
Output Format	SID DATE TIME M CTAG COMPLD "SYNCSTATE=<syncstate>,STRATUM=<stratum>, REFIPADDR=<refipaddr>,NOMFREQ=<nomfreq>,ACTFREQ=<actfreq>, PRECISION=<precision>,REFTIME=<reftime>,CLKOFFSET=<clkoffset>, ROOTDELAY=<rootdelay>,ROOTDISP=<rootdisp>,PEERDISP=<peerdisp>" ;

Section	RTRV-NTP Description (continued)
Output Example	SID DATE TIME M 123 COMPLD "SYNCSTATE=Y,STRATUM=4,REFIPADDR=172.16.246.1,NOMFREQ=250 , ACTFREQ=249.9999,PRECISION=24, REFTIME=09:09:38.885PSTSunDec302001, CLKOFFSET=7.7674,ROOTDELAY=113.39,ROOTDISP=386.72, PEERDISP=1.57" ; Where: • SYNCSTATE indicates whether clock is synchronized. Valid values are Y or N. • STRATUM indicates the stratum of the reference clock. This is an integer value from 1 to 16. • REFIPADDR indicates the IP address of the peer/server from where the reference clock is being derived. • NOMFREQ shows the nominal frequency in Hz. • ACTFREQ shows the actual frequency in Hz. • PRECISION indicates the precision of the derived clock. If the value specified here is x, the actual precision is of the form 2^x. • REFTIME indicates the clock reference time. • CLKOFFSET shows the clock offset in msec. • ROOTDELAY shows a string value that shows the root delay in msec. • ROOTDISP shows the root dispersion in msec. • PEERDISP shows the peer dispersion in msec.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.63 RTRV-NTPASSOC: Retrieve NTP Associations

Use this command to retrieve the NTP parameters for each association that is created.

Section	RTRV-NTPASSOC Description
Category	NTP
Security	Retrieve
Related Messages	3.11 DLT-NTPASSOC: Delete NTP Associations 3.29 ENT-NTPASSOC: Enter NTP Associations 3.62 RTRV-NTP: Retrieve NTP
Input Format	RTRV-NTPASSOC:[<tid>]::<ctag>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag.

Section	RTRV-NTPASSOC Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD "ASSOCTYPE=<assoctype>,ASSOCIPADDR=<associpaddr>, ASSOCSTRATUM=<assocstratum>,ASSOCREFID=<assocrefid>, ASSOCPOLL=<assocpoll>,ASSOCREACH=<assocreach>, ASSOCDELAY=<assocdelay>,ASSOCOFFSET=<assocoffset>, ASSOCDISP=<assocdisp>" ;
Output Example	SID DATE TIME M 123 COMPLD "ASSOCTYPE=SERVER,ASSOCIPADDR=172.16.246.1, ASSOCSTRATUM=2,ASSOCREFID=172.16.10.80,ASSOCPOLL=64, ASSOCREACH=377,ASSOCDELAY=1.4,ASSOCOFFSET=-23005, ASSOCDISP=4925" ; Where: • ASSOCTYPE shows the association type. The values are SERVER and PEER. • ASSOCIPADDR shows the IP address of the server or peer. • ASSOCSTRATUM the stratum of the peer's clock, is an integer value from 1 to 16. • ASSOCREFID indicates the reference ID of the peer is an IP address • ASSOCPOLL indicates the interval at which the local host polls the peer. This is an integer value in seconds. • ASSOCREACH indicates the reachability status of the peer. This is an integer value from 0 to 255. • ASSOCDELAY shows the estimated round-trip delay of the peer clock with reference to the local clock, in seconds. • ASSOCOFFSET shows the estimated offset of the peer clock with reference to the local clock, in seconds. • ASSOCDISP shows the estimated error between the peer clock and the local clock, in seconds.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.64 RTRV-OCH: Retrieve Optical Channel

Use this command to retrieve interface configuration information.

The PST and SST values in the last position defined block indicate the current status of the interface. The values of PST-PSTQ and SST, under different conditions, are listed as follows:

- If the interface is administratively shut down by using the ENT-OCH command, values returned are PST=OOS-MA, SST=MT.
- If the interface and the laser are shut down administratively, values returned are PST=OOS_MA, SST=MT, LASER.

