

## **Cisco ONS 15454 and Cisco ONS 15327 TL1 Command Guide**

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## About This Manual

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This section explains who should read the *Cisco ONS 15454 and Cisco ONS 15327 TL1 Command Guide*, how the document is organized, related documentation, document conventions, how to order print and CD-ROM documentation, and how to obtain technical assistance.

## Audience

This guide is for Cisco ONS 15454 and Cisco ONS 15327 technicians and administrators who are responsible for installing, configuring, maintaining, and enhancing ONS 15454 and ONS 15327 networks.

## Organization

Chapter	Description
Chapter 1, “Getting Started”	Explains how to gain access to TL1, command syntax, autonomous messages, provision a DS3E card in CTC using TL1, security level privileges associated with each command, command completion behavior and test access configurations.
Chapter 2, “TL1 Gateway”	Describes the TL1 Gateway and provides procedures and examples for implementing TL1 Gateway on a four node ring.
Chapter 3, “TL1 Command Descriptions”	Lists TL1 commands by category and then lists each command and autonomous message supported by the ONS 15454 and the ONS 15327.
Chapter 4, “TL1 Command Components”	Describes the components of TL1 commands including, default values, access identifiers (AIDs), and parameter types.
Chapter 5, “Ring Provisioning”	Provides sample procedures for setting up STS or VT circuits over existing unidirectional path switched ring (UPSR) and bidirectional line switch ring (BLSR) configurations.

Chapter	Description
Chapter 6, “TL1 Performance Monitoring”	Provides TL1 performance monitoring (PM) information.
Chapter 7, “TL1 Alarms and Errors”	Lists TL1 alarms and errors supported by the ONS 15454 and the ONS 15327 including descriptions and severity.

## Related Documentation

*Cisco ONS 15454 Procedure Guide, Release 3.3*

*Cisco ONS 15454 Reference Guide, Release 3.3*

*Cisco ONS 15454 Troubleshooting Guide, Release 3.3*

*Cisco ONS 15454 Software Upgrade Guide, Release 3.3*

*Cisco ONS 15454 Product Overview, Release 3.3*

*Release Notes for the Cisco ONS 15454, Release 3.3*

*Cisco ONS 15327 User Documentation, Release 3.3*

*Release Notes for the Cisco ONS 15327, Release 3.3*

*Cisco Warranty Services for ONG Products*

*Cisco ONS 15454 Quick Configuration Guide*

*Cisco ONS 15454 Quick Installation Guide*

## Conventions

The following conventions are used throughout this publication:



### Note

Means reader take note. Notes contain helpful suggestions or useful background information.



### Caution

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



### Warning

**Means reader be careful. In this situation, you might do something that could result in harm to yourself or others.**



### Tip

Means the information might help you solve a problem.



Convention	Definition
Telcordia	Replaces all instances of Bellcore, the former name of Telcordia Technologies, Inc.
Cisco Transport Controller (CTC)	Replaces all instances of Cerent Management System (CMS)
<b>Bold</b>	Denotes icons, buttons, or tabs that the user must select
>	Used to separate consecutive actions; for example, “click the Maintenance > Protection > Ring tabs”
<b>Procedure:</b>	Precedes all procedures; a horizontal line indicates the end of each procedure

## Obtaining Documentation

The following sections explain how to obtain documentation from Cisco Systems.

### World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following URL:

<http://www.cisco.com>

Translated documentation is available at the following URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

### Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

## Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco product documentation from the Networking Products Marketplace:  
[http://www.cisco.com/cgi-bin/order/order\\_root.pl](http://www.cisco.com/cgi-bin/order/order_root.pl)
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:  
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

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You can e-mail your comments to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

Cisco Systems  
Attn: Document Resource Connection  
170 West Tasman Drive  
San Jose, CA 95134-9883

We appreciate your comments.

## Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

## Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you to

- Streamline business processes and improve productivity
- Resolve technical issues with online support

- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to the following URL:

<http://www.cisco.com>

## Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available through the Cisco TAC: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Inquiries to Cisco TAC are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

## Cisco TAC Web Site

The Cisco TAC Web Site allows you to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to the following URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco services contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to the following URL to register:

<http://www.cisco.com/register/>

If you cannot resolve your technical issues by using the Cisco TAC Web Site, and you are a Cisco.com registered user, you can open a case online by using the TAC Case Open tool at the following URL:

<http://www.cisco.com/tac/caseopen>

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

## Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; these classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer will automatically open a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

- Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled; for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). In addition, please have available your service agreement number and your product serial number.



# Getting Started

---

Transaction Language 1 (TL1) is a subset of the input and output messages contained in the International Telecommunications Union (ITU) Man-Machine Language (MML). 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 ONS 15454 and ONS 15327 can support up to 20 concurrent TL1 sessions in this release. 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:

- Setting up TL1 communication
- TL1 command syntax
- Autonomous messages
- TL1 commands by user security
- Provisioning a DS3E card in CTC using TL1
- Mixed mode timing support
- TL1 command completion behavior
- Test access

## 1.1 Setting up TL1 Communication

The period during which a user is logged into the ONS 15454 or ONS 15327 is called a session. There are three options you can use to open a session (login):

- Cisco Transport Controller (CTC)
- Telnet
- Craft interface

When you logout of any of these options, you are closing a session.

The ONS 15454 and ONS 15327 allow a maximum of 20 concurrent TL1 sessions using any one or any combination of the options listed above. For information on issuing commands to multiple nodes, see Chapter 2, “TL1 Gateway.”

## 1.1.1 Open a TL1 session

Use the following procedures to open a TL1 session via the CTC, telnet, or craft interface. In the procedures 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 Command Descriptions.”

### Procedure: Open a TL1 Session Via the CTC

- 
- Step 1** Open a browser program (Netscape or Internet Explorer) and type the address of the node you want to communicate with.
  - Step 2** Log into the CTC. The IP address at the title bar should match the IP address of the node you want to communicate with.
  - Step 3** Once logged into the CTC, click **Tools > Open TL1 Connection**.
  - Step 4** From the Select Node dialog box, choose the node you want to communicate with.
  - Step 5** Click **OK**.

A TL1 interface window opens. There are three sub-windows in the TL1 interface window: Request history, Message log, and TL1 request. Type commands in the TL1 request window. You will see responses in the Message log window. The Request history window allows you to recall previous commands by clicking on them.

- Step 6** Verify that the Connect button is selected (grayed out).
- Step 7** Type the Activate User command in the TL1 request window to open a TL1 session:

**ACT-USER:[<TID>]:<UID>:<CTAG>::<PID>;** and press **Enter**.




---

**Note** You must press Enter after the semicolon in each TL1 command, or the command will not be executed.

---

- Step 8** Type the Cancel User command in the TL1 request window or press the **Disconnect** button to close a TL1 session:

**CANC-USER:[<TID>]:<USERID>:<CTAG>;** and press **Enter**.

---

### Procedure: Open a TL1 Session Via Telnet

To access TL1 commands in a telnet session over a craft interface or a LAN connection (TCC+ front panel or backplane pins) you can choose from several ports. Port number 3082 is a raw TCP/IP port; it will not echo and it will not prompt the user. Port number 3083 is a telnet port that uses the telnet protocol and associated telnet escape sequences. Port number 2361 is supported for backward compatibility with earlier releases and has the same behavior as Port 3083 (telnet port). The following procedure is for use on PCs with a Windows operating system.

- 
- Step 1** At the DOS prompt, type **cmd** and click **OK**. (The same steps can also be done from a Unix prompt).
  - Step 2** At the DOS command prompt type:

**TELNET <NODE IP ADDRESS OR NODE NAME> <PORT NUMBER>** and press **Enter**.

The Node IP address or Node Name refers to the IP address or Node Name of the node 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** Type the Activate User command to open a TL1 session:

```
ACT-USER:[<TID>]:<UID>:<CTAG>::<PID>;
```



**Note** When the semicolon is typed, the command is executed immediately.

**Step 4** Type the Cancel User command to close a TL1 session:

```
CANC-USER:[<TID>]:<USERID>:<CTAG>;
```

## Procedure: Open a TL1 Session Via Craft Interface

The TCC+/XTC has two built-in interface ports for accessing the ONS 15454. With one RJ-45 LAN connection you can access the system using a standard browser interface. In the browser interface, you can perform local and remote Operations, Administration, Maintenance, and Provisioning (OAM&P) functions and open a VT100 emulation window to enter TL1 commands. If a browser is not available, you can access the system using a nine-pin RS-232 port. The RS-232 port supports VT100 emulation such that TL1 commands may be entered directly without a browser.

**Step 1** Connect the serial cable to the RS-232 port on the active TCC+/XTC card.

**Step 2** Configure the terminal emulation software (Hyperterminal):

- a. Terminal emulation = vt100
- b. Bits per second = 9600
- c. Parity = None
- d. Stop BITS = 1
- e. Flow control = None

**Step 3** Press **Enter**. An angle bracket prompt (>) appears.

**Step 4** At the > prompt, type the Activate User command to open a TL1 session:

```
ACT-USER:[<TID>]:<UID>:<CTAG>::<PID>;
```



**Note** When the semicolon is typed, the TL1 command is executed immediately.

**Step 5** Type the Cancel User command to close a TL1 session:

```
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, 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 (in this case, the ONS 15454 or ONS 15327), 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 CLI code. To establish the TID for an ONS 15454/15327 node, use the Provisioning > General tabs in CTC.



### 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 ONS 15454/ONS 15327. 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 operator. When the ONS 15454/ONS 15327 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 a vehicle for defining the syntax:

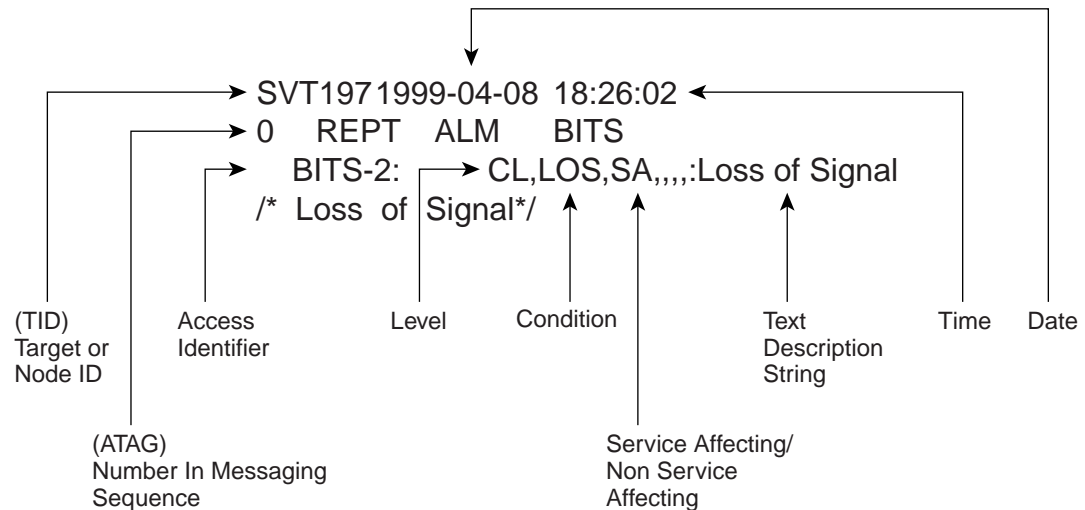
- < > enclose a symbol specifier, for example <CTAG>.
- [ ] enclose an optional symbol, for example [<TID>].
- “ ” enclose a literal character, for example an output format  
“SLOT-7:PLUGIN,TC,,,,,;\“EQUIPMENT PLUG-IN\”,TCC”
- ^ is a space, a literal blank character used only in examples of messages.



## 1.3 Autonomous Messages

The autonomous TL1 messages are included in Chapter 3, “TL1 Command Descriptions” and listed alphabetically. 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 ONS 15454 or ONS 15327. The ONS 15454 and ONS 15327 use whole numbers 0000 to 9999.

**Figure 1-1 Autonomous message format**



40898

### 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 is an example of an output message that includes the Critical alarm code:

```
ab7-56 1970-01-01 16:02:10
*C 4 REPT ALM EQPT
"SYSTEM:CR,HITEMP,NSA,,,,:\High Temperature\",TCC"
```

For more information about alarms, see Chapter 7, “TL1 Alarms and Errors.”

## 1.4 TL1 Commands by User Security

The following table specifies command access privileges for each user security level.

**Table 1-1 Command Access**

Command	Superuser	Provisioning	Maintenance	Retrieve
DLT-USER-SECU	X			
ED-DAT	X			
ED-USER-SECU	X			
ENT-USER-SECU	X			
SET-TOD	X	X		
DLT-*_*	X	X		
ED-*_*	X	X		
ENT-*_*	X	X		
SET-*_*	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	
ALW-*_*	X	X	X	X
INH-*_*	X	X	X	X
REPT * *	X	X	X	X
RTRV-*_*	X	X	X	X
CANC-*_*	X	X	X	X
ACT-*_*	X	X	X	X
ED-PID	X	X	X	X

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 idle times. Table 1-2 shows security levels and their idle times.

**Table 1-2 Security Idle Times**

Security Level	Idle Time
Retrieve	Unlimited
Maintenance	60 minutes
Provisioning	30 minutes
Superuser	15 minutes

## 1.5 Provisioning a DS3E Card in CTC Using TL1

The DS3E card can autosense the framing being received and set the framing accordingly; however, this framing autosense feature can only be set using CTC. Use CTC to set the FMT attribute on a DS3E card to autoprovision which results in the FMT field being blanked out for a few seconds while the DS3E card is determining the framing mode coming into that particular port. The FMT field is then set accordingly to unframed, M23, or CBit. If the DS3E card is not present (pre-provisioned), setting the FMT field to autoprovision will result in the FMT field defaulting to unframed.

The TL1 interface does not support the autoprovision option for the DS3E card; the TL1 interface only supports unframed, M23, or CBit. If autoprovision is selected from CTC and at the same time the TL1 command RTRV-T3 is issued, the TL1 output will result in the FMT field populated with unframed during the time period that the DS3E card (if present) is autosensing the frame format. If the DS3E card is not present (pre-provisioned), issuing RTRV-T3 after CTC sets the FMT to autoprovision will result in the TL1 output populating the FMT field with unframed.

## 1.6 Mixed Mode Timing Support

Although mixed mode timing is supported via TL1 in this release, Cisco strongly advises against its implementation. Mixed mode timing is not a recommended timing mode because of the inherent risk of creating timing loops. Refer to Telcordia document GR-436-CORE, *Digital Network Synchronization Plan* for recommended synchronization planning. Refer to the *Cisco ONS 15454 Procedure Guide* or the *Cisco ONS 15327 User Documentation* for information about setting up ONS 15454/15327 timing. For further assistance contact the Cisco Technical Assistance Center (TAC) at [www.cisco.com](http://www.cisco.com) or call 1-877-323-7368 for unresolved problems.

## 1.7 TL1 Command Completion Behavior

### 1.7.1 General Rules

**Note**

The command completion behavior does not apply to RTRV-CRS, RTRV-ALM, and RTRV-COND commands.

#### 1.7.1.1 Explicit List of AIDs - No Wildcards

If a set of AIDs is explicitly listed, including a set of just one AID, then each AID must complete successfully to return a Cmpld 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

### 1.7.1.2 Implicit List of AIDs - Single AID With Wildcard

If a set of AIDs is implied by the use of the ALL modifier on a single AID, then follow the same rules as in the “Explicit List of AIDs - No Wildcards” section on page 1-7. The caveat is that the implicit list only includes AIDs that apply to the command.

```
SLOT-ALL
FAC-1-ALL
STS-3-ALL
```

where Slot 3 contains an OC-12 and the command is ED-ST51 but STS-3-4 and STS-3-7 are STS3C. The set implied by STS-3-ALL then only contains STS-3-{1,2,3,10,11,12} and will not return an error for STS-3-{4,5,6,7,8,9}. Disregard the STS3C in this case because the modifier of the command specifies that the user is only interested in STS-1 paths. The rule specified in this section then applies to the implicit set of {1,2,3,10,11,12}.

### 1.7.1.3 Explicit List Grouped With Implicit List

If the set of AIDs is comprised of two subsets, one set including explicitly stated AIDs and the other set implied by one or more AID(s) with the ALL modifier, then follow the rules of the “Explicit List of AIDs - No Wildcards” section on page 1-7 and the “Implicit List of AIDs - Single AID With Wildcard” section on page 1-8, respectively.

```
FAC-1-1&FAC-2-ALL
FAC-3-ALL&FAC-7-ALL
STS-2-ALL&STS-12-1&STS-13-2&STS-14-ALL
```

## 1.7.2 Retrieval of Cross Connections

### 1.7.2.1 Explicit List of AIDs - No Wildcards

For an explicit list of AIDs on a RTRV-CROSS-CONNECTION, an error code will be returned for each AID that fails validation (e.g. 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 “Explicit List of AIDs - No Wildcards” section on page 1-7. If the result is either PRTL or CMLPD, then a list of matching cross-connections will accompany the response.

### 1.7.2.2 Implicit List of AIDs - Single AID With Wildcard

If a set of AIDs is implied by the use of the ALL modifier on a single AID, then follow the same AID expansion rule as defined in the example from the “Implicit List of AIDs - Single AID With Wildcard” section on page 1-8. Then apply the following rules to the set:

1. If all valid AIDs match, CMLPD is returned with a matching list of cross-connections.
2. If some valid AIDs match but not all, CMLPD is returned with a matching list of cross-connections.
3. If all valid AIDs fail to match, DENY is returned.