- If the interface is down because of alarms on the link, such as Loss of Signal/Loss of Frame, Loss of Light, values returned are PST=OOS-AU, SST=FAF.
- If the interface is down because of alarms and is also administratively shut down, values returned are PST=OOS-AUMA, SST=FAF, MT.
- If there is an entity failure on the NE because the interface is down, values returned are PST=OOS-AU, SST= SGEO.
- If the transmit laser fails at an interface, values returned is PST=OOS-AU, SST=FLT.
- If only thresholds are exceeded on the interface, values returned are PST=IS-ANR. For wavepatch interfaces only, the SST value also indicates the current state with respect to APS of the interface.
- If the wavepatch is currently active, the SST value of ACT is returned.
- If the wavepatch is currently standby, the value of STBYH is returned.
- Under normal operating conditions, values returned are PST=IS-NR.

Section	RTRV-OCH Description
Category	Transparent interface configuration
Security	Retrieve
Related Messages	3.21 ED-OCH: Edit Optical Channel 3.39 OPR-LPBK-OCH: Operate Loopback OCH 3.64 RTRV-OCH: Retrieve Optical Channel 3.64 RTRV-OCH: Retrieve Optical Channel
Input Format	RTRV-OCH:[<tid>]:[<aid>]:<ctag> Where: • <tid> is the target identifier. • <AID> indicates the interface that is being configured. Valid values are TRANSPARENT-slot-subcard-0, WAVE-slot-subcard, WAVEPATCH-slot-subcard-port, or ETHERDCC-slot-subcard-port. • <ctag> is the correlation tag.
Input Example	To retrieve interface configuration information, use the following: RTRV-OCH:ons155xx:TRANSPARENT-10-0-0:123; RTRV-OCH:ons155xx:WAVE-8-0:123;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:THRLISTNAME=<thrlistname>,FLC=<flc>,LSC=<lsc>, LASERFREQ=<laserfreq>,LPBKTYPE=<lpbktype>:<pst>" ;

Section	RTRV-OCH Description (continued)
Output Example	SID DATE TIME M 123 COMPLD "TRANSPARENT-10-0-0:ENCAP=OC3,THRLISTNAME=sonet-cvs, FLC=N,LPBKTYPE=FACILITY:IS-NR" ; SID DATE TIME M 123 COMPLD "WAVE-8-0:THRLISTNAME=sonet-cvs,FLC=N,LSC=Y, LASERFREQ=159800, LPBKTYPE=FACILITY:IS-NR" ; Where: • LASERFREQ can be retrieved only on the AID WAVE-slot-subcard. • LPBKTYPE indicates the type of loopback on the interface. Valid values are as follows: – FACILITY - where the signal from the receive input is looped back to the transmit output. – TERMINAL - where the signal bound for transmit output is looped back to the receive input. This is an internal loopback and it is used for hardware debug and diagnostics.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.65 RTRV-PATCH: Retrieve Patch

Use this command to retrieve the patch configuration.

Section	RTRV-PATCH Description
Category	Patch configuration
Security	Retrieve
Related Messages	3.12 DLT-PATCH: Delete Patch 3.30 ENT-PATCH: Enter Patch

Section	RTRV-PATCH Description (continued)
Input Format	RTRV-PATCH:[<tid>]:[<from_aid>],[<to_aid>]:<ctag>; Where: • <tid> is the target identifier. • <from_aid> identifies the port patched to the port identified by <to_aid>. Valid values for <from_aid> are as follows: – FILTER-slot-subcard-0 – OSCFILTER-slot-subcard – THRU-slot-subcard – WAVE-slot – WAVEPATCH-slot-subcard-port – WDM-slot-subcard • <to_aid> identifies the port patched from the port identified by <from_aid>. Valid values for <to_aid> are as follows: – FILTER-slot-subcard-0 – OSCFILTER-slot-subcard – THRU-slot-subcard – WAVE-slot – WAVEPATCH-slot-subcard-port – WDM-slot-subcard • <ctag> is the correlation tag. **Note** If the AID value is not provided then information for all the patches is retrieved. If both the AIDs are specified, all the patches associated with the specified AIDs is retrieved.
Input Example	To retrieve the patch configuration, use the following: RTRV-PATCH:ons155xx::123;
Output Format	SID DATE TIME M CTAG COMPLD "<from_aid>,<to_aid>:<dirn>" ;
Output Example	SID DATE TIME M 123 COMPLD "WAVEPATCH-2-0-0,FILTER-0-0-0:2WAY" "WDM-0-0,THRU-0-0:2WAY" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.66 RTRV-PM-ENCAP: Retrieve Performance Encapsulation

Use this command to retrieve the performance monitoring parameters related to error counters for transponder and OSC wave interfaces specified by the AID. The parameter is specified by <montype> and the <tmper> specifies the accumulation time period.

Section	RTRV-PM-ENCAP Description
Category	Transparent interface configuration
Security	Retrieve
Related Messages	3.21 ED-OCH: Edit Optical Channel
Input Format	RTRV-PM-ENCAP:[<tid>]:[<aid>]:<ctag>::[<montype>],,,,[<tmper>],[<mondat>],[<montm>]; Where: • <tid> is the target identifier. • <aid> indicates transparent interface or wave interface for which performance monitor data is being retrieved. Valid values are TRANSPARENT-slot-subcard-0, WAVE-slot-subcard, or WAVE-slot. • <ctag> is the correlation tag. • <montype> is monitored parameter type. Valid values are as follows: – FC - Indicates the number of times signal failure threshold was exceeded on an interface. – DC - Indicates the number of times signal degrade threshold was exceeded on an interface. – PSC - Shows protection switch count (for APS) on the AID. – ESS - Errored Second count (Section). – SEFS-S - Severely errored framing seconds count. – SESS - Severely errored second count. – CVRD - Coding violations and running disparity errors. – CDLHEC - CDL header error count. This parameter applies to the OSC WAVE-slot AIDs only. The default is all montypes. • <tmper> is the time period for the counts. Valid values are 15-MIN, 24-HR, or TOTAL. The 15-MIN and 24-HR counts are reported only for the SONET-related counters CVS, ESS, SEFS-S, and SESS. For all other counters, only TOTAL counts are reported. • <mond> is the day the AID was monitored. The format is YY-MM-DD. • <montm> is the time the AID was monitored. The format is HH:SS.
Input Example	To retrieve the performance monitoring parameters for the transparent interface in slot 2, subcard 0, use the following: RTRV-PM-ENCAP:ons155xx:TRANSPARENT-2-0-0:123;

Section	RTRV-PM-ENCAP Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:<error>,<count>,COMPL,,,<interval>" ;
Output Example	SID DATE TIME M 123 COMPLD "TRANSPARENT-2-0-0,OC3:CVS,153,COMPL,,,15-MIN" "TRANSPARENT-2-0-0,OC3:FC,0,COMPL,,,TOTAL" "TRANSPARENT-2-0-0,OC3:DC,5,COMPL,,,TOTAL" "TRANSPARENT-2-0-0,OC3:PSC,6,COMPL,,,TOTAL" ; Where: • FC is the number of times signal failure threshold was exceeded on an interface. • DC is the number of times signal degrade threshold was exceeded on an interface. • PSC is the protection switch count (for APS) on the interface. **Note** Valid values for the time period for this command include 15-MIN, 24-HR and TOTAL. The 15-MIN and 24-HR counts are reported only for SONET related counters. That is CVS, ESS, SEFS-S, SESS. For all other counters, only TOTAL counts is reported.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.67 RTRV-PM-EQPT: Retrieve Performance Monitoring Equipment

Use this command to retrieve performance monitoring data for a processor card.