```
RTRV-CRS-ST51:[<TID>]:STS-9-ALL:<CTAG>;
```

where STS-9-ALL maps to STS-9-{1,2,3,10,11,12} because there is a single-port OC-12 card in Slot 3 with STS-3C defined for STS-9-4 and STS-9-7. You then traverse the set and return only the STS1 cross-connections that exist using end points in that set. If no cross-connections are retrieved, CMLPD is returned.

### 1.7.2.3 Explicit List Grouped With Implicit List

When you have determined the implicit list, apply the rules from the “Implicit List of AIDs - Single AID With Wildcard” section on page 1-8 to the implicit list and the rules from the “Explicit List of AIDs - No Wildcards” section on page 1-8 to the explicit list. Apply the following logic to the results from the two subsets:

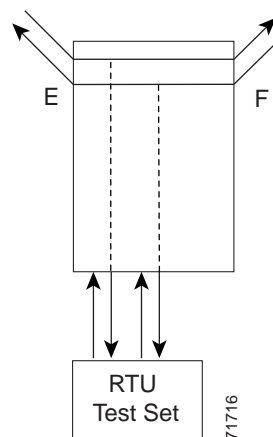
1. Explicit list returns CMPLD, implicit list returns CMPLD, return CMPLD plus matching list
2. Explicit list returns CMPLD, implicit list returns DENY, return PRTLwith errors plus matching list
3. Explicit list returns PRTL, implicit list returns CMPLD, return PRTL with errors plus matching lists
4. Explicit list returns PRTL, implicit list returns DENY, return PRTL with errors plus matching list
5. Explicit list returns DENY, implicit list returns CMPLD, return PRTL with errors plus matching list
6. Explicit list returns DENY, implicit list returns DENY, return DENY with errors

## 1.8 Test Access

TL1 Test Access enables you to monitor and test circuits. Commands to connect, disconnect, and change the test access (TACC) and test access connections have been added to TL1 starting with ONS 15454 R3.0. This section includes test access configurations, mode definitions, split access modes, and loop modes. You can view test access information in CTC; in node view click the **Maintenance > Test Access** tabs.

Refer to Telcordia document GR-834-CORE, *Network Maintenance: Access and Testing* and GR-1402-CORE, *Network Maintenance: Access Testing - DS3 HCDS TSC/RTU and DTAU Functional Requirements* for more information about Test Access. See Chapter 3, “TL1 Command Descriptions” for TL1 command information.

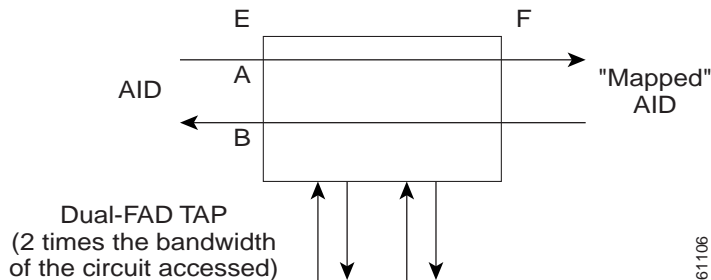
**Figure 1-2 Single node view (Node 1)**



## 1.8.1 Mode Definitions

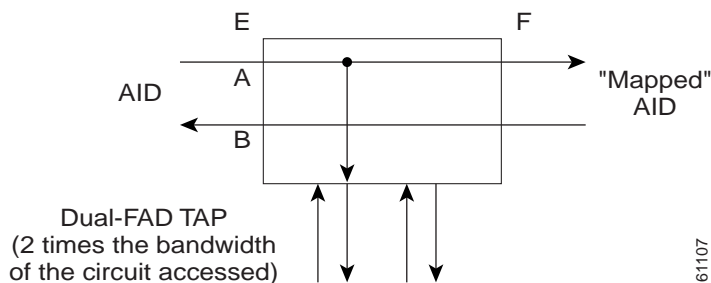
Figure 1-3 through Figure 1-6 show what the different <MD> test access modes refer to. The following descriptions are taken from GR-834-CORE, section 6-4.

**Figure 1-3 Circuit with no access**



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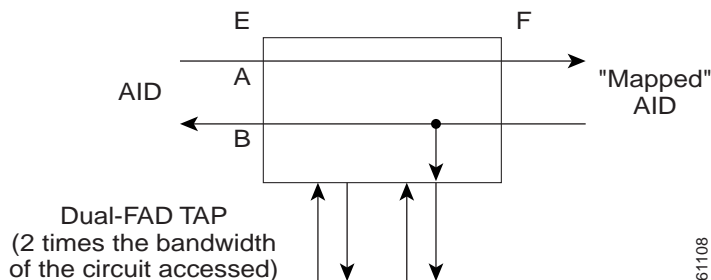
**Figure 1-4 Monitor E (MONE) access**



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MONE indicates that a monitor connection is to be provided from the FAD to the A transmission path of the accessed circuit.

**Figure 1-5 Monitor F (MONF) access**



61108

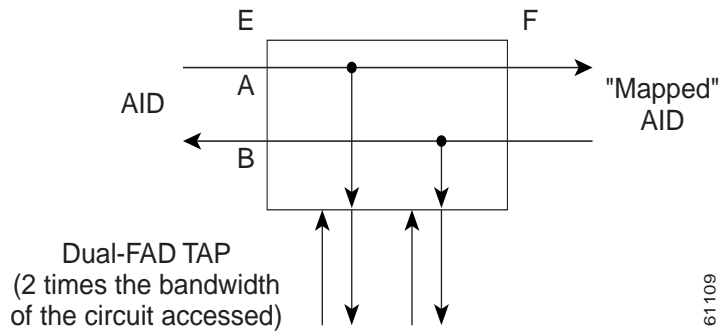
MONF indicates that the FAD is providing a monitor connection to the B transmission path of the accessed circuit.



**Note**

The MONE and SPLTA modes are applicable to unidirectional circuits from E to F. The MONF and SPLTB modes are applicable to unidirectional circuits from F to E.

**Figure 1-6 Monitor EF (MONEF) access**

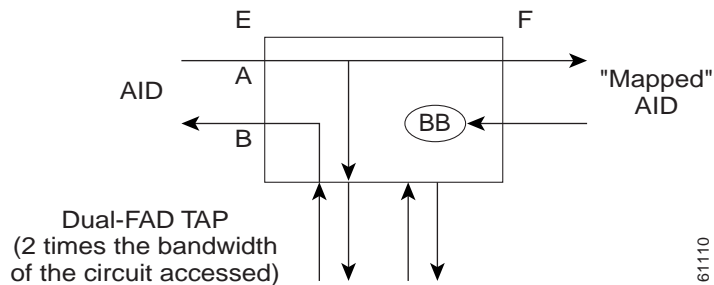


MONEF for T3 (DS3 HCDS) indicates that the odd pair of a FAP is providing a monitor connection to the A transmission path and from the even pair of a FAP to the B transmission path of the accessed circuit.

## 1.8.2 Split E and F Access Modes

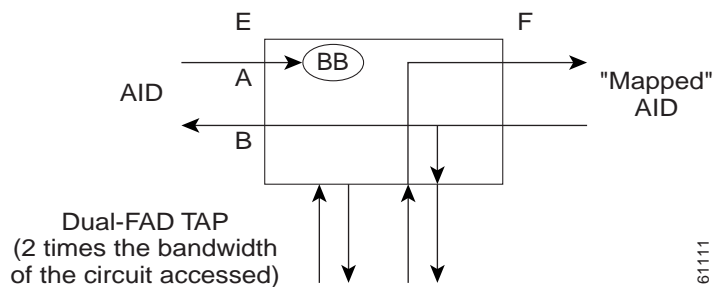
Figure 1-7 through 1-9 show split E and F access modes.

**Figure 1-7 Split E (SPLTE) access**

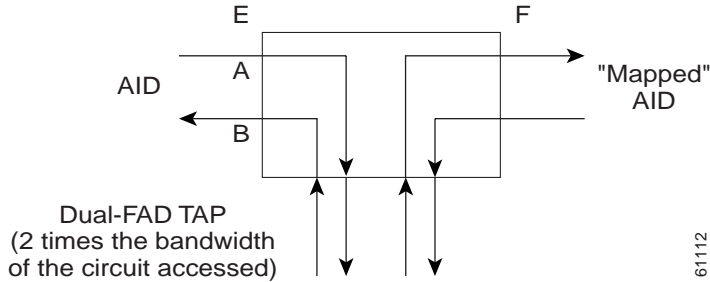


SPLTE indicates to split both the A and B paths and connect the E side of the accessed circuit to the FAD.

**Figure 1-8 Split F (SPLTF) access**



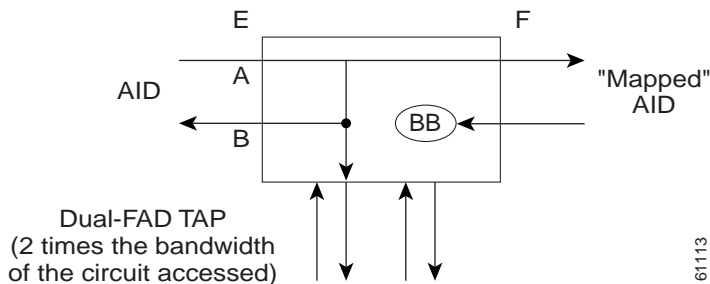
SPLTF indicates to split both the A and B paths and connect the F side of the accessed circuit to the FAD.

**Figure 1-9 Split EF (SPLTEF) access**

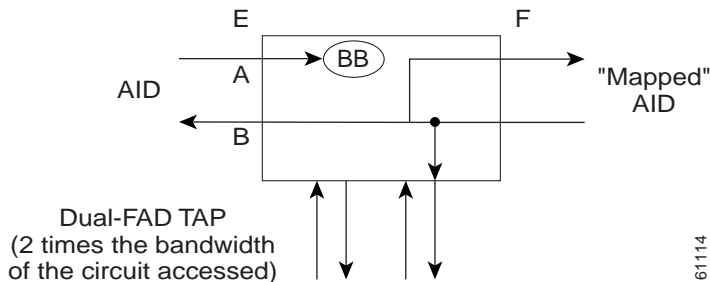
SPLTEF for T1 (DS1 HCDS) indicates to split both the A and B paths, connect the E side of the accessed circuit to FAD1 and the dual facility access digroup (DFAD) pair, and connect the F side to the FAD2 of the same DFAD pair. SPLTEF for T3 (DS3 HCDS) indicates to split both the A and B paths and connect the E side of the accessed circuit to the odd pair of the FAP and the F side to the even pair of the FAP.

### 1.8.3 Loop E and F Modes

Loop E and F modes are basically identical to the SPLT E and F modes except that the outgoing signal is the incoming signal and not the signal from the remote test unit (RTU).

**Figure 1-10 LOOPE access**

LOOPE indicates to split both the A and B paths, connect the incoming line from the E direction to the outgoing line in the E direction, and connect this looped configuration to the FAD.

**Figure 1-11 LOOPF access**

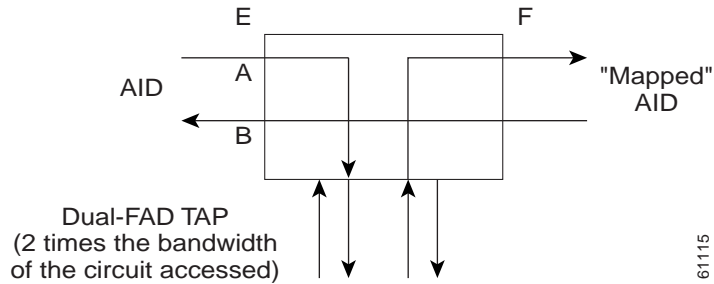
LOOPF indicates to split both the A and B paths, connect the incoming line from the F direction to the outgoing line in the F direction and connect this looped configuration to the FAD.



## 1.8.4 Split A and B Access Modes

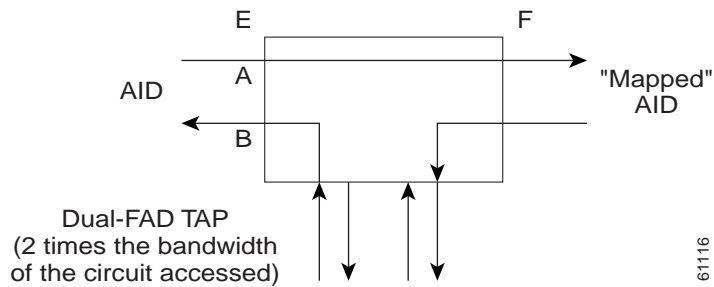
Split A and B access modes are shown in Figure 1-12 and Figure 1-13. These modes are similar to the Split E and F modes, except the signals are sent to the RTU, not the NE signal configuration.

**Figure 1-12 SPLTA access**



SPLTA indicates that a connection is provided from both the E and F sides of the A transmission path of the circuit under test to the FAD and split the A transmission path.

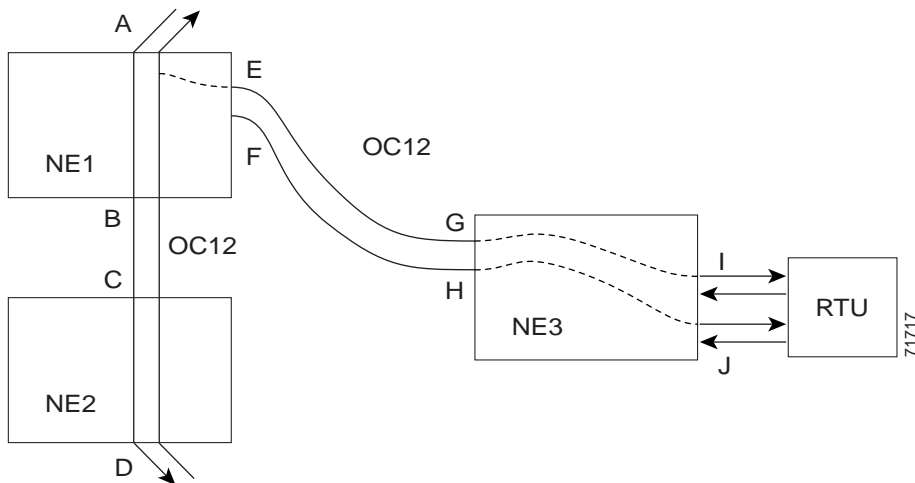
**Figure 1-13 SPLTB access**



SPLTB indicates that a connection is provided from both the E and F sides of the B transmission path of the circuit under test to the FAD and split the B transmission path.

## 1.8.5 Creating Test Access Points

Figure 1-14 Multi-node view (MONE example)



**Example 1-1** *ED-ST51:NE1:STS-1-1:TACC=4;*

This command creates a test access point (TAP) with STS-1-1 and STS-1-2 through NE1. The TAP number assigned is four.

## 1.8.6 Connecting Test Access Points

**Example 1-2** *ENT-CRS-ST51:NE3:<AID I-G>:100::2WAY;*

This command is a connection, not a TAP. <CTAG> is 100.

**Example 1-3** *ENT-CRS-ST51:NE3:<AID J-H>:101::2WAY;*

This command is a second connection, not a TAP.

Assuming the path from A to B is already entered, the A and B points in Figure 1-14 refer to entry and exit points on the node or different cards. The E/F designators refer to the two 2-way connections from NE3.

**Example 1-4** *CONN-TACC-ST51:NE1:<AID A or B>:102::4:<MONE>;*

This command connects the TAP number four to the circuit.

The I and J connections would be TAPs in Figure 1-2, but normal connections in Figure 1-14. CTC will not present TAPs as parts of circuits. TAPs will be displayed on the node-level Maintenance/Test Access Tab. This tab helps to avoid confusion when a connection can be treated one way under TL1 but another way in CTC.

**Note**

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The <AID> provided designates the E side and the other automatically becomes the F side. Once a CONN-TACC is set up, these designations cannot change until a DISC-TACC or another CONN-TACC command is executed. The connection is based on the <AID> supplied.

---

## 1.8.7 Changing Test Access Modes

The command to change a TACC mode is:

**Example 1-5** *CHG-ACCMD-STS1:CISCO:8:123::MONF;*

This command changes the test access mode for the circuit under test. This may be a change from monitoring the data to inserting data into the STS. This command can only be applied to an existing TAP connection. STS192c is not supported for Cisco ONS 15327.

## 1.8.8 Disconnecting Test Access Modes

TAPs can be disconnected in the following ways:

- Issue the DISC-TACC command
- Delete or modify accessed connection
- Drop the TL1 session for any reason, including logout or a dropped telnet session
- Switch or reset a TCC+/XTC

## 1.8.9 Deleting Test Access Points

The command to delete a TAP is:

**Example 1-6** *ED-<STS\_PATH>:[<[TID]>]:<AID>:<CTAG>:::TACC=0;*

**Note**

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The TACC number must be set to zero in order to delete a TAP.

---

**Note**

---

If a TAP is not removed the STS bandwidth will be stranded.

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## TL1 Gateway

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This chapter describes the TL1 Gateway and provides procedures and examples for implementing TL1 Gateway on the ONS 15454.



**Note**

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TL1 Gateway is supported for the Cisco ONS 15454 only.

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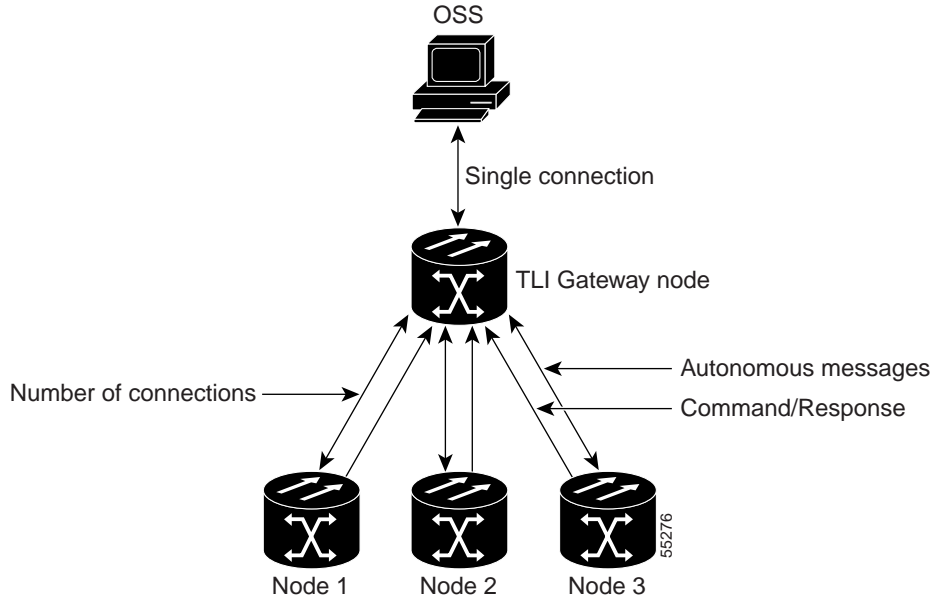
### 2.1 Gateway Network Element Topology

You can issue TL1 commands to multiple nodes via a single connection through the TL1 Gateway. Any node can serve as a Gateway Network Element (GNE), End-Point Network Element (ENE), or Intermediate Network Element (INE). A node becomes a GNE when a TL1 user connects to it and enters a command destined for another node. An ENE is an end node because it processes a TL1 command that is passed to it from another node. An INE is an intermediate node because of topology; it has no special hardware, software, or provisioning.

To implement the TL1 Gateway, use the desired ENE's TID in the ACT-USER command at any node. You do not need to establish a TL1 session on the GNE. From the GNE, you can access several remote nodes which become the ENEs. The ENEs are the message destinations or origins. The INE handles the DCC TCP/IP packet exchange.

The GNE Session is the connection that multiplexes TL1 messages between the OSS/craftsperson and the GNE. The GNE demultiplexes incoming operations support system (OSS) TL1 commands and forwards them to the remote ENE. The GNE also multiplexes incoming responses and autonomous messages to the GNE Session. The ENE Session is the connection that exchanges messages between the GNE and the remote ENE. Figure 2-1 shows the GNE topology.

Figure 2-1 Example of a GNE topology



Each GNE can support six (5+1) concurrent gateway communication sessions (connections from an OS to the GNE). Five of these sessions are via the LAN (wire-wrap, active TCC+ LAN port, or DCC) and the sixth session is reserved for the active TCC+ serial port.

On each gateway communication session a GNE can establish TL1 sessions to up to 31 additional DCC-connected nodes, for a total DCC of 32 nodes. Each GNE can handle 32 nodes and 6 concurrent communication gateway sessions, and the GNE can handle up to a maximum of 96 ENEs/GNE. You can dynamically distribute the ENEs to balance the number of concurrent gateway communication sessions versus the number of NEs on the DCC. The GNE treats the 6 (5+1) concurrent gateway communication sessions and 96 ENEs/GNE limit as a resource pool (Table 2-1) and continues to allocate resources until the pool is exhausted (see Table 2-2 for allocation examples). When the pool is exhausted the GNE returns an “All Gateways in Use” message or an “All ENE Connections in Use” message.

Table 2-1 Gateway Resource Pool

Number of GNEs	Number of GNE Sessions	Number of ENEs	Maximum Number of ENE sessions/GNE session
1	6 (5+1)	96 (dynamically allocated)	31

**Table 2-2** *Examples of a Single GNE Topology Showing How the GNE/ENE Resources can be Allocated*

Number of GNE Communication Sessions	Maximum Number of ENEs
1	31
2	62
3	93
4	96

Number of GNE Communication Sessions	Number of ENEs
1	16
2	32
3	48
4	64
5	80
6	96

**Note**

Issuing commands to specific nodes in the network is accomplished by entering a unique node name in the TID field in each TL1 message. The TID field is synonymous with the name of the node and is the second token in a TL1 command.

## 2.2 Implementing TL1 Gateway

The following procedures demonstrate TL1 Gateway on a four-node ring (without TL1 Gateway in Figure 2-2 and with TL1 Gateway in Figure 2-3), where:

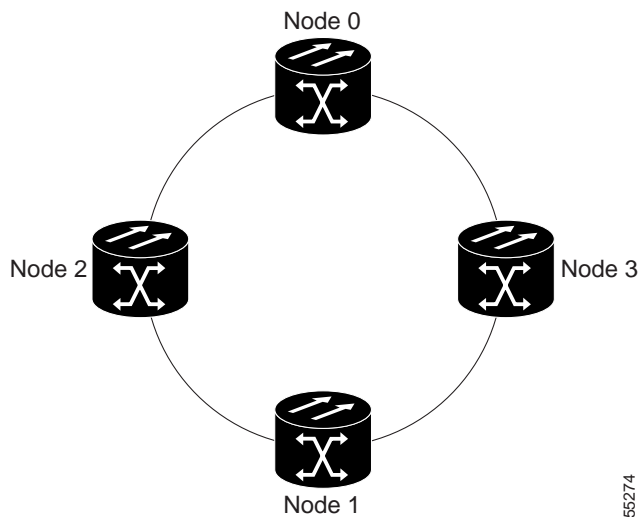
Node 0 is the gateway GNE.

Node 1 is the ENE 1.

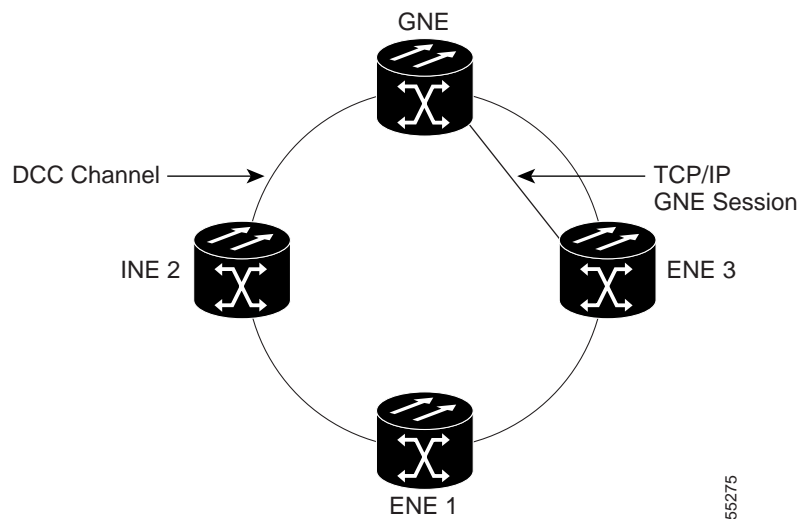
Node 2 is the INE 2.

Node 3 is the ENE 3.

**Figure 2-2** Four-node ring without TL1 Gateway



**Figure 2-3** Four-node ring with TL1 Gateway





## Log Into a Remote ENE

- 
- Step 1** Telnet or serial port to Node 0, which will become the GNE.
- Step 2** To connect to the ENE 1 node, enter the TL1 login command using the following input example:  
ACT-USER:NODE1:USERNAME:1234:PASSWORD;  
The GNE forwards the login to ENE 1. After successful login, ENE 1 sends a COMPLD response.
- Step 3** When you are logged into ENE 1, enter the following TL1 login command to connect to ENE 3:  
ACT-USER:NODE3:USERNAME:1234:PASSWORD;  
The GNE forwards the login to ENE 3. After successful login, the ENE 3 sends a COMPLD response.
- 

## Forward Commands by Specifying the ENE TID (Node 1 or Node 3)

When you are logged into ENE 1 and ENE 3, enter a command and designate a specific TID, as shown in the following example:

RTRV-HDR:NODE1::1; will retrieve the header of Node 1 and

RTRV-HDR:NODE3::3; will retrieve the header of Node 3.

## Receive Autonomous Messages from the Remote ENE

To receive autonomous messages from the remote ENE, you must log into the remote ENE. When you are logged in, you will start receiving autonomous messages. The source of the message is identified by the node TID as part of the message.

## Log Out of a Remote ENE

To disconnect from a remote ENE, you must use the CANC-USER command as follows:

CANC-USER:NODE1:USERNAME:1; will disconnect ENE 1 and

CANC-USER:NODE3:USERNAME:3; will disconnect ENE 3.

The GNE forwards the logout to the remote ENEs. The GNE/ENE TCP session is closed.





# TL1 Command Descriptions

This chapter provides specific information on TL1 commands and autonomous messages for the Cisco ONS 15454 and the Cisco ONS 15327, Release 3.3, including:

- TL1 commands by category
- TL1 commands by card
- TL1 commands, categories and cards
- TL1 commands

For information on command components, such as parameters, see Chapter 4, “TL1 Command Components.”

## 3.1 TL1 Commands by Category

**Table 3-1 TL1 Commands by Category**

Category	Command or Autonomous Message
BLSR	ED-BLSR REPT ALM RING REPT EVT RING RTRV-ALM-RING RTRV-BLSR RTRV-COND-RING
Cross Connections	DLT-CRS-<STS_PATH> DLT-CRS-VT1 ENT-CRS-<STS_PATH> ENT-CRS-VT1 RTRV-CRS-<STS_PATH> RTRV-CRS-VT1

Table 3-1 TL1 Commands by Category (continued)

Category	Command or Autonomous Message
Environmental Alarms and Controls	OPR-EXT-CONT REPT ALM ENV REPT EVT ENV RLS-EXT-CONT RTRV-ALM-ENV RTRV-ATTR-CONT RTRV-ATTR-ENV RTRV-COND-ENV RTRV-EXT-CONT SET-ATTR-CONT SET-ATTR-ENV
Equipment	ALW-SWDX-EQPT ALW-SWTOPROTN-EQPT ALW-SWTOWKG-EQPT DLT-EQPT ED-EQPT ENT-EQPT INH-SWDX-EQPT INH-SWTOPROTN-EQPT INH-SWTOWKG-EQPT REPT ALM EQPT REPT EVT EQPT RTRV-ALM-EQPT RTRV-COND-EQPT RTRV-EQPT SW-DX-EQPT SW-TOPROTN-EQPT SW-TOWKG-EQPT
Fault	REPT ALM <MOD2ALM> REPT ALM COM REPT EVT <MOD2ALM> REPT EVT COM RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-COND-<MOD2ALM> RTRV-COND-ALL
Log	ALW-MSG-DBCHG INH-MSG-DBCHG REPT DBCHG RTRV-LOG
Performance	INIT-REG-<MOD2> RTRV-PM-<MOD2> RTRV-PMMODE-<STS_PATH> RTRV-TH-<MOD2> SET-PMMODE-<STS_PATH> SET-TH-<MOD2>

**Table 3-1 TL1 Commands by Category (continued)**

<b>Category</b>	<b>Command or Autonomous Message</b>
Ports	ED-<OCN_TYPE> ED-DS1 ED-EC1 ED-G1000 ED-T1 ED-T3 RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-<OCN_TYPE> RTRV-DS1 RTRV-EC1 RTRV-G1000 RTRV-T1 RTRV-T3
Security	ACT-USER CANC CANC-USER DLT-USER-SECU ED-PID ED-USER-SECU ENT-USER-SECU REPT EVT SECU
SONET Line Protection	DLT-FFP-<OCN_TYPE> ED-FFP-<OCN_TYPE> ENT-FFP-<OCN_TYPE> EX-SW-<OCN_BLSR> OPR-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<OCN_TYPE> RTRV-FFP-<OCN_TYPE>
STS and VT Paths	ED-<STS_PATH> ED-VT1 RTRV-<STS_PATH> RTRV-PTHTRC-<STS_PATH> RTRV-VT1

**Table 3-1 TL1 Commands by Category (continued)**

<b>Category</b>	<b>Command or Autonomous Message</b>
Synchronization	ED-BITS ED-NE-SYCN ED-SYCN OPR-SYCN REPT ALM BITS REPT ALM SYCN REPT EVT BITS REPT EVT SYCN RLS-SYCN RTRV-ALM-BITS RTRV-ALM-SYCN RTRV-BITS RTRV-COND-BITS RTRV-COND-SYCN RTRV-NE-SYCN RTRV-SYCN
System	ALW-MSG-ALL ED-DAT ED-NE-GEN INH-MSG-ALL INIT-SYS RTRV-HDR RTRV-INV RTRV-NE-GEN RTRV-NE-IPMAP RTRV-TOD SET-TOD
Test Access	CHG-ACCMD-<MOD_TACC> CONN-TACC-<MOD_TACC> DISC-TACC
Testing	OPR-LPBK-<MOD2_IO> RLS-LPBK-<MOD2_IO>
UPSR Switching	OPR-PROTNSW-<STS_PATH> OPR-PROTNSW-VT1 REPT SW RLS-PROTNSW-<STS_PATH> RLS-PROTNSW-VT1

## 3.2 TL1 Commands by Card (ONS 15454)

*Table 3-2 TL1 Commands by Card (ONS 15454)*

ONS 15454 Card	Command or Autonomous Message		
G1000	DISC-TACC	RLS-PROTNSW-<STS_PATH>	
	DLT-CRS-<STS_PATH>	RMV-<MOD_PORT>	
	DLT-CRS-VT1	RST-<MOD_PORT>	
	DLT-EQPT	RTRV-ALM-<MOD2ALM>	
	ED-<STS_PATH>	RTRV-ALM-ALL	
	ED-G1000	RTRV-ALM-EQPT	
	ENT-CRS-<STS_PATH>	RTRV-COND-ALL	
	ENT-EQPT	RTRV-COND-EQPT	
	INIT-SYS	RTRV-COND-<MOD2ALM>	
	OPR-LPBK-<MOD2_IO>	RTRV-CRS-<STS_PATH>	
	OPR-PROTNSW-<STS_PATH>	RTRV-EQPT	
	REPT ALM EQPT	RTRV-G1000	
	REPT ALM <MOD2ALM>	RTRV-INV	
	REPT DBCHG	RTRV-PTHTRC-<STS_PATH>	
	REPT EVT <MOD2ALM>	RTRV-<STS_PATH>	
	REPT EVT EQPT	SET-PMMODE-<STS_PATH>	
	RLS-LPBK-<MOD2_IO>		
	EC1	ALW-SWTOPTN-EQPT	RLS-LPBK-<MOD2_IO>
		ALW-SWTOWKG-EQPT	RMV-<MOD_PORT>
		CHG-ACCMD-<MOD_TACC>	RST-<MOD_PORT>
CONN-TACC-<MOD_TACC>		RTRV-<STS_PATH>	
DISC-TACC		RTRV-ALM-<MOD2ALM>	
DLT-CRS-<STS_PATH>		RTRV-ALM-ALL	
DLT-CRS-VT1		RTRV-ALM-EQPT	
DLT-EQPT		RTRV-COND-<MOD2ALM>	
ED-<STS_PATH>		RTRV-COND-ALL	
ED-EC1		RTRV-COND-EQPT	
ED-EQPT		RTRV-CRS-<STS_PATH>	
ED-VT1		RTRV-CRS-VT1	
ENT-CRS-<STS_PATH>		RTRV-EC1	
ENT-EQPT		RTRV-EQPT	
INH-SWTOPTN-EQPT		RTRV-INV	
INH-SWTOWKG-EQPT		RTRV-PM-<MOD2>	
INIT-REG-<MOD2>		RTRV-PMMODE-<STS_PATH>	
INIT-SYS		RTRV-PTHTRC-<STS_PATH>	
OPR-LPBK-<MOD2_IO>		RTRV-TH-<MOD2>	
REPT ALM <MOD2ALM>		RTRV-VT1	
REPT ALM EQPT		SET-PMMODE-<STS_PATH>	
REPT DBCHG		SET-TH-<MOD2>	
REPT EVT <MOD2ALM>		SW-TOPROTN-EQPT	
REPT EVT EQPT		SW-TOWKG-EQPT	

Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message
DS1	ALW-SWTOPROTN-EQPT      RLS-LPBK-<MOD2_IO> ALW-SWTOWKG-EQPT      RMV-<MOD_PORT> CHG-ACCMD-<MOD_TACC>    RST-<MOD_PORT> CONN-TACC-<MOD_TACC>    RTRV-<STS_PATH> DISC-TACC                RTRV-ALM-<MOD2ALM> DLT-CRS-<STS_PATH>      RTRV-ALM-ALL DLT-CRS-VT1             RTRV-ALM-EQPT DLT-EQPT                RTRV-COND-<MOD2ALM> ED-<STS_PATH>          RTRV-COND-ALL ED-EQPT                RTRV-COND-EQPT ED-T1                    RTRV-CRS-<STS_PATH> ED-VT1                  RTRV-CRS-VT1 ENT-CRS-<STS_PATH>      RTRV-EQPT ENT-EQPT                RTRV-INV INH-SWTOPROTN-EQPT      RTRV-PM-<MOD2> INH-SWTOWKG-EQPT      RTRV-PMMODE-<STS_PATH> INIT-REG-<MOD2>        RTRV-PTHTRC-<STS_PATH> INIT-SYS                RTRV-T1 OPR-LPBK-<MOD2_IO>      RTRV-TH-<MOD2> REPT ALM <MOD2ALM>      RTRV-VT1 REPT ALM EQPT          SET-PMMODE-<STS_PATH> REPT DBCHG             SET-TH-<MOD2> REPT EVT <MOD2ALM>      SW-TOPROTN-EQPT REPT EVT EQPT          SW-TOWKG-EQPT
DS1N	ALW-SWTOPROTN-EQPT      RLS-LPBK-<MOD2_IO> ALW-SWTOWKG-EQPT      RMV-<MOD_PORT> CHG-ACCMD-<MOD_TACC>    RST-<MOD_PORT> CONN-TACC-<MOD_TACC>    RTRV-<STS_PATH> DISC-TACC                RTRV-ALM-<MOD2ALM> DLT-CRS-<STS_PATH>      RTRV-ALM-ALL DLT-CRS-VT1             RTRV-ALM-EQPT DLT-EQPT                RTRV-COND-<MOD2ALM> ED-<STS_PATH>          RTRV-COND-ALL ED-EQPT                RTRV-COND-EQPT ED-T1                    RTRV-CRS-<STS_PATH> ED-VT1                  RTRV-CRS-VT1 ENT-CRS-<STS_PATH>      RTRV-EQPT ENT-EQPT                RTRV-INV INH-SWTOPROTN-EQPT      RTRV-PM-<MOD2> INH-SWTOWKG-EQPT      RTRV-PMMODE-<STS_PATH> INIT-REG-<MOD2>        RTRV-PTHTRC-<STS_PATH> INIT-SYS                RTRV-T1 OPR-LPBK-<MOD2_IO>      RTRV-TH-<MOD2> REPT ALM <MOD2ALM>      RTRV-VT1 REPT ALM EQPT          SET-PMMODE-<STS_PATH> REPT DBCHG             SET-TH-<MOD2> REPT EVT <MOD2ALM>      SW-TOPROTN-EQPT REPT EVT EQPT          SW-TOWKG-EQPT



Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message
DS3	ALW-SWTOPROTN-EQPT                    RLS-LPBK-<MOD2_IO> ALW-SWTOWKG-EQPT                    RMV-<MOD_PORT> CHG-ACCMD-<MOD_TACC>                RST-<MOD_PORT> CONN-TACC-<MOD_TACC>                RTRV-<STS_PATH> DISC-TACC                                RTRV-ALM-<MOD2ALM> DLT-CRS-<STS_PATH>                    RTRV-ALM-ALL DLT-EQPT                                 RTRV-ALM-EQPT ED-<STS_PATH>                          RTRV-COND-<MOD2ALM> ED-EQPT                                 RTRV-COND-ALL ED-T3                                     RTRV-COND-EQPT ENT-CRS-<STS_PATH>                    RTRV-CRS-<STS_PATH> ENT-EQPT                                 RTRV-EQPT INH-SWTOPROTN-EQPT                   RTRV-INV INH-SWTOWKG-EQPT                    RTRV-PM-<MOD2> INIT-REG-<MOD2>                        RTRV-PMMODE-<STS_PATH> INIT-SYS                                 RTRV-PTHTRC-<STS_PATH> OPR-LPBK-<MOD2_IO>                   RTRV-T3 REPT ALM <MOD2ALM>                   RTRV-TH-<MOD2> REPT ALM EQPT                         SET-PMMODE-<STS_PATH> REPT DBCHG                             SET-TH-<MOD2> REPT EVT <MOD2ALM>                   SW-TOPROTN-EQPT REPT EVT EQPT                         SW-TOWKG-EQPT
DS3N	ALW-SWTOPROTN-EQPT                   RLS-LPBK-<MOD2_IO> ALW-SWTOWKG-EQPT                    RMV-<MOD_PORT> CHG-ACCMD-<MOD_TACC>                RST-<MOD_PORT> CONN-TACC-<MOD_TACC>                RTRV-<STS_PATH> DISC-TACC                                RTRV-ALM-<MOD2ALM> DLT-CRS-<STS_PATH>                    RTRV-ALM-ALL DLT-EQPT                                 RTRV-ALM-EQPT ED-<STS_PATH>                          RTRV-COND-<MOD2ALM> ED-EQPT                                 RTRV-COND-ALL ED-T3                                     RTRV-COND-EQPT ENT-CRS-<STS_PATH>                    RTRV-CRS-<STS_PATH> ENT-EQPT                                 RTRV-EQPT INH-SWTOPROTN-EQPT                   RTRV-INV INH-SWTOWKG-EQPT                    RTRV-PM-<MOD2> INIT-REG-<MOD2>                        RTRV-PMMODE-<STS_PATH> INIT-SYS                                 RTRV-PTHTRC-<STS_PATH> OPR-LPBK-<MOD2_IO>                   RTRV-T3 REPT ALM <MOD2ALM>                   RTRV-TH-<MOD2> REPT ALM EQPT                         SET-PMMODE-<STS_PATH> REPT DBCHG                             SET-TH-<MOD2> REPT EVT <MOD2ALM>                   SW-TOPROTN-EQPT REPT EVT EQPT                         SW-TOWKG-EQPT

Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message
DS3E	ALW-SWTOPROTN-EQPT      RLS-LPBK-<MOD2_IO> ALW-SWTOWKG-EQPT      RMV-<MOD_PORT> CHG-ACCMD-<MOD_TACC>   RST-<MOD_PORT> CONN-TACC-<MOD_TACC>   RTRV-<STS_PATH> DISC-TACC                RTRV-ALM-<MOD2ALM> DLT-CRS-<STS_PATH>      RTRV-ALM-ALL DLT-EQPT                 RTRV-ALM-EQPT ED-<STS_PATH>            RTRV-COND-<MOD2ALM> ED-EQPT                 RTRV-COND-ALL ED-T3                     RTRV-COND-EQPT ENT-CRS-<STS_PATH>      RTRV-CRS-<STS_PATH> ENT-EQPT                 RTRV-EQPT INH-SWTOPROTN-EQPT      RTRV-INV INH-SWTOWKG-EQPT      RTRV-PM-<MOD2> INIT-REG-<MOD2>         RTRV-PMMODE-<STS_PATH> INIT-SYS                 RTRV-PTHTRC-<STS_PATH> OPR-LPBK-<MOD2_IO>      RTRV-T3 REPT ALM <MOD2ALM>      RTRV-TH-<MOD2> REPT ALM EQPT            SET-PMMODE-<STS_PATH> REPT DBCHG              SET-TH-<MOD2> REPT EVT <MOD2ALM>      SW-TOPROTN-EQPT REPT EVT EQPT            SW-TOWKG-EQPT
DS3NE	ALW-SWTOPROTN-EQPT      RLS-LPBK-<MOD2_IO> ALW-SWTOWKG-EQPT      RMV-<MOD_PORT> CHG-ACCMD-<MOD_TACC>   RST-<MOD_PORT> CONN-TACC-<MOD_TACC>   RTRV-<STS_PATH> DISC-TACC                RTRV-ALM-<MOD2ALM> DLT-CRS-<STS_PATH>      RTRV-ALM-ALL DLT-EQPT                 RTRV-ALM-EQPT ED-<STS_PATH>            RTRV-COND-<MOD2ALM> ED-EQPT                 RTRV-COND-ALL ED-T3                     RTRV-COND-EQPT ENT-CRS-<STS_PATH>      RTRV-CRS-<STS_PATH> ENT-EQPT                 RTRV-EQPT INH-SWTOPROTN-EQPT      RTRV-INV INH-SWTOWKG-EQPT      RTRV-PM-<MOD2> INIT-REG-<MOD2>         RTRV-PMMODE-<STS_PATH> INIT-SYS                 RTRV-PTHTRC-<STS_PATH> OPR-LPBK-<MOD2_IO>      RTRV-T3 REPT ALM <MOD2ALM>      RTRV-TH-<MOD2> REPT ALM EQPT            SET-PMMODE-<STS_PATH> REPT DBCHG              SET-TH-<MOD2> REPT EVT <MOD2ALM>      SW-TOPROTN-EQPT REPT EVT EQPT            SW-TOWKG-EQPT

Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message	
DS3XM	ALW-SWTOPROTN-EQPT ALW-SWTOWKG-EQPT CHG-ACCMD-<MOD_TACC> CONN-TACC-<MOD_TACC> DISC-TACC DLT-CRS-<STS_PATH> DLT-CRS-VT1 DLT-EQPT ED-<STS_PATH> ED-DS1 ED-EQPT ED-T3 ED-VT1 ENT-CRS-<STS_PATH> ENT-CRS-VT1 ENT-EQPT INH-SWTOPROTN-EQPT INH-SWTOWKG-EQPT INIT-REG-<MOD2> INIT-SYS OPR-LPBK-<MOD2_IO> REPT ALM <MOD2ALM> REPT ALM EQPT REPT DBCHG REPT EVT <MOD2ALM>	REPT EVT EQPT RLS-LPBK-<MOD2_IO> RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-<STS_PATH> RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-ALM-EQPT RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-EQPT RTRV-CRS-<STS_PATH> RTRV-CRS-VT1 RTRV-DS1 RTRV-EQPT RTRV-INV RTRV-PM-<MOD2> RTRV-PMMODE-<STS_PATH> RTRV-PTHTRC-<STS_PATH> RTRV-TH-<MOD2> RTRV-VT1 SET-PMMODE-<STS_PATH> SET-TH-<MOD2> SW-TOPROTN-EQPT SW-TOWKG-EQPT

Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message
OC3	CHG-ACCMD-<MOD_TACC>      RLS-LPBK-<MOD2_IO> CONN-TACC-<MOD_TACC>      RLS-PROTNSW-<OCN_TYPE> DISC-TACC                      RLS-PROTNSW-<STS_PATH> DLT-CRS-<STS_PATH>          RLS-PROTNSW-VT1 DLT-CRS-VT1                    RLS-SYNCNSW DLT-EQPT                        RMV-<MOD_PORT> DLT-FFP-<OCN_TYPE>          RST-<MOD_PORT> ED-<OCN_TYPE>                RTRV-<OCN_TYPE> ED-<STS_PATH>                RTRV-<STS_PATH> ED-BLSR                        RTRV-ALM-<MOD2ALM> ED-FFP-<OCN_TYPE>          RTRV-ALM-ALL ED-VT1                         RTRV-ALM-EQPT ENT-CRS-<STS_PATH>          RTRV-ALM-SYNCN ENT-CRS-VT1                   RTRV-COND-<MOD2ALM> ENT-EQPT                       RTRV-COND-ALL ENT-FFP-<OCN_TYPE>          RTRV-COND-EQPT INIT-REG-<MOD2>              RTRV-CRS-<STS_PATH> INIT-SYS                       RTRV-CRS-VT1 OPR-LPBK-<MOD2_IO>          RTRV-DS1 OPR-PROTNSW-<OCN_TYPE>      RTRV-EQPT OPR-PROTNSW-<STS_PATH>      RTRV-FFP-<OCN_TYPE> OPR-PROTNSW-VT1              RTRV-INV OPR-SYNCNSW                  RTRV-NE-IPMAP REPT ALM <MOD2ALM>          RTRV-PM-<MOD2> REPT ALM EQPT                RTRV-PMMODE-<STS_PATH> REPT ALM SYNCN               RTRV-PTHTRC-<STS_PATH> REPT DBCHG                    RTRV-TH-<MOD2> REPT EVT <MOD2ALM>          RTRV-VT1 REPT EVT EQPT                SET-PMMODE-<STS_PATH> REPT EVT SYNCN               SET-TH-<MOD2>

Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message	
OC12	CHG-ACCMD-<MOD_TACC>	REPT EVT SYNCN
	CONN-TACC-<MOD_TACC>	RLS-LPBK-<MOD2_IO>
	DISC-TACC	RLS-PROTNSW-<OCN_TYPE>
	DLT-CRS-<STS_PATH>	RLS-PROTNSW-<STS_PATH>
	DLT-CRS-VT1	RLS-PROTNSW-VT1
	DLT-EQPT	RLS-SYNCNSW
	DLT-FFP-<OCN_TYPE>	RMV-<MOD_PORT>
	ED-<OCN_TYPE>	RST-<MOD_PORT>
	ED-<STS_PATH>	RTRV-<OCN_TYPE>
	ED-BLSR	RTRV-<STS_PATH>
	ED-FFP-<OCN_TYPE>	RTRV-ALM-ALL
	ED-VT1	RTRV-ALM-EQPT
	ENT-CRS-<STS_PATH>	RTRV-ALM-RING
	ENT-CRS-VT1	RTRV-ALM-SYNCN
	ENT-EQPT	RTRV-ALM-<MOD2ALM>
	ENT-FFP-<OCN_TYPE>	RTRV-BLSR
	EX-SW-<OCN_BLSR>	RTRV-COND-<MOD2ALM>
	INIT-REG-<MOD2>	RTRV-COND-ALL
	INIT-SYS	RTRV-COND-EQPT
	OPR-LPBK-<MOD2_IO>	RTRV-COND-RING
	OPR-PROTNSW-<OCN_TYPE>	RTRV-CRS-<STS_PATH>
	OPR-PROTNSW-<STS_PATH>	RTRV-CRS-VT1
	OPR-PROTNSW-VT1	RTRV-EQPT
	OPR-SYNCNSW	RTRV-FFP-<OCN_TYPE>
	REPT ALM <MOD2ALM>	RTRV-INV
	REPT ALM EQPT	RTRV-NE-IPMAP
	REPT ALM RING	RTRV-PM-<MOD2>
	REPT ALM SYNCN	RTRV-PMODE-<STS_PATH>
	REPT DBCHG	RTRV-TH-<MOD2>
	REPT EVT <MOD2ALM>	RTRV-VT1
	REPT EVT EQPT	SET-PMODE-<STS_PATH>
	REPT EVT RING	SET-TH-<MOD2>

Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message
4 port OC12	CHG-ACCMD-<MOD_TACC> REPT EVT SYNCN CONN-TACC-<MOD_TACC> RLS-LPBK-<MOD2_IO> DISC-TACC RLS-PROTNSW-<OCN_TYPE> DLT-CRS-<STS_PATH> RLS-PROTNSW-<STS_PATH> DLT-CRS-VT1 RLS-PROTNSW-VT1 DLT-EQPT RLS-SYNCNSW DLT-FFP-<OCN_TYPE> RMV-<MOD_PORT> ED-<OCN_TYPE> RST-<MOD_PORT> ED-<STS_PATH> RTRV-<OCN_TYPE> ED-BLSR RTRV-<STS_PATH> ED-FFP-<OCN_TYPE> RTRV-ALM-ALL ED-VT1 RTRV-ALM-EQPT ENT-CRS-<STS_PATH> RTRV-ALM-RING ENT-CRS-VT1 RTRV-ALM-SYNCN ENT-EQPT RTRV-ALM-<MOD2ALM> ENT-FFP-<OCN_TYPE> RTRV-BLSR EX-SW-<OCN_BLSR> RTRV-COND-<MOD2ALM> INIT-REG-<MOD2> RTRV-COND-ALL INIT-SYS RTRV-COND-EQPT OPR-LPBK-<MOD2_IO> RTRV-COND-RING OPR-PROTNSW-<OCN_TYPE> RTRV-CRS-<STS_PATH> OPR-PROTNSW-<STS_PATH> RTRV-CRS-VT1 OPR-PROTNSW-VT1 RTRV-EQPT OPR-SYNCNSW RTRV-FFP-<OCN_TYPE> REPT ALM <MOD2ALM> RTRV-INV REPT ALM EQPT RTRV-NE-IPMAP REPT ALM RING RTRV-PM-<MOD2> REPT ALM SYNCN RTRV-PMMODE-<STS_PATH> REPT DBCHG RTRV-TH-<MOD2> REPT EVT <MOD2ALM> SET-PMMODE-<STS_PATH> REPT EVT EQPT SET-TH-<MOD2> REPT EVT RING

Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message	
OC48	CHG-ACCMD-<MOD_TACC>	REPT EVT SYNCN
	CONN-TACC-<MOD_TACC>	RLS-LPBK-<MOD2_IO>
	DISC-TACC	RLS-PROTNSW-<OCN_TYPE>
	DLT-CRS-<STS_PATH>	RLS-PROTNSW-<STS_PATH>
	DLT-CRS-VT1	RLS-PROTNSW-VT1
	DLT-EQPT	RLS-SYNCNSW
	DLT-FFP-<OCN_TYPE>	RMV-<MOD_PORT>
	ED-<OCN_TYPE>	RST-<MOD_PORT>
	ED-<STS_PATH>	RTRV-<OCN_TYPE>
	ED-BLSR	RTRV-<STS_PATH>
	ED-FFP-<OCN_TYPE>	RTRV-ALM-<MOD2ALM>
	ED-VT1	RTRV-ALM-ALL
	ENT-CRS-<STS_PATH>	RTRV-ALM-EQPT
	ENT-CRS-VT1	RTRV-ALM-RING
	ENT-EQPT	RTRV-ALM-SYNCN
	ENT-FFP-<OCN_TYPE>	RTRV-BLSR
	EX-SW-<OCN_BLSR>	RTRV-COND-<MOD2ALM>
	INIT-REG-<MOD2>	RTRV-COND-ALL
	INIT-SYS	RTRV-COND-EQPT
	OPR-LPBK-<MOD2_IO>	RTRV-COND-RING
	OPR-PROTNSW-<OCN_TYPE>	RTRV-CRS-<STS_PATH>
	OPR-PROTNSW-<STS_PATH>	RTRV-CRS-VT1
	OPR-PROTNSW-VT1	RTRV-EQPT
	OPR-SYNCNSW	RTRV-FFP-<OCN_TYPE>
	REPT ALM <MOD2ALM>	RTRV-INV
	REPT ALM EQPT	RTRV-NE-IPMAP
	REPT ALM RING	RTRV-PM-<MOD2>
	REPT ALM SYNCN	RTRV-PMODE-<STS_PATH>
	REPT DBCHG	RTRV-TH-<MOD2>
	REPT EVT <MOD2ALM>	RTRV-VT1
	REPT EVT EQPT	SET-PMODE-<STS_PATH>
	REPT EVT RING	SET-TH-<MOD2>

Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message
OC48AS	CHG-ACCMD-<MOD_TACC> CONN-TACC-<MOD_TACC> DISC-TACC DLT-CRS-<STS_PATH> DLT-CRS-VT1 DLT-EQPT DLT-FFP-<OCN_TYPE> ED-<OCN_TYPE> ED-<STS_PATH> ED-BLSR ED-FFP-<OCN_TYPE> ED-VT1 ENT-CRS-<STS_PATH> ENT-CRS-VT1 ENT-EQPT ENT-FFP-<OCN_TYPE> EX-SW-<OCN_BLSR> INIT-REG-<MOD2> INIT-SYS OPR-LPBK-<MOD2_IO> OPR-PROTNSW-<OCN_TYPE> OPR-PROTNSW-<STS_PATH> OPR-PROTNSW-VT1 OPR-SYCNCSW REPT ALM <MOD2ALM> REPT ALM EQPT REPT ALM RING REPT ALM SYNCN REPT DBCHG REPT EVT <MOD2ALM> REPT EVT EQPT REPT EVT RING REPT EVT SYNCN RLS-LPBK-<MOD2_IO> RLS-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<STS_PATH> RLS-PROTNSW-VT1 RLS-SYCNCSW RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-<OCN_TYPE> RTRV-<STS_PATH> RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-ALM-EQPT RTRV-ALM-RING RTRV-ALM-SYCN RTRV-BLSR RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-EQPT RTRV-COND-RING RTRV-CRS-<STS_PATH> RTRV-CRS-VT1 RTRV-EQPT RTRV-FFP-<OCN_TYPE> RTRV-INV RTRV-NE-IPMAP RTRV-PTHTRC-<STS_PATH> RTRV-PM-<MOD2> RTRV-PMMODE-<STS_PATH> RTRV-TH-<MOD2> RTRV-VT1 SET-PMMODE-<STS_PATH> SET-TH-<MOD2>



Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message
OC192	CHG-ACCMD-<MOD_TACC>      RLS-LPBK-<MOD2_IO> CONN-TACC-<MOD_TACC>      RLS-PROTNSW-<OCN_TYPE> DISC-TACC                      RLS-PROTNSW-<STS_PATH> DLT-CRS-<STS_PATH>          RLS-PROTNSW-VT1 DLT-CRS-VT1                    RLS-SYNCNSW DLT-EQPT                        RMV-<MOD_PORT> DLT-FFP-<OCN_TYPE>          RST-<MOD_PORT> ED-<OCN_TYPE>                RTRV-<OCN_TYPE> ED-<STS_PATH>                RTRV-<STS_PATH> ED-BLSR                        RTRV-ALM-<MOD2ALM> ED-FFP-<OCN_TYPE>          RTRV-ALM-ALL ED-VT1                         RTRV-ALM-EQPT ENT-CRS-<STS_PATH>          RTRV-ALM-RING ENT-CRS-VT1                  RTRV-ALM-SYCN ENT-EQPT                       RTRV-BLSR ENT-FFP-<OCN_TYPE>          RTRV-COND-<MOD2ALM> EX-SW-<OCN_BLSR>            RTRV-COND-ALL INIT-REG-<MOD2>              RTRV-COND-EQPT INIT-SYS                       RTRV-COND-RING OPR-LPBK-<MOD2_IO>          RTRV-CRS-<STS_PATH> OPR-PROTNSW-<OCN_TYPE>      RTRV-CRS-VT1 OPR-PROTNSW-<STS_PATH>      RTRV-EQPT OPR-PROTNSW-VT1              RTRV-FFP-<OCN_TYPE> OPR-SYCNNSW                  RTRV-INV REPT ALM <MOD2ALM>          RTRV-NE-IPMAP REPT ALM EQPT                RTRV-PTHTRC-<STS_PATH> REPT ALM RING                RTRV-PM-<MOD2> REPT ALM SYCN                RTRV-PMODE-<STS_PATH> REPT DBCHG                   RTRV-TH-<MOD2> REPT EVT <MOD2ALM>          RTRV-VT1 REPT EVT EQPT                SET-PMODE-<STS_PATH> REPT EVT RING                SET-TH-<MOD2> REPT EVT SYCN
E100T	DLT-EQPT                        RTRV-ALM-<MOD2ALM> ENT-EQPT                       RTRV-ALM-ALL INIT-SYS                       RTRV-ALM-EQPT REPT ALM <MOD2ALM>          RTRV-COND-<MOD2ALM> REPT ALM EQPT                RTRV-COND-ALL REPT DBCHG                   RTRV-COND-EQPT REPT EVT <MOD2ALM>          RTRV-EQPT REPT EVT EQPT                RTRV-INV
E1000	DLT-EQPT                        RTRV-ALM-<MOD2ALM> ENT-EQPT                       RTRV-ALM-ALL INIT-SYS                       RTRV-ALM-EQPT REPT ALM <MOD2ALM>          RTRV-COND-<MOD2ALM> REPT ALM EQPT                RTRV-COND-ALL REPT DBCHG                   RTRV-COND-EQPT REPT EVT <MOD2ALM>          RTRV-EQPT REPT EVT EQPT                RTRV-INV

Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message
TCC+	DLT-EQPT ED-BITS ED-NE-GEN ED-NE-SYNCN ED-SYNCN ENT-EQPT INIT-SYS OPR-SYNCNSW REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM EQPT REPT ALM SYNCN REPT DBCHG REPT EVT <MOD2ALM> REPT EVT BITS REPT EVT EQPT REPT EVT SYNCN RLS-SYNCNSW RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-ALM-BITS RTRV-ALM-EQPT RTRV-ALM-SYNCN RTRV-BITS RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-BITS RTRV-COND-EQPT RTRV-EQPT RTRV-INV RTRV-NE-GEN RTRV-NE-SYNCN RTRV-SYNCN
XC	ALW-SWDX-EQPT DLT-EQPT ENT-EQPT INH-SWDX-EQPT INIT-SYS REPT ALM <MOD2ALM> REPT ALM EQPT REPT DBCHG REPT EVT <MOD2ALM> REPT EVT EQPT REPT SW RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-ALM-EQPT RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-EQPT RTRV-EQPT RTRV-INV SW-DX-EQPT
XCVT	ALW-SWDX-EQPT DLT-EQPT ENT-EQPT INH-SWDX-EQPT INIT-SYS REPT ALM <MOD2ALM> REPT ALM EQPT REPT DBCHG REPT EVT <MOD2ALM> REPT EVT EQPT REPT SW RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-ALM-EQPT RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-EQPT RTRV-EQPT RTRV-INV SW-DX-EQPT

Table 3-2 TL1 Commands by Card (ONS 15454)

ONS 15454 Card	Command or Autonomous Message	
XC10G	ALW-SWDX-EQPT	REPT SW