Section	RTRV-PM-EQPT Description
Category	Redundancy Configuration
Security	Retrieve
Related Messages	3.36 INIT-REG-ETH: Initialize Register Ethernet, page 3-34
Input Format	RTRV-PM-EQPT:[<tid>]:[<aid>]:<ctag>; Where: • <tid> is the target identifier. • <aid> is the access identifier. Valid values is SLOT-6 or SLOT-7. • <ctag> is the correlation tag.
Input Example	To retrieve performance monitoring parameters for the processor card in slot 6, use the following: RTRV-PM-EQPT:ons155xx:SLOT-6:123;

Section	RTRV-PM-EQPT Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:<montype>,<date>,,,,<interval>" ;
Output Example	SID DATE TIME M 123 COMPLD "SLOT-6:SWCT,1,,,," "SLOT-6:SWTM,0,,,,01-10-11-19-33" "SLOT-6:AVAILUPTM,0,,,,00-00-03-04-35" "SLOT-6:INITM,0,,,,00-00-00-22-33" "SLOT-6:RCSYNCTM,0,,,,00-00-00-02-18" "SLOT-6:SCSYNCTM,0,,,,00-00-00-06-01" ; /* RTRV-PM-EQPT */ Where: • SWCT is an integer and shows switchover counts. • SWTM is a string and shows the last switchover time in YY-MM-DD-HH-MM. • AVAILUPTM shows available uptime such as time since the last event when the entire system was down. The format is YY-MM-DD-HH-MM. • INITM shows the time since this module was initialized. The format is YY-MM-DD-HH-MM. • RCSYNCTM shows the time since last running-config sync. The format is YY-MM-DD-HH-MM. • SCSYNCTM shows the time since the last startup-config sync. The format is YY-MM-DD-HH-MM.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.68 RTRV-PMMODE-OCH: Retrieve Performance Mode OCH

Use this command to retrieve the configuration for performance monitoring.

Section	RTRV-PMMODE-OCH Description
Category	Transparent interface configuration
Security	Retrieve
Related Messages	3.76 SET-PMMODE-OCH: Set Performance Mode OCH
Input Format	RTRV-PMMODE-OCH:[<tid>]:[<aid>]:<ctag>; Where: • <tid> is the target identifier. • <aid> is the access identifier. The value is TRANSPARENT-slot-subcard-0. • <ctag> is the correlation tag.

Section	RTRV-PMMODE-OCH Description (continued)
Input Example	To retrieve the configuration for performance monitoring, use the following: RTRV-PMMODE-OCH:ons155xx:TRANSPARENT-10-0-0:123;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:,,<pmmode>" ;
Output Example	SID DATE TIME M 123 COMPLD "TRANSPARENT-10-0-0:,,ON" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.69 RTRV-PM-OCH: Retrieve Performance Monitoring

Use this command to retrieve the performance monitoring information for optical parameters on a transponder module specified by the AID. The parameter is specified by <montype> and <tmper> specifies the accumulation time period.

Note The value returned for all optical power related montype parameters is in the range of –40 to 25 dBm. The value returned for all laser bias current related montype parameters is in hundreds of microamperes and has a range from 0 to 10000.The value returned for all laser temperature related montype parameters is in tenths of degrees centigrade and has a range from –500 to 850.

Section	RTRV-PM-OCH Description
Category	Optical Parameter Monitoring
Security	Retrieve
Related Messages	3.67 RTRV-PM-EQPT: Retrieve Performance Monitoring Equipment 3.66 RTRV-PM-ENCAP: Retrieve Performance Encapsulation

Section	RTRV-PM-OCH Description (continued)
Input Format	RTRV-PM-OCH:[<tid>]:[<aid>]:<ctag>::[<montype>],[<monlev>],,[<dirn>],[<tmper>],[<mondat>],[<montm>]; Where: • <tid> is the target identifier. • <aid > is the access identifier. Valid values are WAVE-slot-subcard or WAVEPATCH-slot-subcard-port. • <ctag> is the correlation tag. • <montype> is the performance monitoring parameter. Valid values are as follows: – OPR indicates the current value of the received optical power level. – OPRMIN indicates the minimum value of the received optical power level during a particular interval. – OPRMAX indicates the maximum value of the received optical power level during a particular interval. – OPRAVG indicates the average value of the received optical power level during a particular interval. • <monlev> is the level for the performance monitoring parameter. Valid values are n-UP and n-DN, where n is a decimal number indicating the number of levels in the desired direction. • <dirn> is the direction. Valid values are RCV or TRMT. • <tmper> is the time period for the counts. Valid values are 15-MIN, 24-HR, or TOTAL. The 15-MIN and 24-HR counts are reported only for the SONET-related counters CVS, ESS, SEFS-S, and SESS. For all other counters, only TOTAL counts are reported. • <mond> is the day the AID was monitored. The format is YY-MM-DD. • <montm> is the time the AID was monitored. The format is HH:SS.
Input Example	To retrieve the performance monitor information for the optical parameters monitored on the wavepatch interface in slot 8, subcard 0, port 0, use the following: RTRV-PM-OCH:ons155xx:WAVEPATCH-8-0-0:123;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:<montype>,<value>,COMPL,,<dirn>,<interval>,<date>,<time>" ;