	DLT-EQPT	RTRV-ALM-<MOD2ALM>
	ENT-EQPT	RTRV-ALM-ALL
	INH-SWDX-EQPT	RTRV-ALM-EQPT
	INIT-SYS	RTRV-COND-<MOD2ALM>
	REPT ALM <MOD2ALM>	RTRV-COND-ALL
	REPT ALM EQPT	RTRV-COND-EQPT
	REPT DBCHG	RTRV-EQPT
	REPT EVT <MOD2ALM>	RTRV-INV
	REPT EVT EQPT	SW-DX-EQPT
AIC	DLT-EQPT	RTRV-ALM-ENV
	ENT-EQPT	RTRV-ALM-EQPT
	INIT-SYS	RTRV-ATTR-CONT
	OPR-EXT-CONT	RTRV-ATTR-ENV
	REPT ALM <MOD2ALM>	RTRV-COND-<MOD2ALM>
	REPT ALM ENV	RTRV-COND-ALL
	REPT ALM EQPT	RTRV-COND-ENV
	REPT DBCHG	RTRV-COND-EQPT
	REPT EVT <MOD2ALM>	RTRV-EQPT
	REPT EVT ENV	RTRV-EXT CONT
	REPT EVT EQPT	RTRV-INV
	RLS-EXT-CONT	SET-ATTR-CONT
	RTRV-ALM-<MOD2ALM>	SET-ATTR-ENV
	RTRV-ALM-ALL	

## 3.3 TL1 Commands by Card (ONS 15327)

**Table 3-3 TL1 Commands by Card (ONS 15327)**

ONS 15327Card	Command or Autonomous Message
XTC	CHG-ACCMD-<MOD_TACC>
	CONN-TACC-<MOD_TACC>
	DISC-TACC
	DLT-CRS-<STS_PATH>
	DLT-CRS-VT1
	DLT-EQPT
	ED-<STS_PATH>
	ED-BITS
	ED-EQPT
	ED-NE-GEN
	ED-NE-SYNCN
	ED-SYNCN
	ED-T1
	ED-T3
	ED-VT1
	ENT-CRS-<STS_PATH>
	ENT-EQPT
	INH-SWDX-EQPT
	INH-SWTOPROTN-EQPT
	INH-SWTOWKG-EQPT
	INIT-REG-<MOD2>
	INIT-SYS
	OPR-LPBK-<MOD2_IO>
	OPR-SYNCNSW
	REPT ALM <MOD2ALM>
	REPT ALM BITS
	REPT ALM EQPT
	REPT ALM SYNCN
	REPT DBCHG
	REPT EVT <MOD2ALM>
	REPT EVT BITS
	REPT EVT ENV
	REPT EVT EQPT
	REPT EVT SYNCN
	REPT SW
	RLS-EXT-CONT
	RLS-LPBK-<MOD2_IO>
	RLS-SYNCNSW
	RMV-<MOD_PORT>
	RST-<MOD_PORT>
	RTRV-<STS_PATH>
	RTRV-ALM-<MOD2ALM>
	RTRV-ALM-ALL
	RTRV-ALM-BITS
	RTRV-ALM-ENV
	RTRV-ALM-EQPT
	RTRV-ALM-SYNCN
	RTRV-ATTR-CONT
	RTRV-ATTR-ENV
	RTRV-BITS
	RTRV-COND-<MOD2ALM>
	RTRV-COND-ALL
	RTRV-COND-BITS
	RTRV-COND-ENV
	RTRV-COND-EQPT
	RTRV-CRS-<STS_PATH>
	RTRV-CRS-VT1
	RTRV-EQPT
	RTRV-INV
	RTRV-NE-GEN
	RTRV-NE-SYNCN
	RTRV-PM-<MOD2>
	RTRV-PMMODE-<STS_PATH>
	RTRV-PTHTRC-<STS_PATH>
	RTRV-SYNCN
	RTRV-T1
	RTRV-T3
RTRV-TH-<MOD2>	
RTRV-VT1	
SET-ATTR-CONT	
SET-ATTR-ENV	
SET-PMMODE-<STS_PATH>	
SET-TH-<MOD2>	
SW-DX-EQPT	
SW-TOPROTN-EQPT	
SW-TOWKG-EQPT	

Table 3-3 TL1 Commands by Card (ONS 15327) (continued)

ONS 15327Card	Command or Autonomous Message
OC3	CHG-ACCMD-<MOD_TACC>      RLS-PROTNSW-<OCN_TYPE> CONN-TACC-<MOD_TACC>      RLS-PROTNSW-<STS_PATH> DISC-TACC                      RLS-PROTNSW-VT1 DLT-CRS-<STS_PATH>          RLS-SYNCNSW DLT-CRS-VT1                    RMV-<MOD_PORT> DLT-EQPT                        RST-<MOD_PORT> DLT-FFP-<OCN_TYPE>        RTRV-<OCN_TYPE> ED-<OCN_TYPE>                RTRV-<STS_PATH> ED-<STS_PATH>                RTRV-ALM-ALL ED-FFP-<OCN_TYPE>        RTRV-ALM-EQPT ED-VT1                         RTRV-ALM-SYNCN ENT-CRS-<STS_PATH>        RTRV-ALM-<MOD2ALM> ENT-CRS-VT1                 RTRV-COND-<MOD2ALM> ENT-EQPT                       RTRV-COND-ALL ENT-FFP-<OCN_TYPE>        RTRV-COND-EQPT INIT-REG-<MOD2>             RTRV-CRS-<STS_PATH> INIT-SYS                       RTRV-CRS-VT1 OPR-LPBK-<MOD2_IO>        RTRV-EQPT OPR-PROTNSW-<OCN_TYPE>    RTRV-FFP-<OCN_TYPE> OPR-PROTNSW-<STS_PATH>    RTRV-INV OPR-PROTNSW-VT1            RTRV-NE-IPMAP OPR-SYNCNSW                 RTRV-PM-<MOD2> REPT ALM <MOD2ALM>        RTRV-PMMODE-<STS_PATH> REPT ALM EQPT                RTRV-PTHTRC-<STS_PATH> REPT ALM SYNCN              RTRV-TH-<MOD2> REPT EVT <MOD2ALM>        RTRV-VT1 REPT EVT EQPT                SET-PMMODE-<STS_PATH> REPT EVT SYNCN              SET-TH-<MOD2> RLS-LPBK-<MOD2_IO>

Table 3-3 TL1 Commands by Card (ONS 15327) (continued)

ONS 15327Card	Command or Autonomous Message	
OC12	CHG-ACCMD-<MOD_TACC>	REPT EVT SYNCN
	CONN-TACC-<MOD_TACC>	RLS-LPBK-<MOD2_IO>
	DISC-TACC	RLS-PROTNSW-<OCN_TYPE>
	DLT-CRS-<STS_PATH>	RLS-PROTNSW-<STS_PATH>
	DLT-CRS-VT1	RLS-PROTNSW-VT1
	DLT-EQPT	RLS-SYNCNSW
	DLT-FFP-<OCN_TYPE>	RMV-<MOD_PORT>
	ED-<OCN_TYPE>	RST-<MOD_PORT>
	ED-<STS_PATH>	RTRV-<OCN_TYPE>
	ED-BLSR	RTRV-<STS_PATH>
	ED-FFP-<OCN_TYPE>	RTRV-ALM-ALL
	ED-VT1	RTRV-ALM-EQPT
	ENT-CRS-<STS_PATH>	RTRV-ALM-SYNCN
	ENT-CRS-VT1	RTRV-ALM-<MOD2ALM>
	ENT-EQPT	RTRV-BLSR
	ENT-FFP-<OCN_TYPE>	RTRV-COND-<MOD2ALM>
	EX-SW-<OCN_BLSR>	RTRV-COND-ALL
	INIT-REG-<MOD2>	RTRV-COND-EQPT
	INIT-SYS	RTRV-CRS-<STS_PATH>
	OPR-LPBK-<MOD2_IO>	RTRV-CRS-VT1
	OPR-PROTNSW-<OCN_TYPE>	RTRV-EQPT
	OPR-PROTNSW-<STS_PATH>	RTRV-FFP-<OCN_TYPE>
	OPR-PROTNSW-VT1	RTRV-INV
	OPR-SYNCNSW	RTRV-NE-IPMAP
	REPT ALM <MOD2ALM>	RTRV-PM-<MOD2>
	REPT ALM EQPT	RTRV-PMMODE-<STS_PATH>
	REPT ALM RING	RTRV-TH-<MOD2>
	REPT ALM SYNCN	RTRV-VT1
	REPT EVT <MOD2ALM>	SET-PMMODE-<STS_PATH>
	REPT EVT EQPT	SET-TH-<MOD2>
	REPT EVT RING	

Table 3-3 TL1 Commands by Card (ONS 15327) (continued)

ONS 15327Card	Command or Autonomous Message
OC48	CHG-ACCMD-<MOD_TACC> REPT EVT SYNCN CONN-TACC-<MOD_TACC> RLS-LPBK-<MOD2_IO> DISC-TACC RLS-PROTNSW-<OCN_TYPE> DLT-CRS-<STS_PATH> RLS-PROTNSW-<STS_PATH> DLT-CRS-VT1 RLS-PROTNSW-VT1 DLT-EQPT RLS-SYNCSW DLT-FFP-<OCN_TYPE> RMV-<MOD_PORT> ED-<OCN_TYPE> RST-<MOD_PORT> ED-<STS_PATH> RTRV-<OCN_TYPE> ED-BLSR RTRV-<STS_PATH> ED-FFP-<OCN_TYPE> RTRV-ALM-ALL ED-VT1 RTRV-ALM-EQPT ENT-CRS-<STS_PATH> RTRV-ALM-SYNCN ENT-CRS-VT1 RTRV-ALM-<MOD2ALM> ENT-EQPT RTRV-BLSR ENT-FFP-<OCN_TYPE> RTRV-COND-<MOD2ALM> EX-SW-<OCN_BLSR> RTRV-COND-ALL INIT-REG-<MOD2> RTRV-COND-EQPT INIT-SYS RTRV-CRS-<STS_PATH> OPR-LPBK-<MOD2_IO> RTRV-CRS-VT1 OPR-PROTNSW-<OCN_TYPE> RTRV-EQPT OPR-PROTNSW-<STS_PATH> RTRV-FFP-<OCN_TYPE> OPR-PROTNSW-VT1 RTRV-INV OPR-SYNCSW RTRV-NE-IPMAP REPT ALM <MOD2ALM> RTRV-PM-<MOD2> REPT ALM EQPT RTRV-PMMODE-<STS_PATH> REPT ALM RING RTRV-TH-<MOD2> REPT ALM SYNCN RTRV-VT1 REPT EVT <MOD2ALM> SET-PMMODE-<STS_PATH> REPT EVT EQPT SET-TH-<MOD2> REPT EVT RING
E10/100	DLT-EQPT RTRV-ALM-ALL ENT-EQPT RTRV-ALM-EQPT INIT-SYS RTRV-COND-<MOD2ALM> REPT ALM <MOD2ALM> RTRV-COND-ALL REPT ALM EQPT RTRV-COND-EQPT REPT EVT <MOD2ALM> RTRV-EQPT REPT EVT EQPT RTRV-INV RTRV-ALM-<MOD2ALM>

## 3.4 TL1 Commands, Categories and Cards

**Table 3-4** TL1 Commands, Categories and Cards

Command or Autonomous Message	Category	ONS 15454 Cards	ONS 15327 Cards
ACT-USER	Security	—	—
ALW-MSG-ALL	System	—	—
ALW-MSG-DBCHG	Log	—	—
ALW-SWDX-EQPT	Equipment	XC, XCVT, XC10G	—
ALW-SWTOPROTN-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM	—
ALW-SWTOWKG-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM	—
CANC	Security	—	—
CANC-USER	Security	—	—
CHG-ACCMD-<MOD_TACC>	Test Access	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
CONN-TACC-<MOD_TACC>	Test Access	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
DISC-TACC	Test Access	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
DLT-CRS-<STS_PATH>	Cross Connection	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
DLT-CRS-VT1	Cross Connection	G1000, EC1, DS1, DS1N, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
DLT-EQPT	Equipment	All cards	XTC, OC3, OC12, OC48, E10/100



Table 3-4 TL1 Commands, Categories and Cards (continued)

Command or Autonomous Message	Category	ONS 15454 Cards	ONS 15327 Cards
DLT-FFP-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
DLT-USER-SECU	Security	—	—
ED-<OCN_TYPE>	Ports	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
ED-<STS_PATH>	STS and VT Paths	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
ED-BITS	Synchronization	TCC+	XTC
ED-BLSR	Cross Connection	OC12, OC48, OC48AS, OC192	OC12, OC48
ED-DAT	System	—	—
ED-DS1	Ports	DS3XM	—
ED-EC1	Ports	EC1	—
ED-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM	XTC
ED-FFP-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
ED-G1000	Ports	—	Not supported
ED-NE-GEN	System	TCC+	XTC
ED-NE-SYNCN	Synchronization	TCC+	XTC
ED-PID	Security	—	—
ED-SYNCN	Synchronization	TCC+	XTC
ED-T1	Ports	DS1, DS1N	XTC
ED-T3	Ports	DS3, DS3N, DS3E, DS3NE, DS3XM	XTC
ED-USER-SECU	Security	—	—
ED-VT1	STS and VT Paths	EC1, DS1, DS1N, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
ENT-CRS-<STS_PATH>	Cross Connection	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48

Table 3-4 TL1 Commands, Categories and Cards (continued)

Command or Autonomous Message	Category	ONS 15454 Cards	ONS 15327 Cards
ENT-CRS-VT1	Cross Connection	DS3XM, OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
ENT-EQPT	Equipment	All cards	All cards
ENT-FFP-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
ENT-USER-SECU	Security	—	—
EX-SW-<OCN_BLSR>	SONET Line Protection	OC12, OC48, OC48AS, OC192	OC12, OC48
INH-MSG-ALL	System	—	—
INH-MSG-DBCHG	Log	—	—
INH-SWDX-EQPT	Equipment	XC, XCVT, XC10G	XTC
INH-SWTOPROTN-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM	XTC
INH-SWTOWKG-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM	XTC
INIT-REG-<MOD2>	Performance	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
INIT-SYS	System	All cards	All cards
OPR-EXT-CONT	Environmental Alarms and Controls	AIC	—
OPR-LPBK-<MOD2_IO>	Testing	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
OPR-PROTNSW-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
OPR-PROTNSW-<STS_PATH>	UPSR Switching	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
OPR-PROTNSW-VT1	UPSR Switching	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
OPR-SYNCNSW	Synchronization	OC3, OC12, OC48, OC48AS, OC192, TCC+	XTC, OC3, OC12, OC48

Table 3-4 TL1 Commands, Categories and Cards (continued)

Command or Autonomous Message	Category	ONS 15454 Cards	ONS 15327 Cards
REPT ALM <MOD2ALM>	Fault	All cards	All cards
REPT ALM BITS	Synchronization	TCC+	XTC
REPT ALM COM	Fault	—	—
REPT ALM ENV	Environmental Alarms and Controls	AIC	—
REPT ALM EQPT	Equipment	All cards	All cards
REPT ALM RING	BLSR	OC12, OC48, OC48AS, OC192	OC12, OC48
REPT ALM SYNCN	Synchronization	OC3, OC12, OC48, OC48AS, OC192, TCC+	XTC, OC3, OC12, OC48
REPT DBCHG	Log	All cards	—
REPT EVT <MOD2ALM>	Fault	All cards	All cards
REPT EVT BITS	Synchronization	TCC+	XTC
REPT EVT COM	Fault	—	—
REPT EVT ENV	Environmental Alarms and Controls	AIC	—
REPT EVT EQPT	Equipment	All cards	All cards
REPT EVT RING	BLSR	OC12, OC48, OC48AS, OC192	OC12, OC48
REPT EVT SECU	Security	—	—
REPT EVT SYNCN	Synchronization	OC3, OC12, OC48, OC48AS, OC192, TCC+	XTC, OC3, OC12, OC48
REPT SW	Protection	XC, XCVT, XC10G	XTC
RLS-EXT-CONT	Environmental Alarms and Controls	AIC	XTC
RLS-LPBK-<MOD2_IO>	Testing	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
RLS-PROTNSW-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
RLS-PROTNSW-<STS_PATH>	UPSR Switching	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48

Table 3-4 TL1 Commands, Categories and Cards (continued)

Command or Autonomous Message	Category	ONS 15454 Cards	ONS 15327 Cards
RLS-PROTNSW-VT1	UPSR Switching	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
RLS-SYCNNSW	Synchronization	OC3, OC12, OC48, OC48AS, OC192, TCC+	XTC, OC3, OC12, OC48
RMV-<MOD_PORT>	Ports	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
RST-<MOD_PORT>	Ports	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
RTRV-<OCN_TYPE>	Ports	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
RTRV-<STS_PATH>	STS and VT Paths	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
RTRV-ALM-<MOD2ALM>	Fault	All cards	All cards
RTRV-ALM-ALL	Fault	All cards	All cards
RTRV-ALM-BITS	Synchronization	TCC+	XTC
RTRV-ALM-ENV	Environmental Alarms and Controls	AIC	XTC
RTRV-ALM-EQPT	Equipment	All cards	All cards
RTRV-ALM-RING	BLSR	—	—
RTRV-ALM-SYCN	Synchronization	OC3, OC12, OC48, OC48AS, OC192, TCC+	XTC, OC3, OC12, OC48
RTRV-ATTR-CONT	Environmental Alarms and Controls	AIC	XTC
RTRV-ATTR-ENV	Environmental Alarms and Controls	AIC	XTC
RTRV-BITS	Synchronization	TCC+	XTC

Table 3-4 TL1 Commands, Categories and Cards (continued)

Command or Autonomous Message	Category	ONS 15454 Cards	ONS 15327 Cards
RTRV-BLSR	SONET Line Protection	OC12, OC48, OC48AS, OC192	OC12, OC48
RTRV-COND-<MOD2ALM>	Fault	All cards	All cards
RTRV-COND-ALL	Fault	All cards	All cards
RTRV-COND-BITS	Synchronization	TCC+	XTC
RTRV-COND-ENV	Environmental Alarms and Controls	AIC	XTC
RTRV-COND-EQPT	Equipment	All cards	All cards
RTRV-COND-RING	BLSR	—	—
RTRV-COND-SYNCN	Synchronization	TCC+	XTC
RTRV-CRS-<STS_PATH>	Cross Connection	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
RTRV-CRS-VT1	Cross Connection	EC1, DS1, DS1N, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
RTRV-DS1	Ports	DS3XM	—
RTRV-EC1	Ports	EC1	—
RTRV-EQPT	Equipment	All cards	All cards
RTRV-EXT-CONT	Environmental Alarms and Controls	AIC	XTC
RTRV-FFP-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
RTRV-G1000	Ports	—	Not supported
RTRV-HDR	System	—	—
RTRV-INV	System	All cards	All cards
RTRV-LOG	Log	—	—
RTRV-NE-GEN	System	TCC+	XTC
RTRV-NE-IPMAP	System	OC3, OC12, OC48, OC48AS, OC192	OC3, OC12, OC48
RTRV-NE-SYNCN	Synchronization	TCC+	XTC

Table 3-4 TL1 Commands, Categories and Cards (continued)

Command or Autonomous Message	Category	ONS 15454 Cards	ONS 15327 Cards
RTRV-PM-<MOD2>	Performance	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
RTRV-PMODE-<STS_PATH>	Performance	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
RTRV-PTHTRC-<STS_PATH>	STS and VT Paths	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC48AS, OC192	XTC, OC3
RTRV-SYCN	Synchronization	TCC+	XTC
RTRV-T1	Ports	DS1, DS1N	XTC
RTRV-T3	Ports	DS3, DS3N, DS3E, DS3NE	XTC
RTRV-TH-<MOD2>	Performance	EC1, DS1, DS1N, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
RTRV-TOD	System	—	—
RTRV-VT1	STS and VT Paths	EC1, DS1, DS1N, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
SET-ATTR-CONT	Environmental Alarms and Controls	AIC	XTC
SET-ATTR-ENV	Environmental Alarms and Controls	AIC	XTC
SET-PMODE-<STS_PATH>	Performance	G1000, EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48

**Table 3-4 TL1 Commands, Categories and Cards (continued)**

<b>Command or Autonomous Message</b>	<b>Category</b>	<b>ONS 15454 Cards</b>	<b>ONS 15327 Cards</b>
SET-TH-<MOD2>	Performance	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC48AS, OC192	XTC, OC3, OC12, OC48
SET-TOD	System	—	—
SW-DX-EQPT	Equipment	XC, XCVT, XC10G	XTC
SW-TOPROTN-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM	XTC
SW-TOWKG-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM	XTC

## 3.5 TL1 Commands

The commands and autonomous messages used for ONS 15454 and ONS 15327 are described in detail in this section and are listed alphabetically according to the first alpha character of the command string.

Each TL1 command must be less than or equal to 255 characters. Any command larger than 255 characters must be split into multiple commands. For example, if you use the ED-<STS\_PATH> command to edit the J1 EXPTRC/TRC message, UPSR attributes, and TACC attributes and the command exceeds 255 characters the command will not be processed. You must use multiple ED-<STS\_PATH> commands instead.



**Note** The AID of any TL1 line mode command is a mandatory field in this TL1 release.



**Note** The AID definitions provided are supersets of the actual AID definitions.



**Note** TL1 commands that are entered incorrectly are not completed.



**Note** Starting with this release (R3.3), all TL1 commands will return the DENY error code without any additional error messages prior to a successful TL1 login (i.e. prior to a successful ACT-USER command). Releases earlier than R3.3 either return different error codes; for example, PLNA and IICT and also additional error messages; for example, Login Not Active.

### 3.5.1 ACT-USER: Activate User

This command is used to set-up a session with the Network Element (NE).

Notes:

1. Passwords are visible on-screen when entered for the ENT-USER-SECU and ACT-USER commands. Cisco recommends that you close any windows containing sensitive information after exiting a TL1 session.
2. In this release, the ACT-USER command does not return the date and time of the last session established by the UID or the number of unsuccessful session attempts since the last session.
3. This command is now backwards compatible with userids and passwords from ONS 15454 2.X software versions according to the following rules:
  - a. The syntax of the userid (UID) and the password (PID) are not checked.
  - b. Invalid syntax for both the userid and password is permitted, but the user can only log in if the userid/password match what is in the database.
  - c. The userid and password cannot exceed 10 characters.

Section	ACT-USER Description
Category	Security
Security	N/A



Section	ACT-USER Description (continued)
Related Messages	CANC CANC-USER DLT-USER-SECU ED-PID ED-USER-SECU ENT-USER-SECU REPT EVT SECU
Input Format	ACT-USER:[<TID>]:<UID>:<CTAG>::<PID>; where: <ul style="list-style-type: none"> <li>• &lt;UID&gt; is the user identifier and is a string; &lt;UID&gt; is any combination of up to 10 alphanumeric characters. &lt;UID&gt; must not be null.</li> <li>• &lt;PID&gt; is the user login password and is a string; &lt;PID&gt; is any combination of up to 10 alphanumeric characters. &lt;PID&gt; must not be null.</li> </ul> <p><b>Note</b> CTC allows &lt;UID&gt; and &lt;PID&gt; of up to 20 characters. The 20 character CTC-entered &lt;UID&gt; and &lt;PID&gt; are not valid TL1 &lt;UID&gt; and &lt;PID&gt;.</p>
Input Example	ACT-USER:PETALUMA:TERRI:100::MYPASSWD;
Errors	This message generates all the default errors

## 3.5.2 ALW-MSG-ALL: Allow Message All

This command instructs the NE to enter a mode in which all the REPT ALM and REPT EVT autonomous messages are transmitted. See the INH-MSG-ALL command to inhibit these autonomous messages. When a TL1 session starts, the REPT ALM and REPT EVT messages are allowed by default.



### Note

If this command is issued twice in the same session, the SAAL (Status, Already Allowed) error message will be returned. The optional fields in the e block are not supported.

Section	ALW-MSG-ALL Description
Category	System
Security	Retrieve
Related Messages	ED-DAT ED-NE-GEN ED-NE-SYCN INH-MSG-ALL INIT-SYS RTRV-HDR RTRV-INV RTRV-NE-GEN RTRV-NE-IPMAP RTRV-NE-SYCN RTRV-TOD SET-TOD
Input Format	ALW-MSG-ALL:[<TID>]:<CTAG>[:,,];
Input Example	ALW-MSG-ALL:PETALUMA::549;
Errors	This message generates all the default errors

### 3.5.3 ALW-MSG-DBCHG: Allow Database Change Message

This command is used to enable REPT DBCHG.


**Note**

This command is not defined in the GR.

Section	ALW-MSG-DBCHG Description
Category	Log
Security	Retrieve
Related Messages	INH-MSG-DBCHG REPT DBCHG RTRV-LOG
Input Format	ALW-MSG-DBCHG:[<TID>]::<CTAG>[::,];
Input Example	ALW-MSG-DBCHG:CISCO::123;
Errors	This message generates all the default errors

### 3.5.4 ALW-SWDX-EQPT: Allow Switch Duplex Equipment

(Cisco ONS 15454 only)

This command instructs an NE to allow automatic or manual switching on a duplex system containing duplexed or redundant equipment. To inhibit an NE switching to duplex, use the INH-SWDX-EQPT command.

ALW-SWDX-EQPT is not used for SONET line or electrical card protection switching. For SONET line or path protection switching commands, see OPR-PROTNSW and RLS-PROTNSW commands. For the electrical card protection switching, see SW-TOWKG-EQPT and SW-TOPROTN-EQPT commands.


**Note**

This command applies to the XC or XCVT equipment unit only in this release.

Section	ALW-SWDX-EQPT Description	
Category	Equipment	
Security	Maintenance	
Related Messages	ALW-SWTOPROTN-EQPT ALW-SWTOWKG-EQPT DLT-EQPT ED-EQPT ENT-EQPT INH-SWDX-EQPT INH-SWTOPROTN-EQPT INH-SWTOWKG-EQPT	REPT ALM EQPT REPT EVT EQPT RTRV-ALM-EQPT RTRV-COND-EQPT RTRV-EQPT SW-DX-EQPT SW-TOPROTN-EQPT SW-TOWKG-EQPT
Input Format	ALW-SWDX-EQPT:[<TID>]:<AID>:<CTAG>[::]; where:	
	<ul style="list-style-type: none"> <li>&lt;AID&gt; is the XC/XCVT equipment AID from the “EQPT” section on page 4-11</li> </ul>	

Section	ALW-SWDX-EQPT Description (continued)
Input Example	ALW-SWDX-EQPT:CISCO:SLOT-8:1234;
Errors	This message generates all the default errors

## 3.5.5 ALW-SWTOPROTN-EQPT: Allow Switch to Protection Equipment

(Cisco ONS 15454 only)

This command instructs the NE to allow automatic or manual switching of an equipment unit back to a protection status. Use the INH-SWTOPROTN-EQPT command to inhibit an NE from switching to protection.

ALW-SWTOPROTN-EQPT is used for non-SONET line cards (e.g. DS1, DS3, DS3XM, and EC1). DS1 and DS3 cards have 1:1 and 1:N equipment protection. DS3XM and EC1 cards have only 1:1 equipment protection. When this command is given to a working unit, the working unit will be allowed to switch to the protection unit. When this command is given to a protection unit, any working unit in the protection group is allowed to switch to the protection unit.

The standing condition of INHSWPR on the unit specified by the AID will be cleared.

Notes:

1. This command only supports one value of the <DIRN> parameter - BTH. A command with any other value is considered an incorrect use of the command. An IDNV (Input, Data Not Valid) error message should be responded.
2. This command is not used for the common control (TCC+ or XC/XCVT) cards. A command on a common control card will receive an IIAC (Input, Invalid Access Identifier) error message. To use the common control card switching commands, use the SW-DX-EQPT and ALW-SWDX-EQPT commands.
3. This command is not used for SONET (OCN) cards. A command on a SONET card will receive an IIAC (Input, Invalid Access identifier) error message. To use a SONET card switching command, use OPR-PROTNSW and RLS-PROTNSW commands.
4. If this command is used on a card that is not in a protection group, the SNVS (Status, Not in Valid State) error message should be responded.
5. If this command is used on a card that is not in the inhibit state, the SAAL (Status, Already Allowed) error message should be responded.
6. The following situation(s) are allowed and will not generate any error response: Sending this command to missing cards so long as none of the previous error conditions apply.

Section	ALW-SWTOPROTN-EQPT Description	
Category	Equipment	
Security	Maintenance	
Related Messages	ALW-SWDX-EQPT	REPT ALM EQPT
	ALW-SWTOWKG-EQPT	REPT EVT EQPT
	DLT-EQPT	RTRV-ALM-EQPT
	ED-EQPT	RTRV-COND-EQPT
	ENT-EQPT	RTRV-EQPT
	INH-SWDX-EQPT	SW-DX-EQPT
	INH-SWTOPROTN-EQPT	SW-TORPROTN-EQPT
	INH-SWTOWKG-EQPT	SW-TOWKG-EQPT

Section	ALW-SWTOPROTN-EQPT Description (continued)
Input Format	ALW-SWTOPROTN-EQPT:[<TID>]:<AID>:<CTAG>[:<DIRN>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; The parameter can either be the protection unit for which carrying traffic is to be allowed (release of lockout) or the working unit for which switching to protect is to be allowed (release of lock on); &lt;AID&gt; is from the “EQPT” section on page 4-11.</li> <li>• &lt;DIRN&gt; is the direction of the switching. The command only supports one value of the &lt;DIRN&gt; parameter - BTH. This parameter defaults to BTH; valid values for &lt;DIRN&gt; are shown in the “DIRECTION” section on page 4-35.</li> </ul>
Input Example	ALW-SWTOPROTN-EQPT:CISCO:SLOT-2:123::BTH;
Errors	This message generates all the default errors

### 3.5.6 ALW-SWTOWKG-EQPT: Allow Switch to Working Equipment

(Cisco ONS 15454 only)

This command instructs the NE to allow automatic or manual switching of an equipment unit back to a working status. Use the INH-SWTOWKG-EQPT command to inhibit an NE from switching to working. ALW-SWTOWKG-EQPT is used for non-SONET line cards (e.g. DS1, DS3, DS3XM, and EC1). DS1 and DS3 cards have 1:1 and 1:N equipment protection. DS3XM and EC1 cards have only 1:1 equipment protection. When this command is given to a working unit, the working unit will be allowed to carry traffic. When this command is given to a protection unit, the protection unit will be allowed to switch back to the working unit currently protected as long as the working unit has not raised INH-SWTOWKG.

In the case of revertive protection, the traffic will switch immediately from the protection unit to the working unit regardless of the reversion time setting. In the case of non-revertive protection, the protection unit will continue to carry the traffic.

The standing condition of INH-SWTOWKG on the unit specified by the AID will be cleared.

Notes:

1. This command only supports one value of the <DIRN> parameter - BTH. A command with any other value is considered an incorrect use of the command. An IDNV (Input, Data Not Valid) error message should be responded.
2. This command is not used for the common control (TCC+ or XC/XCVT) cards. A command on a common control card will receive an IIAC (Input, Invalid Access Identifier) error message. To use the common control card switching commands, use the SW-DX-EQPT and ALW-SWDX-EQPT commands.
3. This command is not used for SONET (OCN) cards. A command on a SONET card will receive an IIAC (Input, Invalid Access Identifier) error message. To use a SONET card switching command, use the OPR-PROTNSW and RLS-PROTNSW commands.
4. If this command is used on a card that is not in a protection group, the SNVS (Status, Not in Valid State) error message should be responded.
5. If this command is used on a card that is not in the inhibit state, the SAAL (Status, Already Allowed) error message should be responded.
6. The following situation(s) are allowed and will not generate any error response: Sending this command to missing cards so long as none of the previous error conditions apply.

Section	ALW-SWTOWKG-EQPT Description
Category	Equipment
Security	Maintenance
Related Messages	ALW-SWDX-EQPT REPT ALM EQPT ALW-SWTOPROTN-EQPT REPT EVT EQPT DLT-EQPT RTRV-ALM-EQPT ED-EQPT RTRV-COND-EQPT ENT-EQPT RTRV-EQPT INH-SWDX-EQPT SW-DX-EQPT INH-SWTOPROTN-EQPT SW-TOPROTN-EQPT INH-SWTOWKG-EQPT SW-TOWKG-EQPT
Input Format	ALW-SWTOWKG-EQPT:[<TID>]:<AID>:<CTAG>[:<DIRN>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; This parameter can either be the protection unit for which switching back to working is to be allowed (release of lock on) or the working unit for which carrying traffic is to be allowed (release of lockout); &lt;AID&gt; is from the “EQPT” section on page 4-11.</li> <li>• &lt;DIRN&gt; is the direction of the switching. The command only supports one value of the &lt;DIRN&gt; parameter - BTH. This parameter defaults to BTH; valid values for &lt;DIRN&gt; are shown in the “DIRECTION” section on page 4-35.</li> </ul>
Input Example	ALW-SWTOWKG-EQPT:CISCO:SLOT-2:123::BTH;
Errors	This message generates all the default errors

### 3.5.7 CANC: Cancel

Reports the occurrence of a session timeout event.

CANC is an autonomous message transmitted by the NE to a user when a session established by that user is terminated because no messages were exchanged for a long period of time, a timeout. The timeout period is set based on the user's privilege. The superuser [SUPER] has the timeout period of 15 minutes. The Provision user [PROV] has the timeout period of 30 minutes. The Maintenance [MAINT] user has the timeout period of 60 minutes.

When a timeout occurs, the corresponding port drops and the next session initiation at that port requires the regular login procedure.

Section	CANC Description
Category	Security
Security	Retrieve
Related Messages	ACT-USER CANC-USER DLT-USER-SECU ED-PID ED-USER-SECU ENT-USER-SECU REPT EVT SECU

Section	CANC Description (continued)
Output Format	SID DATE TIME A ATAG CANC “<UID>” ; where: <ul style="list-style-type: none"> <li>• &lt;UID&gt; refers to the user’s identification whose session is terminated due to timeout; &lt;UID&gt; is any combination of up to 10 alphanumeric characters. &lt;UID&gt; is a string.</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 A 001 CANC “CISCO15” ;

### 3.5.8 CANC-USER: Cancel User

This command logs a user out of an active session with the NE.



#### Note

The USERID field of this command is a mandatory field.

Section	CANC-USER Description
Category	Security
Security	Retrieve
Related Messages	ACT-USER CANC DLT-USER-SECU ED-PID ED-USER-SECU ENT-USER-SECU REPT EVT SECU
Input Format	CANC-USER:[<TID>]:<USERID>:<CTAG>; where: <ul style="list-style-type: none"> <li>• &lt;USERID&gt; identifies the user to the system; &lt;USERID&gt; is any combination of up to 10 alphanumeric characters. &lt;USERID&gt; is a string</li> </ul> <p><b>Note</b> CTC allows &lt;UID&gt; and &lt;PID&gt; of up to 20 characters. The 20 character CTC-entered &lt;UID&gt; and &lt;PID&gt; are not valid TL1 &lt;UID&gt; and &lt;PID&gt;.</p>
Input Example	CANC-USER:PETALUMA:TERRI:101;
Errors	This message generates all the default errors

### 3.5.9 CHG-ACCMD-<MOD\_TACC>: Change Access Mode (DS1, STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C, T1, T3, VT1)

(STS192C supported for Cisco ONS 15454 only)

This command changes the test access (TACC) mode for the circuit being tested. For more information on TACC, refer to the “Test Access” section on page 1-9.

This may be a change from monitoring the data to inserting data into the STS. This command can only be applied to an existing (test access path) TAP connection.

Notes:

1. If there is no TAP connection, a DENY error message will be returned.
2. If a requested condition already exists, a SRCN error message will be returned.
3. If a requested access configuration is invalid, a SRAC error message will be returned.
4. If a requested TAP does not exist, a RTEN error message is returned.

Section	CHG-ACCMD-<MOD_TACC> Description
Category	Test Access
Security	Maintenance
Related Messages	CONN-TACC-<MODE_TACC> DISC_TACC
Input Format	CHG-ACCMD-<MOD_TACC>:[<TID>]:<TAP>:<CTAG>::<MD>; where: <ul style="list-style-type: none"> <li>• &lt;TAP&gt; indicates the test access path number selected by the NE. The &lt;TAP&gt; is used to identify all messages between the TSC and NE until the access path is released. The &lt;TAP&gt; number must be an integer with a range of 1 to 999. &lt;TAP&gt; is a string.</li> </ul> <p><b>Note</b> This command only changes a single TAP at a time.</p> <ul style="list-style-type: none"> <li>• &lt;MD&gt; indicates the test access mode (SPLTE, SPLTF, LOOPE, AND LOOPF require an external QRS input signal); valid values for &lt;MD&gt; are shown in the “TACC_MODE” section on page 4-62</li> </ul>
Input Example	CHG-ACCMD-ST1:CISCO:8:123::MONE;
Errors	This message generates all the default errors

### 3.5.10 CONN-TACC-<MOD\_TACC>: Connect TACC (DS1, STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C, T1, T3, VT1)

(STS192C supported for Cisco ONS 15454 only)

This command connects the STS or VT defined by AID to the STS or VT specified by the TAP number. For more information on TACC, refer to the “Test Access” section on page 1-9.

Notes:

1. If all TAPs are busy, a RABY error message will be returned.
2. If a requested TAP is busy, a RTBY error message will be returned.

3. If a requested TAP does not exist, a RTEN error message will be returned.
4. If a circuit is already connected to another TAP, a SCAT error message will be returned.
5. If a requested condition already exists, a SRCN error message will be returned.
6. If the AID is invalid, a IIAC (Input, Invalid Access Identifier) error message will be returned.
7. If an access is not supported, an EANS error message will be returned.
8. If a requested access configuration is invalid, a SRAC error message will be returned.

Section	CONN-TACC-<MOD_TACC> Description
Category	Test Access
Security	Provisioning
Related Messages	CHG-ACCMD-<CHG-ACCMD> DISC-TACC
Input Format	CONN-TACC-<MOD_TACC>:[<TID>]:<AID>:<CTAG>::[<TAP>]:MD=<MD>; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is an access identifier. &lt;AID&gt; format is the modifier AID format in the ALL AID list. &lt;AID&gt; is the AID from the “ALL” section on page 4-5. &lt;AID&gt; must not be null.</li> <li>• &lt;TAP&gt; indicates the test access path number selected by the NE. The &lt;TAP&gt; is used to identify all messages between the TSC and the NE until the access path is released. The &lt;TAP&gt; number must be an integer with a range of 1 to 999. A null &lt;TAP&gt; defaults to an appropriate &lt;TAP&gt; number selected by the NE. &lt;TAP&gt; is an integer and a null value is equivalent to ALL.</li> <li>• &lt;MD&gt; indicates the test access mode (SPLTE, SPLTF, LOOPE and LOOPF require an external QRS input signal); valid values for &lt;MD&gt; are shown in the “TACC_MODE” section on page 4-62. &lt;MD&gt; must not be null.</li> </ul>
Input Example	CONN-TACC-STS1:CISCO:STS-2-4:123::8:MD=MONE;
Output Format	SID DATE TIME M CTAG COMPLD “<TAP>” ; where: <ul style="list-style-type: none"> <li>• &lt;TAP&gt; indicates the test access path number selected by the NE. The &lt;TAP&gt; is used to identify all messages between the TSC and NE until the access path is released. The &lt;TAP&gt; number must be an integer with a range of 1 - 999. A null &lt;TAP&gt; defaults to an appropriate &lt;TAP&gt; number selected by the NE. &lt;TAP&gt; is an integer.</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “8” ;
Errors	This message generates all the default errors



## 3.5.11 DISC-TACC: Disconnect TACC

This command disconnects the TAP and puts the connection back to its original state (no splits). For more information on TACC, refer to the “Test Access” section on page 1-9.

Notes:

1. If you send this command to an already disconnected connection, a SADC error message is returned.
2. If the system cannot release TAP, an SRTN error message is returned.

Section	DISC-TACC Description
Category	Test Access
Security	Provisioning
Related Messages	CHG-ACCMD-<MOD_TACC> CONN-TACC-<MOD_TACC>
Input Format	DISC-TACC:[<TID>]:<TAP>:<CTAG>; where: <ul style="list-style-type: none"> <li>• &lt;TAP&gt; indicates the test access path number selected by the NE. The &lt;TAP&gt; is used to identify all messages between the TSC and the NE until the access path is released. The &lt;TAP&gt; number must be an integer with a range of 1- 999. This command only supports changing a single &lt;TAP&gt; number at a time. &lt;TAP&gt; is a string.</li> </ul> <p><b>Note</b> This command only disconnects a single TAP at a time.</p>
Input Example	DISC-TACC:CISCO:8:123;
Errors	This message generates all the default errors

## 3.5.12 DLT-CRS-<STS\_PATH>: Delete Cross Connection (STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C)

(STS192C supported for Cisco ONS 15454 only)

This command deletes a cross connection between STS paths. STS paths are specified using their STS AID.

Notes:

1. The fields after CTAG (trailing colons) are optional.
2. For the 1-way cross connections the AIDs must be in the same order as originally entered; for the 2-way cross connections, either order will work.
3. This command does not support deleting multiple STS cross connections.
4. Using “&” in the AID field of this command can delete an UPSR STS cross connection.

The following command is used to delete a 1-way selector or 2-way selector and bridge with:

from points: f1, f2

to points: t1

DLT-CRS-{<STS\_PATH>}:[<TID>]:f1&f2,t1:<CTAG>;

The following command is used to delete a 1-way bridge or 2-way selector and bridge with:

```

from point: f1
to points: t1, t2
DLT-CRS-<STS_PATH>:[<TID>]:f1,t1&t2:<CTAG>;

```

The following command is used to delete a 1-way or 2-way subtending UPSR connection with:

```

from point: f1, f2
to points: t1, t2
DLT-CRS-<STS_PATH>:[<TID>]:f1&f2,t1&t2:<CTAG>;

```

The AID format in the deletion command is the same as the AID format in the retrieved response message. For example, if the output of any retrieved AID is “F1&F2,T1:CCT,STS3C”, the deletion command with the AID format (F1&F2,T1) is required to delete this cross connection.

5. All a&b AIDs in the TL1 cross connection command are in the format of WorkingAid&ProtectAid.
6. You can experience some implementation behavior problems if additional drops have been added to the connection object.
7. The facility AID is only valid for slots holding the G1000-4 card.

Section	DLT-CRS- <b>&lt;STS_PATH&gt;</b> Description
Category	Cross Connection
Security	Provisioning
Related Messages	DLT-CRS-VT1 ENT-CRS- <b>&lt;STS_PATH&gt;</b> ENT-CRS-VT1 RTRV-CRS- <b>&lt;STS_PATH&gt;</b> RTRV-CRS-VT1
Input Format	DLT-CRS- <b>&lt;STS_PATH&gt;</b> :[ <b>&lt;TID&gt;</b> ]: <b>&lt;FROM&gt;</b> , <b>&lt;TO&gt;</b> : <b>&lt;CTAG&gt;</b> [ <b>:::</b> ]; where: <ul style="list-style-type: none"> <li>• <b>&lt;FROM&gt;</b> indicates an identifier at one end of the STS cross connection; <b>&lt;FROM&gt;</b> is the AID from the “CrossConnectID” section on page 4-7.</li> <li>• <b>&lt;TO&gt;</b> indicates an identifier at the other end of the STS cross connection; <b>&lt;TO&gt;</b> is the AID from the “CrossConnectID” section on page 4-7.</li> </ul>
Input Example	DLT-CRS-STS12C:VINBURG:STS-1-1, STS-12-1:102;
Errors	This message generates all the default errors

### 3.5.13 DLT-CRS-VT1: Delete Virtual Tributary Cross Connect

This command deletes the VT1 cross connections.

Notes:

1. The fields after CTAG (trailing colons) are the optional.
2. For the 1-way cross connections the AIDs must be in same order as originally entered; for the 2-way either order will work.
3. This command does not support deleting multiple VT cross connections.
4. Using “&” in the AID field of this command can delete an UPSR VT cross connection.

The following command is used to delete a 1-way selector or 2-way selector and bridge with:

from points: f1, f2

to points: t1

```
DLT-CRS-VT1:[<TID>]:f1&f2,t1:<CTAG>;
```

The following command is used to delete a 1-way bridge or 2-way selector and bridge with:

from point: f1

to points: t1, t2

```
DLT-CRS-VT1:[<TID>]:f1,t1&t2:<CTAG>;
```

The following command is used to delete a 1-way subtending UPSR connection or 2-way subtending UPSR connection with:

from points: f1, f2

to points: t1, t2

```
DLT-CRS-VT1:[<TID>]:f1&f2,t1&t2:<CTAG>;
```

The AID format in the deletion command is the same as the AID format in the retrieved response message. For example, if the output of any retrieved AID is “F1&F2,T1:CCT”, the deletion command with the AID format (F1&F2,T1) is required to delete this cross connection.

5. All a&b AIDs in the TL1 cross connection command are in the format of WorkingAid&ProtectAid.
6. You can experience some implementation behavior problems if additional drops have been added to the connection object.

Section	DLT-CRS-VT1 Description
Category	Cross Connections
Security	Provisioning
Related Messages	DLT-CRS-<STS_PATH> ENT-CRS-<STS_PATH> ENT-CRS-VT1 RTRV-CRS-<STS_PATH> RTRV-CRS-VT1

Section	DLT-CRS-VT1 Description (continued)
Input Format	DLT-CRS-VT1:[<TID>]:<FROM>,<TO>:<CTAG>[::]; where: <ul style="list-style-type: none"> <li>• &lt;FROM&gt; indicates an identifier at one end of the VT cross connection; &lt;FROM&gt; is the AID from the “VT1_5” section on page 4-17.</li> <li>• &lt;TO&gt; indicates an identifier at the other end of the VT cross connection; &lt;TO&gt; is the AID from the “VT1_5” section on page 4-17.</li> </ul>
Input Example	DLT-CRS-VT1:CISCO:VT1-2-3-7-2,VT1-4-4-5-2:1234;
Errors	This message generates all the default errors

### 3.5.14 DLT-EQPT: Delete Equipment

This command deletes a card from a slot in the NE.

This command removes the card type and attributes that were entered for a particular slot. If any facilities are assigned, they are deleted too. The command will be denied if the card is part of a protection group or has a cross-connect end-point.

To delete a card that is part of a protection group, it has to be removed from the protection group first via ED-EQPT.

Error conditions for deleting equipment may be:

1. For a card in a protection group that has a cross connection, DCC or is a synchronization source, the SPLD (Equipment in use) error message will be returned.
2. If a card is not provisioned, an error message will be returned.

Section	DLT-EQPT Description
Category	Equipment
Security	Provisioning
Related Messages	ALW-SWDX-EQPT REPT ALM EQPT ALW-SWTOPROTN-EQPT REPT EVT EQPT ALW-SWTOWKG-EQPT RTRV-ALM-EQPT ED-EQPT RTRV-COND-EQPT ENT-EQPT RTRV-EQPT INH-SWDX-EQPT SW-DX-EQPT INH-SWTOPROTN-EQPT SW-TOPROTN-EQPT INH-SWTOWKG-EQPT SW-TOWKG-EQPT
Input Format	DLT-EQPT:[<TID>]:<AID>:<CTAG>[::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the equipment unit (slot) to act on and is the AID from the “EQPT” section on page 4-11.</li> </ul>
Input Example	DLT-EQPT:SONOMA:SLOT-1:104;
Errors	This message generates all the default errors

### 3.5.15 DLT-FFP-<OCN\_TYPE>: Delete Facility Protection Group (OC3, OC12, OC48, OC192)

(OC192 supported for Cisco ONS 15454 only)

This command deletes an OCN facility protection group in the 1+1 architecture.



**Note**

If the protection group does not exist, an error message will be returned.

Section	DLT-FFP-<OCN_TYPE> Description
Category	SONET Line Protection
Security	Provisioning
Related Messages	ED-FFP-<OCN_TYPE> ENT-FFP-<OCN_TYPE> EX-SW-<OCN_BLSR> OPR-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<OCN_TYPE> RTRV-FFP-<OCN_TYPE>
Input Format	DLT-FFP-<OCN_TYPE>:[<TID>]:<WORK>,<PROTECT>:<CTAG>[:::]; where: <ul style="list-style-type: none"> <li>&lt;WORK&gt; identifies the working facility and is the AID from the “FACILITY” section on page 4-11.</li> <li>&lt;PROTECT&gt; identifies the protect facility and is the AID “FACILITY” section on page 4-11.</li> </ul>
Input Example	DLT-FFP-OC3:PETALUMA:FAC-2-1,FAC-1-1:1;
Errors	This message generates all the default errors

### 3.5.16 DLT-USER-SECU: Delete User Security

This command deletes a user and can only be performed by a Superuser. Privilege levels are described in the ENT-USER-SECU command.

Notes:

- The user whose ID is to be deleted must not be logged in. If this command is executed while the user is logged on, the current session for that user continues. Once the user logs out, the same USERID cannot be used to log in again. If you try to delete a userid and the user is logged in, an error message indicating that the user is logged in will be received.
- To maintain backwards compatibility, the following rules apply:
  - The syntax of <UID> is not checked (but must not exceed ten characters).
  - The <UID> is deleted if <UID> exists in the database.

Section	DLT-USER-SECU Description
Category	Security
Security	Superuser
Related Messages	ACT-USER CANC CANC-USER ED-PID ED-USER-SECU ENT-USER-SECU REPT EVT SECU
Input Format	DLT-USER-SECU:[<TID>]:<UID>:<CTAG>; where: <ul style="list-style-type: none"> <li>&lt;UID&gt; is the user identifier and is a string; &lt;UID&gt; is any combination of up to 10 alphanumeric characters.</li> </ul> <p><b>Note</b> CTC allows &lt;UID&gt; and &lt;PID&gt; of up to 20 characters. The 20 character CTC-entered &lt;UID&gt; and &lt;PID&gt; are not valid TL1 &lt;UID&gt; and &lt;PID&gt;.</p>
Input Example	DLT-USER-SECU:PETALUMA:CISCO15:123;
Errors	This message generates all the default errors

### 3.5.17 ED-<OCN\_TYPE>: Edit (OC3, OC12, OC48, OC192)

(OC192 supported for Cisco ONS 15454 only)

This command edits the attributes (i.e. service parameters) and state of an OC-N facility. Allowable states for a facility are Out of Service (OOS) and In Service (IS).

The DCC transmit is bridged to both working and protect in a 1+1 configuration. On the receive side, the active one is selected for DCC. The DCC is provisioned on the working port only in a 1+1 configuration.

All OCN lines are allowed to change to SDH mode with this command with the following restrictions:

1. The line must be unprotected at the time, but can be protected after changing.
2. The line can be a sync reference but cannot have “syncMessages” enabled or “send Do Not Use”.
3. The line cannot have Orderwire.
4. The line cannot have VT circuits.
5. The line cannot have DCC.

All lines in a 1+1 or BLSR must have the same mode. If the mode of a line that is in a 1+1 or BLSR is changed, an error message will be returned.

Section	ED-<OCN_TYPE> Description
Category	Ports
Security	Provisioning

Section	ED-<OCN_TYPE> Description (continued)
Related Messages	ED-DS1 ED-EC1 ED-G1000 ED-T1 ED-T3 RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-<OCN_TYPE> RTRV-DS1 RTRV-EC1 RTRV-G1000 RTRV-T1 RTRV-T3
Input Format	ED-<OCN_TYPE>:[<TID>]:<AID>:<CTAG>:::[DCC=<DCC>, [SYNCSMSG=<SYNCSMSG>],[SENDDUS=<SENDDUS>],[PJMON=<PJMON>, [SFBER=<SFBER>],[SDBER=<SDBER>],[MODE=<MODE>],[MUX=<MUX>] [:<PST>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “FACILITY” section on page 4-11</li> <li>• &lt;DCC&gt; identifies an OC-N port DCC connection; valid values for &lt;DCC&gt; are shown in the “SDCC_MODE” section on page 4-55</li> <li>• &lt;SYNCSMSG&gt; indicates if sync status messaging is enabled or disabled on the facility; valid values for &lt;SYNCSMSG&gt; are shown in the “ON_OFF” section on page 4-51</li> <li>• &lt;SENDDUS&gt; indicates that the facility will send out the DUS (do not use for synchronization) value as the sync status message for that facility; valid values are shown in the “ON_OFF” section on page 4-51</li> <li>• &lt;PJMON&gt; identifies an OC-N port PJMON with a value range of [0, highest STS number for the sonet card]; &lt;PJMON&gt; is an integer</li> <li>• &lt;SFBER&gt; identifies an OC-N port SFBER; valid values for &lt;SFBER&gt; are shown in the “SF_BER” section on page 4-56</li> <li>• &lt;SDBER&gt; identifies an OC-N port SDBER; valid values for &lt;SDBER&gt; are shown in the “SD_BER” section on page 4-55</li> <li>• Valid values for &lt;MODE&gt; are shown in the “OPTICAL_MODE” section on page 4-51</li> <li>• &lt;MUX&gt; BLSR Extension Byte (supported only on OC48AS cards); valid values for &lt;MUX&gt; are shown in the “MUX_TYPE” section on page 4-49</li> <li>• &lt;PST&gt; identifies an OC-N port state (e.g. IS or OOS); valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53</li> </ul>
Input Example	ED-OC48:PENNGROVE:FAC-6-1:114:::DCC=Y,SYNCSMSG=Y,SENDDUS=N, PJMON=48,SFBER=1E-4,SDBER=1E-6,MODE=SONET,MUX=E2:IS;
Errors	This message generates all the default errors

### 3.5.18 ED-<STS\_PATH>: Edit (STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C)

(STS192C supported for Cisco ONS 15454 only)

This command edits the attributes associated with an STS path.

The SFBER, SDBER, RVRTV, and RVTM parameters only apply to UPSR.

The path trace message is a 64 character string including the terminating CR (carriage return) and LF (line feed) that is transported in the J1 byte of the SONET STS Path overhead. Both the EXPTRC and TRC string can be provisioned by user with up to 62 character string.

The EXPTRC indicates the contents of the expected incoming path trace are provisioned by the user. The TRC indicates the contents of the outgoing path trace message. The INCTRC indicates the contents of the incoming path trace message.

The path trace mode has three modes: OFF, MANUAL, and AUTO. The path trace mode defaults to OFF. The MANUAL mode performs the comparison of the received string with the user-entered expected string. The AUTO mode performs the comparison of the present received string with an expected string set to a previously received string. If there is a mismatch, TIM-P alarm is raised. When the path trace mode is in OFF mode, there is no path trace processing, and all the alarm and state conditions are reset.

The TACC parameter edits an existing single STS or VT and changes it to a test access path. When an editing command on TACC is executed, it assigns the STS for the first 2WAY test access connection and STS=1 as the second 2WAY connection. For STS3C and STS12C, the next available STS of the same width is chosen. For more information on TACC, refer to the “Test Access” section on page 1-9.

J1 is implemented on the DS1/DS1N, DS3, DS3E/DS3NE, DS3XM, EC1, OC3, OC48AS and OC192 cards.

DS3/DS3N, OC12, OC48, E100, and E1000 cards do not support path trace.

DS1/DS1N, DS3E/DS3NE, and DS3XM support both TRC and EXPTRC in the ED-STSPATH command.

EC1, OC3, OC48AS, and OC192 only support EXPTRC in the ED-STSPATH command.



#### Note

Each TL1 command must be less than or equal to 255 characters. Any command larger than 255 characters must be split into multiple commands. For example, if you use the ED-<STS\_PATH> command to edit the J1 EXPTRC/TRC message, UPSR attributes, and TACC attributes and the command exceeds 255 characters the command will not be processed. You must use multiple ED-<STS\_PATH> commands instead.



#### Note

An STS tap created in a DS3XM card cannot be used to connect to an STS having a non-VT structured payload; for example, DS3, if created traffic cannot be monitored.



#### Note

An STS tap created in a DS3 card cannot be used to connect to an STS having non-DS3 payload; for example, VT-structured, if created traffic cannot be monitored.

Error conditions:

1. If sending this command to edit SFBER or SDBER or RVRTV or RVTM for the non UPSR STS path, an error message (cross-connect does not have UPSR path selector) will be returned.



2. If sending this command to edit the EXPTRC string with the AUTO path trace mode (TRCMODE=AUTO), an error message (incompatible parameter values for exptrc and TRCMODE) will be returned.
3. If sending this command to edit TRC on any card other than DS3(N)E, DS1(N), and DS3XM cards, an error message (TRC-not allowed for monitor paths. Incorrect card type.) will be returned.
4. This command is allowed to edit EXPTRC on DS1(N), DS3(N)E, DS3XM, EC1, OC3, OC48AS, and OC192 cards.
5. If sending this command to edit both TACC and any other attribute(s), the (Parameters Not compatible) error message will be returned.
6. This command is only allowed when there are no circuits/cross connections (no UPSR connections) on that AID.
7. If sending this command to edit TACC on an AID with circuits or cross connections, an error message (VT in Use) will be returned.
8. TACC creation will also be denied on the protect ports/cards.

Section	ED-<STS_PATH> Description
Category	STS and VT Paths
Security	Provisioning
Related Messages	ED-VT1 RTRV-<STS_PATH> RTRV-PTHTRC-<STS_PATH> RTRV-VT1

Section	ED-<STS_PATH> Description (continued)
Input Format	<p data-bbox="537 260 1485 386">ED-&lt;STS_PATH&gt;:[&lt;TID&gt;]:&lt;aid&gt;:&lt;CTAG&gt;:::[SFBER=&lt;SFBER&gt;],[SDBER=&lt;SDBER&gt;],[RVRTV=&lt;RVRTV&gt;],[RVTM=&lt;RVTM&gt;],[EXPTRC=&lt;EXPTRC&gt;],[TRC=&lt;TRC&gt;],[TRCMODE=&lt;TRCMODE&gt;],[TACC=&lt;TACC&gt;][:];</p> <p data-bbox="537 407 618 436">where:</p> <ul data-bbox="537 449 1485 1352" style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “STS” section on page 4-12</li> <li>• &lt;SFBER&gt; identifies an STS path SFBER which only applies to UPSR; valid values for &lt;SFBER&gt; are shown in the “SF_BER” section on page 4-56</li> <li>• &lt;SDBER&gt; identifies an STS path SDBER which only applies to UPSR; valid values for &lt;SDBER&gt; are shown in the “SD_BER” section on page 4-55</li> <li>• &lt;RVRTV&gt; identifies a revertive mode which only applies to UPSR; valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51 and &lt;RVRTV&gt; is optional</li> <li>• &lt;RVTM&gt; identifies a revertive time which only applies to UPSR; &lt;RVTM&gt; is not allowed to be set while &lt;RVRTV&gt; is N (non-revertive mode). Valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55 and &lt;RVTM&gt; is optional</li> <li>• &lt;EXPTRC&gt; indicates the expected path trace message (J1) contents. The EXPTRC is any 64 character string, including the terminating CR (carriage return) and LF (line feed); &lt;EXPTRC&gt; is a string</li> <li>• &lt;TRC&gt; identifies the path trace message to be transmitted. The TRC is any combination of 64 characters, including the terminating CR and LF. The trace byte (J1) continuously transmits a 64 byte string, one byte at a time. A null value defaults to the NE transmitting null characters (Hex 00); &lt;TRC&gt; is a string</li> <li>• &lt;TRCMODE&gt; indicates the path trace mode, and defaults to the OFF mode; valid values for &lt;TRCMODE&gt; are shown in the “TRCMODE” section on page 4-64</li> <li>• &lt;TACC&gt; defines the STS as a test access port with a selected unique TAP number. The TAP number ranges from 0–999. When TACC is 0, the TAP is deleted. &lt;TACC&gt; is an integer.</li> </ul>
Input Example	ED-ST51:FERNDAL:STS-2-4:115:::SFBER=1E-3,SDBER=1E-5,RVRTV=Y,RVTM=1.0,EXPTRC="EXPTRCSTRING",TRC="TRCSTRING",TRCMODE=OFF,TACC=8;
Errors	This message generates all the default errors

## 3.5.19 ED-BITS: Edit Building Integrated Timing Supply

This command edits the BITS reference attributes.

Section	ED-BITS Description
Category	Synchronization
Security	Provisioning
Related Messages	ED-NE-SYNCN ED-SYNCN OPR-SYNCNSW REPT ALM BITS REPT ALM SYNCN REPT EVT BITS REPT EVT SYNCN RLS-SYNCNSW RTRV-ALM-BITS RTRV-ALM-SYNCN RTRV-BITS RTRV-COND-BITS RTRV-COND-SYNCN RTRV-NE-SYNCN RTRV-SYNCN
Input Format	ED-BITS:[<TID>]:<AID>:<CTAG>:::[LINECDE=<LINECDE>],[FMT=<FMT>],[LBO=<LBO>],[SYNCMSG=<SYNCMSG>],[AISTHRSHLD=<AISTHRSHLD>][:<PST>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is an access identifier from the “BITS” section on page 4-9</li> <li>• &lt;LINECDE&gt; is a line code; valid values for &lt;LINECDE&gt; are shown in the “LINE_CODE” section on page 4-42</li> <li>• &lt;FMT&gt; is the frame format; valid values for &lt;FMT&gt; are shown in the “FRAME_FORMAT” section on page 4-41</li> <li>• &lt;LBO&gt; indicates BITS line build out. The default value is “0-133”. Valid values for &lt;LBO&gt; are shown in the “BITS_LineBuildOut” section on page 4-22</li> <li>• &lt;SYNCMSG&gt; indicates if this BITS facility supports synchronization status message; &lt;SYNCMSG&gt; defaults to (Y) and valid values are shown in the “ON_OFF” section on page 4-51</li> <li>• &lt;AISTHRSHLD&gt; is the AIS Threshold. Valid values for &lt;AISTHRSHLD&gt; shown in the “SYNC_CLOCK_REF_QUALITY_LEVEL” section on page 4-60</li> <li>• &lt;PST&gt; is a state; valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53</li> </ul>
Input Example	ED-BITS:SONOMA:BITS-2:779:::LINECDE=AMI,FMT=ESF,LBO=0-133,SYNCMSG=Y,AISTHRSHLD=PRS:IS;
Errors	This message generates all the default errors

## 3.5.20 ED-BLSR: Edit Bidirectional Line Switched Ring

This command edits the BLSR attributes.

Notes:

1. Only the RVRTV, RVTM, SRVRTV, SRVTM attributes can be edited for the 4-Fiber BLSR.
2. Only the RVRTV and RVTM attributes can be edited for the 2-Fiber BLSR.

Error conditions:

1. If there is a system error, an SDBE (Status, Internal Data Base Error) error message will be returned.
2. If the NE returns nothing for the required BLSR (BLSR number, AID), a SRQN (Status, Invalid Request) error message will be returned.
3. If sending this command to modify any attribute other than RVRTV, RVTM, SRVRTV, and SRVTM on the 4-Fiber BLSR, an IDNV (Input, Data Not Valid) error message will be returned.
4. If sending this command to modify any attribute other than RVRTV and RVTM on the 2-Fiber BLSR, an IDNV (Input, Data Not Valid) error message will be returned.
5. If sending this command to modify RVTM while RVRTV is in non-revertive mode or SRVTM while SRVRTV is in non-revertive mode, an ICNV (Input, Command Not Valid) error message will be returned.

Section	ED-BLSR Description
Category	BLSR
Security	Provisioning
Related Messages	REPT ALM RING REPT EVT RING RTRV-ALM-RING RTRV-BLSR RTRV-COND-RING

Section	ED-BLSR Description (continued)
Input Format	<p>ED-BLSR:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;:::[RINGID=&lt;RINGID&gt;, [NODEID=&lt;NODEID&gt;],[RVRTV=&lt;RVRTV&gt;],[RVTM=&lt;RVTM&gt;, [SRVRTV=&lt;SRVRTV&gt;],[SRVTM=&lt;SRVTM&gt;][:];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the BLSR of the NE and is from the “BLSR” section on page 4-9 (the AID “ALL” or “BLSR ALL” is not allowed for editing BLSR). This command only supports a single BLSR AID.</li> <li>• &lt;NODEID&gt; identifies the BLSR node ID of the NE. It ranges from 0–31. &lt;NODEID&gt; is an integer.</li> </ul> <p><b>Note</b> &lt;NODEID&gt; cannot be edited in this release.</p> <ul style="list-style-type: none"> <li>• &lt;RINGID&gt; identifies the BLSR ring ID of the NE. It ranges from 0–9999. &lt;RINGID&gt; is an integer.</li> </ul> <p><b>Note</b> &lt;RINGID&gt; cannot be edited in this release.</p> <ul style="list-style-type: none"> <li>• &lt;RVRTV&gt; identifies the revertive mode and valid values are shown in the “ON_OFF” section on page 4-51</li> <li>• &lt;RVTM&gt; identifies the revertive time and is not allowed to be set while &lt;RVRTV&gt; is N (non-revertive mode); valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55</li> <li>• &lt;SRVRTV&gt; identifies the span revertive mode for 4F BLSR only and valid values are shown in the “ON_OFF” section on page 4-51</li> <li>• &lt;SRVTM&gt; identifies the span revertive time for 4F BLSR only and is not allowed to be set while &lt;SRVRTV&gt; is N (non-revertive mode); valid values for &lt;SRVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55</li> </ul>
Input Example	ED-BLSR:PETALUMA:BLSR-43:123:::RVRTV=Y,RVTM=2.0,SRVRTV=Y,SRVTM=5.0;
Errors	This message generates all the default errors

## 3.5.21 ED-DAT: Edit Date and Time

This command edits the date and the time

Section	ED-DAT Description
Category	System
Security	Provisioning
Related Messages	ALM-MSG-ALL ED-NE-GEN ED-NE-SYCN INH-MSG-ALL INIT-SYS RTRV-HDR RTRV-INV RTRV-NE-GEN RTRV-NE-IPMAP RTRV-NE-SYCN RTRV-TOD SET-TOD
Input Format	ED-DAT:[<TID>]::<CTAG>::[<DATE>],[<TIME>]; where: <ul style="list-style-type: none"> <li>• &lt;DATE&gt; identifies the date and is a string</li> <li>• &lt;TIME&gt; identifies the time and is a string</li> </ul>
Input Example	ED-DAT:CISCO::1234::99-12-21,14-35-15;
Errors	This message generates all the default errors

## 3.5.22 ED-DS1: Edit DS1 Layer of DS3XM

(Cisco ONS 15454 only)

This command edits the test access attributes on the DS3XM card at the DS1 layer.



### Note

This command is not allowed if the card is a protecting card.

Section	ED-DS1 Description
Category	Ports
Security	Provisioning
Related Messages	ED-<OCN_TYPE>                      RTRV-<OCN_TYPE> ED-EC1                                RTRV-DS1 ED-G1000                              RTRV-EC1 ED-T1                                  RTRV-G1000 ED-T3                                  RTRV-T1 RMV-<MOD_PORT>                      RTRV-T3 RST-<MOD-PORT>

Section	ED-DS1 Description (continued)
Input Format	ED-DS1:[<TID>]:<AID>:<CTAG>[::TACC=<TACC>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier of a DS1 layer entity on the DS3XM card and is from the “DS1” section on page 4-10</li> <li>• &lt;TACC&gt; defines the DS1 as a test access port with a selected unique TAP number. The TAP number ranges from 0–999. When TACC is 0, the TAP is deleted. &lt;TACC&gt; is an integer.</li> </ul>
Input Example	ED-DS1:PETALUMA:DS1-2-6-12:123:::TACC=8;
Errors	This message generates all the default errors

### 3.5.23 ED-EC1: Edit Electrical Carrier

(Cisco ONS 15454 only)

This command edits the attributes of an EC1.



**Note**

This command is not allowed if the card is a protecting card.

Section	ED-EC1 Description
Category	Ports
Security	Provisioning
Related Messages	ED-<OCN_TYPE> RTRV-<OCN_TYPE> ED-DS1 RTRV-DS1 ED-G1000 RTRV-EC1 ED-T1 RTRV-G1000 ED-T3 RTRV-T1 RMV-<MOD_PORT> RTRV-T3 RST-<MOD_PORT>
Input Format	ED-EC1:[<TID>]:<AID>:<CTAG>[::[PJMON=<PJMON>],[LBO=<LBO>] [:<PST>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the facility AID of an EC1 port and is from the “FACILITY” section on page 4-11</li> <li>• &lt;PJMON&gt; is the SONET pointer number (0 or 1) of an EC1 port and is an integer</li> <li>• Valid values for &lt;LBO&gt; are shown in the “E_LBO” section on page 4-36</li> <li>• &lt;PST&gt; is the state of an EC1 port; valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53</li> </ul>
Example	Input ED-EC1:CISCO:FAC-1-1:123:::PJMON=0,LBO=0-225:IS;
Errors	This message generates all the default errors

## 3.5.24 ED-EQPT: Edit Equipment

This command edits the attributes for a given equipment slot in the NE. If the card is in an equipment slot, this command is allowed only on the working AID.

The PROTID parameter indicates the unique identifier of the protection group (the protect card). “NULL” is a special value of the PROTID parameter and indicates absence of a protection group. For 1:1 protection type, RVRTV and RVTM parameters can be changed. For 1:N protection type, if the PROTID parameter is entered as “NULL”, the protection group is deleted.