Section	RTRV-PM-OCH Description (continued)
Output Example	SID DATE TIME M 123 COMPLD "WAVEPATCH-8-0-0:OPR,11.0,COMPL,,RCV,CURRENT" "WAVEPATCH-8-0-0:OPRMIN,5.0,COMPL,,RCV,15-MIN,05-09,22-45" "WAVEPATCH-8-0-0:OPRMAX,15.0,COMPL,,RCV,15-MIN,05-09,22-45" "WAVEPATCH-8-0-0:OPRAVG,10.0,COMPL,,RCV,15-MIN,05-09,22-45" ; Where: • OPR indicates the current value of the received optical power level. • OPRMIN indicates the minimum value of the received optical power level during a particular interval. • OPRMAX indicates the maximum value of the received optical power level during a particular interval. OPRAVG indicates the average value of the received optical power level during a particular interval.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.70 RTRV-THR-OCH: Retrieve Thresholds OCH

Use this command to retrieve the configurations for thresholds. The complete threshold list or specific thresholds within the list can be retrieved.

Note When retrieving a particular threshold from a list, both the ERRTYPE and THRTYPE parameters, along with the THRLISTNAME, must be specified.

Section	RTRV-THR-OCH Description
Category	Threshold list configuration
Security	Retrieve
Related Messages	3.13 DLT-THR-OCH: Delete Threshold OCH 3.31 ENT-THR-OCH: Enter Thresholds OCH 3.71 RTRV-TH-rr: Retrieve Threshold 3.78 SET-TH-OCH: Set Optical Threshold

Section	RTRV-THR-OCH Description (continued)
Input Format	RTRV-THR-OCH:[<tid>]:[<thrlistname>]:<ctag>:::[ERRTYPE=<errtype>, THRTYPE=<thrtype>]; Where: • <tid> is the target identifier. • <thrlistname> specifies the threshold list. • <ctag> is the correlation tag. • <errtype> indicates the type of error counter to which the threshold applies. Valid values are as follows: – CVS - SONET/SDH section CV errors – CVRD - 8B/10B code violations and running disparity errors – CDLHEC - CDL HEC errors – CRC - Cyclic redundancy check errors • <thrtype> indicates the threshold type. Valid values are as follows: – DEGR - Indicates that a signal degrade condition has been reached. Use this threshold type only when <errtype> is CVS. – FAIL - Indicates that a ignal failure condition has been reached. Use this threshold type only when <errtype> is CVS. – EVTTHR - Indicates that a non-service affecting condition has been reached. Use this threshold type only when <errtype> is not CVS. – ALMTHR - Iindicates that a service affecting condition has been reached. Use this threshold type only when <errtype> is not CVS.
Input Example	To retrieve the configurations for thresholds, use the following: RTRV-THR-OCH:ons155xx:sonet-cvs:123;
Output Format	SID DATE TIME M CTAG COMPLD "<thrlistname>:ERRTYPE=<errtype>,THRTYPE=<thrtype>,VALUE=<value>, INDEX=<index>,TRGAPS=<trgaps>,DESCR=<descr>" ;
Output Example	SID DATE TIME M 123 COMPLD "sonet-cvs:ERRTYPE=CVS,THRTYPE=DEGR,VALUE=7,INDEX=1, TRGAPS=Y,DESCR=xxx" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.71 RTRV-TH-rr: Retrieve Threshold

Use this command to retrieve the optical power threshold values configured on the wavepatch interfaces.