```
ED-EQPT:[<TID>]:SLOT-2:<CTAG>:::PROTID=NULL;
```

For 1:N protection type, if the PROTID is “NULL”, the AIDs in the list are removed from the protection group. If all the working cards are in the AID list, the protection group is deleted.

Example: if Slot-1, Slot-2 and Slot-4 were the only working cards in the protection group. The following command will remove Slot-4 from the protection group:

```
ED-EQPT:[<TID>]:SLOT-4:<CTAG>:::PROTID=NULL;
```

The protection group still has Slot-1 and Slot-2 as working cards.

Following command will remove all the other working cards in the above example and consequently, delete the protection group itself:

```
ED-EQPT:[<TID>]:SLOT-2&SLOT-1:<CTAG>:::PROTID=NULL;
```

In summary, the ED-EQPT command can be successfully executed on an already provisioned card to add a working card to or remove one from a protection group. This command is not valid on a protect card. Only cards can be added to or removed from a protection group. Protection type is immutable and is determined at the time of creation of a protection group (while adding the first working card). Once provisioned, the equipment type can not be edited either.

Examples of adding an existing card to a protection group via ED-EQPT command:

1:1 protection group

```
ED-EQPT::SLOT-2:12:::PROTID=SLOT-1,RVRTV=Y,RVTM=9.0;
```

1:1 protection group

```
ED-EQPT::SLOT-2:12:::PROTID=SLOT-3,PRTYPE=1-N,RVTM=6.5;
```

Error conditions for editing 1:1 or 1:N protection group may be:

1. Editing the PRTYPE or PROTID (non-NULL value) parameters.
2. Editing RVRTV or RVTM when no protection group exists.
3. Editing RVRTV for 1:N protection.
4. Failed to remove, currently switched to protect.

Section	ED-EQPT Description
Category	Equipment
Security	Provisioning



Section	ED-EQPT Description (continued)
Related Messages	ALW-SWDX-EQPT REPT ALM EQPT ALW-SWTOPROTN-EQPT REPT EVT EQPT ALW-SWTOWKG-EQPT RTRV-ALM-EQPT DLT-EQPT RTRV-COND-EQPT ENT-EQPT RTRV-EQPT INH-SWDX-EQPT SW-DX-EQPT INH-SWTOPROTN-EQPT SW-TOPROTN-EQPT INH-SWTOWKG-EQPT SW-TOWKG-EQPT
Input Format	ED-EQPT:[<TID>]:<AID>:<CTAG>:::[PROTID=<PROTID>, [PRTYPE=<PRTYPE>],[RVRTV=<RVRTV>],[RVTM=<RVTM>][:]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “EQPT” section on page 4-11</li> <li>• &lt;PROTID&gt; is the protecting card slot number of the protection group.                &lt;PROTID&gt; is the AID from the “PRSLOT” section on page 4-8</li> <li>• &lt;PRTYPE&gt; is the protection group type; valid values for &lt;PRTYPE&gt; are shown in the “PROTECTION_GROUP” section on page 4-53</li> <li>• &lt;RVRTV&gt; is the revertive mode: valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51</li> <li>• &lt;RVTM&gt; is the revertive time; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55</li> </ul>
Input Example	ED-EQPT:CISCO:SLOT-2:123:::PROTID=SLOT-1,PRTYPE=1-1,RVRTV=Y,RVTM=9.0;
Errors	This message generates all the default errors

### 3.5.25 ED-FFP-<OCN\_TYPE>: Edit Facility Protection Group (OC3, OC12, OC48, OC192)

(OC192 supported for Cisco ONS 15454 only)

This command edits the optical facility protection.

Notes:

1. This command can be used on both protecting and working AIDs.
2. If you provision the revertive time under the non-revertive mode, an error will be returned.

Section	ED-FFP-<OCN_TYPE> Description
Category	SONET Line Protection
Security	Provisioning
Related Messages	DLT-FFP-<OCN_TYPE> ENT-FFP-<OCN_TYPE> EX-SW-<OCN_BLSR> OPR-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<OCN_TYPE> RTRV-FFP-<OCN_TYPE>

Section	ED-FFP-<OCN_TYPE> Description (continued)
Input Format	ED-FFP-<OCN_TYPE>:[<TID>]:<AID>:<CTAG>:::[PROTID=<PROTID>, [RVRTV=<RVRTV>],[RVTM=<RVTM>],[PSDIRN=<PSDIRN>][:]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the facility AID from the “FACILITY” section on page 4-11</li> <li>• &lt;PROTID&gt; is the protection group identifier (protection group name) and is a string; &lt;PROTID&gt; can have a maximum of 32 characters</li> <li>• &lt;RVRTV&gt; identifies a revertive mode; valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51</li> <li>• &lt;RVTM&gt; identifies a revertive time; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55</li> <li>• &lt;PSDIRN&gt; identifies the switching mode; valid values for &lt;PSDIRN&gt; are shown in the “UNI_BI” section on page 4-64</li> </ul>
Input Example	ED-FFP-OC3:PETALUMA:FAC-1-1:1:::PROTID=PROT_NAME,RVRTV=Y, RVTM=1.0,PSDIRN=BI;
Errors	This message generates all the default errors

## 3.5.26 ED-G1000: Edit G1000

(Cisco ONS 15454 only)

This command modifies the attributes related to a G1000 port.

Section	ED-EC1 Description
Category	Ports
Security	Provisioning
Related Messages	ED-<OCN_TYPE> RTRV-<OCN_TYPE> ED-DS1 RTRV-DS1 ED-EC1 RTRV-EC1 ED-T1 RTRV-G1000 ED-T3 RTRV-T1 RMV-<MOD_PORT> RTRV-T3 RST-<MOD_PORT>
Input Format	ED-G1000:[<TID>]:<AID>:<CTAG>:::[MFS=<MFS>],[FLOW=<FLOW>] [:<PST>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the AID facility from the “FACILITY” section on page 4-11</li> <li>• Valid values for &lt;MFS&gt; are shown in the “MFS_TYPE” section on page 4-43</li> <li>• Valid values for &lt;FLOW&gt; are shown in the “ON_OFF” section on page 4-51</li> <li>• Valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53</li> </ul>
Example	Input ED-G1000:TID:FAC-1-1:CTAG:::MFS=1548,FLOW=ON:IS;
Errors	This message generates all the default errors

## 3.5.27 ED-NE-GEN: Edit Network Element GEN

This command edits the general node attributes of the NE.

Notes:

1. Only the IPADDR, IPMASK, DEFRTTR and node name can be modified with this command.
2. The node name can be a maximum of 20 characters. If the entered name exceeds 20 characters, an IPNV (Node Name Too Long) error message is returned.
3. The feature of setting a timing source has been supported since ONS 15454 R3.2.
4. An existing timing source can be removed by setting the address to 0.0.0.0.

Section	ED-NE-GEN Description
Category	System
Security	Superuser
Related Messages	ALW-MSG-ALL RTRV-INV ED-DAT RTRV-NE-GEN ED-NE-SYCN RTRV-NE-IPMAP INH-MSG-ALL RTRV-NE-SYCN INIT-SYS RTRV-TOD RTRV-HDR SET-TOD
Input Format	ED-NE-GEN:[<TID>]::<CTAG>:::[NAME=<NAME>],[IPADDR=<IPADDR>],[IPMASK=<IPMASK>],[DEFRTTR=<DEFRTTR>],[NTP=<NTP>]; where: <ul style="list-style-type: none"> <li>• &lt;NAME&gt; indicates the node name and is a string</li> <li>• &lt;IPADDR&gt; indicates the node IP address and is a string</li> <li>• &lt;IPMASK&gt; indicates the node IP mask and is a string</li> <li>• &lt;DEFRTTR&gt; indicates the node default router and is a string</li> <li>• &lt;NTP&gt; indicates the NTP timing source address of the node and is a string</li> </ul>
Input Example	ED-NE-GEN:CISCO::123:::NAME=NODENAME,IPADDR=192.168.100.52,IPMASK=255.255.255.0,DEFRTTR=192.168.100.1,NTP=192.168.100.52;
Errors	This message generates all the default errors

## 3.5.28 ED-NE-SYCN: Edit Network Element Synchronization

This command edits the synchronization attributes of the NE.

Notes:

1. Although mixed mode timing is supported in this release, it is not recommended. See the “Mixed Mode Timing Support” section on page 1-7 for more information.
2. The existing external and line modes have the same functionality in all ONS 15454 3.x releases:
  - External mode: the node derives its timing from the BITS inputs.
  - Line mode: the node derives its timing from the SONET line(s).
  - Mixed mode: the node derives its timing from the BITS input or SONET lines.

Section	ED-NE-SYCN Description
Category	Synchronization
Security	Provisioning
Related Messages	ALW-MSG-ALL RTRV-ALM-BITS ED-BITS RTRV-ALM-SYCN ED-DAT RTRV-BITS ED-NE-GEN RTRV-COND-BITS ED-SYCN RTRV-COND-SYCN INH-MSG-ALL RTRV-HDR INIT-SYS RTRV-INV OPR-SYCNCSW RTRV-NE-GEN REPT ALM BITS RTRV-NE-IPMAP REPT ALM SYCN RTRV-NE-SYCN REPT EVT BITS RTRV-SYCN REPT EVT SYCN RTRV-TOD RLS-SYCNCSW SET-TOD
Input Format	ED-NE-SYCN:[<TID>]::<CTAG>:::[TMMD=<TMMD>, [SSMGEN=<SSMGEN>],[QRES=<QRES>],[RVRTV=<RVRTV>, [RVTM=<RVTM>]; where: <ul style="list-style-type: none"> <li>• &lt;TMMD&gt; is the timing mode; valid values for &lt;TMMD&gt; are shown in the “TIMING_MODE” section on page 4-63. A null value is equivalent to ALL.</li> <li>• &lt;SSMGEN&gt; is the SSM message set; valid values for &lt;SSMGEN&gt; are shown in the “SYNC_GENERATION” section on page 4-60. A null value is equivalent to ALL.</li> <li>• &lt;QRES&gt; is the quality of the RES; valid values for &lt;QRES&gt; are shown in the “SYNC_QUALITY_LEVEL” section on page 4-61. A null value is equivalent to ALL.</li> <li>• &lt;RVRTV&gt; is the revertive mode; valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51. A null value is equivalent to ALL.</li> <li>• &lt;RVTM&gt; is the revertive time; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55. A null value is equivalent to ALL.</li> </ul>

Section	ED-NE-SYNCN Description (continued)
Example	Input ED-NE-SYNCN:CISCO::123::TMMD=LINE,SSMGEN=GEN1, QRES=ABOVE-PRS,RVRTV=Y,RVTM=8.0;
Errors	This message generates all the default errors

### 3.5.29 ED-PID: Edit Password

This command allows a user to change their own password.

The password cannot be null. It will be echoed as clear text as the message is parsed only after the complete message is entered and terminated.

Notes:

1. The password will not appear in the TL1 log on the NE.
2. You must use the ED-USER-SECU command to change the empty password (Superuser CISCO15 default empty password) to a non-empty, valid password. The ED-PID command cannot be used to change the empty password to a valid password.
3. If you use the ED-PID command to change the password while providing an incorrect old password (including an empty password), both ED-PID and ED-USER-SECU commands will be broken and cannot be used to edit passwords in the current TL1 session. You must exit the TL1 session and login again to perform a valid edit password function by using the ED-PID or ED-USER-SECU commands.

Section	ED-PID Description
Category	Security
Security	Provisioning
Related Messages	ACT-USER CANC CANC-USER DLT-USER-SECU ED-USER-SECU ENT-USER-SECU REPT EVT SECU
Input Format	ED-PID:[<TID>]:<UID>:<CTAG>::<OLDPID>,<NEWPID>; where: <ul style="list-style-type: none"> <li>• &lt;UID&gt; is the user identifier and is a string; &lt;UID&gt; is any combination of up to 10 alphanumeric characters.</li> <li>• &lt;OLDPID&gt; is the old password and is a string; &lt;OLDPID&gt; is any combination of up to 10 alphanumeric characters. The syntax of &lt;OLDPID&gt; is not checked for backwards compatibility.</li> <li>• &lt;NEWPID&gt; is the user login password and is a string; &lt;NEWPID&gt; is a minimum of 6, maximum of 10 alphanumeric characters including at least one digit and one special character (% , #, or +).</li> </ul> <p><b>Note</b> CTC allows &lt;UID&gt; and &lt;PID&gt; of up to 20 characters. The 20 character CTC-entered &lt;UID&gt; and &lt;PID&gt; are not valid TL1 &lt;UID&gt; and &lt;PID&gt;.</p>

Section	ED-PID Description (continued)
Input Example	ED-PID:CISCO:UID:123::OLDPID,NEWPID;
Errors	This message generates all the default errors

### 3.5.30 ED-SYNCN: Edit Synchronization

This command edits the synchronization reference list used to determine the sources for the NE's reference clock and the BITS output clock. For each clock, up to three synchronization sources may be specified (e.g., PRIMARY, SECOND, THIRD). To view or edit the system timing mode, use the RTRV-NE-SYNCN or ED-NE-SYNCN commands.



#### Note

To retrieve/set the timing mode, SSM message Set or Quality of RES information, use the RTRV-NE-SYNCN and ED-NE-SYNCN commands.

Section	ED-SYNCN Description																
Category	Synchronization																
Security	Provisioning																
Related Messages	<table> <tbody> <tr> <td>ED-BITS</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>ED-NE-SYNCN</td> <td>RTRV-ALM-SYNCN</td> </tr> <tr> <td>OPR-SYNCNSW</td> <td>RTRV-BITS</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-COND-SYNCN</td> </tr> <tr> <td>REPT EVT BITS</td> <td>RTRV-NE-SYNCN</td> </tr> <tr> <td>REPT EVT SYNCN</td> <td>RTRV-SYNCN</td> </tr> <tr> <td>RLS-SYNCNSW</td> <td></td> </tr> </tbody> </table>	ED-BITS	RTRV-ALM-BITS	ED-NE-SYNCN	RTRV-ALM-SYNCN	OPR-SYNCNSW	RTRV-BITS	REPT ALM BITS	RTRV-COND-BITS	REPT ALM SYNCN	RTRV-COND-SYNCN	REPT EVT BITS	RTRV-NE-SYNCN	REPT EVT SYNCN	RTRV-SYNCN	RLS-SYNCNSW	
ED-BITS	RTRV-ALM-BITS																
ED-NE-SYNCN	RTRV-ALM-SYNCN																
OPR-SYNCNSW	RTRV-BITS																
REPT ALM BITS	RTRV-COND-BITS																
REPT ALM SYNCN	RTRV-COND-SYNCN																
REPT EVT BITS	RTRV-NE-SYNCN																
REPT EVT SYNCN	RTRV-SYNCN																
RLS-SYNCNSW																	
Input Format	<p>ED-SYNCN:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;:::[PRI=&lt;PRI&gt;],[SEC=&lt;SEC&gt;],[THIRD=&lt;THIRD&gt;][:];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the synchronization reference to be modified and is from the “SYNC_REF” section on page 4-15</li> <li>• &lt;PRI&gt; is the primary reference of the synchronization and is the AID from the “SYN_SRC” section on page 4-14</li> <li>• &lt;SEC&gt; is the secondary reference of the synchronization and is the AID from the “SYN_SRC” section on page 4-14</li> <li>• &lt;THIRD&gt; is the third reference of the synchronization and is the AID from the “SYN_SRC” section on page 4-14</li> </ul>																
Input Example	ED-SYNCN:BOYES:SYNC-NE:112:::PRI=INTERNAL,SEC=INTERNAL,THIRD=INTERNAL;																
Errors	This message generates all the default errors																

### 3.5.31 ED-T1: Edit T1 Facility

This command edits the attributes related to a DS1/T1 port.

Notes:

1. This command is not allowed if the card is a protecting card.
2. If sending this command to edit TACC and any other attribute(s), and the port having the cross connection, the (Parameters Not compatible) error message will be returned.
3. Editing TACC via an ED-xxx command is only allowed when there is no circuit/cross connection on this port. Otherwise, an error message (VT in Use) will be returned.
4. TACC creation will also be denied on the protect ports/cards.

Section	ED-T1 Description
Category	Ports
Security	Provisioning
Related Messages	ED-<OCN_TYPE>                      RTRV-<OCN_TYPE> ED-DS1                                RTRV-DS1 ED-EC1                                RTRV-EC1 ED-G1000                             RTRV-G1000 ED-T3                                 RTRV-T1 RMV-<MOD_PORT>                    RTRV-T3 RST-<MOD_PORT>
Input Format	ED-T1:[<TID>]:<AID>:<CTAG>:::[LINECDE=<LINECDE>],[FMT=<FMT>],[LBO=<LBO>],[TACC=<TACC>][:<PST>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “FACILITY” section on page 4-11</li> <li>• &lt;LINECDE&gt; is the line coding; valid values for &lt;LINECDE&gt; are shown in the “LINE_CODE” section on page 4-42</li> <li>• &lt;FMT&gt; is the frame format; valid values for &lt;FMT&gt; are shown in the “FRAME_FORMAT” section on page 4-41</li> <li>• &lt;LBO&gt; is the line build out; valid values for &lt;LBO&gt; are shown in the “LINE_BUILDOUT” section on page 4-42</li> <li>• &lt;TACC&gt; defines the STS as a test access port with a selected unique TAP number. The TAP number ranges from 0–999. When TACC is 0, the TAP is deleted; &lt;TACC&gt; is an integer.</li> <li>• &lt;PST&gt; is the state; valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53</li> </ul>
Input Example	ED-T1:CISCO:FAC-2-1:1223:::LINECDE=AMI,FMT=ESF,LBO=0-131,TACC=8:IS;
Errors	This message generates all the default errors

### 3.5.32 ED-T3: Edit T3 Facility

This command edits the attributes related to a DS3/T3 port.

Notes:

1. This command is not allowed if the card is a protecting card.
2. Both FMT and Line code are not supported for T3/DS3 facility. They are supported on both the DS3XM and DS3E card. The unframed value of the framing format is only supported on the DS3E facility.
3. If sending this command to edit TACC and any other attribute(s), and the port having the cross connection, the (Parameters Not compatible) error message will be returned.
4. Editing TACC via an ED-xxx command is only allowed when there is no circuit/cross connection on the port and the port/VT does not have a TAP. Otherwise, an error message (VT in Use) will be returned.
5. TACC creation will also be denied on the protect ports/cards.

Section	ED-T3 Description
Category	Ports
Security	Provisioning
Related Messages	ED-<OCN_TYPE> RTRV-<OCN_TYPE> ED-DS1 RTRV-DS1 ED-EC1 RTRV-EC1 ED-G1000 RTRV-G1000 ED-T1 RTRV-T1 RMV-<MOD_PORT> RTRV-T3 RST-<MOD_PORT>
Input Format	ED-T3:[<TID>]:<AID>:<CTAG>:::[FMT=<FMT>],[LINECDE=<LINECDE>],[LBO=<LBO>],[TACC=<TACC>][:<PST>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the facility AID from the “FACILITY” section on page 4-11</li> <li>• &lt;FMT&gt; is the frame format and the unframed value of the framing format is only supported for the DS3E; valid values for &lt;FMT&gt; are shown in the “DS_LINE_TYPE” section on page 4-36</li> <li>• &lt;LBO&gt; is the line buildout; valid values for &lt;LBO&gt; are shown in the “E_LBO” section on page 4-36</li> <li>• &lt;LINECDE&gt; is the line code; valid values for &lt;LINECDE&gt; are shown in the “DS_LINE_CODE” section on page 4-35</li> <li>• &lt;TACC&gt; defines the STS as a test access port with a selected unique TAP number. The TAP number ranges from 0–999. When TACC is 0, the TAP is deleted; &lt;TACC&gt; is an integer</li> <li>• &lt;PST&gt; is the state; valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53</li> </ul>



Section	ED-T3 Description (continued)
Example	Input ED-T3:CISCO:FAC-1-2:123:::FMT=C-BIT,LINECDE=B3ZS,LBO=0-225, TACC=8:IS;
Errors	This message generates all the default errors

### 3.5.33 ED-USER-SECU: Edit User Security

This command edits a user's privileges, password, or ID. Only a Superuser may perform this operation. Privilege levels are described in the ENT-USER-SECU command. If the password is changed with this command, the password should be blanked out in the TL1 log.

Notes:

1. The <UID> can be any combination of up to 10 alphanumeric characters.
2. The <PID> is a string of up to 10 characters where at least 2 are non-alphabetic with at least one special character (+, %, or #).
3. Although the CTC allows both <UID> and <PID> of up to 20 characters, the CTC-entered users (<UID>, <PID>) are not valid TL1 users.
4. This command is now backwards compatible according to the following rules:
  - a. The syntax of <NEWPID> is checked and must meet TL1 standards.
  - b. If the <NEWPID> is specified, the syntax is checked and must meet TL1 standards.
  - c. The syntax of <UID> is not checked.
  - d. Old users can change their password without changing their userid, but the new password must meet the new requirements.
  - e. The <NEWPID> is required when changing the <USERID>.

Currently, when <NEWUID> is specified, <NEWPID> is not optional; however, it is possible to change a userid without changing the password by providing the same password. Users are not allowed to keep their old password if the old password does not meet the new syntax requirements; for example,

```
<USERID> = DODI2345
```

```
<PASSWORD> = DODI#234 /*PASSWORD ALREADY MEETS REQUIREMENTS*/
```

```
> ED-USER-SECU::DODI2345:1::DODI3456,DODI#234,,PROV;  
ED-USER-SECU::DODI2345:1::DODI3456,DODI#234,,PROV;
```

```
BRONCOS4 1970-01-02 13:15:35
```

```
M 1 COMPLD
```

```
;
```

```
<NEWUSERID> = DODI3456
```

```
<PASSWORD> = DODI#234
```

```
<USERID> = CISCO40
```

```
<PASSWORD> = CISCO40 /*PASSWORD DOES NOT MEET REQUIREMENTS*/
```

```
> ED-USER-SECU::CISCO40:1::CISCO40,,PROV;
ED-USER-SECU::CISCO40:1::CISCO40,,PROV;
```

```
BRNCOS4 1970-01-02 13:14:24
M 1 DENY
IIFM
/* INVALID PASSWORD */
;
```

5. You must use the ED-USER-SECU command to change the empty password (Superuser CISCO15 default empty password) to a non-empty, valid password. The ED-PID command cannot be used to change the empty password to a valid password.
6. If you use the ED-PID command to change the password while providing an incorrect old password (including an empty password), both ED-PID and ED-USER-SECU commands will be broken and cannot be used to edit passwords in the current TL1 session. You must exit the TL1 session and login again to perform a valid edit password function by using the ED-PID or ED-USER-SECU commands.

Section	ED-USER-SECU Description
Category	Security
Security	Superuser
Related Messages	ACT-USER CANC CANC-USER DLT-USER-SECU ED-PID ENT-USER-SECU REPT EVT SECU
Input Format	ED-USER-SECU:[<TID>]:<UID>:<CTAG>::[<NEWUID>],[<NEWPID>], [<UAP>][:]; where: <ul style="list-style-type: none"> <li>• &lt;UID&gt; is the user identifier and is a string. The minimum &lt;UID&gt; size is 6, the maximum UID size is 10; &lt;UID&gt; is a string.</li> <li>• &lt;NEWUID&gt; is the new user identifier and is a string. The minimum &lt;UID&gt; size is 6, the maximum PID size is 10; &lt;UID&gt; is a string.</li> <li>• &lt;NEWPID&gt; is the user login password and is a string; &lt;NEWPID&gt; is a minimum of 6, maximum of 10 alphanumeric characters including at least one digit and one special character (% , #, or +).</li> <li>• &lt;UAP&gt; is the user access privilege; valid values for &lt;UAP&gt; are shown in the “PRIVILEGE” section on page 4-52</li> </ul> <p><b>Note</b> CTC allows &lt;UID&gt; and &lt;PID&gt; of up to 20 characters. The 20 character CTC-entered &lt;UID&gt; and &lt;PID&gt; are not valid TL1 &lt;UID&gt; and &lt;PID&gt;.</p>
Input Example	ED-USER-SECU:PETALUMA:CISCO15:123::NEWUID,NEWPID,,MAINT;
Errors	This message generates all the default errors

### 3.5.34 ED-VT1: Edit Virtual Tributary

This command edits the attributes associated with a VT1 path.

Both RVRTV and RVTM parameters only apply to UPSR.

The TACC parameter edits an existing single STS or VT and changes it to a test access path. When an editing command on TACC is executed, it assigns the STS for the first 2-way connection and STS=1 as the second 2-way connection.

Error conditions:

1. Sending this command to edit RVRTV or RVTM for the non UPSR VT path, an error message will be returned.
2. If sending this command to edit both TACC and any other attribute(s), the (Parameters Not compatible) error message will be returned.
3. This command is only allowed whenever there are no circuits/cross connections (no UPSR connections) on that AID.
4. If sending this command to edit TACC on an AID with circuits or cross connections, or if the port/VT has a TAP, an error message (VT in Use) will be returned.
5. TACC creation will also be denied on the protect ports/cards.

Section	ED-VT1 Description
Category	STS and VT Paths
Security	Provisioning
Related Messages	ED-<STS_PATH> RTRV-<STS_PATH> RTRV-PTHTRC-<STS_PATH RTRV-VT1
Input Format	ED-VT1:[<TID>]:<AID>:<CTAG>:::[RVRTV=<RVRTV>],[RVTM=<RVTM>],[TACC=<TACC>];  where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “VT1_5” section on page 4-17 and must not be null</li> <li>• &lt;RVRTV&gt; identifies a revertive mode which only applies to UPSR; valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51 and &lt;RVRTV&gt; is optional</li> <li>• Valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55</li> <li>• &lt;TACC&gt; defines the STS as a test access path with a selected unique TAP number. The TAP number ranges from 0–999. When TACC is 0, the TAP is deleted. &lt;TACC&gt; is an integer.</li> </ul>
Input Example	ED-VT1:CISCO:VT1-2-3-1-4:123:::RVRTV=Y,RVTM=1.0,TACC=8;
Errors	This message generates all the default errors

### 3.5.35 ENT-CRS-<STS\_PATH>: Enter Cross Connection (STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C)

(STS192C supported for ONS 15454 only)

This command creates an STS cross connection with a cross connection type (CCT).

When a UPSR cross connection is created, the path presented by the first AID is configured to be the preferred path. For example, the AID (f1) of the cross connection (created by ENT-CRS-STS1::f1&f2,t1:123;) is the preferred path.

Notes:

1. The default cross connection type is 2WAY.
2. If a path is already in a connection, it cannot be in another connection even if the other is a 1WAY and the new one will be 1WAY the other direction.
3. This command does not support creating multiple STS cross connections.
4. The UPSR cross STS connection can be created by using “&” in the AID fields of this command.

The following command is used to create a 1WAY selector or 2WAY selector and bridge with:

```
from points: f1, f2
to points: t1
ENT-CRS-{STS_PATH}:[<TID>]:f1&f2,t1:<CTAG>::[<CCT>];
```

The following command is used to create a 1WAY bridge or 2WAY selector and bridge with:

```
from point: f1
to points: t1, t2
ENT-CRS-{STS_PATH}:[<TID>]:f1,t1&t2:<CTAG>::[<CCT>];
```

The following command is used to create a 1WAY subtending UPSR connection or 2WAY subtending UPSR connection with:

```
from point: f1, f2
to points: t1, t2
ENT-CRS-{STS_PATH}:[<TID>]:f1&f2,t1&t2:<CTAG>::[<CCT>];
```

The following command is used to create a 2WAY selector and bridge with:

```
from point: f1,f2 (f1 is the working side, f2 is the protect side)
nbsp;selector points: s1, s2 (s1 is the working side, s2 is the protect side)
ENT-CRS-{STS_PATH}:[<TID>]:f1&f2,s1&s2::2WAY;
```

5. All a&b AIDs in the TL1 cross connection command are in the format of WorkingAid&ProtectAid.
6. To establish a cross connection on a 2F protection path or on a 4F protection channel, the PCA connection type (1WAYPCA or 2WAYPCA) is required.
7. If you send a PCA cross connection type on the non-PCA AIDs, the IIAC error message is returned.
8. If you send a non-PCA cross connection type on the PCA AIDs, the IIAC error message is returned.
9. The facility AID is only valid on slots holding a G1000-4 card (ONS 15454).

Section	ENT-CRS-<STS_PATH> Description
Category	Cross Connections
Security	Provisioning
Related Messages	DLT-CRS-<STS_PATH> DLT-CRS-VT1 ENT-CRS-VT1 RTRV-CRS-<STS_PATH> RTRV-CRS-VT1
Input Format	<p>ENT-CRS-&lt;STS_PATH&gt;:[&lt;TID&gt;]:&lt;FROM&gt;,&lt;TO&gt;:&lt;CTAG&gt;::[&lt;CCT&gt;][::];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;FROM&gt; indicates an identifier at one end of the STS cross connection and is the AID from the “CrossConnectID” section on page 4-7</li> <li>• &lt;TO&gt; indicates an identifier at the other end of the STS cross connection and is the AID from the “CrossConnectID” section on page 4-7</li> <li>• &lt;CCT&gt; identifies the cross connection type; valid values for &lt;CCT&gt; are shown in the “CCT” section on page 4-23</li> </ul> <p><b>Note</b> A facility AID of FAC-{1-6,12-17}-{1-4} is allowed as the &lt;FROM&gt; or &lt;TO&gt; portions of the cross connect for a G1000-4 card (ONS 15454). For UPSR cross connections, the FAC aid should not be used in conjunction with the “&amp;” syntax, so &lt;FROM&gt; or &lt;TO&gt; AIDs such as “STS-1-1&amp;FAC-5-1” or “FAC-1-1&amp;FAC-2-1” or “FAC-3-1&amp;STS-2-1” should not be used. However, if the &lt;FROM&gt; or &lt;TO&gt; AID uses multiple STS aids, then the other AID of the cross connection can be a single FAC AID and “STS-1-1&amp;STS-2-1,FAC-5-1” and “FAC-5-1,STS-1-1&amp;STS-2-1” are allowed.</p>
Input Example	ENT-CRS-ST1:BODEGA:STS-5-1,STS-12-5:116::2WAY;
Errors	This message generates all the default errors

### 3.5.36 ENT-CRS-VT1: Enter Virtual Tributary Cross Connection

This command creates a VT1 cross connect. When a UPSR cross connection is created, the path presented by the first AID is configured to be the preferred path. For example, the first AID (f1) of the cross connection (created by ENT-CRS-VT1::f1&f2,t1:123;) is the preferred path.

Notes:

1. The default cross connection type is 2WAY.
2. If a path is already in a connection, it cannot be in another connection even if the other is a 1WAY and the new one will be 1WAY the other direction.
3. This command does not support creating multiple VT cross connections.
4. The UPSR VT cross connection can be created by using “&” in the AID fields of this command.

The following command is used to create a 1WAY selector or 2WAY selector and bridge with:

from points: f1, f2

to points: t1

ENT-CRS-VT1:[<TID>]:f1&f2,t1:<CTAG>::[<CCT>];

The following command is used to create a 1WAY bridge or 2WAY selector and bridge with:

```
from point: f1
to points: t1, t2
ENT-CRS-VT1:[<TID>]:f1,t1&t2:<CTAG>::[<CCT>];
```

The following command is used to create a 1WAY subtending UPSR connection or 2WAY subtending UPSR connection with:

```
from point: f1, f2
to points: t1, t2
ENT-CRS-VT1:[<TID>]:f1&f2,t1&t2:<CTAG>::[<CCT>];
```

The following command is used to create a 2WAY selector and bridge with:

```
from points: f1, f2 (f1 is the working side, f2 is the protect side)
selector points: s1, s2 (s1 is the working side, s2 is the protect side)
ENT-CRS-VT1:[<TID>]:f1&f2,s1&s2::2-way;
```

5. All a&b AIDs in the TL1 cross connection command are in the format of WorkingAid&ProtectAid.
6. To establish a cross connection on a 2F protection path or on a 4F protection channel, the PCA connection type (1WAYPCA or 2WAYPCA) is required.
7. If you send a PCA cross connection type on the non-PCA AIDs, an IIAC error message is returned.
8. If you send a non-PCA cross connection type on the PCA AIDs, an IIAC error message is returned.

Section	ENT-CRS-VT1 Description
Category	Cross Connections
Security	Provisioning
Related Messages	DLT-CRS-<STS_PATH> DLT-CRS-VT1 ENT-CRS-<STS_PATH> RTRV-CRS-<STS_PATH> RTRV-CRS-VT1
Input Format	ENT-CRS-VT1:[<TID>]:<FROM>,<TO>:<CTAG>::[<CCT>][:]; where: <ul style="list-style-type: none"> <li>• &lt;FROM&gt; indicates an identifier at one end of the VT cross connection and is the AID from the “VT1_5” section on page 4-17</li> <li>• &lt;TO&gt; indicates an identifier at the other end of the VT cross connection and is the AID from the “VT1_5” section on page 4-17</li> <li>• &lt;CCT&gt; identifies the cross connection type; valid values for &lt;CCT&gt; are shown in the “CCT” section on page 4-23</li> </ul>
Example	Input ENT-CRS-VT1:CISCO:VT1-2-3-7-2,VT1-4-4-5-2:1234::1WAY;
Errors	This message generates all the default errors

### 3.5.37 ENT-EQPT: Enter Equipment

This command enters the card type and attributes for a given equipment slot in the NE. It also automatically enters all facilities supported by the card, assigning default values to all facility and path attributes.

The command supports optional parameters: RVTM (revertive time), RVRTV (revertive behavior), PROTID (unique protection id) and PRTPYE (protection type) for configuring the card in an equipment protection group. PRTPYE can be 1:1 and 1:N. These parameters can only be entered for a working AID. The protect card must already be provisioned before creating the protection group.

1:1 protection involves the odd slot protecting the even slot. The work-protect pair is as follows (2-1, 4-3, 6-5, 16-17, 14-15, 12-13). DS1, DS3, DS3XM, DS3N, DS3E, EC1 and other electrical cards support 1:1 protection. The value of PROTID is the protecting slot and is of the form "slot-x". This command creates a 1:1 protection group. If the command has the optional parameters for creating a protection group and the protection group cannot be created due to an error condition, provisioning of the equipment fails.

The PROTID slot must be provisioned first.

To create 1:1 with the ENT-EQPT command, the working card should not be provisioned first, so the AID type field should be presented in ENT-EQPT for the AID on this <AID>.

The following is an example for a 1:1 protection group:

```
ENT-EQPT:[<TID>]:SLOT-1:<CTAG>::DS1;
```

```
ENT-EQPT:[<TID>]:SLOT-2:<CTAG>::DS1:PROTID=SLOT-1,PRTPYE=1-1,RVTM=5.0,
RVRTV=Y;
```

1:N protection is always revertive. For 1:N protection, the protect slot can only be Slot 3 or Slot 15. For protect card in Slot 3, the working cards can be in any of the slots on Bank A. Slot 15 is for protection in Bank B. A DSXN (DS1N or DS3N) card must be provisioned in the protect slot. A 1:1 protection cannot be upgraded to 1:N protection. This command creates a 1:N protection group or adds a new card to an existing 1:N protection group. Multiple working AIDs can be entered in a protection group.

The following is an example of provisioning a 1:N protection group with the ENT-EQPT command:

```
ENT-EQPT:[<TID>]:SLOT-3:<CTAG>::DS1N;
```

```
ENT-EQPT:[<TID>]:SLOT-2&SLOT-1:<CTAG>::DS1:PROTID=SLOT-3,PRTPYE=1-N;
```

The following is an example of provisioning a 1:N protection group with the ED-EQPT command:

```
ENT-EQPT:[<TID>]:SLOT-1&SLOT-2:<CTAG>::DS1;
```

```
ENT-EQPT:[<TID>]:SLOT-3:<CTAG>::DS1N;
```

```
ED-EQPT:[<TID>]:SLOT-2&SLOT-1:<CTAG>:::PROTID=SLOT-1,PRTPYE=1-N;
```

If the provisioning fails for some AIDs, PRTL responses will be provided indicating failed AIDs. If the provisioning fails for all the AIDs, a DENY response will be provided. For both CMPLD and PRTL responses on creating protection group query, the protection group has been created for the successful AID(s) query.

The following is an example for 1:N protection. RVRTV parameter is not valid for 1:N protection.