Section	RTRV-TH-OCH Description
Category	Optical Parameter Monitoring
Security	Retrieve
Related Messages	3.23 ED-THR-OCH: Edit Thresholds OCH 3.78 SET-TH-OCH: Set Optical Threshold
Input Format	RTRV-TH-OCH:[<tid>]:[<aid>]:<ctag>::[<montype>]; Where: • <tid> is the target identifier. • <aid> is the access identifier. The valid values are WAVEPATCH-slot-subcard-port. • <ctag> is the correlation tag. • <montype> is the performance monitoring parameter. Valid values are as follows: – OPR indicates the current value of the received optical power level. – OPRMIN indicates the minimum value of the received optical power level during a particular interval. – OPRMAX indicates the maximum value of the received optical power level during a particular interval. – OPRAVG indicates the average value of the received optical power level during a particular interval.
Input Example	To retrieve the threshold values configured on the wavepatch interfaces, use the following: RTRV-TH-OCH:ons155xx:WAVEPATCH-8-0-0:123::OPRHA;
Output Format	SID DATE TIME M CTAG COMPLD "<aid>:<montype>,,<dirn>,<value>" ;
Output Example	SID DATE TIME M 123 COMPLD "WAVEPATCH-8-0-0:OPRHA,,RCV,200" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.72 RTRV-TOD: Retrieve Time of Day

Use this command to retrieve time-of-day (TOD) information for the NE.

Section	RTRV-TOD Description
Category	Generic NE configuration
Security	Retrieve
Related Messages	3.15 ED-DAT: Edit Date
Input Format	RTRV-TOD:[<tid>]::<ctag>; Where: • <tid> is the target identifier. • <ctag> is the correlation tag.
Input Example	To retrieve TOD information for the NE, use the following: RTRV-TOD:ons155xx::123;
Output Format	SID DATE TIME M CTAG COMPLD "<year>,<month>,<day>,<hour>,<minute>, <second>.<thousandths-of-second>,<timezone>" ;
Output Example	SID 2003-02-11 13:30:51 M 123 COMPLD "2003,2,11,13,30,51.879,UTC" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.73 RTRV-USER-SECU: Retrieve User Security

Use this command to retrieve the security parameters associated with a user, except for the password.

Section	RTRV-USER-SECU Description
Category	Security
Security	Retrieve
Related Messages	3.1 ACT-USER: Activate User 3.4 CANC-USER: Cancel User 3.14 DLT-USER-SECU: Delete User Security 3.24 ED-USER-SECU: Edit User Security 3.32 ENT-USER-SECU: Enter User Security

Section	RTRV-USER-SECU Description (continued)
Input Format	RTRV-USER-SECU:[<tid>]:<uid>:<ctag>; Where: • <tid> is the target identifier. • <uid> is the user identifier. • <ctag> is the correlation tag.
Input Example	To retrieve the security parameters associated with a user, use the following: RTRV-USER-SECU:ons155xx:admin:123;
Output Format	SID DATE TIME M CTAG COMPLD "<uid>:,<security>:" ;
Output Example	SID DATE TIME M 123 COMPLD "admin:,PROV:" ;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.74 SET-ATTR-OCH: Set Attributes

Use this command to set the severity associated with the thresholds configured using the SET-TH-OCH command described in the "3.78 SET-TH-OCH: Set Optical Threshold" section on page 3-79.

Section	SET-ATTR-OCH Description
Category	Optical Parameter Monitoring
Security	Retrieve
Related Messages	3.64 RTRV-OCH: Retrieve Optical Channel 3.71 RTRV-TH-rr: Retrieve Threshold 3.70 RTRV-THR-OCH: Retrieve Thresholds OCH 3.78 SET-TH-OCH: Set Optical Threshold

Section	SET-ATTR-OCH Description (continued)
Input Format	SET-ATTR-OCH:[<tid>]:<aid>:<ctag>::[<ntfcncde>],[<condtype>],,[<dirn>]; Where: • <tid> is the target identifier. • <aid> is the access identifier.The valid value of AID is WAVEPATCH-slot-subcard-port. • <ctag> is the correlation tag. • <ntfcncde> indicates the type of notification generated on the NE when a threshold is exceeded or cleared. When the condtyp parameter corresponds to the high alarm or the low alarm conditions, the notification code can have values CR (critical) or MJ (major) only. The condition is reported through REPT ALM service affect flag is set to SA. When the condtyp parameter corresponds to the high warning or low warning conditions, the notification code can have values MN (minor), NA (not alarmed) or NR (not reported). When the notification code is set to MN, the condition is reported through REPT ALM and the service affect flag is NSA. When the notification code is set to NA, the condition is reported through REPT EVT and the condeff flag is set to SC. When the notification code is set to NR, the condition will not be reported (the information can be retrieved from the NE) and the condeff flag is set to SC. • <condtype> is monitored condition type. Valid values are as follows: – OPRHA - Receive optical power level corresponding to the high alarm threshold. If the optical power level is greater than the threshold associated with this parameter, an alarm is generated. – OPRLA - Receive optical power level corresponding to the low alarm threshold. If the optical power level is less than the threshold associated with this parameter, an alarm is generated. – OPRHW - Receive optical power level corresponding to the high warning threshold. If the optical power level is greater than the threshold associated with this parameter, a warning is generated that may be reported using REPT EVT. – OPRLW - Receive optical power level corresponding to the low warning threshold. If the optical power level is less than the threshold associated with this parameter, a warning is generated that may be reported using the REPT EVT. • <dirn> is the direction associated with the information. Valid values are RCV or TRMT. The default is both directions.
Input Example	To configure a severity of MJ on the high alarm threshold on the received optical power, at the wavepatch interface in slot 8, subcard 0, port 0, use the following: SET-ATTR-OCH:ons155xx:WAVEPATCH-8-0-0:123::MJ,OPRHA,,RCV;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.75 SET-NTP: Set NTP

Use this command to configure NTP attributes on the entire system.

Section	SET-NTP Description
Category	NTP
Security	Maintenance
Related Messages	3.62 RTRV-NTP: Retrieve NTP
Input Format	SET-NTP:[<tid>]::<ctag>:::[MASTER=<master>],[MSTRATUM=<mstatum>], [MAXASSOC=<maxassoc>], [CLKPERIOD=<clkperiod>],[UPDCAL=<updcal>]; Where: • <tid> is the target identifier. • <ctag> is the correlation tag. • <master> enables or disables this NE to act as NTP master clock.Valid values are Y or N. The default is N. • <mstratum> indicates stratum value to use while acting as NTP master clock. • <maxassoc> sets the maximum number of NTP associations allowed. Valid values are 0 to 4294967295 . • <clkperiod> sets the length of hardware clock tick in 2^{-32} seconds. Valid values are 0 to 4294967295. • <updcal> indicates whether the NE should update its internal hardware clock with clock value obtained from NTP. Valid values are Y or N. The default is N.
Errors	Errors are listed in Table 2-13 on page 2-9.

3.76 SET-PMMODE-OCH: Set Performance Mode OCH

Use this command to enable and disable performance monitoring on a transparent interface. The <locn> and <modetype> parameters in this command do not apply and are set to NULL.

Section	SET-PMMODE-OCH Description
Category	Transparent interface configuration
Security	Maintenance
Related Messages	3.68 RTRV-PMMODE-OCH: Retrieve Performance Mode OCH
Input Format	SET-PMMODE-OCH:[<tid>]:<aid>:<ctag>::,,<pmstate>; Where: • <tid> is the target identifier. • <aid> is the access identifier. The value is TRANSPARENT-slot-subcard-0. • <ctag> is the correlation tag. • <pmstate> is the performance monitoring state. Valid values are ON or OFF. The default value is OFF.

Section	SET-PMMODE-OCH Description (continued)
Input Example	To enable monitoring on the transparent interface in slot 2, subcard 0, use the following: SET-PMMODE-OCH:ons155xx:TRANSPARENT-2-0-0:123::,,ON;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.77 SET-SID: Set System Identification

Use this command to change the NE system identification code to a specific value. The hostname on the device is changed to this value.

Section	SET-SID Description
Category	Generic NE configuration
Security	Retrieve
Related Messages	3.38 INIT-SYS: Initialize System
Input Format	SET-SID:[<tid>]::<ctag>::<SID>; Where: <tid> is the target identifier. <ctag> is the correlation tag. <sid> is the system identifier.
Input Example	To change the NE system identification code to a specific value, use the following: SET-SID:ons155xx::123::ons155xx-tl1;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.78 SET-TH-OCH: Set Optical Threshold

Use this command to set a threshold level on the monitored optical parameters. Each monitored parameter has a default threshold value assigned to it.

When this command is used with no attributes specified, it restores the default values.

Section	SET-TH-OCH Description
Category	Optical parameter monitoring
Security	Retrieve
Related Messages	3.71 RTRV-TH-rr: Retrieve Threshold 3.70 RTRV-THR-OCH: Retrieve Thresholds OCH 3.31 ENT-THR-OCH: Enter Thresholds OCH

Section	SET-TH-OCH Description (continued)
Input Format	SET-TH-OCH:[<tid>]:[<aid>]:<ctag>::[<montype>],[<thlev>],,[<dirn>]; Where: • <tid> is the target identifier. • <aid> is the access identifier. The valid value is WAVEPATCH-slot-subcard-port. When the second modifier is set to WDM, the AID is WAVEPATCH-slot-subcard-port. Thresholds for Rx parameters only can be configured on the WAVEPATCH-slot-subcard-port. • <montype> specifies one of the following threshold types: – OPRHA - Receive optical power level corresponding to the high alarm threshold. If the optical power level is greater than the threshold associated with this parameter, an alarm is generated. – OPRLA - Receive optical power level corresponding to the low alarm threshold. If the optical power level is less than the threshold associated with this parameter, an alarm is generated. – OPRHW - Receive optical power level corresponding to the high warning threshold. If the optical power level is greater than the threshold associated with this parameter, a warning is generated that may be reported using REPT EVT. – OPRLW - Receive optical power level corresponding to the low warning threshold. If the optical power level is less than the threshold associated with this parameter, a warning is generated that may be reported using the REPT EVT.
Input Example	To configure a high alarm threshold of 20.0 dBm on the received optical power at the wavepatch interface in slot 8, port 0, use the following: SET-TH-OCH:ons155xx:WAVEPATCH-8-0-0:123::OPRHA,200,,RCV;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.79 SQUEEZE-MEM: Squeeze Memory

Use this command to permanently delete files and defragment the file system on a Flash memory device.

Section	SQUEEZE-MEM Description
Category	Memory Management
Security	Retrieve
Related Messages	3.5 CPY-MEM: Copy Memory 3.33 FORMAT-MEM: Format Memory 3.43 RST-MEM: Restore Memory 3.57 RTRV-MEM: Retrieve Memory

Section	SQUEEZE-MEM Description (continued)
Input Format	SQUEEZE-MEM:[<tid>]:<aid>:<ctag>; Where: • <tid> is the target identifier. • <aid> indicates the memory device that is being defragmented. Valid values are BOOTFLASH, DDISK-[0–1], PCMCIA-[0–1], SBY-BOOTFLASH, SBY-DISK-[0–1], or SBY-PCMCIA-[0–1]. • <ctag> is the correlation tag.
Input Example	To delete files and defragment the file system on a Flash memory device, use the following: SQUEEZE-MEM:ons155xx:BOOTFLASH:123;
Errors	Errors are listed in Table 2-13 on page 2-9.

3.80 SW-DX-EQPT: Switch Duplex Equipment

Use this command to switch activity from the active to the standby processor card.

Section	SW-DX-EQPT Description
Category	Redundancy configuration
Security	Maintenance
Related Messages	3.3 ALW-SWDX-EQPT: Allow Switch Duplex Equipment 3.35 INH-SWDX-EQPT: Inhibit Switch Duplex Equipment
Input Format	SW-DX-EQPT:[<tid>]:<aid>:<ctag>::[<mode>]; Where: • <tid> is the target identifier. • <aid> indicates the active processor card. Valid values are SLOT-6 or SLOT-7. • <ctag> is the correlation tag. • <mode> indicates the mode of operation. Valid values are FRCD and NORMAL. The default mode is NORMAL.
Input Example	To forcibly make the active processor card in slot 6 switch to standby mode, use the following: SW-DX-EQPT:ons155xx:SLOT-6:123::FRCD;
Errors	Errors are listed in Table 2-13 on page 2-9.

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