```
ENT-EQPT:[<TID>]:SLOT-2:<CTAG>:::PROTID=SLOT-3,PRTPYE=1-N,RVTM=5.0;
```

Both ENT-EQPT and ED-EQPT commands can provision all working AIDs (1-5) together for 1:N by using listed AIDs.

The ENT-EQPT command provisions a new card and adds it to the protection group. The ED-EQPT command adds the already provisioned cards to the protection group.

Protect AID should already be provisioned for either command because protection group parameters are not supported for the protect AID.

In summary, the ENT-EQPT command provisions an equipment successfully on an empty slot if the equipment type is compatible with the slot number. This command can have the optional parameters in the “f” block to provision a card as working card. It has the effect of adding the protection behavior at the time of provisioning itself. For the protection provisioning to succeed, the protect card should have already been provisioned. Trying to execute ENT-EQPT to provision a protection group on an already provisioned card will result in an error.

An example to provision a 1:1 protection group:

```
ENT-EQPT::SLOT-1:12::DS3;// provision the protect card
```

```
ENT-EQPT::SLOT-2:12::DS3:PROTID=SLOT-1,RVRTV=Y,RVTM=8.0; //provision a card and add it to the protection group.
```

An example to provision a 1:N protection group:

```
ENT-EQPT::SLOT-3:12::DS3N;//provision the protect card
```

```
ENT-EQPT::SLOT-1:12::DS3:PROTID=SLOT-3,RVTM=7.5,PRTYPE=1-N;//provision a card and add it to protection group.
```

Sending this command to provision a DS3NE card on Slot { 1,2,4,5,6,12,13,14,16,or 17 }, the DS3E card type is presented.

Error conditions for creating 1:1 or 1:N protection groups are:

1. AID sent to non-working slot. The working cards must be in even slots for 1:1 and in the same bank for 1:N and not in Slot 3 or Slot 15 (ONS 15454).
2. Invalid AID chosen for protection slot.
3. Working AID is already in protection group.
4. AID is a protect AID.
5. The protect card has a circuit.
6. The equipment type does not match with the allowed AID.
7. The slot is already provisioned.
8. The protecting slot is not provisioned.
9. Multiple working AIDs for 1:1 protection.

Section	ENT-EQPT Description	
Category	Equipment	
Security	Provisioning	
Related Messages	ALW-SWDX-EQPT	REPT ALM EQPT
	ALW-SWTOPROTN-EQPT	REPT EVT EQPT
	ALW-SWTOWKG-EQPT	RTRV-ALM-EQPT
	DLT-EQPT	RTRV-COND-EQPT
	ED-EQPT	RTRV-EQPT
	INH-SWDX-EQPT	SW-DX-EQPT
	INH-SWTOPROTN-EQPT	SW-TOPROTN-EQPT
	INH-SWTOWKG-EQPT	SW-TOWKG-EQPT



Section	ENT-EQPT Description (continued)
Input Format	ENT-EQPT:[<TID>]:<AID>:<CTAG>::[<AIDTYPE>]:[PROTID=<PROTID>, [PRTYPE=<PRTYPE>],[RVRTV=<RVRTV>],[RVTM=<RVTM>][:]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “EQPT” section on page 4-11</li> <li>• &lt;AIDTYPE&gt; is the AID card type; valid values for &lt;AIDTYPE&gt; are shown in the “EQUIPMENT_TYPE” section on page 4-40</li> <li>• &lt;PROTID&gt; is the protecting card slot identifier of the protection group and is the AID from the “PRSLOT” section on page 4-8</li> <li>• &lt;PRTYPE&gt; is the protection group type; valid values for &lt;PRTYPE&gt; are shown in the “PROTECTION_GROUP” section on page 4-53</li> <li>• &lt;RVRTV&gt; is the revertive mode; valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51</li> <li>• &lt;RVTM&gt; is the revertive time; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55</li> </ul>
Example	Input ENT-EQPT:PETALUMA:SLOT-12:118::DS1:PROTID=SLOT-13,PRTYPE=1-1, RVRTV=Y,RVTM=8.5;
Errors	This message generates all the default errors

### 3.5.38 ENT-FFP-<OCN\_TYPE>: Enter Facilities Protection Group (OC3, OC12, OC48, OC192)

(OC192 supported for ONS 15454 only)

This command creates an optical 1+1 protection.

Notes:

1. Protect AID must not be provisioned with traffic.
2. Work AID can be provisioned with traffic.
3. PROTID is a string and can have a maximum length of 32 characters.

Section	ENT-FFP-<OCN_TYPE> Description
Category	SONET Line Protection
Security	Provisioning
Related Messages	DLT-FFP-<OCN_TYPE> ED-FFP-<OCN_TYPE> EX-SW-<OCN_BLSR> OPR-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<OCN_TYPE> RTRV-FFP-<OCN_TYPE>

Section	ENT-FFP-<OCN_TYPE> Description (continued)
Input Format	ENT-FFP-<OCN_TYPE>:[<TID>]:<WORK>,<PROTECT>:<CTAG>:: [PROTID=<PROTID>],[RVRTV=<RVRTV>],[RVTM=<RVTM>], [PSDIRN=<PSDIRN>][:]; where: <ul style="list-style-type: none"> <li>• &lt;WORK&gt; identifies a working port and is the AID from the “FACILITY” section on page 4-11</li> <li>• &lt;PROTECT&gt; identifies a protection port and is the AID from the “FACILITY” section on page 4-11</li> <li>• &lt;PROTID&gt; is the protection group identifier (protection group name); &lt;PROTID&gt; defaults to the protecting port of the protection group, it is a string and can have a maximum length of 32 characters. &lt;PROTID&gt; is a string.</li> <li>• &lt;RVRTV&gt; identifies the revertive mode and defaults to N (non-revertive mode); valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51</li> <li>• &lt;RVTM&gt; identifies the revertive time and defaults to 5.0 minutes; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55</li> <li>• &lt;PSDIRN&gt; identifies the switching mode and defaults to UNI; valid values for &lt;PSDIRN&gt; are shown in the “UNI_BI” section on page 4-64</li> </ul>
Input Example	ENT-FFP-OC3:PETALUMA:FAC-2-1,FAC-1-1:1:::PROTID=PROT_NAME, RVRTV=Y,RVTM=1.0,PSDIRN=BI;
Errors	This message generates all the default errors

### 3.5.39 ENT-USER-SECU: Enter User Security

This command adds a user account. Only a Superuser can do this. Each user is configured as being at one of these four privilege levels:

1. Retrieve [RTRV]: Users possessing this security level can retrieve information from the node, but cannot modify anything. The idle time for Retrieve is unlimited.
2. Maintenance [MAINT]: Users possessing this security level can retrieve information from the node and perform limited maintenance operations such as card resets, Manual/Force/Lockout on cross-connects or in protection groups, and BLSR ring maintenance. The idle time for Maintenance is 60 minutes.
3. Provisioning [PROV]: Users possessing this security level can perform all maintenance actions, and all provisioning actions except those restricted to superusers. The idle time for Provisioning is 30 minutes.
4. Superuser [SUPER]: Users possessing this security level can perform all PROV user actions, plus creating/deleting user security profiles, setting basic system parameters such as time/date, node name, and IP address, doing database backup & restore. The idle time for Superuser is 15 minutes.

Notes:

1. The <UID> can be any combination of up to 10 alphanumeric characters.
2. The <PID> is a string of up to 10 characters where at least 2 characters are non-alphabetic with at least one special character (\*, %, or #).
3. Although the CTC allows both <UID> and <PID> of up to 20 characters, the CTC-entered users (<UID> and <PID>) may not be valid TL1 users.

4. The TL1 password security is enforced with the following rules:
  - a. The username <UID> must not be the same as the password (<PID>).
  - b. The password <PID> must have one non-alphabetic and one special (\*, %, or #) character.
  - c. There is no password <PID> toggling.

Section	ENT-USER-SECU Description
Category	Security
Security	Superuser
Related Messages	ACT-USER CANC CANC-USER DLT-USER-SECU ED-PID ED-USER-SECU REPT EVT SECU
Input Format	ENT-USER-SECU:[<TID>]:<UID>:<CTAG>::<PID>,,<UAP>[:]; where: <ul style="list-style-type: none"> <li>• &lt;UID&gt; is the user identifier. The minimum &lt;UID&gt; size is 6, the maximum &lt;UID&gt; size is 10; &lt;UID&gt; is a string.</li> <li>• &lt;PID&gt; is the user login password. The minimum &lt;PID&gt; size is 6, the maximum &lt;PID&gt; size is 10; &lt;PID&gt; is a string.</li> <li>• &lt;UAP&gt; is the user access privilege value; valid values for &lt;UAP&gt; are shown in the “PRIVILEGE” section on page 4-52</li> </ul>
Input Example	ENT-USER-SECU:PETALUMA:CISCO15:123::PSWD,,MAINT;
Errors	This message generates all the default errors

### 3.5.40 EX-SW-<OCN\_BLSR>: Operate Protection Switch (OC12, OC48, OC192)

(OC192 supported for ONS 15454 only)

This command instructs an NE to exercise the algorithm for switching from a working facility to a protection facility without actually performing a switch. It is assumed that the facility being exercised is the working unit. The exercise switching success or failure result will be indicated by an automatic alarm.

Exercise switch for the SONET protection line is not supported in this release. If sending this command to the protection unit, an error message will be returned. In addition to all normal INPUT, EQUIPAGE, PRIVILEGE error codes, the following error codes are also included in this command:

SNVS (Status, Not in Valid State)

SROF (Status, Requested Operation Failed)

SSRD (Status, Switch Request Denied)

Section	EX-SW-<OCN_TYPE> Description
Category	SONET Line Protection
Security	Maintenance

Section	EX-SW-<OCN_TYPE> Description (continued)
Related Messages	DLT-FFP-<OCN_TYPE> ED-FFP-<OCN_TYPE> ENT-FFP-<OCN_TYPE> OPR-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<OCN_TYPE> RTRV-FFP-<OCN_TYPE>
Input Format	EX-SW-<OCN_BLSR>:[<TID>]:<AID>:<CTAG>[::<ST>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the facility in the NE to which the switch request is directed. &lt;AID&gt; is from the “FACILITY” section on page 4-11. &lt;AID&gt; must not be null.</li> <li>• &lt;ST&gt; is the BLSR switch type. the switch type is optional and for BLSR protection switch only. &lt;ST&gt; defaults to RING switch type and valid values are shown in the “SWITCH_TYPE” section on page 4-59. A null value is equivalent to ALL.</li> </ul>
Input Example	EX-SW-OC48:CISCO:FAC-12-1:123::SPAN;
Errors	This message generates all the default errors

### 3.5.41 INH-MSG-ALL: Inhibit Message All

This command instructs the NE to enter a mode in which all REPT ALM and REPT EVT autonomous messages are prevented from being transmitted. See the ALW-MSG-ALL to resume these autonomous messages. When a TL1 session starts, the REPT ALM and REPT EVT messages are allowed by default.



#### Note

If this command is used twice in the same session, the SAIN (Already Inhibited) error message will be reported.

Section	INH-MSG-ALL Description
Category	System
Security	Retrieve
Related Messages	ALW-MSG-ALL ED-DAT ED-NE-GEN ED-NE-SYCN INIT-SYS RTRV-HDR RTRV-INV RTRV-NE-GEN RTRV-NE-IPMAP RTRV-NE-SYCN RTRV-TOD SET-TOD
Input Format	INH-MSG-ALL:[<TID>]::<CTAG>[::,];
Input Example	INH-MSG-ALL:PETALUMA::550;
Errors	This message generates all the default errors

### 3.5.42 INH-MSG-DBCHG: Inhibit Database Change Message

This command disables REPT DBCHG.

Section	INH-MSG-DBCHG Description
Category	Log
Security	Retrieve
Related Messages	ALW-MSG-DBCHG REPT DBCHG RTRV-LOG
Input Format	INH-MSG-DBCHG:[<TID>]::<CTAG>[::,];
Input Example	INH-MSG-DBCHG:CISCO::123;
Errors	This message generates all the default errors

### 3.5.43 INH-SWDX-EQPT: Inhibit Switch Duplex Equipment

(Cisco ONS 15454 only)

This command instructs the NE to inhibit automatic or manual switching on a system containing duplex equipment. Use the ALW-SWDX command to release the inhibit. This command is not used for SONET line protection switching. For SONET line/path protection switching commands, use the OPR-PROTNSW and RLS-PROTNSW commands. This command is not used for 1:1 and 1:N equipment protection switching, use ALW-SWTOPROTN, ALW-SWTOWKG, INH-SWTOPROTN, INH-SWTOWKG commands.

Notes:

1. This command is applied for XC or XCVT equipment units only in this release.
2. When sending this command to a TCC+ card, an error message will occur because the NE treats the TCC+ as a non-revertive protection group without user control.

Section	INH-SWDX-EQPT Description
Category	Equipment
Security	Maintenance
Related Messages	ALW-SWDX-EQPT ALW-SWTOPROTN-EQPT ALW-SWTOWKG-EQPT DLT-EQPT ED-EQPT ENT-EQPT INH-SWTOPROTN-EQPT INH-SWTOWKG-EQPT
	REPT ALM EQPT REPT EVT EQPT RTRV-ALM-EQPT RTRV-COND-EQPT RTRV-EQPT SW-DX-EQPT SW-TOPROTN-EQPT SW-TOWKG-EQPT
Input Format	INH-SWDX-EQPT:[<TID>]:<aid>:<CTAG>[::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the XC/XCVT equipment AID (Slot 8 or Slot 10) from the “EQPT” section on page 4-11</li> </ul>

Section	INH-SWDX-EQPT Description (continued)
Input Example	INH-SWDX-EQPT:CISCO:SLOT-1:1234;
Errors	This message generates all the default errors

### 3.5.44 INH-SWTOPROTN-EQPT: Inhibit Switch to Protection Equipment

(Cisco ONS 15454 only)

This command instructs the NE to inhibit automatic or manual switching of an equipment unit to protection. Use the ALW-SWTOPROTN-EQPT command to release the inhibit.

INH-SWTOPROTN-EQPT is used for non-SONET line cards (e.g. DS1, DS3, DS3XM and EC1 cards). DS1 and DS3 cards have 1:1 and 1:N equipment protection. DS3XM and EC1 cards have only 1:1 equipment protection. When performing a lockout with this command, the traffic will be switched from the unit specified by the AID, unless the working unit being protected has failed or is missing. When performing a lock on with this command and the working unit specified in the AID is in standby, sending this command will also initiate a traffic switch. When traffic is locked on a working unit or locked out of the protection unit with this command, the protection unit will not carry traffic, even if the working unit is pulled from the system.

Sending this command to a working unit in a 1:N protection group does not prevent a protection switch from another working unit in the same protection group. All the working units must be sent this command to prevent a protection switch. If the command is sent only to a subset of the working units, only those working units will have traffic locked on.

The inhibit state is persistent over TCC+ side switches and removal/reboot of all the units in the protection group. The inhibit state can, but does not have to be persistent over a complete power cycle of the NE.

The unit specified by the AID will raise the condition of INHSWPR when this command is sent.

Notes:

1. This command only supports one value of the <DIRN> parameter - BTH. A command with any other value is considered an incorrect use of the command. An IDNV (Input, Data Not Valid) error message should be responded.
2. This command is not used for the common control (TCC+ or XC/XCVT) cards. A command on a common control card will receive an IIAC (Input, Invalid Access Identifier) error message. To use the common control card switching commands, use the SW-DX-EQPT and ALW-SWDX-EQPT commands.
3. This command is not used for SONET (OCN) cards. A command on a SONET card will receive an IIAC (Input, Invalid Access Identifier) error message. To use a SONET card switching command, use the OPR-PROTNSW and RLS-PROTNSW commands.
4. If this command is used on a card that is not in a protection group, the SNVS (Status, Not in Valid State) error message should be received.
5. If this command is used on a card that is already in the inhibit state, the SAIN (Status, Already Inhibited) error message should be received.
6. If sending the inhibit switch to protection command to a working card when the protect card in the same protection group has already raised the condition of INHSWWKG, the SPLD (Status, Protection unit Locked) error message should be responded.

7. If sending the inhibit switch to protection command to the protect card when a working card in the same protection group has already raised the condition of INHSWWKG, the SWLD (Status, Working unit Locked) error message should be responded.
8. Sending the inhibit switch to protection command to an active protect card when the peer working card is failed or missing, the SWFA (Status, Working unit Failed) error message should be responded.
9. The following situation(s) are allowed and will not generate any error response: sending this command to missing cards as long as none of the previous error conditions apply.

Section	INH-SWTOPROTN-EQPT Description																
Category	Equipment																
Security	Maintenance																
Related Messages	<table border="0"> <tr> <td>ALW-SWDX-EQPT</td> <td>REPT ALM EQPT</td> </tr> <tr> <td>ALW-SWTOPROTN-EQPT</td> <td>REPT EVT EQPT</td> </tr> <tr> <td>ALW-SWTOWKG-EQPT</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>DLT-EQPT</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>ED-EQPT</td> <td>RTRV-EQPT</td> </tr> <tr> <td>ENT-EQPT</td> <td>SW-DX-EQPT</td> </tr> <tr> <td>INH-SWDX-EQPT</td> <td>SW-TOPROTN-EQPT</td> </tr> <tr> <td>INH-SWTOWKG-EQPT</td> <td>SW-TOWKG-EQPT</td> </tr> </table>	ALW-SWDX-EQPT	REPT ALM EQPT	ALW-SWTOPROTN-EQPT	REPT EVT EQPT	ALW-SWTOWKG-EQPT	RTRV-ALM-EQPT	DLT-EQPT	RTRV-COND-EQPT	ED-EQPT	RTRV-EQPT	ENT-EQPT	SW-DX-EQPT	INH-SWDX-EQPT	SW-TOPROTN-EQPT	INH-SWTOWKG-EQPT	SW-TOWKG-EQPT
ALW-SWDX-EQPT	REPT ALM EQPT																
ALW-SWTOPROTN-EQPT	REPT EVT EQPT																
ALW-SWTOWKG-EQPT	RTRV-ALM-EQPT																
DLT-EQPT	RTRV-COND-EQPT																
ED-EQPT	RTRV-EQPT																
ENT-EQPT	SW-DX-EQPT																
INH-SWDX-EQPT	SW-TOPROTN-EQPT																
INH-SWTOWKG-EQPT	SW-TOWKG-EQPT																
Input Format	INH-SWTOPROTN-EQPT:[<TID>]:<AID>:<CTAG>[:<DIRN>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; This parameter can either be the working unit for which switching to protection is inhibited (lock on) or the protection unit for which carrying traffic is to be inhibited (lockout); &lt;AID&gt; is from the “EQPT” section on page 4-11</li> <li>• &lt;DIRN&gt; is the direction of the switching. The command only supports one value of the &lt;DIRN&gt; parameter - BTH. This parameter defaults to BTH; valid values for &lt;DIRN&gt; are shown in the DIRECTION, page 35</li> </ul>																
Input Example	INH-SWTOPROTN-EQPT:CISCO:SLOT-2:123::BTH;																
Errors	This message generates all the default errors																

### 3.5.45 INH-SWTOWKG-EQPT: Inhibit Switch to Working Equipment

(Cisco ONS 15454 only)

This command instructs the NE to inhibit automatic or manual switching of an equipment unit back to the working unit. Use the ALW-SWTOWKG-EQPT command to release the inhibit.

INH-SWTOWKG-EQPT is used for non-SONET line cards (e.g. DS1, DS3, DS3XM and EC1 cards). DS1 and DS3 cards have 1:1 and 1:N equipment protection. DS3XM and EC1 cards have only 1:1 equipment protection. When performing a lock-out with this command, the traffic will be switched from the unit specified by the AID, unless the protection unit has failed or is missing. When performing a lock-on with this command and the protection unit specified in the AID is in standby, sending this command will initiate a traffic switch only when there is one working card in the protection group. In the case where there is more than one working card in the protection group, an error will be generated (see error conditions below). When traffic is locked on the protection unit or locked out of a working unit with this command, the working unit will not carry traffic, even if the protection unit is pulled from the system.

The inhibit state is persistent over TCC+ side switches and removal/reboot of all the units in the protection group. The inhibit state can but does not have to be persistent over a complete power cycle of the NE.

The unit specified by the AID will raise the condition of INH-SWWKKG when this command is sent.

Notes:

1. The command only supports one value of the <DIRN> parameter - BTH. A command with any other value is considered an incorrect use of the command. An IDNV (Input, Data Not Valid) error message should be responded.
2. This command is not used for the common control (TCC+ or XC/XCVT) cards. A command on a common control card will receive an IIAC (Input, Invalid Access Identifier) error message. To use the common control card switching commands, use the SW-DX-EQPT and ALW-SWDX-EQPT commands.
3. This command is not used for SONET (OCN) cards. A command on a SONET card will receive an IIAC (Input, Invalid Access Identifier) error message. To use a SONET card switching command, use the OPR-PROTNSW and RLS-PROTNSW commands.
4. If this command is used on a card that is not in a protection group, the SNVS (Status, Not in Valid State) error message should be received.
5. If this command is used on a card that is already in the inhibit state, the SAIN (Status, Already Inhibited) error message should be received.
6. If sending this command to a working card when the protect card in the same protection group has already raised the condition of INH-SWPR, the SPLD (Status, Protection unit Locked) error message should be received.
7. If sending the INH-SWTOWKG command to a protect card when a working card in the same protection group has already raised the condition of INH-SWPR, the SWLD (Status, Working unit Locked) error message should be responded.
8. If sending the INH-SWTOWKG command to an active working card when the protect card has failed or is missing, the SPFA (Status, Protection unit Failed) error message should be received.
9. If sending the INH-SWTOWKG command to an active working card when the protect card is already carrying traffic (this only occurs in a 1:N protection group with N greater than one), the SPAC (Status, Protection unit Active) error message should be received.
10. The following situation is allowed and will not generate any error response: Sending this command to missing cards as long as none of the previous error conditions apply.

Section	INH-SWTOWKG-EQPT Description	
Category	Equipment	
Security	Maintenance	
Related Messages	ALW-SWDX-EQPT	REPT ALM EQPT
	ALW-SWTOPROTN-EQPT	REPT EVT EQPT
	ALW-SWTOWKG-EQPT	RTRV-ALM-EQPT
	DLT-EQPT	RTRV-COND-EQPT
	ED-EQPT	RTRV-EQPT
	ENT-EQPT	SW-DX-EQPT
	INH-SWDX-EQPT	SW-TOPROTN-EQPT
	INH-SWTOPROTN-EQPT	SW-TOWKG-EQPT



Section	INH-SWTOWKG-EQPT Description (continued)
Input Format	INH-SWTOWKG-EQPT:[<TID>]:<AID>:<CTAG>[:<DIRN>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; This parameter can either be the protection unit for which switching back to working is inhibited (lock-on) or the working unit for which carrying traffic is to be inhibited (lockout); &lt;AID&gt; is from the “EQPT” section on page 4-11</li> <li>• &lt;DIRN&gt; is the direction of the switching. The command only supports one value of the &lt;DIRN&gt; parameter - BTH. This parameter defaults to BTH; valid values for &lt;DIRN&gt; are shown in the DIRECTION, page 35</li> </ul>
Input Example	INH-SWTOWKG-EQPT:CISCO:SLOT-2:123::BTH;
Errors	This message generates all the default errors

### 3.5.46 INIT-REG-<MOD2>: Initialize Register (DS1, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C, T1, T3, VT1)

(DS1, EC1, OC192 and STS192C supported for ONS 15454 only)

This command initializes the performance monitoring (PM) registers.

Notes:

1. The time period is always the current time period, and the previous time period counts are not cleared; therefore, both <MONDAT> and <MONTM> are not supported in this command.

Section	INIT-REG-<MOD2> Description
Category	Performance
Security	Maintenance
Related Messages	RTRV-PM-<MOD2> RTRV-PMMODE-<STS_PATH> RTRV-TH-<MOD2> SET-PMMODE-<STS_PATH> SET-TH-<MOD2>

Section	INIT-REG-<MOD2> Description (continued)
Input Format	INIT-REG-<MOD2>:[<TID>]:<AID>:<CTAG>::, [<LOCN>], [<DIRN>], [<TMPER>][,]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier. All the STS, VT1, facility and DS1 AIDs are supported; &lt;AID&gt; is from the “ALL” section on page 4-5</li> <li>• &lt;LOCN&gt; indicates the location, in reference to the entity identified by the AID, from which the PM value is being retrieved; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42</li> <li>• &lt;DIRN&gt; is the direction of PM relative to the entity identified by the AID. &lt;DIRN&gt; defaults to ALL, which means that the command initializes all the registers irrespective of the PM direction. Valid values for &lt;DIRN&gt; are shown in the “DIRECTION” section on page 4-35.</li> <li>• &lt;TMPER&gt; indicates the accumulation time period for the PM information; valid values for &lt;TMPER&gt; are shown in the “TMPER” section on page 4-63. A null value of &lt;TMPER&gt; defaults to 15-MIN. The default value is 15-MIN.</li> </ul>
Input Example	INIT-REG-OC3:CISCO:FAC-1-1:1234::,NEND,BTH,15-MIN;
Errors	This message generates all the default errors

### 3.5.47 INIT-SYS: Initialize System

This command instructs the NE to initialize the specified card and its associated subsystem(s).

Notes:

1. The SLOT-ALL AID and the list AID are not allowed in this command.
2. Only one level of restart is supported in this command.
3. It is important that the standby TCC+ should be up and running fully standby before this command is sent on the active TCC+ for a period of time. During this time, the system is vulnerable to traffic outages caused by timing disruptions or other causes.

Section	INIT-SYS Description
Category	System
Security	Maintenance
Related Messages	ALW-MSG-ALL                      RTRV-INV ED-DAT                                RTRV-NE-GEN ED-NE-GEN                          RTRV-NE-IPMAP ED-NE-SYNCN                        RTRV-NE-SYNCN INH-MSG-ALL                        RTRV-TOD RTRV-HDR                             SET-TOD
Input Format	INIT-SYS:[<TID>]:<AID>:<CTAG>[::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier of the equipment unit or slot and is from the “EQPT” section on page 4-11</li> </ul>

Section	INIT-SYS Description (continued)
Input Example	INIT-SYS:HOTWATER:SLOT-8:201;
Errors	This message generates all the default errors

### 3.5.48 OPR-EXT-CONT: Operate External Control

This command operates an external control and closes the external control contact.

Notes:

1. The duration has one value in this release: CONTS, Continuous duration
2. In an automatic state, the contact could be opened or closed depending on the provisioned trigger.
3. RLS-EXT-CONT changes the state to automatic. Therefore, issuing an OPR-EXT-CONT command when the control is manually open and then issuing a RLS-EXT-CONT will not revert the state back to Manual Open.
4. A NULL value for the duration parameter defaults to CONTS.

Section	OPR-EXT-CONT Description										
Category	Environmental Alarms and Controls										
Security	Maintenance										
Related Messages	<table> <tbody> <tr> <td>REPT ALM ENV</td> <td>RTRV-ATTR-ENV</td> </tr> <tr> <td>REPT EVT ENV</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>RLS-EXT-CONT</td> <td>RTRV-EXT-CONT</td> </tr> <tr> <td>RTRV-ALM-ENV</td> <td>SET-ATTR-CONT</td> </tr> <tr> <td>RTRV-ATTR-CONT</td> <td>SET-ATTR-ENV</td> </tr> </tbody> </table>	REPT ALM ENV	RTRV-ATTR-ENV	REPT EVT ENV	RTRV-COND-ENV	RLS-EXT-CONT	RTRV-EXT-CONT	RTRV-ALM-ENV	SET-ATTR-CONT	RTRV-ATTR-CONT	SET-ATTR-ENV
REPT ALM ENV	RTRV-ATTR-ENV										
REPT EVT ENV	RTRV-COND-ENV										
RLS-EXT-CONT	RTRV-EXT-CONT										
RTRV-ALM-ENV	SET-ATTR-CONT										
RTRV-ATTR-CONT	SET-ATTR-ENV										
Input Format	<p>OPR-EXT-CONT:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;CONTTYPE&gt;],[&lt;DURATION&gt;];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ENV” section on page 4-10 and must not be null</li> <li>• &lt;CONTTYPE&gt; is the type of control; valid values for &lt;CONTTYPE&gt; are shown in the “CONTTYPE” section on page 4-34</li> <li>• Valid values for &lt;DUR&gt; are shown in the “DURATION” section on page 4-36. A null value is equivalent to ALL.</li> </ul>										
Input Example	OPR-EXT-CONT:CISCO:ENV-OUT-2:123::AIRCOND,CONTS;										
Errors	This message generates all the default errors										

### 3.5.49 OPR-LPBK-<MOD2\_IO>: Operate Loopback (DS1, EC1, G1000, OC3, OC12, OC48, OC192, T1, T3)

(OC192 supported for ONS 15454 only)

This command operates a signal loopback on an I/O card.

Notes:

1. The optional [<LPBKTYPE>] defaults to FACILITY in this command.
2. The TERMINAL loopback type is not supported for the DS1 line of a DS3XM card.

Section	OPR-LPBK-<MOD2_IO> Description
Category	Testing
Security	Maintenance
Related Messages	RLS-LPBK-<MOD2_IO>
Input Format	OPR-LPBK-<MOD2_IO>:[<TID>]:<AID>:<CTAG>::,,,[<LPBKTYPE>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier. The &lt;AID&gt; is only supported for FACILITY and DS1; &lt;AID&gt; is from the “ALL” section on page 4-5</li> <li>• &lt;LPBKTYPE&gt; indicates the loopback type; valid values for &lt;LPBKTYPE&gt; are shown in the “LPBK_TYPE” section on page 4-43</li> </ul>
Input Example	OPR-LPBK-DS1:PTREYES:DS1-4-2-13:203::,,FACILITY;
Errors	This message generates all the default errors

### 3.5.50 OPR-PROTNSW-<OCN\_TYPE>: Operate Protection Switch (OC3, OC12, OC48, OC192)

(OC192 supported for ONS 15454 only)

This command instructs the NE to initiate a SONET line protection switch request. User switch requests initiated with this command remain active until they are released via the RLS-PROTNSW-OCN command or are overridden by a higher priority protection switch request.

The switch commands; MAN (Manual Switch), FRCD (Forced Switch) and LOCKOUT (Lockout) are supported by the ONS 15454.

Manual Switch of Protection Line (to Working Line). If the AID identifies the protection line, then (only in the 1+1 architecture) service will be transferred from the protection line to the working line, unless a request of equal or higher priority is in effect.

Manual Switch of Working Line (to Protection Line). If the AID identifies a working line, then service will be switched from the working line to the protection line unless a request of equal or higher priority is in effect.

Force Switch of Protection Line (to Working Line). If the AID identifies the protection line, then (only in the 1+1 architecture) service will be transferred from the protection line to the working line unless a request of equal or higher priority is in effect.

Force Switch of Working Line (to Protection Line). If the AID identifies a working line, then service will be transferred from the working line to the protection line unless a request of equal or higher priority is in effect. A lockout of protection and a signal fail of protection line have higher priority than this switch command.

Lockout of Protection Line. If the AID identifies the protection line, this switch command will prevent the working line from switching to protection line. If the working line is already on protection, then the working line will be switched back to its original working line.

Lockout of Protection Line. If the AID identifies protection line, this switch command will prevent the working line from switching to protection line. If the working line is already on protection, then the working line will be switched back from protection line to its original working line.

Notes:

1. This command is not used for the common control (TCC+ or XC/XCVT) cards. A query on a common control card will generate an IIAC (Input, Invalid Access Identifier) error message. To use this command on the common control card switching commands, use the SW-DX-EQPT and ALW-SWDX-EQPT commands.
2. Sending this command on non-SONET (OCN) cards, an IIAC (Input, Invalid Access Identifier) error message should be received. To query on a non-SONET card switching command, use the ALW-SWTOPROTN/SWTOWKG-EQPT and INH-SWTOPROTN/SWTOWKG-EQPT commands.
3. When sending this command to query on a card that is not in a protection group, the SNVS (Status, Not in Valid State) error message should be received.
4. When sending this command to a working card that is failed or missing, the SWFA (Status, Working unit Failed) error message should be received.
5. When sending this command to a protect card that is failed or missing, the SPFA (Status, Protection unit Failed) error message should be received.
6. When sending this command to a card that is already in protection with a higher priority, the SSRD (Status, Switch Request Denied) error message should be received.
7. Sending this command to an OCN line with a switching mode that is already in mode, will return a SAMS (Already in the Maintenance State) error message.
8. To get the protection switching state (manual, lockout, forced), use the RTRV-COND-ALL or RTRV-ALM-ALL commands.
9. Sending the OPR-PROTNSW-OCN command with Manual (or Force) switch over the BLSR line and the BLSR ring has already been in a higher switching state Force (or Lockout Span), the command returns the COMPLD without any standing switching condition, for example, MANUAL-REQ-RING, or FORCED REQ-RING, SC. This means the switching request is preempted. CTC shows this end as APS-CLEAR state.
10. Sending the OPR-PROTNSW-OCN command with Force (or Lockout Span) switch over the BLSR line (near end) and the BLSR (far end) has already been in a lower switching state, Manual (or Force), the command returns the COMPLD with proper standing switching events on the command sent to the near end. The far end (that used to be the lower switch state) sends out the switch clear events, for example, MANUAL-REQ-RING, or FORCED-REQ-RING, CL. This means the lower state end is preempted. CTC shows the low state end as APS-CLEAR.

Section	OPR-PROTNSW-<OCN_TYPE> Description
Category	SONET Line Protection
Security	Maintenance

Section	OPR-PROTNSW-<OCN_TYPE> Description (continued)
Related Messages	DLT-FFP-<OCN_TYPE> ED-FFP-<OCN_TYPE> ENT-FFP-<OCN_TYPE> EX-SW-<OCN_BLSR> RLS-PROTNSW-<OCN_TYPE> RTRV-FFP-<OCN_TYPE>
Input Format	OPR-PROTNSW-<OCN_TYPE>:[<TID>]:<AID>:<CTAG>::<SC>,[<ST>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the facility in the NE to which the switch request is directed and is from the “FACILITY” section on page 4-11</li> <li>• &lt;SC&gt; is the switch command on the facility; valid values for &lt;SC&gt; are shown in the “SWITCH” section on page 4-59</li> <li>• &lt;ST&gt; is the BLSR switch type. The switch type is optional, and for BLSR protection switch only. &lt;ST&gt; defaults to RING switch type and valid values are shown in the “SWITCH_TYPE” section on page 4-59</li> </ul>
Input Example	OPR-PROTNSW-OC48:CHICKALUMA:FAC-6-1:204::LOCKOUT,SPAN;
Errors	This message generates all the default errors

### 3.5.51 OPR-PROTNSW-<STS\_PATH>: Operate Protection Switch (STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C)

(STS192C supported for ONS 15454 only)

This command instructs a SONET NE to initiate a SONET path protection (UPSR) switch request. User switch requests initiated with this command (forced switch, lockout, and manual switch) remain active until they are released through the RLS-PROTNSW-<STS\_PATH> command or overridden by a higher priority protection switch request.

Notes:

1. This command applies to UPSR configuration only.
2. The VTAID should be working or protect AID only.
3. If you send this command on the Drop AID, a DENY (Invalid AID, should use working/protect AID) message will be returned.
4. To get the protection switching state (manual, lockout, forced), use the RTRV-COND-ALL or RTRV-ALM-ALL commands.

Section	OPR-PROTNSW-<STS_PATH> Description
Category	UPSR Switching
Security	Maintenance
Related Messages	OPR-PROTNSW-VT1 REPT SW RLS-PROTNSW-<STS_PATH> RLS-PROTNSW-VT1

Section	OPR-PROTNSW-<STS_PATH> Description (continued)
Input Format	OPR-PROTNSW-<STS_PATH>:[<TID>]:<AID>:<CTAG>::<SC>[:]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the entity in the NE to which the switch request is directed and is from the “STS” section on page 4-12</li> <li>• &lt;SC&gt; is the switch command that is to be initiated on the paths; valid values for &lt;SC&gt; are shown in the “SWITCH” section on page 4-59</li> </ul>
Input Example	OPR-PROTNSW-STS1:CISCO:STS-2-1:123::MAN;
Errors	This message generates all the default errors

### 3.5.52 OPR-PROTNSW-VT1: Operate Virtual Tributary Protection Switch

This command instructs a SONET NE to initiate a SONET path protection (UPSR) switch request. User switch requests initiated with this command (forced switch, lockout, and manual switch) remain active until they are released through the RLS-PROTNSW-VT1 command or overridden by a higher priority protection switch request.

Notes:

1. This command applies to UPSR configuration only.
2. The VTAID should be working or protect AID only.
3. If you send this command on the Drop AID, a DENY (Invalid AID, should use working/protect AID) message will be returned.
4. To get protection switching state (manual, lockout, forced), use the RTRV-COND-ALL or RTRV-ALM-ALL commands.

Section	OPR-PROTNSW-VT1 Description
Category	UPSR Switching
Security	Maintenance
Related Messages	OPR-PROTNSW-<STS_PATH> REPT SW RLS-PROTNSW-<STS_PATH> RLS-PROTNSW-VT1
Input Format	OPR-PROTNSW-VT1:[<TID>]:<AID>:<CTAG>::<SC>[:]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the entity in the NE to which the switch request is directed and is from the “VT1_5” section on page 4-17</li> <li>• &lt;SC&gt; is the switch command that is to be initiated on the paths; valid values for &lt;SC&gt; are shown in the “SWITCH” section on page 4-59</li> </ul>
Input Example	OPR-PROTNSW-VT1:CISCO:VT1-5-2-4-1:123::MAN;
Errors	This message generates all the default errors

### 3.5.53 OPR-SYNCNSW: Operate Synchronization Switch

This command forces the NE to switch to the reference specified by the synchronization reference number if the reference supplied is valid, otherwise the command will fail.

The Operate Synchronization Switches are released by the RLS-SYNCNSW command or are overridden by a synchronization reference failure.

Once the switch is effective, an event “MANSWTOPRI”, Manual Switch to Primary (or Secondary ...) Reference, will be raised

Section	OPR-SYNCNSW Description
Category	Synchronization
Security	Maintenance
Related Messages	ED-BITS ED-NE-SYNCN ED-SYNCN REPT ALM BITS REPT ALM SYNCN REPT EVT BITS REPT EVT SYNCN RLS-SYNCNSW RTRV-ALM-BITS RTRV-ALM-SYNCN RTRV-BITS RTRV-COND-BITS RTRV-COND-SYNCN RTRV-NE-SYNCN RTRV-SYNCN
Input Format	OPR-SYNCNSW:[<TID>]:[<AID>]:<CTAG>::<SWITCHTO>; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “SYNC_REF” section on page 4-15. A null value of &lt;AID&gt; defaults to SYNC-NE.</li> <li>• &lt;SWITCHTO&gt; identifies the new synchronization reference that will be used and is the AID from the “SYNCNSW” section on page 4-16</li> </ul>
Input Example	OPR-SYNCNSW:CISCO:SYNC-NE:3::PRI;
Errors	This message generates all the default errors





### 3.5.55 REPT ALM BITS: Report Alarm Building Integrated Timing Supply

Reports an alarm condition on a BITS facility.

Section	REPT ALM BITS Description
Category	Synchronization
Security	Retrieve
Related Messages	ED-BITS ED-NE-SYCN ED-SYCN OPR-SYCN SW REPT ALM <MOD2ALM> REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT ALM RING REPT ALM SYCN REPT EVT BITS REPT EVT COM REPT EVT SYCN RLS-SYCN SW RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-ALM-BITS RTRV-ALM-ENV RTRV-ALM-EQPT RTRV-ALM-RING RTRV-ALM-SYCN RTRV-BITS RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-BITS RTRV-COND-ENV RTRV-COND-EQPT RTRV-COND-RING RTRV-COND-SYCN RTRV-NE-SYCN RTRV-SYCN
Output Format	<pre>SID DATE TIME ** ATAG REPT ALM BITS "&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,;,;:[&lt;CONDDSR&gt;]" ;</pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the "BITS" section on page 4-9</li> <li>• &lt;NTFCNCDE&gt; identifies a 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the "NOTIF_CODE" section on page 4-49</li> <li>• &lt;CONDTYPE&gt; indicates an alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the "CONDITION" section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the "SERV_EFF" section on page 4-56</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	<pre>TID-000 1998-06-20 14:30:00 ** 001 REPT ALM BITS "BITS-1:MJ,SYNC,SA,,;,\`"LOSS OF TIMING\`" ;</pre>

## 3.5.56 REPT ALM COM: Report Alarm COM

Reports an alarm condition when an AID cannot be given, for example, a fan failure is reported using this message.

Section	REPT ALM COM Description
Category	Fault
Security	Retrieve
Related Messages	REPT ALM <MOD2ALM>                    RTRV-ALM-EQPT REPT ALM BITS                            RTRV-ALM-RING REPT ALM ENV                            RTRV-ALM-SYNCN REPT ALM EQPT                           RTRV-COND-<MOD2ALM> REPT ALM RING                           RTRV-COND-ALL REPT ALM SYNCN                         RTRV-COND-BITS REPT EVT COM                            RTRV-COND-ENV RTRV-ALM-<MOD2ALM>                   RTRV-COND-EQPT RTRV-ALM-ALL                            RTRV-COND-RING RTRV-ALM-BITS                           RTRV-COND-SYNCN RTRV-ALM-ENV
Output Format	<pre> SID DATE TIME ** ATAG REPT ALM COM “[&lt;AID&gt;]:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,,:[&lt;DESC&gt;]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; indicates the alarm without AID; &lt;AID&gt; is a string and is optional</li> <li>• &lt;NTFCNCDE&gt; indicates a notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49</li> <li>• &lt;CONDTYPE&gt; indicates an alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul> </pre>
Output Example	<pre> TID-000 1998-06-20 14:30:00 ** 001 REPT ALM COM “COM:MJ,FAN,NSA,,:\"FAN FAILURE\”” ; </pre>

### 3.5.57 REPT ALM ENV: Report Alarm Environment

Reports a customer-defined condition on an environmental alarm input.

Section	REPT ALM ENV Description																												
Category	Environmental Alarms and Controls																												
Security	Retrieve																												
Related Messages	<table> <tbody> <tr> <td>OPR-EXT-CONT</td> <td>RTRV-ALM-RING</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-SYCN</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-ATTR-CONT</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-ATTR-ENV</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM SYCN</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT EVT ENV</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>RLS-EXT-CONT</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td>RTRV-COND-RING</td> </tr> <tr> <td>RTRV-ALM-ALL</td> <td>RTRV-COND-SYCN</td> </tr> <tr> <td>RTRV-ALM-BITS</td> <td>RTRV-EXT-CONT</td> </tr> <tr> <td>RTRV-ALM-ENV</td> <td>SET-ATTR-CONT</td> </tr> <tr> <td>RTRV-ALM-EQPT</td> <td>SET-ATTR-ENV</td> </tr> </tbody> </table>	OPR-EXT-CONT	RTRV-ALM-RING	REPT ALM <MOD2ALM>	RTRV-ALM-SYCN	REPT ALM BITS	RTRV-ATTR-CONT	REPT ALM COM	RTRV-ATTR-ENV	REPT ALM EQPT	RTRV-COND-<MOD2ALM>	REPT ALM RING	RTRV-COND-ALL	REPT ALM SYCN	RTRV-COND-BITS	REPT EVT ENV	RTRV-COND-ENV	RLS-EXT-CONT	RTRV-COND-EQPT	RTRV-ALM-<MOD2ALM>	RTRV-COND-RING	RTRV-ALM-ALL	RTRV-COND-SYCN	RTRV-ALM-BITS	RTRV-EXT-CONT	RTRV-ALM-ENV	SET-ATTR-CONT	RTRV-ALM-EQPT	SET-ATTR-ENV
OPR-EXT-CONT	RTRV-ALM-RING																												
REPT ALM <MOD2ALM>	RTRV-ALM-SYCN																												
REPT ALM BITS	RTRV-ATTR-CONT																												
REPT ALM COM	RTRV-ATTR-ENV																												
REPT ALM EQPT	RTRV-COND-<MOD2ALM>																												
REPT ALM RING	RTRV-COND-ALL																												
REPT ALM SYCN	RTRV-COND-BITS																												
REPT EVT ENV	RTRV-COND-ENV																												
RLS-EXT-CONT	RTRV-COND-EQPT																												
RTRV-ALM-<MOD2ALM>	RTRV-COND-RING																												
RTRV-ALM-ALL	RTRV-COND-SYCN																												
RTRV-ALM-BITS	RTRV-EXT-CONT																												
RTRV-ALM-ENV	SET-ATTR-CONT																												
RTRV-ALM-EQPT	SET-ATTR-ENV																												
Output Format	<pre>SID DATE TIME ** ATAG REPT ALM ENV "&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;ALMTYPE&gt;,,,[&lt;DESC&gt;]" ;</pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies an environmental input and is from the "ENV" section on page 4-10</li> <li>• &lt;NTFCNCDE&gt; identifies a 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the "NOTIF_CODE" section on page 4-49</li> <li>• &lt;ALMTYPE&gt; abbreviated code identifying the alarm; valid values for &lt;ALMTYPE&gt; are shown in the "ENV_ALM" section on page 4-36</li> <li>• &lt;DESC&gt; is the alarm message; &lt;DESC&gt; is a string and is optional</li> </ul>																												
Output Example	<pre>TID-000 1998-06-20 14:30:00 ** 001 REPT ALM ENV "ENV-IN-1:MJ,OPENDR,,,\"OPEN DOOR\""</pre>																												

## 3.5.58 REPT ALM EQPT: Report Alarm Equipment

Reports an alarm condition against an equipment unit or slot.

Section	REPT ALM EQPT Description
Category	Equipment
Security	Retrieve
Related Messages	ALW-SWDX-EQPT RTRV-ALM-ALL ALW-SWTOPROTN-EQPT RTRV-ALM-BITS ALW-SWTOWKG-EQPT RTRV-ALM-ENV DLT-EQPT RTRV-ALM-EQPT ED-EQPT RTRV-ALM-RING ENT-EQPT RTRV-ALM-SYCN INH-SWDX-EQPT RTRV-COND-<MOD2ALM> INH-SWTOPROTN-EQPT RTRV-COND-ALL INH-SWTOWKG-EQPT RTRV-COND-BITS REPT ALM <MOD2ALM> RTRV-COND-ENV REPT ALM BITS RTRV-COND-EQPT REPT ALM COM RTRV-COND-RING REPT ALM ENV RTRV-COND-SYCN REPT ALM RING RTRV-EQPT REPT ALM SYCN SW-DX-EQPT REPT EVT COM SW-TOPROTN-EQPT REPT EVT EQPT SW-TOWKG-EQPT RTRV-ALM-<MOD2ALM>
Output Format	<pre> SID DATE TIME ** ATAG REPT ALM EQPT "&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;CONDITION&gt;,&lt;SRVEFF&gt;,.,.,:[&lt;DESC&gt;], [&lt;AIDDET&gt;]" ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the equipment AID SLOT-{1-17} from the "EQPT" section on page 4-11</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the "NOTIF_CODE" section on page 4-49</li> <li>• &lt;CONDITION&gt; is the type of alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the "CONDITION" section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the "SERV_EFF" section on page 4-56</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> <li>• &lt;AIDDET&gt; specifies the type of AID; valid values for &lt;AIDDET&gt; are shown in the "EQPT_TYPE" section on page 4-38, &lt;AIDDET&gt; is optional</li> </ul> </pre>
Output Example	<pre> TID-000 1998-06-20 14:30:00 ** 001 REPT ALM EQPT "SLOT-7:MJ,CONTR,NSA,.,.,:\\"CONTROLLER FAILURE\\",TCC" ; </pre>

## 3.5.59 REPT ALM RING: Report Alarm Ring

Reports an alarm condition against a ring object for BLSR.

Section	REPT ALM RING Description
Category	BLSR
Security	Retrieve
Related Messages	ED-BLSR REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT ALM SYNCN REPT EVT COM REPT EVT RING RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-ALM-BITS RTRV-ALM-ENV RTRV-ALM-EQPT RTRV-ALM-RING RTRV-ALM-SYCN RTRV-BLSR RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-BITS RTRV-COND-ENV RTRV-COND-EQPT RTRV-COND-RING RTRV-COND-SYCN
Output Format	<pre>           SID DATE TIME           ** ATAG REPT ALM RING           "&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,.,.,:[&lt;DESC&gt;]"           ;           where:           • &lt;AID&gt; identifies a BLSR ID with alarm condition; &lt;AID&gt; is a string.           • &lt;NTFCNCDE&gt; indicates a 2-letter notification code; valid values for             &lt;NTFCNCDE&gt; are shown in the "NOTIF_CODE" section on page 4-49           • &lt;CONDTYPE&gt; indicates a BLSR alarm; valid values for &lt;CONDTYPE&gt; are             shown in the "CONDITION" section on page 4-24           • &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values             for &lt;SRVEFF&gt; are shown in the "SERV_EFF" section on page 4-56           • &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional         </pre>
Output Example	<pre>           TID-000 1998-06-20 14:30:00           ** 001 REPT ALM RING           "RING-999:MJ,PRC-DUPID,SA,.,.,:\“DUPLICATE NODE ID\”,”           ;         </pre>

## 3.5.60 REPT ALM SYNCN: Report Alarm Synchronization

Reports an alarm condition against a synchronization reference.

Section	REPT ALM SYNCN Description																																
Category	Synchronization																																
Security	Retrieve																																
Related Messages	<table border="0"> <tr> <td>ED-BITS</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>ED-NE-SYNCN</td> <td>RTRV-ALM-ENV</td> </tr> <tr> <td>ED-SYNCN</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>OPR-SYNCNSW</td> <td>RTRV-ALM-RING</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-SYNCN</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-BITS</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT EVT BITS</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>REPT EVT COM</td> <td>RTRV-COND-RING</td> </tr> <tr> <td>REPT EVT SYNCN</td> <td>RTRV-COND-SYNCN</td> </tr> <tr> <td>RLS-SYNCNSW</td> <td>RTRV-NE-SYNC</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td>RTRV-SYNCN</td> </tr> <tr> <td>RTRV-ALM-ALL</td> <td></td> </tr> </table>	ED-BITS	RTRV-ALM-BITS	ED-NE-SYNCN	RTRV-ALM-ENV	ED-SYNCN	RTRV-ALM-EQPT	OPR-SYNCNSW	RTRV-ALM-RING	REPT ALM <MOD2ALM>	RTRV-ALM-SYNCN	REPT ALM BITS	RTRV-BITS	REPT ALM COM	RTRV-COND-<MOD2ALM>	REPT ALM ENV	RTRV-COND-ALL	REPT ALM EQPT	RTRV-COND-BITS	REPT ALM RING	RTRV-COND-ENV	REPT EVT BITS	RTRV-COND-EQPT	REPT EVT COM	RTRV-COND-RING	REPT EVT SYNCN	RTRV-COND-SYNCN	RLS-SYNCNSW	RTRV-NE-SYNC	RTRV-ALM-<MOD2ALM>	RTRV-SYNCN	RTRV-ALM-ALL	
ED-BITS	RTRV-ALM-BITS																																
ED-NE-SYNCN	RTRV-ALM-ENV																																
ED-SYNCN	RTRV-ALM-EQPT																																
OPR-SYNCNSW	RTRV-ALM-RING																																
REPT ALM <MOD2ALM>	RTRV-ALM-SYNCN																																
REPT ALM BITS	RTRV-BITS																																
REPT ALM COM	RTRV-COND-<MOD2ALM>																																
REPT ALM ENV	RTRV-COND-ALL																																
REPT ALM EQPT	RTRV-COND-BITS																																
REPT ALM RING	RTRV-COND-ENV																																
REPT EVT BITS	RTRV-COND-EQPT																																
REPT EVT COM	RTRV-COND-RING																																
REPT EVT SYNCN	RTRV-COND-SYNCN																																
RLS-SYNCNSW	RTRV-NE-SYNC																																
RTRV-ALM-<MOD2ALM>	RTRV-SYNCN																																
RTRV-ALM-ALL																																	
Output Format	<pre>SID DATE TIME ** ATAG REPT ALM SYNCN "&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,;,;:[&lt;DESC&gt;]" ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies a synchronization reference with alarm condition and is from the "SYNC_REF" section on page 4-15</li> <li>• &lt;NTFCNCDE&gt; indicates a 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the "NOTIF_CODE" section on page 4-49</li> <li>• &lt;CONDTYPE&gt; indicates an alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the "CONDITION" section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the "SERV_EFF" section on page 4-56</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul> </pre>																																
Output Example	<pre>TID-000 1998-06-20 14:30:00 ** 001 REPT ALM SYNCN "SYNC-NE:MJ,MAN,SA,,;,:\"MANUAL SWITCH\"," ;</pre>																																

## 3.5.61 REPT DBCHG: Report Change

Reports any changes on the NE that result from:

1. TL1 provisioning commands or their GUI equivalents containing the verbs: ALW, DLT, ED, ENT, INH, INIT, OPR, RLS, SET, and SW (for example, DLT-EQPT,ENT-CRS-ST51)
2. External event such as a board insertion.

Section	REPT DBCHG Description
Category	Log
Security	Retrieve
Related Messages	ALW-MSG-DBCHG INH-MSG-DBCHG RTRV-LOG
Output Format	<p>SID DATE TIME A ATAG REPT DBCHG “TIME=&lt;TIME&gt;,DATE=&lt;DATE&gt;,[SOURCE=&lt;SOURCE&gt;, [USERID=&lt;USERID&gt;],DBCHGSEQ=&lt;DBCHGSEQ&gt;:&lt;COMMAND&gt;:&lt;AID&gt;” ; where:</p> <ul style="list-style-type: none"> <li>• &lt;TIME&gt; is the time of the message triggered by the NE; &lt;TIME&gt; is a time.</li> <li>• &lt;DATE&gt; is the date of the message triggered by the NE; &lt;DATE&gt; is a date.</li> <li>• &lt;SOURCE&gt; is an input command CTAG if present; &lt;SOURCE&gt; is an integer and is optional.</li> <li>• &lt;USERID&gt; is the user name or user identifier; &lt;USERID&gt; is a string and is optional.</li> <li>• &lt;DBCHGSEQ&gt; is a sequential number of the DBCHG message; &lt;DBCHGSEQ&gt; is an integer.</li> <li>• &lt;COMMAND&gt; is the input command or substitute; &lt;COMMAND&gt; is a string.</li> <li>• &lt;AID&gt; is the AID(s) or substitute; &lt;AID&gt; is a string.</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00 A 001 REPT DBCHG “TIME=14-35-46,DATE=99-07-28,SOURCE=123,USERID=CISCO15, DBCHGSEQ=456:ENT-CRS-VT1:VT1-4-2-6-4” ;</p>



### 3.5.62 REPT EVT <MOD2ALM>: Report Event (DS1, E100, E1000, EC1, G1000, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C, T1, T3, VT1)

(DS1, E1000, EC1, OC192, STS192C supported for ONS 15454 only)

Reports the occurrence of a non-alarmed event.

Section	REPT EVT <MOD2ALM> Description
Category	Fault
Security	Retrieve
Related Messages	—
Output Format	<p>SID DATE TIME  A ATAG REPT EVT &lt;MOD2ALM&gt;  “&lt;AID&gt;:&lt;CONDTYPE&gt;,[&lt;CONDEFF&gt;],,,[&lt;LOCN&gt;],[&lt;MONVAL&gt;],  [&lt;THLEV&gt;],[&lt;TMPER&gt;]:[&lt;DESC&gt;],[&lt;AIDDET&gt;]”  ;  where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; indicates an event with the condition type and is from the “ALL” section on page 4-5</li> <li>• &lt;CONDTYPE&gt; indicates an event with the condition type and is a string</li> <li>• &lt;CONDEFF&gt; is the effect of the condition on the NE; valid values for &lt;CONDEFF&gt; are shown in the “COND_EFF” section on page 4-24, &lt;CONDEFF&gt; is optional</li> <li>• &lt;LOCN&gt; indicates the location; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42, &lt;LOCN&gt; is optional</li> <li>• &lt;MONVAL&gt; is the monitored value; &lt;MONVAL&gt; is an integer and is optional</li> <li>• &lt;THLEV&gt; is the threshold value; &lt;THLEV&gt; is an integer and is optional</li> <li>• &lt;TMPER&gt; is the accumulation time period for the PM information; valid values for &lt;TMPER&gt; are shown in the “TMPER” section on page 4-63</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> <li>• &lt;AIDDET&gt; specifies the type of AID; valid values for &lt;AIDDET&gt; are shown in the “EQPT_TYPE” section on page 4-38, &lt;AIDDET&gt; is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00  A 001 REPT EVT OC48  “FAC-5-1:WKS WPR,TC,,FEND,,12,13,15-MIN:\“WORKING SWITCH TO PROTECTION\”,OC48”  ;</p>

### 3.5.63 REPT EVT BITS: Report Event BITS

Reports the occurrence of a non-alarmed event against a BITS facility.

Section	REPT EVT BITS Description
Category	Synchronization
Security	Retrieve
Related Messages	ED-BITS ED-NE-SYNCN ED-SYNCN OPR-SYNCNSW REPT ALM BITS REPT ALM SYNCN REPT EVT SYNCN RLS-SYNCNSW RTRV-ALM-BITS RTRV-ALM-SYNCN RTRV-BITS RTRV-COND-BITS RTRV-COND-SYNCN RTRV-NE-SYNCN RTRV-SYNCN
Output Format	SID DATE TIME A ATAG REPT EVT BITS “<AID>:<CONDTYPE>,[<CONDEFF>],,,,,,:[<DESC>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; indicates an access identifier and is from the “BITS” section on page 4-9</li> <li>• &lt;CONDTYPE&gt; indicates a condition type and the valid values are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;CONDEFF&gt; indicates an effect of the condition on the NE; valid values for are shown in the “COND_EFF” section on page 4-24, &lt;CONDEFF&gt; is optional</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 A 001 REPT EVT BITS “BITS-1:SSM-STU,TC,,,,,:[“SYNCHRONIZED - TRACEABILITY UNKNOWN”” ;

## 3.5.64 REPT EVT COM: Report Event COM

Reports a non-alarmed event against an NE when there is no AID associated with it.

Section	REPT EVT COM Description																						
Category	Fault																						
Security	Retrieve																						
Related Messages	<table> <tbody> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-ENV</td> </tr> <tr> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-ALM-RING</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-ALM-SYCN</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT ALM SYCN</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td>RTRV-COND-RING</td> </tr> <tr> <td>RTRV-ALM-ALL</td> <td>RTRV-COND-SYCN</td> </tr> <tr> <td>RTRV-ALM-BITS</td> <td></td> </tr> </tbody> </table>	REPT ALM <MOD2ALM>	RTRV-ALM-ENV	RTRV-COND-<MOD2ALM>	RTRV-ALM-EQPT	REPT ALM BITS	RTRV-ALM-RING	REPT ALM COM	RTRV-ALM-SYCN	REPT ALM ENV	RTRV-COND-ALL	REPT ALM EQPT	RTRV-COND-BITS	REPT ALM RING	RTRV-COND-ENV	REPT ALM SYCN	RTRV-COND-EQPT	RTRV-ALM-<MOD2ALM>	RTRV-COND-RING	RTRV-ALM-ALL	RTRV-COND-SYCN	RTRV-ALM-BITS	
REPT ALM <MOD2ALM>	RTRV-ALM-ENV																						
RTRV-COND-<MOD2ALM>	RTRV-ALM-EQPT																						
REPT ALM BITS	RTRV-ALM-RING																						
REPT ALM COM	RTRV-ALM-SYCN																						
REPT ALM ENV	RTRV-COND-ALL																						
REPT ALM EQPT	RTRV-COND-BITS																						
REPT ALM RING	RTRV-COND-ENV																						
REPT ALM SYCN	RTRV-COND-EQPT																						
RTRV-ALM-<MOD2ALM>	RTRV-COND-RING																						
RTRV-ALM-ALL	RTRV-COND-SYCN																						
RTRV-ALM-BITS																							
Output Format	<pre>SID DATE TIME A ATAG REPT EVT COM “[&lt;AID&gt;]:&lt;CONDTYPE&gt;,&lt;CONDEFF&gt;],,,,,,:[&lt;DESC&gt;]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; indicates this event is from the NE. &lt;AID&gt; is a string and is optional.</li> <li>• &lt;CONDTYPE&gt; indicates an event condition type. Valid values are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;CONDEFF&gt; indicates an effect of the condition on the NE; valid values for &lt;CONDEFF&gt; are shown in the “COND_EFF” section on page 4-24, &lt;CONDEFF&gt; is optional</li> <li>• &lt;DESC&gt; is the description message for the condition; &lt;DESC&gt; is a string and is optional</li> </ul> </pre>																						
Output Example	<pre>TID-000 1998-06-20 14:30:00 A 001 REPT EVT COM “COM:CLDRESTART,TC,,,,,,:\“COLD RESTART\”,” ;</pre>																						



## 3.5.66 REPT EVT EQPT: Report Event Equipment

Reports the occurrence of a non-alarmed event against an equipment unit or slot.

Section	REPT EVT EQPT Description																
Category	Equipment																
Security	Retrieve																
Related Messages	<table border="0"> <tr> <td>ALW-SWDX-EQPT</td> <td>INH-SWTOWKG-EQPT</td> </tr> <tr> <td>ALW-SWTOPROTN-EQPT</td> <td>REPT ALM EQPT</td> </tr> <tr> <td>ALW-SWTOWKG-EQPT</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>DLT-EQPT</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>ED-EQPT</td> <td>RTRV-EQPT</td> </tr> <tr> <td>ENT-EQPT</td> <td>SW-DX-EQPT</td> </tr> <tr> <td>INH-SWDX-EQPT</td> <td>SW-TOPROTN-EQPT</td> </tr> <tr> <td>INH-SWTOPROTN-EQPT</td> <td>SW-TOWKG-EQPT</td> </tr> </table>	ALW-SWDX-EQPT	INH-SWTOWKG-EQPT	ALW-SWTOPROTN-EQPT	REPT ALM EQPT	ALW-SWTOWKG-EQPT	RTRV-ALM-EQPT	DLT-EQPT	RTRV-COND-EQPT	ED-EQPT	RTRV-EQPT	ENT-EQPT	SW-DX-EQPT	INH-SWDX-EQPT	SW-TOPROTN-EQPT	INH-SWTOPROTN-EQPT	SW-TOWKG-EQPT
ALW-SWDX-EQPT	INH-SWTOWKG-EQPT																
ALW-SWTOPROTN-EQPT	REPT ALM EQPT																
ALW-SWTOWKG-EQPT	RTRV-ALM-EQPT																
DLT-EQPT	RTRV-COND-EQPT																
ED-EQPT	RTRV-EQPT																
ENT-EQPT	SW-DX-EQPT																
INH-SWDX-EQPT	SW-TOPROTN-EQPT																
INH-SWTOPROTN-EQPT	SW-TOWKG-EQPT																
Output Format	<p>SID DATE TIME  A ATAG REPT EVT EQPT  “&lt;AID&gt;:&lt;CONDTYPE&gt;,[&lt;CONDEFF&gt;],,,,,,;[&lt;DESC&gt;],[&lt;AIDDET&gt;]”  ;  where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; indicates an equipment AID SLOT-{1-17} and is from the “EQPT” section on page 4-11</li> <li>• &lt;CONDTYPE&gt; indicates an event condition type; &lt;CONDTYPE&gt; defaults to EQPT and the valid values are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;CONDEFF&gt; indicates an effect of the condition on the NE; valid values for &lt;CONDEFF&gt; are shown in the “COND_EFF” section on page 4-24, &lt;CONDEFF&gt; is optional</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> <li>• &lt;AIDDET&gt; specifies the type of AID; valid values for &lt;AIDDET&gt; are shown in the “EQPT_TYPE” section on page 4-38, &lt;AIDDET&gt; is optional</li> </ul>																
Output Example	<pre>TID-000 1998-06-20 14:30:00 A 001 REPT EVT EQPT “SLOT-7:PLUGIN,TC,,,,,;\“EQUIPMENT PLUG-IN\”,TCC” ;</pre>																

## 3.5.67 REPT EVT RING: Report Event Ring

Reports the occurrence of a non-alarmed event against a ring object for BLSR.



### Note

When a change is made to a BLSR, including creating a new circuit, the circuit will not have BLSR protection until after the BLSR-UPDATED message is received.

Section	REPT EVT RING Description
Category	BLSR
Security	Retrieve
Related Messages	ED-BLSR REPT ALM RING RTRV-ALM-RING RTRV-BLSR RTRV-COND-RING
Output Format	<p>SID DATE TIME A ATAG REPT EVT RING “&lt;AID&gt;:&lt;CONDTYPE&gt;,&lt;CONDEFF&gt;],,,,,,;[&lt;DESC&gt;]” ; where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies an event with condition type; &lt;AID&gt; is a string.</li> <li>• &lt;CONDTYPE&gt; indicates an event condition type; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;CONDEFF&gt; is the effect of the condition on the NE; valid values for &lt;CONDEFF&gt; are shown in the “COND_EFF” section on page 4-24</li> <li>• &lt;DESC&gt; is the condition description; &lt;CONDDESR&gt; is a string and is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00 A 001 REPT EVT RING “RING-88:BLSR-RESYNC,TC,,,,,;:\“BLSR TABLES RESYNCHRONIZED\”,” ;</p>

## 3.5.68 REPT EVT SECU: Report Event Security

Reports the occurrence of a non-alarmed security even against the NE.

Based on TR-NWT-000835 in TR-NWT-000835 and the AID of the security alarm should be the Connection Identifier (CID) which is not supported in this release. The COM or UID is an acceptable substitute for the AID here. CID's will be supported in a future release.

For the rule of single failure, single message/alarm, the security alarm will not be reported as REPT ALM COM, because it is reported as REPT ALM SECU.

Because the NE sends this security message as a transient message, to make all TL1 autonomous messages consistent, the TL1 agent reports the security message into REPT EVT SECU.

Section	REPT EVT SECU Description
Category	Security
Security	Retrieve
Related Messages	ACT-USER CANC CANC-USER DLT-USER-SECU ED-PID ED-USER-SECU ENT-USER-SECU
Output Format	<p>SID DATE TIME</p> <p>A ATAG REPT EVT SECU</p> <p>“&lt;AID&gt;:&lt;CONDTYPE&gt;,&lt;CONDEFF&gt;],,,,,,:[&lt;DESC&gt;]”</p> <p>;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies an entity with the condition and defaults to “COM”; &lt;AID&gt; is a string</li> <li>• &lt;CONDTYPE&gt; is the condition type and valid values are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;CONDEFF&gt; indicates an effect of the condition on the NE and valid values are shown in the “COND_EFF” section on page 4-24; &lt;CONDEFF&gt; is optional</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00</p> <p>A 001 REPT EVT SECU</p> <p>“COM:INTRUSION,TC,,,,,;\“SECURITY-INVALID LOGIN (SEE AUDIT TRIAL)\””</p> <p>;</p>

### 3.5.69 REPT EVT SYNCN: Report Event Synchronization

Reports the occurrence of a non-alarmed event against a synchronization entity.

Section	REPT EVT SYNCN Description
Category	Synchronization
Security	Retrieve
Related Messages	ED-BITS RTRV-ALM-BITS ED-NE-SYNCN RTRV-ALM-SYNCN ED-SYNCN RTRV-BITS OPR-SYCNCSW RTRV-COND-BITS REPT ALM BITS RTRV-COND-SYNCN REPT ALM SYNCN RTRV-NE-SYNCN REPT EVT BITS RTRV-SYNCN RLS-SYCNCSW
Output Format	SID DATE TIME A ATAG REPT EVT SYNCN “<AID>:<CONDTYPE>,<CONDEFF>],,,,,,:[<DESC>],[<AIDDET>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the synchronization entity with the condition and is from the “SYNC_REF” section on page 4-15</li> <li>• &lt;CONDTYPE&gt; indicates the condition type; &lt;CONDTYPE&gt; defaults to SYNCN and the valid values are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;CONDEFF&gt; indicates the effect of the condition on the NE; valid values for &lt;CONDEFF&gt; are shown in the “COND_EFF” section on page 4-24, &lt;CONDEFF&gt; is optional</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> <li>• &lt;AIDDET&gt; specifies the type of AID; valid values for &lt;AIDDET&gt; are shown in the “EQPT_TYPE” section on page 4-38, &lt;AIDDET&gt; is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 A 001 REPT EVT SYNCN “SYNC-NE:SWTOINT,SC,,,,,:\“SWITCH TO INTERNAL CLOCK\”,TCC” ;



## 3.5.70 REPT SW: Report Switch

(Cisco ONS 15454 only)

Reports the autonomous switching of an active unit in a duplex equipment pair to the standby state and its mate to the active state. An automatic report for the occurrence or clearance of an alarm or event that triggers the switch may be associated with the message.

Section	REPT SW Description
Category	UPSR Switching
Security	Retrieve
Related Messages	OPR-PROTNSW-<STS_PATH> OPR-PROTNSW-VT1 RLS-PROTNSW-<STS_PATH> RLS-PROTNSW-VT1
Output Format	<pre>SID DATE TIME A ATAG REPT SW   "&lt;ACTID&gt;,&lt;STDBYID&gt;" ;</pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;ACTID&gt; identifies the equipment unit that has been placed in the active state. Parameter grouping cannot be used with this parameter; &lt;ACTID&gt; is the AID from the "EQPT" section on page 4-11</li> <li>• &lt;STDBYID&gt; identifies the equipment unit that was placed in the standby state. Parameter grouping cannot be used with this parameter; &lt;STDBYID&gt; is the AID from the "EQPT" section on page 4-11</li> </ul>
Output Example	<pre>TID-000 1998-06-20 14:30:00 A 001 REPT SW   "SLOT-8,SLOT-10" ;</pre>

## 3.5.71 RLS-EXT-CONT: Release External Control

This command is used to release a forced contact state and returns the control of the contact to an AUTOMATIC control state. In AUTOMATIC control state, the contact could be opened or closed depending on triggers that may or may not be provisioned in the NE. Therefore, issuing an RLS might not produce any contact state change.

The NE defaults to having no triggers provisioned for external controls which consequently produces default open contacts. An NE with this default provisioning will always produce an open contact with a RLS-EXT-CONT command.

Notes:

1. The duration is not supported, it defaults to CONTS.
2. In an automatic state, the contact could be opened or closed depending on the provisioned trigger. Therefore, issuing an OPR-EXT-CONT command followed by an RLS-EXT-CONT command might not produce any contact state change.

Section	RLS-EXT-CONT Description										
Category	Environmental Alarms and Controls										
Security	Maintenance										
Related Messages	<table border="0"> <tr> <td>OPR-EXT-CONT</td> <td>RTRV-ATTR-ENV</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT EVT ENV</td> <td>RTRV-EXT-CONT</td> </tr> <tr> <td>RTRV-ALM-ENV</td> <td>SET-ATTR-CONT</td> </tr> <tr> <td>RTRV-ATTR-CONT</td> <td>SET-ATTR-ENV</td> </tr> </table>	OPR-EXT-CONT	RTRV-ATTR-ENV	REPT ALM ENV	RTRV-COND-ENV	REPT EVT ENV	RTRV-EXT-CONT	RTRV-ALM-ENV	SET-ATTR-CONT	RTRV-ATTR-CONT	SET-ATTR-ENV
OPR-EXT-CONT	RTRV-ATTR-ENV										
REPT ALM ENV	RTRV-COND-ENV										
REPT EVT ENV	RTRV-EXT-CONT										
RTRV-ALM-ENV	SET-ATTR-CONT										
RTRV-ATTR-CONT	SET-ATTR-ENV										
Input Format	RLS-EXT-CONT:[<TID>]:<AID>:<CTAG>[:,:]; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; identifies the external control being released and is from the “ENV” section on page 4-10</li> </ul>										
Input Example	RLS-EXT-CONT:CISCO:ENV-OUT-2:123;										
Errors	This message generates all the default errors										

### 3.5.72 RLS-LPBK-<MOD2\_IO>: Release Loopback (DS1, EC1, G1000, OC3, OC12, OC48, OC192, T1, T3)

(DS1, EC1, and OC192 supported for ONS 15454 only)

This command releases a signal loopback on an I/O card.

Notes:

- The optional [<LPBKTYPE>] field defaults to the current existing loopback type.
- The TERMINAL loopback type is not supported for a DS3XM card.

Section	RLS-LPBK-<MOD2_IO> Description
Category	Testing
Security	Maintenance
Related Messages	OPR-LPBK-<MOD2_IO>
Input Format	RLS-LPBK-<MOD2_IO>:[<TID>]:<AID>:<CTAG>[:,:],[<LPBKTYPE>]; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; is the access identifier. The &lt;AID&gt; is only supported for FACILITY and DS1; &lt;AID&gt; is from the “ALL” section on page 4-5</li> <li>&lt;LPBKTYPE&gt; indicates the loopback type; valid values for &lt;LPBKTYPE&gt; are shown in the “LPBK_TYPE” section on page 4-43</li> </ul>
Input Example	RLS-LPBK-DS1:PTREYES:DS1-4-2-13:203::,,FACILITY;
Errors	This message generates all the default errors

### 3.5.73 RLS-PROTNSW-<OCN\_TYPE>: Release Protection Switch (OC3, OC12, OC48, OC192)

(OC192 supported for ONS 15454 only)

This command instructs a SONET NE to release a SONET line protection switch request.

The release of a protection switch request is applicable only to the OPR-PROTNSW protection switch commands, the user-initiated switch protection commands.

Notes:

1. This command is not used for the common control (TCC+ or XC/XCVT) cards. Sending a command on a common control card will generate an IIAC (Input, Invalid Access Identifier) error message. To query the common control card switching commands, use SW-DX-EQPT, ALW-SWDX-EQPT commands.
2. When sending this command on non-SONET (OCN) cards, an IIAC (Input, Invalid Access Identifier) error message should be responded. To use this command on a non-SONET card switching command, use ALW-SWTOPROTN/SWTOWKG-EQPT and INH-SWTOPROTN/SWTOWKG-EQPT commands.
3. When sending this command to query on a card that is not in a protection group, the SNVS (Status, Not in Valid State) error message should be responded.
4. When sending this command to a working card that is failed or missing, the SWFA (Status, Working unit Failed) error message should be responded.
5. When sending this command to a protect card that is failed or missing, the SPFA (Status, Protection unit Failed) error message should be responded.
6. When sending this command to a card that is not in protection, the SNPR (Status, Not in Protection State) error message should be responded.
7. Sending this command to an OCN line that is already in clear mode will return a SAMS (Already in Clear Maintenance State) error message.
8. To get the protection switching state (manual, lockout, forced), use the RTRV-COND-ALL or RTRV-ALM-ALL command.

Section	RLS-PROTNSW-<OCN_TYPE> Description
Category	SONET Line Protection
Security	Maintenance
Related Messages	DLT-FFP-<OCN_TYPE> ED-FFP-<OCN_TYPE> ENT-FFP-<OCN_TYPE> EX-SW-<OCN_TYPE> OPR-PROTNSW-<OCN_TYPE> RTRV-FFP-<OCN_TYPE>
Input Format	RLS-PROTNSW-<OCN_TYPE>:[<TID>]:<AID>:<CTAG>[::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the facility in the NE to which the switch request is directed and is from the "FACILITY" section on page 4-11</li> </ul>
Input Example	RLS-PROTNSW-OC48:CHICKALUMA:FAC-6-1:209;
Errors	This message generates all the default errors

### 3.5.74 RLS-PROTNSW-<STS\_PATH>: Release Protection Switch (STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C)

(STS192C supported for ONS 15454 only)

This command instructs a SONET NE to release a SONET path protection switch request that was established with the OPR-PROTNSW-<STS\_PATH> command. This command assumes that only one user-initiated switch is active per AID.

Notes:

1. This command applies to UPSR configuration only.
2. The VTAID should be working or protect AID only.
3. If sending this command on the Drop AID, a DENY (Invalid AID, should use working/protect AID) message will be returned.
4. To get the protection switching state (manual, lockout, forced), use the RTRV-COND-ALL or RTRV-ALM-ALL command.

Section	RLS-PROTNSW-<STS_PATH> Description
Category	UPSR Switching
Security	Maintenance
Related Messages	OPR-PROTNSW-<STS_PATH> OPR-PROTNSW-VT1 REPT SW RLS-PROTNSW-VT1
Input Format	RLS-PROTNSW-<STS_PATH>:[<TID>]:<AID>:<CTAG>[::];  where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the entity in the NE to which the switch request is directed and is from the “STS” section on page 4-12</li> </ul>
Input Example	RLS-PROTNSW-ST1:CISCO:STS-2-1:123;
Errors	This message generates all the default errors

### 3.5.75 RLS-PROTNSW-VT1: Release Virtual Tributary Protection Switch

This command instructs a SONET NE to release a SONET path protection switch request that was established with the OPR-PROTNSW-VT1 command. This command assumes that only one user-initiated switch is active per AID.

Notes:

1. This command applies to UPSR configuration only.
2. The VTAID should be working or protect AID only.
3. Sending this command on the Drop AID, a DENY (Invalid AID, should use working/protect AID) message will be returned.
4. To get the protection switching state (manual, lockout, forced), use the RTRV-COND-ALL or RTRV-ALM-ALL command.

Section	RLS-PROTNSW-VT1 Description
Category	UPSR Switching
Security	Maintenance
Related Messages	OPR-PROTNSW-<STS_PATH> OPR-PROTNSW-VT1 REPT SW RLS-PROTNSW-<STS_PATH>
Input Format	RLS-PROTNSW-VT1:[<TID>]:<AID>:<CTAG>[::]; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; identifies the entity in the NE to which the switch request is directed and is from the “VT1_5” section on page 4-17</li> </ul>
Input Example	RLS-PROTNSW-VT1:CISCO:VT1-4-2-3-1:123;
Errors	This message generates all the default errors

### 3.5.76 RLS-SYNCNSW: Release Synchronization Switch

This command releases the previous synchronization reference provided by the OPR-SYNCNSW command. The timing reverts back to its previous mode.

In a non-revertive system, the use of the RLS-SYNCNSW command may not be appropriate. All the switching between synchronization references should be initiated with the OPR-SYNCNSW command.

Once a switch is in effect, a minor alarm “MANSWTOPRI”, Manual Switch to Primary Reference (or Secondary...), will be raised.

Section	RLS-SYNCNSW Description
Category	Synchronization
Security	Maintenance
Related Messages	ED-BITS ED-NE-SYCN ED-SYCN OPR-SYNCNSW REPT ALM BITS REPT ALM SYCN REPT EVT BITS REPT EVT SYCN RTRV-ALM-BITS RTRV-ALM-SYCN RTRV-BITS RTRV-COND-BITS RTRV-COND-SYCN RTRV-NE-SYCN RTRV-SYCN
Input Format	RLS-SYNCNSW:[<TID>]:[<AID>]:<CTAG>; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; is the access identifier from the “SYNC_REF” section on page 4-15. A null value of AID defaults to SYNC-NE.</li> </ul>
Input Example	RLS-SYNCNSW:CISCO:SYNC-NE:3;
Errors	This message generates all the default errors

### 3.5.77 RMV-<MOD\_PORT>: Remove (EC1, G1000, OC3, OC12, OC48, OC192, T1, T3)

(EC1, G1000, OC192 supported for ONS 15454 only)

This command removes a facility from service.

Section	RMV-<MOD_PORT> Description
Category	Ports
Security	Maintenance
Related Messages	ED-<OCN_TYPE> RTRV-<OCN_TYPE> ED-DS1 RTRV-DS1 ED-EC1 RTRV-EC1 ED-G1000 RTRV-G1000 ED-T1 RTRV-T1 ED-T3 RTRV-T3 RST <MOD_PORT>
Input Format	RMV-<MOD_PORT>:[<TID>]:<AID>:<CTAG>[:,:]; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; is the access identifier from the “FACILITY” section on page 4-11</li> </ul>
Input Example	RMV-EC1:CISCO:FAC-1-1:1234;
Errors	This message generates all the default errors

### 3.5.78 RST-<MOD\_PORT>: Restore (EC1,G1000, OC3, OC12, OC48, OC192, T1, T3)

(EC1, G1000, OC192 supported for ONS 15454 only)

This command provisions a facility in service.

Section	RST-<MOD_PORT> Description
Category	Ports
Security	Maintenance
Related Messages	ED-<OCN_TYPE> RTRV-<OCN_TYPE> ED-DS1 RTRV-DS1 ED-EC1 RTRV-EC1 ED-G1000 RTRV-G1000 ED-T1 RTRV-T1 ED-T3 RTRV-T3 RMV-<MOD_PORT>
Input Format	RST-<MOD_PORT>:[<TID>]:<AID>:<CTAG>[:,:]; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; is the access identifier from the “FACILITY” section on page 4-11</li> </ul>
Input Example	RST-EC1:CISCO:FAC-1-1:1234;
Errors	This message generates all the default errors

### 3.5.79 RTRV-<OCN\_TYPE>: Retrieve (OC3, OC12, OC48, OC192)

(OC192 supported for ONS 15454 only)

This command retrieves the attributes (i.e. service parameters) and the state of an OC-N facility.

Both RINGID and BLSRTYPE identify the OCN port connected with a BLSR. These attributes are only presented for the OC12, OC48, OC192 ports within a BLSR connection. The RTRV-BLSR command with the AID RINGID, can provide more information on this BLSR.



#### Note

This command does not show the WVLEN attribute if the OCN port has zero value on WVLELN.

Section	RTRV-<OCN_TYPE> Description
Category	Ports
Security	Retrieve
Related Messages	ED-<OCN_TYPE> RST-<MOD_PORT> ED-DS1 RTRV-DS1 ED-EC1 RTRV-EC1 ED-G1000 RTRV-G1000 ED-T1 RTRV-T1 ED-T3 RTRV-T3 RMV-<MOD_PORT>
Input Format	RTRV-<OCN_TYPE>:[<TID>]:<AID>:<CTAG>[::::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “FACILITY” section on page 4-11 and must not be null.</li> </ul>
Input Example	RTRV-OC48:PENNGROVE:FAC-6-1:236;

Section	RTRV-<OCN_TYPE> Description (continued)
Output Format	<p data-bbox="537 260 760 291">SID DATE TIME</p> <p data-bbox="537 296 769 327">M CTAG COMPLD</p> <pre data-bbox="537 331 1487 485"> "&lt;AID&gt;:.,[&lt;ROLE&gt;],[&lt;STATUS&gt;]:[DCC=&lt;DCC&gt;],[TMGREF=&lt;TMGREF&gt;],[ [SYNCSMSG=&lt;SYNCSMSG&gt;],[SENDDUS=&lt;SENDDUS&gt;],[PJMON=&lt;PJMON&gt;],[ [SFBER=&lt;SFBER&gt;],[SDBER=&lt;SDBER&gt;],[MODE=&lt;MODE&gt;],[ [WVLEN=&lt;WVLEN&gt;],[RINGID=&lt;RINGID&gt;],[BLSRATYPE=&lt;BLSRATYPE&gt;],[ [MUX=&lt;MUX&gt;]:[&lt;PST&gt;]" </pre> <p data-bbox="537 489 548 520">;</p> <p data-bbox="537 531 613 562">where:</p> <ul data-bbox="537 573 1487 1843" style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “FACILITY” section on page 4-11</li> <li>• &lt;ROLE&gt; identifies the OCN port role (e.g. WORK or PROT); valid values for &lt;ROLE&gt; are shown in the “SIDE” section on page 4-56, &lt;ROLE&gt; is optional</li> <li>• &lt;STATUS&gt; identifies the OCN port status (e.g. Active or Standby); valid values for &lt;STATUS&gt; are shown in the “STATUS” section on page 4-57, &lt;STATUS&gt; is optional</li> <li>• &lt;DCC&gt; identifies the OCN port DCC connection and defaults to N; valid values for &lt;DCC&gt; are shown in the “ON_OFF” section on page 4-51, &lt;DCC&gt; is optional</li> <li>• &lt;TMGREF&gt; identifies if the OCN port has timing reference and defaults to N; valid values for &lt;TMGREF&gt; are shown in the “ON_OFF” section on page 4-51, &lt;TMGREF&gt; is optional</li> <li>• &lt;SYNCSMSG&gt; indicates if sync status messaging is enabled or disabled on the facility; &lt;SYNCSMSG&gt; defaults to Y and the valid values are shown in the “ON_OFF” section on page 4-51. &lt;SYNCSMSG&gt; is optional.</li> <li>• &lt;SENDDUS&gt; indicates that the facility will send out the DUS (do not use for synchronization) value as the sync status message for that facility; &lt;SENDDUS&gt; defaults to N and the valid values are shown in the “ON_OFF” section on page 4-51. &lt;SENDDUS&gt; is optional</li> <li>• &lt;PJMON&gt; identifies the OCN port PJMON; &lt;PJMON&gt; defaults to 0 (zero), is an integer and is optional</li> <li>• &lt;SFBER&gt; identifies the OCN port SFBER and defaults to 1E-4; valid values for &lt;SFBER&gt; are shown in the “SF_BER” section on page 4-56, &lt;SFBER&gt; is optional</li> <li>• &lt;SDBER&gt; identifies the OCN port SDBER and defaults to 1E-7; valid values for &lt;SDBER&gt; are shown in the “SD_BER” section on page 4-55, &lt;SDBER&gt; is optional</li> <li>• &lt;MODE&gt; identifies the OCN port mode (e.g. SONET, SDH) and defaults to SONET; valid values for &lt;MODE&gt; are shown in the “OPTICAL_MODE” section on page 4-51, &lt;MODE&gt; is optional</li> <li>• &lt;WVLEN&gt; identifies the OCN port wavelength; &lt;WVLEN&gt; is wavelength in nm (nanometer) for unit, e.g. WVLEN=1310.00 means it operates at 1310 nm in the DWM application. &lt;WVLEN&gt; is a Float and is optional</li> <li>• &lt;RINGID&gt; identifies the BLSR ID with which the port is connected. The &lt;RINGID&gt; ranges from 0 to 9999; &lt;RINGID&gt; is an integer and is optional</li> </ul>



Section	RTRV-<OCN_TYPE> Description (continued)
Output Format (continued)	<ul style="list-style-type: none"> <li>• Valid values for &lt;BLSRTYPE&gt; are shown in the “BLSR_TYPE” section on page 4-23 and &lt;BLSRTYPE&gt; is optional.</li> <li>• &lt;MUX&gt; BLSR Extension Byte (supported only on OC48AS cards). Valid values for &lt;MUX&gt; are shown in the “MUX_TYPE” section on page 4-49; &lt;MUX&gt; is optional.</li> <li>• &lt;PST&gt; identifies the OCN port state (e.g. IS or OOS); &lt;PST&gt; defaults to OOS and valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53, &lt;PST&gt; is optional.</li> </ul>
Output Example	<pre>TID-000 1998-06-20 14:30:00 M 001 COMPLD “FAC-6-1:.,WORK,ACT:DCC=N,TMGREF=N,SYNCSMSG=Y,SENDDUS=N, PJMON=48,SFBER=1E-4,SDBER=1E-6,MODE=SONET,WVLEN=1310.00, RINGID=43,BLSRTYPE=WESTWORK,MUX=E2:OOS” ;</pre>
Errors	This message generates all the default errors

### 3.5.80 RTRV-<STS\_PATH>: Retrieve (STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C)

(STS192C supported for ONS 15454 only)

This command retrieves the attributes associated with an STS path.

The SFBER, SDBER, RVRTV, and RVTM parameters only apply to UPSR.

The path trace message is a 64 character string including the terminating CR (carriage return) and LF (line feed) that is transported in the J1 byte of the SONET STS Path overhead.

The EXPTRC indicates the contents of the expected incoming path trace are provisioned by the user in the ED-ST<STS\_PATH> command. The TRC indicates the contents of the outgoing path trace message. The INCTRC indicates the contents of the incoming path trace message.

The path trace mode has three modes: OFF, MANUAL, and AUTO. The mode defaults to OFF. The MANUAL mode performs the comparison of the received string with the user entered expected string. The AUTO mode performs the comparison of the present received string with an expected string set to a previously received string. If there is a mismatch, the TIM-P alarm is raised. When the path trace mode is in OFF mode, there is no path trace processing, and all the alarm and state conditions are reset.

When the expected string is queried under the OFF path trace mode, the expected string is a copy of the provisioned string or NULL. When an expected string is queried under the MANUAL path trace mode, the expected string is a copy of the user entered string. When an expected string is queried under the AUTO path trace mode, the expected string is a copy of the acquired received string or NULL if the string has not been acquired.

When the incoming string is queried under the OFF path trace mode, the incoming string is a NULL. When an incoming string is queried under the MANUAL or AUTO path trace mode, the incoming string is a copy of the received string or NULL if the string has not been received.

J1 (EXPTRC) is implemented on the DS1/DS1N, DS3, DS3E/DS3NE, DS3XM, EC1, OC3, OC48AS and OC192.

TRC and INCTRC are supported on DS1(N), DS3(N)E, and DS3XM cards.

Section	RTRV-<STS_PATH> Description
Category	STS and VT Paths
Security	Retrieve
Related Messages	ED-<STS_PATH> ED-VT1 RTRV-PTHTRC-<STS_PATH> RTRV-VT1
Input Format	RTRV-<STS_PATH>:[<TID>]:<AID>:<CTAG>[:]; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; is the AID from the "STS" section on page 4-12 and must not be null</li> </ul>
Input Example	RTRV-ST<STS_PATH>:FERNDAL<STS_PATH>:STS-2-4:238;

Section	RTRV-<STS_PATH> Description (continued)
Output Format	<p data-bbox="573 258 797 287">SID DATE TIME</p> <p data-bbox="573 296 808 325">M CTAG COMPLD</p> <p data-bbox="573 333 1446 449">“&lt;AID&gt;::[LEVEL=&lt;LEVEL&gt;],[SFBER=&lt;SFBER&gt;],[SDBER=&lt;SDBER&gt;],[RVRTV=&lt;RVRTV&gt;],[RVTM=&lt;RVTM&gt;],[EXPTRC=&lt;EXPTRC&gt;],[TRC=&lt;TRC&gt;],[INCTRC=&lt;INCTRC&gt;],[TRCMODE=&lt;TRCMODE&gt;],[TACC=&lt;TACC&gt;]”</p> <p data-bbox="573 457 586 487">;</p> <p data-bbox="573 495 651 525">where:</p> <ul data-bbox="573 533 1518 1814" style="list-style-type: none"> <li data-bbox="573 533 1382 562">• &lt;AID&gt; is the access identifier from the “STS” section on page 4-12</li> <li data-bbox="573 571 1518 686">• &lt;LEVEL&gt; indicates the rate of the cross connected channel; valid values for &lt;LEVEL&gt; are shown in the “STS_PATH” section on page 4-59, &lt;LEVEL&gt; is optional</li> <li data-bbox="573 695 1518 793">• &lt;SFBER&gt; identifies the STS path SFBER which only applies to UPSR; &lt;SFBER&gt; defaults to 1E-4 and valid values are shown in the “SF_BER” section on page 4-56, &lt;SFBER&gt; is optional</li> <li data-bbox="573 802 1518 900">• &lt;SDBER&gt; identifies the STS path SDBER which only applies to UPSR; &lt;SDBER&gt; defaults to 1E-6 and valid values are shown in the “SD_BER” section on page 4-55, &lt;SDBER&gt; is optional</li> <li data-bbox="573 909 1518 1045">• &lt;RVRTV&gt; identifies a revertive mode which only applies to UPSR and defaults to N (non-revertive mode) when a UPSR STSp is created; valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51 and &lt;RVRTV&gt; is optional</li> <li data-bbox="573 1054 1518 1190">• &lt;RVTM&gt; identifies a revertive time which only applies to UPSR and defaults to empty because &lt;RVRTV&gt; is N when a UPSR STSp is created; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55 and &lt;RVTM&gt; is optional</li> <li data-bbox="573 1199 1518 1335">• &lt;EXPTRC&gt; indicates the expected path trace message (J1) contents. The EXPTRC is any 64 character string, including the terminating CR (carriage return) and LF (line feed); &lt;EXPTRC&gt; defaults to null when a UPSR STSp is created. &lt;EXPTRC&gt; is a string and is optional</li> <li data-bbox="573 1344 1518 1535">• &lt;TRC&gt; identifies the path trace message to be transmitted. The TRC is any combination of 64 characters, including the terminating CR (carriage return) and LF (line feed). The trace byte (J1) continuously transmits a 64 byte string, one byte at a time. A null value defaults to the NE transmitting null characters (Hex 00); &lt;TRC&gt; defaults to null when a UPSR STSp is created. &lt;TRC&gt; is a string and is optional</li> <li data-bbox="573 1543 1518 1608">• &lt;INCTRC&gt; identifies the incoming path trace message contents. The INCTRC is any combination of 64 characters; &lt;INCTRC&gt; is a string and is optional</li> <li data-bbox="573 1617 1518 1715">• &lt;TRCMODE&gt; indicates the path trace mode, and defaults to the OFF mode when a UPSR STSp is created; valid values for &lt;TRCMODE&gt; are shown in the “TRCMODE” section on page 4-64 and &lt;TRCMODE&gt; is optional</li> <li data-bbox="573 1724 1518 1822">• &lt;TACC&gt; defines the STS as a test access port with a selected unique TAP number. The TAP number ranges from 1–999; &lt;TACC&gt; is an integer and is optional.</li> </ul>

Section	RTRV-<STS_PATH> Description (continued)
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “STS-2-4::LEVEL=STS1,SFBER=1E-3,SDBER=1E-5,RVRTV=Y,RVTM=1.0, EXPTRC=“EXPTRCSTRING”,TRC=“TRCSTRING”, INCTRC=“INCTRCSTRING”,TRCMODE=AUTO,TACC=8” ;
Errors	This message generates all the default errors

### 3.5.81 RTRV-ALM-<MOD2ALM>:Retrieve Alarm (DS1, E100, E1000, EC1, G1000, OC3, OC12, OC48, OC192, STS1, STS3C, STS9C, STS12C, STS24C, STS48C, STS192C, T1, T3, VT1)

(DS1, E1000, EC1, OC192, STS192C supported for ONS 15454 only.)

Instructs the NE to retrieve and send the current status of its alarm conditions. The alarm condition or severity to be retrieved can be specified by using the input parameters as a filter.

Notes:

1. VT1-n-n-n replaces PS\_VT1-n-n-n for VT1 alarm AID.
2. The [<AIDTYPE>] shows STS1 for STS alarms.

Section	RTRV-ALM-<MOD2ALM> Description	
Category	Fault	
Security	Retrieve	
Related Messages	REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT ALM RING REPT ALM SYNCN REPT EVT COM RTRV-ALM-ALL RTRV-ALM-BITS RTRV-ALM-ENV	RTRV-ALM-EQPT RTRV-ALM-RING RTRV-ALM-SYNCN RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-BITS RTRV-COND-ENV RTRV-COND-EQPT RTRV-COND-RING RTRV-COND-SYNCN

Section	RTRV-ALM-<MOD2ALM> Description (continued)
Input Format	<p>RTRV-ALM-&lt;MOD2ALM&gt;:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;NTFCNCDE&gt;], [&lt;CONDTYPE&gt;],[&lt;SRVEFF&gt;][,,,];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ALL” section on page 4-5 and must not be null</li> <li>• &lt;NTFCNCDE&gt; is the 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49. A null value is equivalent to ALL.</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-ALM-OC12:ELDRIDGE:FAC-5-1:225::MN,SD,SA;
Output Format	<p>SID DATE TIME M CTAG COMPLD “&lt;AID&gt;,[&lt;AIDTYPE&gt;]:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,,,,: [&lt;DESC&gt;]” ; where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ALL” section on page 4-5</li> <li>• &lt;AIDTYPE&gt; is the type of access identifier; valid values for &lt;AIDTYPE&gt; are shown in the “MOD2ALM” section on page 4-44, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56</li> <li>• &lt;CONDDESR&gt; is the condition description; &lt;CONDDESCR&gt; is a string and is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00 M 001 COMPLD “FAC-5-1,OC12:MJ,SD,SA,,,,:\“BER AT SIGNAL DEGRADE LEVEL\”,” ;</p>
Errors	This message generates all the default errors

## 3.5.82 RTRV-ALM-ALL: Retrieve Alarm All

This command instructs the NE to retrieve and send the current status of all active alarm conditions. The alarm condition or severity to be retrieved is specified using the input parameters as a filter.

According to GR-833, the RTRV-ALM-ALL command only reports EQPT, RING, COM, and rr (T1, T3, OCN, EC1, STSN, VT1, and DS1) alarms.

To retrieve all the NE alarms, issue all of the following commands:

```
RTRV-ALM-ALL
RTRV-ALM-ENV
RTRV-ALM-BITS
RTRV-ALM-RING
RTRV-ALM-SYNCN
```

Section	RTRV-ALM-ALL Description																						
Category	Fault																						
Security	Retrieve																						
Related Messages	<table border="0"> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-ALM-RING</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-ALM-SYNCN</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT EVT COM</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td>RTRV-COND-RING</td> </tr> <tr> <td>RTRV-ALM-BITS</td> <td>RTRV-COND-SYNCN</td> </tr> <tr> <td>RTRV-ALM-ENV</td> <td></td> </tr> </table>	REPT ALM <MOD2ALM>	RTRV-ALM-EQPT	REPT ALM BITS	RTRV-ALM-RING	REPT ALM COM	RTRV-ALM-SYNCN	REPT ALM ENV	RTRV-COND-<MOD2ALM>	REPT ALM EQPT	RTRV-COND-ALL	REPT ALM RING	RTRV-COND-BITS	REPT ALM SYNCN	RTRV-COND-ENV	REPT EVT COM	RTRV-COND-EQPT	RTRV-ALM-<MOD2ALM>	RTRV-COND-RING	RTRV-ALM-BITS	RTRV-COND-SYNCN	RTRV-ALM-ENV	
REPT ALM <MOD2ALM>	RTRV-ALM-EQPT																						
REPT ALM BITS	RTRV-ALM-RING																						
REPT ALM COM	RTRV-ALM-SYNCN																						
REPT ALM ENV	RTRV-COND-<MOD2ALM>																						
REPT ALM EQPT	RTRV-COND-ALL																						
REPT ALM RING	RTRV-COND-BITS																						
REPT ALM SYNCN	RTRV-COND-ENV																						
REPT EVT COM	RTRV-COND-EQPT																						
RTRV-ALM-<MOD2ALM>	RTRV-COND-RING																						
RTRV-ALM-BITS	RTRV-COND-SYNCN																						
RTRV-ALM-ENV																							
Input Format	<p>RTRV-ALM-ALL:[&lt;TID&gt;]::&lt;CTAG&gt;::[&lt;NTFCNCDE&gt;],[&lt;CONDITION&gt;], [&lt;SRVEFF&gt;][,.,,];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49. A null value is equivalent to ALL.</li> <li>• &lt;CONDITION&gt; is the type of alarm condition; valid values for &lt;CONDITION&gt; are shown in the “CONDITION” section on page 4-24. A null value is equivalent to ALL.</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56. A null value is equivalent to ALL.</li> </ul>																						
Input Example	RTRV-ALM-ALL:COTATI::229::MN,PWRRESTART,NSA;																						

Section	RTRV-ALM-ALL Description (continued)
Output Format	<pre>SID DATE TIME M CTAG COMPLD “[&lt;AID&gt;],[&lt;AIDTYPE&gt;]:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,,,,: [&lt;DESC&gt;],[&lt;AIDDET&gt;]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the “ALL” section on page 4-5, &lt;AID&gt; is optional</li> <li>• &lt;AIDTYPE&gt; is the type of access identifier; valid values for &lt;AIDTYPE&gt; are shown in the “MOD2B” section on page 4-45, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49</li> <li>• &lt;CONDTYPE&gt; is the single type of alarm condition being reported on this particular line; valid values are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> <li>• &lt;AIDDET&gt; is the supplementary equipment identification; &lt;AIDDET&gt; is a string and is optional</li> </ul> </pre>
Output Example	<pre>TID-000 1998-06-20 14:30:00 M 001 COMPLD “SLOT-2,EQPT:MN,PWRRESTART,NSA,,,,:\“POWER FAILRESTART\”, DS1-14” ; </pre>
Errors	This message generates all the default errors

### 3.5.83 RTRV-ALM-BITS: Retrieve Alarm Building Integrated Timing Supply

This command instructs the NE to retrieve and send the current status of its alarm conditions associated with the BITS facility. The alarm condition or severity retrieved is specified using the input parameters as a filter.

Section	RTRV-ALM-BITS Description
Category	Synchronization
Security	Retrieve

Section	RTRV-ALM-BITS Description (continued)
Related Messages	ED-BITS RTRV-ALM-ALL ED-NE-SYNCN RTRV-ALM-ENV ED-SYNCN RTRV-ALM-EQPT OPR-SYNCNSW RTRV-ALM-RING REPT ALM <MOD2ALM> RTRV-ALM-SYNCN REPT ALM BITS RTRV-BITS REPT ALM COM RTRV-COND-<MOD2ALM> REPT ALM ENV RTRV-COND-ALL REPT ALM EQPT RTRV-COND-BITS REPT ALM RING RTRV-COND-ENV REPT ALM SYNCN RTRV-COND-EQPT REPT EVT BITS RTRV-COND-RING REPT EVT COM RTRV-COND-SYNCN REPT EVT SYNCN RTRV-NE-SYNCN RLS-SYNCNSW RTRV-SYNCN RTRV-ALM-<MOD2ALM>
Input Format	RTRV-ALM-BITS:[<TID>]:<AID>:<CTAG>::[<NTFCNCDE>], [<CONDTYPE>],[<SRVEFF>][,..]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is an identifier that has an alarm condition and is from the AID “BITS” section on page 4-9; &lt;AID&gt; must not be null</li> <li>• &lt;NTFCNCDE&gt; is the 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49. A null value is equivalent to ALL.</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-ALM-BITS:ELVERANO:BITS-1:228::CR,LOS,SA;



Section	RTRV-ALM-BITS Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD “<AID>,[<AIDTYPE>]:<NTFCNCDE>,<CONDTYPE>,<SRVEFF>,.,.,: [<DESC>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the “BITS” section on page 4-9</li> <li>• &lt;AIDTYPE&gt; is the type of access identifier; valid values for &lt;AIDTYPE&gt; are shown in the “MOD2B” section on page 4-45 and &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “BITS-1,BITS:CR,LOS,SA,.,.,:\“LOSS OF SIGNAL\”,” ;
Errors	This message generates all the default errors

### 3.5.84 RTRV-ALM-ENV: Retrieve Alarm Environment

This command retrieves the environmental alarms.

Section	RTRV-ALM-ENV Description
Category	Environmental Alarms and Controls
Security	Retrieve
Related Messages	OPR-EXT-CONT RTRV-ALM-RING REPT ALM <MOD2ALM> RTRV-ALM-SYCN REPT ALM BITS RTRV-ATTR-CONT REPT ALM COM RTRV-ATTR-ENV REPT ALM ENV RTRV-COND-<MOD2ALM> REPT ALM EQPT RTRV-COND-ALL REPT ALM RING RTRV-COND-BITS REPT ALM SYCN RTRV-COND-ENV REPT EVT COM RTRV-COND-EQPT REPT EVT ENV RTRV-COND-RING RLS-EXT-CONT RTRV-COND-SYCN RTRV-ALM-<MOD2ALM> RTRV-EXT-CONT RTRV-ALM-ALL SET-ATTR-CONT RTRV-ALM-BITS SET-ATTR-ENV RTRV-ALM-EQPT

Section	RTRV-ALM-ENV Description (continued)
Input Format	<p>RTRV-ALM-ENV:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;NTFCNCDE&gt;],[&lt;ALMTYPE&gt;];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ENV” section on page 4-10; &lt;AID&gt; must not be null</li> </ul> <p><b>Note</b> For RTRV-ALM-ENV, only ENV-IN-{1-4} is a valid AID for ONS 15454 and only ENV-IN-{1-6} is a valid AID for ONS 15327. ENV-OUT-{1,6} is not a valid AID for RTRV-ALM-ENV.</p> <ul style="list-style-type: none"> <li>• &lt;NTFCNCDE&gt; is the notification; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49. A null value is equivalent to ALL.</li> <li>• &lt;ALMTYPE&gt; is the alarm type for the environmental alarm; valid values for &lt;ALMTYPE&gt; are shown in the “ENV_ALM” section on page 4-36. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-ALM-ENV:CISCO:ENV-IN-1:123::MJ,OPENDR;
Output Format	<p>SID DATE TIME M CTAG COMPLD “&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;ALMTYPE&gt;,,,[&lt;DESC&gt;]” ;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ENV” section on page 4-10</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49</li> <li>• &lt;ALMTYPE&gt; is the alarm type for the environmental alarm; valid values for &lt;ALMTYPE&gt; are shown in the “ENV_ALM” section on page 4-36</li> <li>• &lt;DESC&gt; is the alarm message; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00 M 001 COMPLD “ENV-IN-1:MJ,OPENDR,,,\“OPEN DOOR\”” ;</p>
Errors	This message generates all the default errors

## 3.5.85 RTRV-ALM-EQPT: Retrieve Alarm Equipment

This command instructs the NE to retrieve and send the current status of its alarm conditions associated with the equipment units. The alarm condition or severity to be retrieved is specified using the input parameters as a filter.

Section	RTRV-ALM-EQPT Description
Category	Equipment
Security	Retrieve
Related Messages	ALW-SWDX-EQPT RTRV-ALM-<MOD2ALM> ALW-SWTOPROTN-EQPT RTRV-ALM-ALL ALW-SWTOWKG-EQPT RTRV-ALM-BITS DLT-EQPT RTRV-ALM-ENV ED-EQPT RTRV-ALM-RING ENT-EQPT RTRV-ALM-SYNCN INH-SWDX-EQPT RTRV-COND-<MOD2ALM> INH-SWTOPROTN-EQPT RTRV-COND-ALL INH-SWTOWKG-EQPT RTRV-COND-BITS REPT ALM <MOD2ALM> RTRV-COND-ENV REPT ALM BITS RTRV-COND-EQPT REPT ALM COM RTRV-COND-RING REPT ALM ENV RTRV-COND-SYNCN REPT ALM EQPT RTRV-EQPT REPT ALM RING SW-DX-EQPT REPT ALM SYNCN SW-TOPROTN-EQPT REPT ALM COM SW-TOWKG-EQPT REPT EVT EQPT
Input Format	RTRV-ALM-EQPT:[<TID>]:<AID>:<CTAG>::[<NTFCNCDE>],[<CONDTYPE>], [<SRVEFF>][,,,]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the “EQPT” section on page 4-11; &lt;AID&gt; must not be null</li> <li>• &lt;NTFCNCDE&gt; is the 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49. A null value is equivalent to ALL.</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-24. A null value is equivalent to ALL.</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-ALM-EQPT:TWOROCK:SLOT-7:227::MJ,HITEMP,NSA;

Section	RTRV-ALM-EQPT Description (continued)
Output Format	<p>SID DATE TIME  M CTAG COMPLD  “[&lt;AID&gt;],[&lt;AIDTYPE&gt;]:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,,:  [&lt;DESC&gt;]”  ;  where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the “EQPT” section on page 4-11; &lt;AID&gt; is optional</li> <li>• valid values for &lt;AIDTYPE&gt; are shown in the “MOD2B” section on page 4-45; &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00  M 001 COMPLD  “SLOT-7,EQPT:MJ,HITEMP,NSA,,,:\\“HI TEMPERATURE\\”,”  ;</p>
Errors	This message generates all the default errors

### 3.5.86 RTRV-ALM-RING: Retrieve Alarm Ring

This command instructs the NE to retrieve and send the current status of all active alarm conditions against a ring object for BLSR. The alarm condition or severity to be retrieved can be specified by using the input parameters as a filter.

Section	RTRV-ALM-RING Description	
Category	BLSR	
Security	Retrieve	
Related Messages	ED-BLSR REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT ALM RING REPT ALM SYNCN REPT EVT COM REPT EVT RING RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL	RTRV-ALM-BITS RTRV-ALM-ENV RTRV-ALM-EQPT RTRV-ALM-SYNCN RTRV-BLSR RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-BITS RTRV-COND-ENV RTRV-COND-EQPT RTRV-COND-RING RTRV-COND-SYNCN

Section	RTRV-ALM-RING Description (continued)
Input Format	<p>RTRV-ALM-RING:[&lt;TID&gt;]:[&lt;AID&gt;]:&lt;CTAG&gt;::[&lt;NTFCNCDE&gt;], [&lt;CONDITION&gt;],[&lt;SRVEFF&gt;][,,,];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies a BLSR ID with alarm condition; &lt;AID&gt; is a string and a null value is equivalent to ALL.</li> <li>• &lt;NTFCNCDE&gt; is a notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49 and a null value is equivalent ALL.</li> <li>• &lt;CONDITION&gt; indicates a BLSR alarm condition; valid values for &lt;CONDITION&gt; are shown in the “CONDITION” section on page 4-24 and a null value is equivalent to ALL.</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56 and a null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-ALM-RING:CISCO:RING-999:123::MJ,PRC-DUPID,SA;
Output Format	<p>SID DATE TIME M CTAG COMPLD “&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,,,,:[&lt;DESC&gt;]” ; where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies a BLSR ID with alarm condition and is from the “ALL” section on page 4-5</li> <li>• &lt;NTFCNCDE&gt; is a notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49</li> <li>• &lt;CONDTYPE&gt; indicates a BLSR alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56</li> <li>• &lt;DESC&gt; is a condition description; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00 M 001 COMPLD “RING-999:MJ,PRC-DUPID,SA,,,,;\“DUPLICATE NODE ID\”,” ;</p>
Errors	This message generates all the default errors

### 3.5.87 RTRV-ALM-SYNCN: Retrieve Alarm Synchronization

This command instructs the NE to retrieve and send the current status of its alarm conditions associated with a synchronization facility. The alarm condition or severity to be retrieved can be specified by using the input parameters as a filter.

Section	RTRV-ALM-SYNCN Description
Category	Synchronization
Security	Retrieve
Related Messages	ED-BITS RTRV-ALM-ALL ED-NE-SYNCN RTRV-ALM-BITS ED-SYNCN RTRV-ALM-ENV OPR-SYNCNSW RTRV-ALM-EQPT REPT ALM <MOD2ALM> RTRV-ALM-RING REPT ALM BITS RTRV-BITS REPT ALM COM RTRV-COND-<MOD2ALM> REPT ALM ENV RTRV-COND-ALL REPT ALM EQPT RTRV-COND-BITS REPT ALM RING RTRV-COND-ENV REPT ALM SYNCN RTRV-COND-EQPT REPT EVT BITS RTRV-COND-RING REPT EVT COM RTRV-COND-SYNCN REPT EVT SYNCN RTRV-NE-SYNCN RLS-SYNCNSW RTRV-SYNCN RTRV-ALM-<MOD2ALM>
Input Format	RTRV-ALM-SYNCN:[<TID>]:<AID>:<CTAG>::[<NTFCNCDE>], [<CONDTYPE>],[<SRVEFF>][,.,,]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the access identifier from the “SYN” section on page 4-14, &lt;AID&gt; is listable and must not be null</li> <li>• &lt;NTFCNCDE&gt; is the 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49. A null value is equivalent to ALL.</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-24. A null value is equivalent to ALL.</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-ALM-SYNCN:FULTON:SYNC-NE:226::CR,FAILTOSW,SA;

Section	RTRV-ALM-SYNCN Description (continued)
Output Format	<pre>SID DATE TIME M CTAG COMPLD "&lt;AID&gt;,[&lt;AIDTYPE&gt;]:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,.,.,: [&lt;DESC&gt;]" ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the "SYN" section on page 4-14</li> <li>• &lt;AIDTYPE&gt; is the type of access identifier: valid values for &lt;AIDTYPE&gt; are shown in the "MOD2B" section on page 4-45 and &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the "NOTIF_CODE" section on page 4-49</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the "CONDITION" section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the "SERV_EFF" section on page 4-56</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul> </pre>
Example	<pre>TID-000 1998-06-20 14:30:00 M 001 COMPLD "SYNC-NE,SYNCN:CR,FAILTOSW,SA,.,.,:\`FAILURE TO SWITCH TO PROTECTION\`", ; </pre>
Errors	This message generates all the default errors

### 3.5.88 RTRV-ATTR-CONT: Retrieve Attribute Control

This command instructs the NE to send the attributes associated with an external control. These attributes are used when an external control is operated or released. To set these attributes, use the SET-ATTR-CONT command.

Section	RTRV-ATTR-CONT Description	
Category	Environmental Alarms and Controls	
Security	Retrieve	
Related Messages	OPR-EXT-CONT	RTRV-ATTR-ENV
	REPT ALM ENV	RTRV-COND-ENV
	REPT EVT ENV	RTRV-EXT-CONT
	RLS-EXT-CONT	SET-ATTR-CONT
	RTRV-ALM-ENV	SET-ATTR-ENV

Section	RTRV-ATTR-CONT Description (continued)
Input Format	RTRV-ATTR-CONT:[<TID>]:<AID>:<CTAG>[:<CONTTYPER>]; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; identifies the external control for which attributes are being set; &lt;AID&gt; is from the “ENV” section on page 4-10 and must not be null</li> <li>&lt;CONTTYPER&gt; is the type of external control; valid values for &lt;CONTTYPER&gt; are shown in the “CONTTYPER” section on page 4-34. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-ATTR-CONT:CISCO:ENV-OUT-2:123::AIRCOND;
Output Format	SID DATE TIME M CTAG COMPLD “<AID>:[<CONTTYPER>]” ; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; identifies the external control for which attributes are being set and is from the “ENV” section on page 4-10</li> <li>&lt;CONTTYPER&gt; is the type of external control; valid values for &lt;CONTTYPER&gt; are shown in the “CONTTYPER” section on page 4-34 and &lt;CONTTYPER&gt; is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “ENV-OUT-2:AIRCOND” ;
Errors	This message generates all the default errors

### 3.5.89 RTRV-ATTR-ENV: Retrieve Attribute Environment

This command retrieves the attributes associated with an environmental alarm.

Section	RTRV-ATTR-ENV Description	
Category	Environmental Alarms and Controls	
Security	Retrieve	
Related Messages	OPR-EXT-CONT REPT ALM ENV REPT EVT ENV RLS-EXT-CONT RTRV-ALM-ENV	RTRV-ATTR-CONT RTRV-COND-ENV RTRV-EXT-CONT SET-ATTR-CONT SET-ATTR-ENV



Section	RTRV-ATTR-ENV Description (continued)
Input Format	<p>RTRV-ATTR-ENV:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;NTFCNCDE&gt;],[&lt;ALMTYPE&gt;];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ENV” section on page 4-10 and must not be null</li> <li>• &lt;NTFCNCDE&gt; is the notification code for the environmental alarm; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49. A null value is equivalent to ALL.</li> <li>• &lt;ALMTYPE&gt; is the alarm type for the environmental alarm; valid values for &lt;ALMTYPE&gt; are shown in the “ENV_ALM” section on page 4-36. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-ATTR-ENV:CISCO:ENV-IN-1:123::MJ,OPENDR;
Output Format	<p>SID DATE TIME M CTAG COMPLD “&lt;AID&gt;:[&lt;NTFCNCDE&gt;],[&lt;ALMTYPE&gt;],[&lt;DESC&gt;]” ;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ENV” section on page 4-10</li> <li>• &lt;NTFCNCDE&gt; is the notification code for the environmental alarm; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49, &lt;NTFCNCDE&gt; is optional</li> <li>• &lt;ALMTYPE&gt; is the alarm type for the environmental alarm; valid values for &lt;ALMTYPE&gt; are shown in the “ENV_ALM” section on page 4-36, &lt;ALMTYPE&gt; is optional</li> <li>• &lt;DESC&gt; is the alarm description; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00 M 001 COMPLD “ENV-IN-1:MJ,OPENDR,\“OPEN DOOR\”” ;</p>
Errors	This message generates all the default errors

### 3.5.90 RTRV-BITS: Retrieve Building Integrated Timing Supply

This command retrieves the BITS configuration command.

Section	RTRV-BITS Description
Category	Synchronization
Security	Retrieve
Related Messages	ED-BITS ED-NE-SYNCN ED-SYNCN OPR-SYNCNSW REPT ALM BITS REPT ALM SYNCN REPT EVT BITS REPT EVT SYNCN RLS-SYNCNSW RTRV-ALM-BITS RTRV-ALM-SYNCN RTRV-COND-BITS RTRV-COND-SYNCN RTRV-NE-SYNCN RTRV-SYNCN
Input Format	RTRV-BITS:[<TID>]:<AID>:<CTAG>[:::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the bit access identifier from the “BITS” section on page 4-9 and must not be null</li> </ul>
Input Example	RTRV-BITS:SONOMA:BITS-1:782;
Output Format	SID DATE TIME M CTAG COMPLD “<AID>::[LINECDE=<LINECDE>],[FMT=<FMT>],[LBO=<LBO>],[ [SYNCMSG=<SYNCMSG>],[AISTRSHLD=<AISTRSHLD>]:[<PST>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is an access identifier from the “BITS” section on page 4-9</li> <li>• &lt;LINECDE&gt; is a line code; valid values for &lt;LINECDE&gt; are shown in the “LINE_CODE” section on page 4-42, &lt;LINECDE&gt; is optional</li> <li>• &lt;FMT&gt; is a frame format; valid values for &lt;FMT&gt; are shown in the “FRAME_FORMAT” section on page 4-41, &lt;FMT&gt; is optional</li> <li>• &lt;LBO&gt; indicates BITS line build-out; valid values for &lt;LBO&gt; are shown in the “BITS_LineBuildOut” section on page 4-22, &lt;LBO&gt; is optional</li> <li>• &lt;SYNCMSG&gt; indicates a sync messaging; &lt;SYNCMSG&gt; defaults to (Y) and valid values are shown in the “ON_OFF” section on page 4-51, &lt;SYNCMSG&gt; is optional</li> <li>• &lt;AISTRSHLD&gt; is the AIS threshold. Valid values for &lt;AISTRSHLD&gt; are shown in the “SYNC_CLOCK_REF_QUALITY_LEVEL” section on page 4-60; &lt;AISTRSHLD&gt; is optional</li> <li>• &lt;PST&gt; is the state; valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53, &lt;PST&gt; is optional</li> </ul>

Section	RTRV-BITS Description (continued)
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “BITS-1::LINECDE=AMI,FMT=ESF,LBO=0-133,SYNCSMSG=Y, AISTHRSHLD=PRS:IS” ;
Errors	This message generates all the default errors

### 3.5.91 RTRV-BLSR: Retrieve Bidirectional Line Switched Ring

This command retrieves the BLSR information of the NE. A two-fiber or four-fiber BLSR can be retrieved.

Output examples:

4F BLSR

```
“BLSR-43::RINGID=43,NODEID=3,MODE=4F,RVRTV=Y,RVTM=5.0,SRVRTV=Y,SRVTM=5.0,
EASTWORK=FAC-5-1,WESTWORK=FAC-6-1,EASTPROT=FAC-12-1,WESTPROT=FAC-13-1”
```

2F BLSR

```
“BLSR-12::RINGID=12,NODEID=2,MODE=2F,RVRTV=Y,RVTM=5.0,EASTWORK=FAC-5-1,
WESTWORK=FAC-6-1”
```

Error conditions:

1. Only ALL, null, or single “BLSR-#” in the AID in is allowed in this command.
2. A null AID defaults to the AID ALL.
3. If the system fails on getting IOR, a SDBE (Status, Internal Data Base Error) error message will be returned.
4. If the NE does not have BLSR, the TL1 session will return the COMPLD error message with empty information to the user.

Section	RTRV-BLSR Description
Category	BLSR
Security	Retrieve
Related Messages	ED-BLSR REPT ALM RING REPT EVT RING RTRV-ALM-RING RTRV-COND-RING
Input Format	RTRV-BLSR:[<TID>]:[<AID>]:<CTAG>[:::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the BLSR of the NE. Only ALL, NULL, or single “BLSR-#” in &lt;AID&gt; is allowed; &lt;AID&gt; is from the “BLSR” section on page 4-9. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-BLSR:PETALUMA:ALL:123;

Section	RTRV-BLSR Description (continued)
Output Format	<p>SID DATE TIME M CTAG COMPLD “[&lt;AID&gt;]:[RINGID=&lt;RINGID&gt;],[NODEID=&lt;NODEID&gt;],[MODE=&lt;MODE&gt;],[RVRTV=&lt;RVRTV&gt;],[RVTM=&lt;RVTM&gt;],[SRVRTV=&lt;SRVRTV&gt;],[SRVTM=&lt;SRVTM&gt;],[EASTWORK=&lt;EASTWORK&gt;],[WESTWORK=&lt;WESTWORK&gt;],[EASTPROT=&lt;EASTPROT&gt;],[WESTPROT=&lt;WESTPROT&gt;]” ; where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the BLSR of the NE and is from the “BLSR” section on page 4-9. &lt;AID&gt; is optional.</li> <li>• &lt;RINGID&gt; identifies the BLSR ID of the NE and ranges from 0 to 9999; &lt;RINGID&gt; is an integer and is optional</li> <li>• &lt;NODEID&gt; identifies the BLSR node ID of the NE and ranges from 0 to 31; &lt;NODEID&gt; is an integer and is optional</li> <li>• &lt;MODE&gt; identifies the BLSR mode and can be 2-fiber or 4-fiber; valid values for &lt;MODE&gt; are shown in the “BLSR_MODE” section on page 4-22</li> <li>• &lt;RVRTV&gt; identifies the revertive mode and valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51. &lt;RVRTV&gt; is optional.</li> <li>• &lt;RVTM&gt; identifies the revertive time and is not allowed to be set while &lt;RVRTV&gt; is N; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55 and &lt;RVTM&gt; is optional</li> <li>• &lt;SRVRTV&gt; identifies the span revertive mode; valid values for &lt;SRVRTV&gt; are shown in the “ON_OFF” section on page 4-51 and &lt;SRVRTV&gt; is optional</li> <li>• &lt;SRVTM&gt; identifies the span revertive time and is not allowed to be set while &lt;SRVRTV&gt; is N; valid values for &lt;SRVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55. &lt;SRVTM&gt; is optional.</li> <li>• &lt;EASTWORK&gt; identifies the east working facility and is the AID from the “FACILITY” section on page 4-11; &lt;EASTWORK&gt; is optional</li> <li>• &lt;WESTWORK&gt; identifies the west working facility and is the AID from the “FACILITY” section on page 4-11; &lt;WESTWORK&gt; is optional</li> <li>• &lt;EASTPROT&gt; identifies the east protecting facility and is the AID from the “FACILITY” section on page 4-11; &lt;EASTPROT&gt; is optional</li> <li>• &lt;WESTPROT&gt; identifies the west protecting facility and is the AID from the “FACILITY” section on page 4-11; &lt;WESTPROT&gt; is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00 M 001 COMPLD “BLSR-43::RINGID=43,NODEID=3,MODE=4F,RVRTV=Y,RVTM=5.0,SRVRTV=Y,SRVTM=5.0,EASTWORK=FAC-5-1,WESTWORK=FAC-6-1,EASTPROT=FAC-12-1,WESTPROT=FAC-13-1” ;</p>
Errors	This message generates all the default errors

### 3.5.92 RTRV-COND-<MOD2ALM>: Retrieve Condition (DS1, E100, E1000, EC1, G1000, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C, T1, T3, VT1)

(DS1, E1000, EC1, OC192, STS192C supported for ONS 15454 only.)

This command retrieves the current standing condition and state associated with an entity.

Section	RTRV-COND-<MOD2ALM> Description
Category	Fault
Security	Retrieve
Related Messages	REPT ALM <MOD2ALM>            RTRV-ALM-ENV REPT ALM BITS                    RTRV-ALM-EQPT REPT ALM COM                    RTRV-ALM-RING REPT ALM ENV                    RTRV-ALM-SYNCN REPT ALM EQPT                   RTRV-COND-ALL REPT ALM RING                   RTRV-COND-BITS REPT ALM SYNCN                 RTRV-COND-ENV REPT EVT COM                    RTRV-COND-EQPT RTRV-ALM-<MOD2ALM>            RTRV-COND-RING RTRV-ALM-ALL                    RTRV-COND-SYNCN RTRV-ALM-BITS
Input Format	RTRV-COND-<MOD2ALM>:[<TID>]:<AID>:<CTAG>::[<TYPEREQ>][,,,]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition; &lt;AID&gt; is from the “ALL” section on page 4-5 and must not be null</li> <li>• &lt;TYPEREQ&gt; is the type of condition to be retrieved; valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-COND-T3:TID:FAC-2-1:229::LOS;

Section	RTRV-COND-<MOD2ALM> Description (continued)
Output Format	<p>SID DATE TIME  M CTAG COMPLD  “&lt;AID&gt;,&lt;AIDTYPE&gt;[:&lt;NTFCNCDE&gt;],&lt;TYPEREQ&gt;,&lt;SRVEFF&gt;],,,,,  [&lt;DESC&gt;]”  ;  where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the “ALL” section on page 4-5</li> <li>• Valid values for &lt;AIDTYPE&gt; are shown in the “MOD2ALM” section on page 4-44, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49, &lt;NTFCNCDE&gt; is optional</li> <li>• &lt;TYPEREQ&gt; is the condition itself; valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56, &lt;SRVEFF&gt; is optional</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00  M 001 COMPLD  “FAC-2-1,T3:CR,LOS,SA,,,,,\"LOS OF SIGNAL\””  ;</p>
Errors	This message generates all the default errors

### 3.5.93 RTRV-COND-ALL: Retrieve Condition All

This command retrieves the current standing condition for all entities.

According to GR-833, the RTRV-COND-ALL command only reports EQPT, COM, and rr (T1, T3, OCN, EC1, STSN, VT1, and DS1) alarms.

To retrieve all the NE conditions, issue all of the following commands:

```
RTRV-COND-ALL
RTRV-COND-ENV
RTRV-COND-BITS
RTRV-COND-RING
RTRV-COND-SYNCN
```

RTRV-COND-ALL does not return all conditions that are returned by other, more specific RTRV-COND commands. Instead it returns a subset of those conditions. This is a requirement from section 6.2.1.8.4 of GR-253-CORE. The specific requirements are R6-288, R6-289 and R6-290. Section 6.2.1.8.4 states a retrieval that returns ALL conditions from a node (RTRV-COND-ALL) must omit any conditions that are “same root cause” as other raised conditions. The section also states any retrieval of a subset of the conditions from a node, regardless of how the subsetting occurs, should not omit these “same root cause” conditions. RTRV-COND-STSN, for example, must include “same root cause” conditions in the set it returns, while RTRV-COND-ALL must not.

Section	RTRV-COND-ALL Description																				
Category	Fault																				
Security	Retrieve																				
Related Messages	<table border="0"> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-ENV</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-ALM-RING</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-ALM-SYNCN</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>RTRV-ALM-ALL</td> <td>RTRV-COND-RING</td> </tr> <tr> <td>RTRV-ALM-BITS</td> <td>RTRV-COND-SYNCN</td> </tr> </table>	REPT ALM <MOD2ALM>	RTRV-ALM-ENV	REPT ALM BITS	RTRV-ALM-EQPT	REPT ALM COM	RTRV-ALM-RING	REPT ALM ENV	RTRV-ALM-SYNCN	REPT ALM EQPT	RTRV-COND-<MOD2ALM>	REPT ALM RING	RTRV-COND-BITS	REPT ALM SYNCN	RTRV-COND-ENV	RTRV-ALM-<MOD2ALM>	RTRV-COND-EQPT	RTRV-ALM-ALL	RTRV-COND-RING	RTRV-ALM-BITS	RTRV-COND-SYNCN
REPT ALM <MOD2ALM>	RTRV-ALM-ENV																				
REPT ALM BITS	RTRV-ALM-EQPT																				
REPT ALM COM	RTRV-ALM-RING																				
REPT ALM ENV	RTRV-ALM-SYNCN																				
REPT ALM EQPT	RTRV-COND-<MOD2ALM>																				
REPT ALM RING	RTRV-COND-BITS																				
REPT ALM SYNCN	RTRV-COND-ENV																				
RTRV-ALM-<MOD2ALM>	RTRV-COND-EQPT																				
RTRV-ALM-ALL	RTRV-COND-RING																				
RTRV-ALM-BITS	RTRV-COND-SYNCN																				
Input Format	<p>RTRV-COND-ALL:[&lt;TID&gt;]::&lt;CTAG&gt;::[&lt;TYPEREQ&gt;][,,,];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;TYPEREQ&gt; is the type of condition to be retrieved; valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24. A null value is equivalent to ALL.</li> </ul>																				
Input Example	RTRV-COND-ALL:TID::229::LOS;																				
Output Format	<p>SID DATE TIME</p> <p>M CTAG COMPLD</p> <p>“&lt;AID&gt;,[&lt;AIDTYPE&gt;]:[&lt;NTFCNCDE&gt;],&lt;TYPEREQ&gt;,[&lt;SRVEFF&gt;],,,,,</p> <p>[&lt;DESC&gt;]”</p> <p>;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition; &lt;AID&gt; is from the “ALL” section on page 4-5</li> <li>• &lt;AIDTYPE&gt; is the type of access identifier; valid values for &lt;AIDTYPE&gt; are shown in the “MOD2B” section on page 4-45, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49, &lt;NTFCNCDE&gt; is optional</li> <li>• &lt;TYPEREQ&gt; is the type of condition to be retrieved; valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56, &lt;SRVEFF&gt; is optional</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul>																				
Output Example	<p>TID-000 1998-06-20 14:30:00</p> <p>M 001 COMPLD</p> <p>“FAC-2-1,OC3:CR,LOS,SA,,,,,\“LOS OF SIGNAL\””</p> <p>;</p>																				
Errors	This message generates all the default errors																				

### 3.5.94 RTRV-COND-BITS: Retrieve Condition Building Integrated Timing Supply

This command retrieves the standing conditions on BITS.

Section	RTRV-COND-BITS Description
Category	Synchronization
Security	Retrieve
Related Messages	ED-BITS ED-NE-SYCN ED-SYCN OPR-SYCN OPR-SYCN REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT ALM RING REPT ALM SYCN REPT EVT BITS REPT EVT COM REPT EVT SYCN RLS-SYCN RTRV-ALM-<MOD2ALM>
	RTRV-ALM-ALL RTRV-ALM-BITS RTRV-ALM-ENV RTRV-ALM-EQPT RTRV-ALM-RING RTRV-ALM-SYCN RTRV-BITS RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-ENV RTRV-COND-EQPT RTRV-COND-RING RTRV-COND-SYCN RTRV-NE-SYCN RTRV-SYCN
Input Format	RTRV-COND-BITS:[<TID>]:<AID>:<CTAG>::[<TYPEREQ>][,,,]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “BITS” section on page 4-9 and must not be null</li> <li>• &lt;TYPEREQ&gt; is the type of condition to be retrieved; valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-COND-BITS:TID:BITS-1:229::LOS;



Section	RTRV-COND-BITS Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD “<AID>,[<AIDTYPE>]:[<NTFCNCDE>],<TYPEREQ>,[<SRVEFF>],,,,, [<DESC>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is an identifier that has an alarm condition and is from the “BITS” section on page 4-9</li> <li>• &lt;AIDTYPE&gt; is the type of AID. It is always reported as BITS; valid values for &lt;AIDTYPE&gt; are shown in the “MOD2B” section on page 4-45, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49, &lt;NTFCNCDE&gt; is optional</li> <li>• &lt;TYPEREQ&gt; is the type of condition to be retrieved; valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56, &lt;SRVEFF&gt; is optional</li> <li>• &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “BITS-1,BITS:CR,LOS,SA,,,,,\“LOS OF SIGNAL\”” ;
Errors	This message generates all the default errors

### 3.5.95 RTRV-COND-ENV: Retrieve Condition Environment

This command retrieves the environmental conditions.

Section	RTRV-COND-ENV Description																														
Category	Environmental Alarms and Controls																														
Security	Retrieve																														
Related Messages	<table border="0"> <tr> <td>OPR-EXT-CONT</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-RING</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-ALM-SYCN</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-ATTR-CONT</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-ATTR-ENV</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM SYCN</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT EVT COM</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>REPT EVT ENV</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>RLS-EXT-CONT</td> <td>RTRV-COND-RING</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td>RTRV-COND-SYCN</td> </tr> <tr> <td>RTRV-ALM-ALL</td> <td>RTRV-EXT-CONT</td> </tr> <tr> <td>RTRV-ALM-BITS</td> <td>SET-ATTR-CONT</td> </tr> <tr> <td>RTRV-ALM-ENV</td> <td>SET-ATTR-ENV</td> </tr> </table>	OPR-EXT-CONT	RTRV-ALM-EQPT	REPT ALM <MOD2ALM>	RTRV-ALM-RING	REPT ALM BITS	RTRV-ALM-SYCN	REPT ALM COM	RTRV-ATTR-CONT	REPT ALM ENV	RTRV-ATTR-ENV	REPT ALM EQPT	RTRV-COND-<MOD2ALM>	REPT ALM RING	RTRV-COND-ALL	REPT ALM SYCN	RTRV-COND-BITS	REPT EVT COM	RTRV-COND-EQPT	REPT EVT ENV	RTRV-COND-EQPT	RLS-EXT-CONT	RTRV-COND-RING	RTRV-ALM-<MOD2ALM>	RTRV-COND-SYCN	RTRV-ALM-ALL	RTRV-EXT-CONT	RTRV-ALM-BITS	SET-ATTR-CONT	RTRV-ALM-ENV	SET-ATTR-ENV
OPR-EXT-CONT	RTRV-ALM-EQPT																														
REPT ALM <MOD2ALM>	RTRV-ALM-RING																														
REPT ALM BITS	RTRV-ALM-SYCN																														
REPT ALM COM	RTRV-ATTR-CONT																														
REPT ALM ENV	RTRV-ATTR-ENV																														
REPT ALM EQPT	RTRV-COND-<MOD2ALM>																														
REPT ALM RING	RTRV-COND-ALL																														
REPT ALM SYCN	RTRV-COND-BITS																														
REPT EVT COM	RTRV-COND-EQPT																														
REPT EVT ENV	RTRV-COND-EQPT																														
RLS-EXT-CONT	RTRV-COND-RING																														
RTRV-ALM-<MOD2ALM>	RTRV-COND-SYCN																														
RTRV-ALM-ALL	RTRV-EXT-CONT																														
RTRV-ALM-BITS	SET-ATTR-CONT																														
RTRV-ALM-ENV	SET-ATTR-ENV																														
Input Format	<p>RTRV-COND-ENV:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;NTFCNCDE&gt;],[&lt;ALMTYPE&gt;] [,..];</p> <p>where:</p> <ul style="list-style-type: none"> <li>&lt;AID&gt; is the identifier from the “ENV” section on page 4-10 and must not be null</li> </ul> <p><b>Note</b> For RTRV-COND-ENV, only ENV-IN-{1-4} is a valid AID for ONS 15454 and only ENV-IN-{1-6} is a valid AID for ONS 15327. ENV-OUT-{1,6} is not a valid AID for RTRV-COND-ENV.</p> <ul style="list-style-type: none"> <li>&lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49. A null value is equivalent to ALL.</li> <li>&lt;ALMTYPE&gt; is the condition type for the environmental conditions; valid values for &lt;ALMTYPE&gt; are shown in the “ENV_ALM” section on page 4-36. A null value is equivalent to ALL.</li> </ul>																														
Input Example	RTRV-COND-ENV:CISCO:ENV-IN-1:123::MJ,OPENDR;																														

Section	RTRV-COND-ENV Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD “<AID>:<NTFCNCDE>,<ALMTYPE>,,,,,<DESC>” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier and is from the “ENV” section on page 4-10</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49</li> <li>• &lt;ALMTYPE&gt; is the alarm type for the environmental alarm; valid values for &lt;ENVALM&gt; are shown in the “ENV_ALM” section on page 4-36</li> <li>• &lt;DESC&gt; is the description of the condition; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “ENV-IN-1:MJ,OPENDR,,,,,\“OPEN DOOR\”” ;
Errors	This message generates all the default errors

### 3.5.96 RTRV-COND-EQPT: Retrieve Condition Equipment

This command retrieves the condition equipment.

Section	RTRV-COND-EQPT Description
Category	Equipment
Security	Retrieve
Related Messages	ALW-SWDX-EQPT RTRV-ALM-<MOD2ALM> ALW-SWTOPROTN-EQPT RTRV-ALM-ALL ALW-SWTOWKG-EQPT RTRV-ALM-BITS DLT-EQPT RTRV-ALM-ENV ED-EQPT RTRV-ALM-EQPT ENT-EQPT RTRV-ALM-RING INH-SWDX-EQPT RTRV-ALM-SYNCN INH-SWTOPROTN-EQPT RTRV-COND-<MOD2ALM> INH-SWTOWKG-EQPT RTRV-COND-ALL REPT ALM <MOD2ALM> RTRV-COND-BITS REPT ALM BITS RTRV-COND-ENV REPT ALM COM RTRV-COND-RING REPT ALM ENV RTRV-COND-SYNCN REPT ALM EQPT RTRV-EQPT REPT ALM RING SW-DX-EQPT REPT ALM SYNCN SW-TOPROTN-EQPT REPT EVT COM SW-TOWKG-EQPT REPT EVT EQPT

Section	RTRV-COND-EQPT Description (continued)
Input Format	RTRV-COND-EQPT:[<TID>]:<AID>:<CTAG>::[<TYPEREQ>][,,,]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is an identifier that has an alarm condition; &lt;AID&gt; is from the “EQPT” section on page 4-11 and must not be null</li> <li>• &lt;TYPEREQ&gt; is the type of condition to be retrieved; valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-COND-EQPT:TID:SLOT-1:229::LOS;
Output Format	SID DATE TIME M CTAG COMPLD “<AID>,[<AIDTYPE>]:[<NTFCNCDE>],<TYPEREQ>,[<SRVEFF>],,,,, [<DESC>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the “EQPT” section on page 4-11</li> <li>• &lt;AIDTYPE&gt; is the type of the AID. It is always reported as EQPT for the equipment condition; valid values for &lt;AIDTYPE&gt; are shown in the “MOD2B” section on page 4-45, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49, &lt;NTFCNCDE&gt; is optional</li> <li>• &lt;TYPEREQ&gt; is the type of condition to be retrieved; valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56, &lt;SRVEFF&gt; is optional</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “SLOT-1,EQPT:CR,LOS,SA,,,,,\"LOS OF SIGNAL\”” ;
Errors	This message generates all the default errors

## 3.5.97 RTRV-COND-RING: Retrieve Condition Ring

This command retrieves the current standing condition against a ring object for BLSR.



### Note

When a change is made to a BLSR, including creating a new circuit, the circuit will not have BLSR protection until after the BLSR-UPDATED message is received.

Section	RTRV-COND-RING Description																								
Category	BLSR																								
Security	Retrieve																								
Related Messages	<table border="0"> <tr> <td>ED-BLSR</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-ENV</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-ALM-RING</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-ALM-SYNCN</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-BLSR</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT EVT COM</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT EVT RING</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>RTRV-ALM-ALL</td> <td>RTRV-COND-SYNCN</td> </tr> </table>	ED-BLSR	RTRV-ALM-BITS	REPT ALM <MOD2ALM>	RTRV-ALM-ENV	REPT ALM BITS	RTRV-ALM-EQPT	REPT ALM COM	RTRV-ALM-RING	REPT ALM ENV	RTRV-ALM-SYNCN	REPT ALM EQPT	RTRV-BLSR	REPT ALM RING	RTRV-COND-<MOD2ALM>	REPT ALM SYNCN	RTRV-COND-ALL	REPT EVT COM	RTRV-COND-BITS	REPT EVT RING	RTRV-COND-ENV	RTRV-ALM-<MOD2ALM>	RTRV-COND-EQPT	RTRV-ALM-ALL	RTRV-COND-SYNCN
ED-BLSR	RTRV-ALM-BITS																								
REPT ALM <MOD2ALM>	RTRV-ALM-ENV																								
REPT ALM BITS	RTRV-ALM-EQPT																								
REPT ALM COM	RTRV-ALM-RING																								
REPT ALM ENV	RTRV-ALM-SYNCN																								
REPT ALM EQPT	RTRV-BLSR																								
REPT ALM RING	RTRV-COND-<MOD2ALM>																								
REPT ALM SYNCN	RTRV-COND-ALL																								
REPT EVT COM	RTRV-COND-BITS																								
REPT EVT RING	RTRV-COND-ENV																								
RTRV-ALM-<MOD2ALM>	RTRV-COND-EQPT																								
RTRV-ALM-ALL	RTRV-COND-SYNCN																								
Input Format	<p>RTRV-COND-RING:[&lt;TID&gt;]:[&lt;AID&gt;]:&lt;CTAG&gt;::[&lt;TYPEREQ&gt;][,.,,];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies a BLSR ID with alarm condition; &lt;AID&gt; is a string and a null value is equivalent to ALL</li> <li>• Valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24 and a null value is equivalent to ALL</li> </ul>																								
Input Example	RTRV-COND-RING:CISCO:RING-88:123::RING-MISMATCH;																								
Output Format	<p>SID DATE TIME</p> <p>M CTAG COMPLD</p> <p>“&lt;AID&gt;:[&lt;NTFCNCDE&gt;],&lt;TYPEREQ&gt;,[&lt;SRVEFF&gt;],,,,,[&lt;DESC&gt;]”</p> <p>;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies a BLSR ID with alarm condition and is a string</li> <li>• Valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49. &lt;NTFCNCDE&gt; is optional.</li> <li>• Valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56. &lt;SRVEFF&gt; is optional.</li> <li>• &lt;DESC&gt; is a string and is optional</li> </ul>																								

Section	RTRV-COND-RING Description (continued)
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “RING-88:MN,RING-MISMATCH,SA,,,,, \\“FAR END OF FIBER IS PROVISIONED WITH DIFFERENT RING ID\\”,” ;
Errors	This message generates all the default errors

### 3.5.98 RTRV-COND-SYNCN: Retrieve Condition Synchronization

This command retrieves the synchronization condition.

Section	RTRV-COND-SYNCN Description																																
Category	Synchronization																																
Security	Retrieve																																
Related Messages	<table border="0"> <tr> <td>ED-BITS</td> <td>RTRV-ALM-ALL</td> </tr> <tr> <td>ED-NE-SYNCN</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>ED-SYNCN</td> <td>RTRV-ALM-ENV</td> </tr> <tr> <td>OPR-SYNCNSW</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-RING</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-ALM-SYNCN</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-BITS</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT EVT BITS</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>REPT EVT COM</td> <td>RTRV-COND-RING</td> </tr> <tr> <td>REPT EVT SYNCN</td> <td>RTRV-NE-SYNCN</td> </tr> <tr> <td>RLS-SYNCNSW</td> <td>RTRV-SYNCN</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td></td> </tr> </table>	ED-BITS	RTRV-ALM-ALL	ED-NE-SYNCN	RTRV-ALM-BITS	ED-SYNCN	RTRV-ALM-ENV	OPR-SYNCNSW	RTRV-ALM-EQPT	REPT ALM <MOD2ALM>	RTRV-ALM-RING	REPT ALM BITS	RTRV-ALM-SYNCN	REPT ALM COM	RTRV-BITS	REPT ALM ENV	RTRV-COND-<MOD2ALM>	REPT ALM EQPT	RTRV-COND-ALL	REPT ALM RING	RTRV-COND-BITS	REPT ALM SYNCN	RTRV-COND-ENV	REPT EVT BITS	RTRV-COND-EQPT	REPT EVT COM	RTRV-COND-RING	REPT EVT SYNCN	RTRV-NE-SYNCN	RLS-SYNCNSW	RTRV-SYNCN	RTRV-ALM-<MOD2ALM>	
ED-BITS	RTRV-ALM-ALL																																
ED-NE-SYNCN	RTRV-ALM-BITS																																
ED-SYNCN	RTRV-ALM-ENV																																
OPR-SYNCNSW	RTRV-ALM-EQPT																																
REPT ALM <MOD2ALM>	RTRV-ALM-RING																																
REPT ALM BITS	RTRV-ALM-SYNCN																																
REPT ALM COM	RTRV-BITS																																
REPT ALM ENV	RTRV-COND-<MOD2ALM>																																
REPT ALM EQPT	RTRV-COND-ALL																																
REPT ALM RING	RTRV-COND-BITS																																
REPT ALM SYNCN	RTRV-COND-ENV																																
REPT EVT BITS	RTRV-COND-EQPT																																
REPT EVT COM	RTRV-COND-RING																																
REPT EVT SYNCN	RTRV-NE-SYNCN																																
RLS-SYNCNSW	RTRV-SYNCN																																
RTRV-ALM-<MOD2ALM>																																	
Input Format	<p>RTRV-COND-SYNCN:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;TYPEREQ&gt;][,.,,];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition; &lt;AID&gt; is from the “SYN” section on page 4-14 and must not be null</li> <li>• &lt;TYPEREQ&gt; is the type of condition to be retrieved; valid values are shown in the “CONDITION” section on page 4-24. A null value is equivalent to ALL.</li> </ul>																																
Input Example	RTRV-COND-SYNCN:TID:SYNC-NE:229::LOS;																																

Section	RTRV-COND-SYNCN Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD “<AID>,[<AIDTYPE>]:[<NTFCNCDE>],<TYPEREQ>,[<SRVEFF>],,,,, [<DESC>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the “SYN” section on page 4-14</li> <li>• &lt;AIDTYPE&gt; is the type of AID. It is always reported as SYNCN; valid values for &lt;AIDTYPE&gt; are shown in the “MOD2B” section on page 4-45, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49, &lt;NTFCNCDE&gt; is optional</li> <li>• &lt;TYPEREQ&gt; is the type of condition to be retrieved; valid values for &lt;TYPEREQ&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the effect on service caused by the alarm condition; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56, &lt;SRVEFF&gt; is optional</li> <li>• &lt;DESC&gt; is the condition description; &lt;DESC&gt; is a string and is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “SYNC-NE,SYNCN:MJ,FRNGSYNC,SA,,,,, \“FREE RUNNING SYNCHRONIZATION MODE\”” ;
Errors	This message generates all the default errors

### 3.5.99 RTRV-CRS-<STS\_PATH>: Retrieve Cross Connect (STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C)

(STS192C supported for ONS 15454 only)

This command retrieves any connections associated with the entered AID(s) or AID range. The information on both ends is returned along with the type of connection.

Notes:

1. The UPSR STS cross connection can be retrieved by using “&” in the AID fields of this command.

To retrieve a 1-way selector or 2-way selector and bridge cross connection with:

from points: f1, f2

to points: t1

the output will be:

1-way

“f1&f2,t1:CCT,STS3C”

2-way

If retrieved on point f1 or f2, the output format is the same as the 1-way output.

If retrieved on point t1, the output will be:

“t1,f1&f2:CCT,STS3C”

To retrieve a 1-way bridge or 2-way selector and bridge cross connection with:

from point: f1

to points: t1, t2

the output will be:

1-way

“f1,t1&t2:CCT,STS3C”

2-way

“t1&t2,f1:CCT,STS3C”

To retrieve a 1-way subtending UPSR connection or 2-way subtending UPSR cross connection with:

from point: f1, f2

to points: t1, t2

the output will be:

1-way:

“f1&f2,t1&t2:CCT,STS3C”

2-way:

If retrieved on point f1 or f2, the output format is the same as the 1-way output.

If retrieved on point t1 or t2, the output will be:

“t1&t2,f1&f2:CCT,STS3C”

To retrieve a 2-way selector and bridge cross connection with:

ENT-CRS-<STS\_PATH>::F1&F2,S1&S2:8::2WAY;

from points: f1, f2 (f1 is the working side, f2 is the protect side)

selector: s1, s2 (s1 is the working side, s2 is the protect side)

the output will be:

If retrieved on point f1 or f2, the output will be:

“f1&f2,s1&s2:CCT,STS3C”

If retrieved on selector s1 or s2, the output will be:

“s1&s2,f1&f2:CCT,STS3C”

2. All a&b AIDs in the TL1 cross connection command are in the format of WorkingAid&ProtectAid.
3. <STS\_PATH> does not include STS for the RTRV-CRS command because “STS” is not a standard designator as defined by GR-833 A-2.
4. Both the 1WAYPCA and 2WAYPCA is used to specify a PCA cross connection.
5. The facility AID is only valid on slots with a G1000-4 card.



Section	RTRV-CRS-<STS_PATH> Description
Category	Cross Connections
Security	Retrieve
Related Messages	DLT-CRS-<STS_PATH> DLT-CRS-VT1 ENT-CRS-<STS_PATH> ENT-CRS-VT1 RTRV-CRS-VT1
Input Format	RTRV-CRS-<STS_PATH>:[<TID>]:<AID>:<CTAG>[:::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies STS to check for connection membership. &lt;AID&gt; can be a Facility, STS, or ALL AID. The ALL AID defaults to NE which reports all the existing cross connections of the NE. The STS_PATH does not include STS for the RTRV-CRS command because STS is not a standard designator as defined by GR-833 A-2. &lt;AID&gt; is from the “CrossConnectID” section on page 4-7 and must not be null.</li> </ul>
Input Example	RTRV-CRS-ST3C:KENWOOD:STS-6-1:223;
Output Format	SID DATE TIME M CTAG COMPLD “<FROM>,<TO>:<CCT>,<LEVEL>” ; where: <ul style="list-style-type: none"> <li>• &lt;FROM&gt; identifies an entity at one end of the STS cross connection and is the AID from the “CrossConnectID” section on page 4-7</li> <li>• &lt;TO&gt; identifies an entity at the other end of the STS cross connection and is the AID from the “CrossConnectID” section on page 4-7</li> <li>• &lt;CCT&gt; identifies the cross connection type; valid values for &lt;CCT&gt; are shown in the “CCT” section on page 4-23</li> <li>• &lt;LEVEL&gt; indicates the rate of the cross connected channel; valid values for &lt;LEVEL&gt; are shown in the “STS_PATH” section on page 4-59</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “STS-6-1,STS-12-4:2WAY,STS3C” ;
Errors	This message generates all the default errors

## 3.5.100 RTRV-CRS-VT1: Retrieve Virtual Tributary Cross Connect

This command retrieves the VT cross-connection information.

Notes:

1. The UPSR VT cross connection can be retrieved by using “&” in the AID fields of this command.

To retrieve a 1-way selector or 2-way selector and bridge cross connection with:

from points: f1, f2

to points: t1

the output will be:

1-way:

“f1&f2,t1:CCT,1WAY”

2-way:

If retrieved on point f1 or f2, the output form is the same as the 1-way output.

If retrieved on T1, the output will be:

“t1,f1&f2:CCT”

To retrieve a 1-way bridge or 2-way selector and bridge cross connection with:

from point: f1

to points: t1, t2

the output will be:

1-way:

“f1,t1&t2:CCT,1WAY”

2-way:

“t1&t2,f1:CCT”

To retrieve a 1-way subtending UPSR connection or 2-way subtending UPSR cross connection with:

from point: f1, f2

to points: t1, t2

the output will be:

1-way:

“f1&f2,t1&t2:CCT,1WAY”

2-way:

If retrieved on point f1 or f2, the output format is the same as the 1-way output.

If retrieved on point t1 or t2, the output will be:

“t1&t2,f1&f2:CCT”

To retrieve a 2-way selector bridge cross connection with:

ENT-CRS-VT1::F1&F2,S1&S2:123::2WAY;

from points f1, f2 (f1 is the working side, f2 is the protect side)

selector: s1, s2 (s1 is the working side, s2 is the protect side)

the output will be:

If retrieved on point f1 or f2, the output will be:

“f1&f2,s1&s2:CCT”

If retrieved on selector s1 or s2, the output will be:

“s1&s2,f1&f2:CCT”

2. All a&b AIDs in the TL1 cross connection command are in the format of WorkingAid&ProtectAid
3. Both 1WAYPCA and 2WAYPCA is used to specify a PCA cross connection.

Section	RTRV-CRS-VT1 Description
Category	Cross Connections
Security	Retrieve
Related Messages	DLT-CRS-<STS_PATH> DLT-CRS-VT1 ENT-CRS-<STS_PATH> ENT-CRS-VT1 RTRV-CRS-<STS_PATH>
Input Format	RTRV-CRS-VT1:[<TID>]:<aid>:<CTAG>[:::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies VT to check for connection membership. &lt;AID&gt; can be Facility, VT or ALL. The ALL AID defaults to NE which reports all the existing cross connections of the NE. &lt;AID&gt; is from the “ALL” section on page 4-5 and must not be null.</li> </ul>
Input Example	RTRV-CRS-VT1:CISCO:VT1-1-1-1:1234;
Output Format	SID DATE TIME M CTAG COMPLD “<FROM>,<TO>:<CCT>” ; where: <ul style="list-style-type: none"> <li>• &lt;FROM&gt; indicates an identifier at one end of the VT cross connection and is the AID from the “VT1_5” section on page 4-17</li> <li>• &lt;TO&gt; indicates an identifier at the other end of the VT cross connection and is the AID from the “VT1_5” section on page 4-17</li> <li>• Valid values for &lt;CCT&gt; are shown in the “CCT” section on page 4-23</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “VT1-1-1-1-1,VT1-4-4-5-2:1WAY” ;
Errors	This message generates all the default errors

### 3.5.101 RTRV-DS1: Retrieve DS1 Layer of DS3XM

(Cisco ONS 15454 only)

This command retrieves the test access attributes on the DS3XM card at the DS1 layer.

Section	RTRV-DS1 Description
Category	Ports
Security	Retrieve
Related Messages	ED-<OCN_TYPE>                    RST-<MOD_PORT> ED-DS1                                RTRV-<OCN_TYPE> ED-EC1                                RTRV-EC1 ED-G1000                              RTRV-G1000 ED-T1                                 RTRV-T1 ED-T3                                 RTRV-T3 RMV-<MOD_PORT>
Input Format	RTRV-DS1:[<TID>]:<aid>:<CTAG>[:]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier of a DS1 layer entity on the DS3XM card; &lt;AID&gt; is from the “DS1” section on page 4-10 and must not be null</li> </ul>
Input Example	RTRV-DS1:PETALUMA:DS1-2-6-12:123;
Output Format	SID DATE TIME M CTAG COMPLD “<AID>::[TACC=<TACC>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “DS1” section on page 4-10</li> <li>• &lt;TACC&gt; defines the STS as a test access port with a selected unique TAP number. The TAP number ranges from 0–999; &lt;TACC&gt; is an integer and is optional.</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “DS1-2-6-12::TACC=8” ;
Errors	This message generates all the default errors

## 3.5.102 RTRV-EC1: Retrieve EC1

(Cisco ONS 15454 only)

This command retrieves the facility status of an EC1 card.

Section	RTRV-EC1 Description
Category	Ports
Security	Retrieve
Related Messages	ED-<OCN_TYPE>                      RST-<MOD_PORT> ED-DS1                                RTRV-<OCN_TYPE> ED-EC1                                RTRV-DS1 ED-G1000                             RTRV-G1000 ED-T1                                 RTRV-T1 ED-T3                                 RTRV-T3 RMV-<MOD_PORT>
Input Format	RTRV-EC1:[<TID>]:<aid>:<CTAG>[:::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is from the “FACILITY” section on page 4-11 and must not be null</li> </ul>
Input Example	RTRV-EC1:CISCO:FAC-1-1:1234;
Output Format	SID DATE TIME M CTAG COMPLD “<AID>::[PJMON=<PJMON>],[LBO=<LBO>],[RXEQUAL=<RXEQUAL>]: [<PST>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the facility AID of an EC1 port and is from the “FACILITY” section on page 4-11</li> <li>• &lt;PJMON&gt; is the SONET pointer monitor attribute of an EC1 port; &lt;PJMON&gt; is an integer and is optional</li> <li>• &lt;LBO&gt; is the line build-out value of an EC1 port; valid values for &lt;LBO&gt; are shown in the “E_LBO” section on page 4-36, &lt;LBO&gt; is optional</li> <li>• &lt;RXEQUAL&gt; is the Rx Equalization attribute of an EC1 port and is always in Y (enabled) state; valid values for &lt;RXEQUAL&gt; are shown in the “ON_OFF” section on page 4-51, &lt;RXEQUAL&gt; is optional</li> <li>• &lt;PST&gt; is the state of an EC1 port; valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53, &lt;PST&gt; is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “FAC-1-1::PJMON=0,LBO=0-225,RXEQUAL=Y:IS” ;
Errors	This message generates all the default errors

### 3.5.103 RTRV-EQPT: Retrieve Equipment

This command retrieves the data and state parameters associated with an equipment unit.

This command returns the PRTYPE, PROTID, RVTM and RVRTV parameters for a card inside of a protection group by the following scenario:

1. A working AID/card within a 1:1 protection group, the PRTYPE, PROTID, RVTM and RVRTV attributes will be displayed.
2. A protection AID/card within 1:1 protection group, the PRTYPE, RVTM and RVRTV attributes will be displayed.
3. A working AID/card within 1:N protection group, the PRTYPE, PROTID, RVTM and RVRTV=Y attributes will be displayed.
4. A protection AID/card within 1:1 protection group, the PRTYPE, RVTM and RVRTV=Y attributes will be displayed.
5. An unprotected AID/card, the AIDtype, equip (equip/unequip), status (act/standby), and state (IS/OOS).

Error conditions:

1. The equipment is not provisioned.

Section	RTRV-EQPT Description	
Category	Equipment	
Security	Retrieve	
Related Messages	ALW-SWDX-EQPT ALW-SWTOPROTN-EQPT ALW-SWTOWKG-EQPT DLT-EQPT ED-EQPT ENT-EQPT INH-SWDX-EQPT INH-SWTOPROTN-EQPT	INH-SWTOWKG-EQPT REPT ALM EQPT REPT EVT EQPT RTRV-ALM-EQPT RTRV-COND-EQPT SW-DX-EQPT SW-TOPROTN-EQPT SW-TOWKG-EQPT
Input Format	RTRV-EQPT:[<TID>]:<AID>:<CTAG>[::::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “EQPT” section on page 4-11 and must not be null.</li> </ul>	
Input Example	RTRV-EQPT:MIRABEL:SLOT-12:230;	

Section	RTRV-EQPT Description (continued)
Output Format	<p>SID DATE TIME M CTAG COMPLD “&lt;AID&gt;:&lt;AIDTYPE&gt;,&lt;EQUIP&gt;,[&lt;ROLE&gt;],[&lt;STATUS&gt;]: [PROTID=&lt;PROTID&gt;],[PRTYPE=&lt;PRTYPE&gt;],[RVRTV=&lt;RVRTV&gt;, [RVTM=&lt;RVTM&gt;],[CARDNAME=&lt;CARDNAME&gt;]:[&lt;PST&gt;]” ; where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the equipment unit identifier and is from the “EQPT” section on page 4-11</li> <li>• &lt;AIDTYPE&gt; is a string</li> <li>• &lt;EQUIP&gt; indicates if the equipment unit is physically present; valid values for &lt;EQUIP&gt; are shown in the “EQUIP” section on page 4-40</li> <li>• &lt;ROLE&gt; indicates if the card is the working unit or the protecting unit; valid values for &lt;ROLE&gt; are shown in the “SIDE” section on page 4-56, &lt;ROLE&gt; is optional</li> <li>• &lt;STATUS&gt; indicates the status. SONET card status is shown on it’s line/port level. Valid values for &lt;STATUS&gt; are shown in the “STATUS” section on page 4-57, &lt;STATUS&gt; is optional</li> <li>• &lt;PROTID&gt; indicates the protecting identifier; &lt;PROTID&gt; is the AID “PRSLOT” section on page 4-8 and is optional</li> <li>• &lt;PRTYPE&gt; indicates the protection type; valid values for &lt;PRTYPE&gt; are shown in the “PROTECTION_GROUP” section on page 4-53, &lt;PRTYPE&gt; is optional</li> <li>• &lt;RVRTV&gt; indicates the revertive mode; valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51, &lt;RVRTV&gt; is optional</li> <li>• &lt;RVTM&gt; indicates the revertive time; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55, &lt;RVTM&gt; is optional</li> <li>• &lt;CARDNAME&gt; indicates the card name from the hardware. It will be empty for the preprovisioned card; &lt;CARDNAME&gt; is a string and is optional</li> <li>• &lt;PST&gt; indicates the state; valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53, &lt;PST&gt; is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00 M 001 COMPLD “SLOT-12:DS1,EQUIP,,ACT:PROTID=SLOT-13,PRTYPE=1-1, RVRTV=Y,RVTM=8.5,CARDNAME=DESCRIPTION:IS” ;</p>
Errors	This message generates all the default errors

### 3.5.104 RTRV-EXT-CONT: Retrieve External Control

This command instructs the NE to report the control state of an external control. The command can be used to audit the result of an OPR-EXT-CONT or a RLS-EXT-CONT command.

Notes:

1. If the CONTTYPE is null, the existing conttype on this AID will be returned.
2. The duration is not supported, it defaults to CONTS.

Section	RTRV-EXT-CONT Description										
Category	Environmental Alarms and Controls										
Security	Retrieve										
Related Messages	<table> <tr> <td>OPR-EXT-CONT</td> <td>RTRV-ATTR-CONT</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-ATTR-ENV</td> </tr> <tr> <td>REPT EVT ENV</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>RLS-EXT-CONT</td> <td>SET-ATTR-CONT</td> </tr> <tr> <td>RTRV-ALM-ENV</td> <td>SET-ATTR-ENV</td> </tr> </table>	OPR-EXT-CONT	RTRV-ATTR-CONT	REPT ALM ENV	RTRV-ATTR-ENV	REPT EVT ENV	RTRV-COND-ENV	RLS-EXT-CONT	SET-ATTR-CONT	RTRV-ALM-ENV	SET-ATTR-ENV
OPR-EXT-CONT	RTRV-ATTR-CONT										
REPT ALM ENV	RTRV-ATTR-ENV										
REPT EVT ENV	RTRV-COND-ENV										
RLS-EXT-CONT	SET-ATTR-CONT										
RTRV-ALM-ENV	SET-ATTR-ENV										
Input Format	<p>RTRV-EXT-CONT:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;[:&lt;CONTTYPE&gt;];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ENV” section on page 4-10 and must not be null.</li> </ul> <p><b>Note</b> For ONS 15327, only ENV-OUT-{1-2} is a valid AID for RTRV-EXT-CONT.</p> <p><b>Note</b> For ONS 15454, only ENV-OUT-{1-4} and ENV-OUT-ALL are valid AIDs for RTRV-EXT-CONT.</p> <ul style="list-style-type: none"> <li>• &lt;CONTTYPE&gt; is from the “CONTTYPE” section on page 4-34. A null value is equivalent to ALL.</li> </ul>										
Input Example	RTRV-EXT-CONT:CISCO:ENV-OUT-2:123::AIRCOND;										
Output Format	<p>SID DATE TIME</p> <p>M CTAG COMPLD</p> <p>“&lt;AID&gt;:[&lt;CONTTYPE&gt;],&lt;DUR&gt;,[&lt;CONTSTATE&gt;]”</p> <p>;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the external control for which control state is being retrieved and is from the “ENV” section on page 4-10</li> <li>• &lt;CONTTYPE&gt; is the type of control for which control state is being retrieved; valid values for &lt;CONTTYPE&gt; are shown in the “CONTTYPE” section on page 4-34, &lt;CONTTYPE&gt; is optional</li> <li>• &lt;DUR&gt; is the duration for which the external control can be operated; valid values for &lt;DUR&gt; are shown in the “DURATION” section on page 4-36</li> <li>• &lt;CONTSTATE&gt; is the control of the external control; valid values for &lt;CONTSTATE&gt; are shown in the “CONT_MODE” section on page 4-34, &lt;CONTSTATE&gt; is optional</li> </ul>										



Section	RTRV-EXT-CONT Description (continued)
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “ENV-OUT-2:AIRCOND,CONTS,OPEN” ;
Errors	This message generates all the default errors

### 3.5.105 RTRV-FFP-<OCN\_TYPE>: Retrieve Facility Protection Group (OC3, OC12, OC48, OC192)

(OC192 supported for ONS 15454 only)

This command retrieves the optical facility protection information.

Section	RTRV-FFP-<OCN_TYPE> Description
Category	SONET Line Protection
Security	Retrieve
Related Messages	DLT-FFP-<OCN_TYPE> ED-FFP-<OCN_TYPE> ENT-FFP-<OCN_TYPE> EX-SW-<OCN_BLSR> OPR-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<OCN_TYPE>
Input Format	RTRV-FFP-<OCN_TYPE>:[<TID>]:<AID>:<CTAG>[:::]; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; is the optical facility AID from the “FACILITY” section on page 4-11 and must not be null</li> </ul>
Input Example	RTRV-FFP-OC3:PETALUMA:FAC-1-1:1;

Section	RTRV-FFP-<OCN_TYPE> Description (continued)
Output Format	<p>SID DATE TIME M CTAG COMPLD “&lt;WORK&gt;,&lt;PROTECT&gt;::[PROTID=&lt;PROTID&gt;],[RVRTV=&lt;RVRTV&gt;, [RVTM=&lt;RVTM&gt;],[PSDIRN=&lt;PSDIRN&gt;]” ; where:</p> <ul style="list-style-type: none"> <li>• &lt;WORK&gt; identifies the working port and is the AID from the “FACILITY” section on page 4-11</li> <li>• &lt;PROTECT&gt; identifies the protection port and is the AID from the “FACILITY” section on page 4-11</li> <li>• &lt;PROTID&gt; is the protection group identifier (protection group name). It defaults to the protecting port of the protection group; &lt;PROTID&gt; is a string, it is optional and can have a maximum length of 32 characters</li> <li>• &lt;RVRTV&gt; identifies the revertive mode and defaults to N (non-revertive mode); valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51, &lt;RVRTV&gt; is optional</li> <li>• &lt;RVTM&gt; identifies the revertive time and defaults to 5.0 minutes; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55, &lt;RVTM&gt; is optional</li> <li>• &lt;PSDIRN&gt; indicates the switch mode and defaults to UNI. valid values for &lt;PSDIRN&gt; are shown in the “UNI_BI” section on page 4-64, &lt;PSDIRN&gt; is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00 M 001 COMPLD “FAC-2-1,FAC-1-1::PROTID=PROT_NAME,RVRTV=Y,RVTM=1.0, PSDIRN=BI” ;</p>
Errors	This message generates all the default errors

## 3.5.106 RTRV-G1000: Retrieve G1000 Facility

(Cisco ONS 15454 only)

This command retrieves the G1000 facilities configuration.

Section	RTRV-G1000 Description
Category	Ports
Security	Retrieve
Related Messages	ED-<OCN_TYPE>                    RST-<MOD_PORT> ED-DS1                            RTRV_<OCN_TYPE> ED-EC1                            RTRV-DS1 ED-G1000                         RTRV-EC1 ED-T1                             RTRV-T1 ED-T3                             RTRV-T3 RMV-<MOD_PORT>
Input Format	RTRV-G1000:[<TID>]:<AID>:<CTAG>; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is from the “FACILITY” section on page 4-11 and must not be null</li> </ul>
Input Example	RTRV-G1000:TID:FAC-1-1:CTAG;
Output Format	SID DATE TIME M CTAG COMPLD “<AID>::[MFS=<MFS>],[FLOW=<FLOW>],[LAN=<LAN>], [OPTICS=<OPTICS>]:[<PST>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is from the “FACILITY” section on page 4-11</li> <li>• Valid values for &lt;MFS&gt; are shown in the “MFS_TYPE” section on page 4-43; &lt;MFS&gt; is optional</li> <li>• Valid values for &lt;FLOW&gt; are shown in the “ON_OFF” section on page 4-51; &lt;FLOW&gt; is optional</li> <li>• Valid values for &lt;LAN&gt; are shown in the “FLOW” section on page 4-41; &lt;LAN&gt; is optional</li> <li>• Valid values for &lt;OPTICS&gt; are shown in the “OPTICS” section on page 4-51; &lt;OPTICS&gt; is optional</li> <li>• Valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53; &lt;PST&gt; is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “FAC-1-1::MFS=9032,FLOW=N,LAN=ASYMMETRIC, OPTICS=UNKNOWN:OOS” ;
Errors	This message generates all the default errors

### 3.5.107 RTRV-HDR: Retrieve Header

This command instructs the NE to return the header of a TL1 response message. Used by TL1 clients to determine if the link to the NE is still active and if the NE is responding to commands.

Section	RTRV-HDR Description	
Category	System	
Security	Retrieve	
Related Messages	ALW-MSG-ALL ED-DAT ED-NE-GEN ED-NE-SYNCN INH-MSG-ALL INIT-SYS	RTRV-INV RTRV-NE-GEN RTRV-NE-IPMAP RTRV-NE-SYNCN RTRV-TOD SET-TOD
Input Format	RTRV-HDR:[<TID>]::<CTAG>;	
Input Example	RTRV-HDR:SONOMA::232;	
Errors	This message generates all the default errors	

### 3.5.108 RTRV-INV: Retrieve Inventory

This command queries the NE and returns a listing of the equipment inventory. For each unit in the system, it identifies the unit's firmware numbers and the unit's CLEI code.

Section	RTRV-INV Description	
Category	System	
Security	Retrieve	
Related Messages	ALW-MSG-ALL ED-DAT ED-NE-GEN ED-NE-SYNCN INH-MSG-ALL INIT-SYS	RTRV-HDR RTRV-NE-GEN RTRV-NE-IPMAP RTRV-NE-SYNCN RTRV-TOD SET-TOD
Input Format	RTRV-INV:[<TID>]:<AID>:<CTAG>[:::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the "EQPT" section on page 4-11 and must not be null</li> </ul>	
Input Example	RTRV-INV:OCCIDENTAL:SLOT-15:301;	

Section	RTRV-INV Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD “<AID>,<AIDTYPE>::[PN=<PN>],[HWREV=<HWREV>, [FWREV=<FWREV>],[SN=<SN>],[CLEI=<CLEI>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “EQPT” section on page 4-11</li> <li>• &lt;AIDTYPE&gt; specifies the type of AID and is a string</li> <li>• &lt;PN&gt; is the HW part number; &lt;PN&gt; is a string and is optional</li> <li>• &lt;HWREV&gt; is the HW Rev; &lt;HWREV&gt; is a string and is optional</li> <li>• &lt;FWREV&gt; is the firmware Rev; &lt;FWREV&gt; is a string and is optional</li> <li>• &lt;SN&gt; is the serial number; &lt;SN&gt; is a string and is optional</li> <li>• &lt;CLEI&gt; is a string and is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “SLOT-15,OC3-IR-4::PN=87-31-00002,HWREV=004K, FWREV=76-99-00009-004A,SN=013510,CLEI=NOCLEI” ;
Errors	This message generates all the default errors

### 3.5.109 RTRV-LOG: Retrieve Log

This command retrieves the alarm log of the NE.



#### Note

The only option reported for LOGNM is ALARM.

Section	RTRV-LOG Description
Category	Log
Security	Superuser
Related Messages	ALW-MSG-DBCHG INH-MSG-DBCHG REPT DBCHG
Input Format	RTRV-LOG:[<TID>]::<CTAG>::<LOGNM>; where: <ul style="list-style-type: none"> <li>• &lt;LOGNM&gt; is the log name - ALARM; &lt;LOGNM&gt; is a string and must not be null</li> </ul>
Input Example	RTRV-LOG:CISCO::123::ALARM;

Section	RTRV-LOG Description (continued)
Output Format	<p data-bbox="537 260 748 289">SID DATE TIME</p> <p data-bbox="537 291 764 321">M CTAG COMPLD</p> <p data-bbox="537 323 1243 447">“&lt;AID&gt;,&lt;ALMNUMBER&gt;:CURRENT=&lt;CURRENT&gt;, [PREVIOUS=&lt;PREVIOUS&gt;,&lt;CONDITION&gt;,&lt;SRVEFF&gt;, [TIME=&lt;OCRTIME&gt;],[DATE=&lt;OCRDAT&gt;]:&lt;ALMDESCR&gt;”</p> <p data-bbox="537 449 548 478">;</p> <p data-bbox="537 480 618 510">where:</p> <ul data-bbox="537 512 1489 1094" style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ALL” section on page 4-5</li> <li>• &lt;ALMNUMBER&gt; is the alarm number of the log and is an integer</li> <li>• &lt;CURRENT&gt; is the current severity; valid values for &lt;CURRENT&gt; are shown in the “NOTIF_CODE” section on page 4-49</li> <li>• &lt;PREVIOUS&gt; is the previous severity; valid values for &lt;PREVIOUS&gt; are shown in the “COND_EFF” section on page 4-24, &lt;PREVIOUS&gt; is optional</li> <li>• &lt;CONDITION&gt; is the condition; valid values for &lt;CONDITION&gt; are shown in the “CONDITION” section on page 4-24</li> <li>• &lt;SRVEFF&gt; is the service effect; valid values for &lt;SRVEFF&gt; are shown in the “SERV_EFF” section on page 4-56</li> <li>• &lt;OCRTIME&gt; is the time an alarm is triggered; &lt;OCRTIME&gt; is a Time and is optional</li> <li>• &lt;OCRDAT&gt; is the date an alarm is triggered; &lt;OCRDAT&gt; is a Date and is optional</li> <li>• &lt;ALMDESCR&gt; is the alarm description and is a string</li> </ul>
Output Example	<p data-bbox="537 1100 902 1129">TID-000 1998-06-20 14:30:00</p> <p data-bbox="537 1131 740 1161">M 001 COMPLD</p> <p data-bbox="537 1163 1406 1255">“FAC-3-1,18:CURRENT=MJ,PREVIOUS=CL,EOC,NSA,TIME=16-33-04, DATE=1971-02-03:\“SDCC TERMINATION FAILURE\””</p> <p data-bbox="537 1257 548 1287">;</p>
Errors	This message generates all the default errors

## 3.5.110 RTRV-NE-GEN: Retrieve Network Element General

This command is used to retrieve the general NE attributes.

Section	RTRV-NE-GEN Description
Category	System
Security	Retrieve
Related Messages	ALW-MSG-ALL            RTRV-HDR ED-DAT                    RTRV-INV ED-NE-GEN                RTRV-NE-IPMAP ED-NE-SYNCN             RTRV-NE-SYNCN INH-MSG-ALL             RTRV-TOD INIT-SYS                 SET-TOD
Input Format	RTRV-NE-GEN:[<TID>]:::<CTAG>;
Input Example	RTRV-NE-GEN:CISCO::123;
Output Format	SID DATE TIME M CTAG COMPLD “[IPADDR=<IPADDR>],[IPMASK=<IPMASK>],[DEFRTR=<DEFRTR>],[ [NTP=<NTP>],[NAME=<NAME>],[SWVER=<SWVER>],[LOAD=<LOAD>]” ; where: <ul style="list-style-type: none"> <li>• &lt;IPADDR&gt; indicates the node IP address; &lt;IPADDR&gt; is a string and is optional</li> <li>• &lt;IPMASK&gt; indicates the node IP mask; &lt;IPMASK&gt; is a string and is optional</li> <li>• &lt;DEFRTR&gt; indicates the node default router; &lt;DEFRTR&gt; is a string and is optional</li> <li>• &lt;NTP&gt; indicates the node’s NTP timing source address; &lt;NTP&gt; is a string and is optional</li> <li>• &lt;NAME&gt; is the node name; &lt;NAME&gt; is a string and is optional</li> <li>• &lt;SWVER&gt; is the software version; &lt;SWVER&gt; is a string and is optional</li> <li>• &lt;LOAD&gt; is the load version; &lt;LOAD&gt; is a string and is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “IPADDR=192.168.100.52,IPMASK=255.255.255.0, DEFRTR=192.168.100.1,NTP=192.168.100.52,NAME=NODENAME, SWVER=2.01.03,LOAD=02.13-E09A-08.15” ;
Errors	This message generates all the default errors

### 3.5.111 RTRV-NE-IPMAP: Retrieve Network Element IPMAP

This command indicates the IP address and node name of the DCC connected node which is connected to the AID specified.

Section	RTRV-NE-IPMAP Description												
Category	System												
Security	Retrieve												
Related Messages	<table> <tr> <td>ALW-MSG-ALL</td> <td>RTRV-HDR</td> </tr> <tr> <td>ED-DAT</td> <td>RTRV-INV</td> </tr> <tr> <td>ED-NE-GEN</td> <td>RTRV-NE-GEN</td> </tr> <tr> <td>ED-NE-SYCN</td> <td>RTRV-NE-SYCN</td> </tr> <tr> <td>INH-MSG-ALL</td> <td>RTRV-TOD</td> </tr> <tr> <td>INIT-SYS</td> <td>SET-TOD</td> </tr> </table>	ALW-MSG-ALL	RTRV-HDR	ED-DAT	RTRV-INV	ED-NE-GEN	RTRV-NE-GEN	ED-NE-SYCN	RTRV-NE-SYCN	INH-MSG-ALL	RTRV-TOD	INIT-SYS	SET-TOD
ALW-MSG-ALL	RTRV-HDR												
ED-DAT	RTRV-INV												
ED-NE-GEN	RTRV-NE-GEN												
ED-NE-SYCN	RTRV-NE-SYCN												
INH-MSG-ALL	RTRV-TOD												
INIT-SYS	SET-TOD												
Input Format	RTRV-NE-IPMAP:[<TID>]:[<AID>]:<CTAG>; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the port of an NE carrying a DCC connection; &lt;AID&gt; is from the “FACILITY” section on page 4-11 and a null value defaults to the whole NE. A null value is equivalent to ALL.</li> </ul>												
Input Example	RTRV-NE-IPMAP:CISCO:FAC-12-1:123;												
Output Format	SID DATE TIME M CTAG COMPLD “<AID>:<IPADDR>,<NODENAME>” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the port of an NE carrying a DCC connection and is from the “FACILITY” section on page 4-11</li> <li>• &lt;IPADDR&gt; is the IP address and is a string</li> <li>• &lt;NODENAME&gt; is the node name and is a string</li> </ul>												
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “FAC-12-1:172.20.208.225,TID-000” ;												
Errors	This message generates all the default errors												



## 3.5.112 RTRV-NE-SYNCN: Retrieve Network Element Synchronization

This command is used to retrieve the synchronization attributes of the NE.

Notes:

1. Although mixed mode timing is supported in this release, it is not recommended. See the “Mixed Mode Timing Support” section on page 1-7 for more information.
2. The existing external and line modes have the same functionality in all 3.x releases:
  - External mode: the node derives its timing from the BITS inputs.
  - Line mode: the node derives its timing from the SONET line(s).
  - Mixed mode: the node derives its timing from the BITS input or SONET lines.

Section	RTRV-NE-SYNCN Description	
Category	Synchronization	
Security	Retrieve	
Related Messages	ALW-MSG-ALL ED-BITS ED-DAT ED-NE-GEN ED-NE-SYNCN ED-SYNCN INH-MSG-ALL INIT-SYS OPR-SYNCNSW REPT ALM BITS REPT ALM SYNCN REPT EVT BITS REPT EVT SYNCN	RLS-SYNCNSW RTRV-ALM-BITS RTRV-ALM-SYNCN RTRV-BITS RTRV-COND-BITS RTRV-COND-SYNCN RTRV-HDR RTRV-INV RTRV-NE-GEN RTRV-NE IPMAP RTRV-SYNCN RTRV-TOD SET-TOD
Input Format	RTRV-NE-SYNCN:[<TID>]::<CTAG>[:::];	
Input Example	RTRV-NE-SYNCN:CISCO::123;	
Output Format	SID DATE TIME M CTAG COMPLD “::[TMMD=<TMMD>],[SSMGEN=<SSMGEN>],[QRES=<QRES>],[RVRTV=<RVRTV>],[RVTM=<RVTM>]” ; where: <ul style="list-style-type: none"> <li>• &lt;TMMD&gt; is the timing mode; valid values for &lt;TMMD&gt; are shown in the “TIMING_MODE” section on page 4-63, &lt;TMMD&gt; is optional</li> <li>• &lt;SSMGEN&gt; is the SSM generator; valid values for &lt;SSMGEN&gt; are shown in the “SYNC_GENERATION” section on page 4-60, &lt;SSMGEN&gt; is optional</li> <li>• &lt;QRES&gt; is the quality of RES; valid values for &lt;QRES&gt; are shown in the “SYNC_QUALITY_LEVEL” section on page 4-61, &lt;QRES&gt; is optional</li> <li>• &lt;RVRTV&gt; is the revertive mode; valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-51, &lt;RVRTV&gt; is optional</li> <li>• &lt;RVTM&gt; is the revertive time; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-55, &lt;RVTM&gt; is optional</li> </ul>	

Section	RTRV-NE-SYCN Description (continued)
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “::TMMD=LINE,SSMGEN=GEN1,QRES=ABOVE-PRS,RVRTV=Y,RVTM=8.0” ;
Errors	This message generates all the default errors

### 3.5.113 RTRV-PM-<MOD2>: Retrieve Performance (DS1, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C, T1, T3, VT1)

(DS1, EC1, OC192, STS192C supported for ONS 15454 only)

This command retrieves the values of PM parameters for a specified card type.

<MONTYPE>, <MONLEV>, <MONDAT> and <MONTM> are supported in this release.

<MONLEV> is in the format of LEV-DIRN. Valid values for <DIRN> are shown in the “DIRN” section on page 4-35.

The format of <MONDAT> is MM-DD, where MM (month of the year) ranges from 1–12 and DD (day of the month) ranges from 1–31.

The format for <MONTM> is HH-MM, where HH (hour of the day) ranges from 0–23 and MM (minute of the hour) ranges from 0–59.

Notes:

1. If the <TMPER> is 1-DAY, <MONTM> is not applicable (null), and is treated as null if <MONTM> is not null.
2. A null value for <MONLEV> defaults to 1-UP.
3. A null value for <MONDAT> defaults to the current date (MM-DD).
4. A null value for <MONTM> defaults to the current time (HH-MM).

Section	RTRV-PM-<MOD2> Description
Category	Performance
Security	Retrieve
Related Messages	INIT-REG-<MOD2> RTRV-PMMODE-<STS_PATH> RTRV-TH-<MOD2> SET-PMMODE-<STS_PATH> SET-TH-<MOD2>

Section	RTRV-PM-<MOD2> Description (continued)
Input Format	<p>RTRV-PM-&lt;MOD2&gt;:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;MONTYPE&gt;],[&lt;MONLEV&gt;],[&lt;LOCN&gt;],[&lt;DIRN&gt;],[&lt;TMPER&gt;],[&lt;DATE&gt;],[&lt;TIME&gt;];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier. All the STS, VT1_5, FACILITY and DS1 AIDs are supported; &lt;AID&gt; is from the “ALL” section on page 4-5 and must not be null</li> <li>• &lt;MONTYPE&gt; indicates the type of the monitored parameter; valid values for &lt;MONTYPE&gt; are shown in the “ALL_MONTYPE” section on page 4-19. A null value is equivalent to ALL.</li> <li>• &lt;MONLEV&gt; specifies the discriminating level for the requested monitored parameter. &lt;MONLEV&gt; is in the format of LEVEL-DIRN where LEVEL is the measured value of the monitored parameter (MONVAL) and valid values for DIRN are shown in the “DIRN” section on page 4-35. A null value for &lt;MONLEV&gt; defaults to 1-UP. &lt;MONLEV&gt; is a string and a null value is equivalent to ALL.</li> <li>• &lt;LOCN&gt; indicates the location; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42. A null value is equivalent to ALL.</li> <li>• &lt;DIRN&gt; is the direction of PM relative to the entity identified by the AID. &lt;DIRN&gt; defaults to ALL, which means that the command initializes all the registers irrespective of the PM direction. Valid values for &lt;DIRN&gt; are shown in the “DIRECTION” section on page 4-35. A null value is equivalent to ALL.</li> <li>• &lt;TMPER&gt; indicates the accumulation time period for the PM information. If the &lt;TMPER&gt; is 1-DAY, &lt;MONTM&gt; is not applicable (null), and is treated as null if &lt;MONTM&gt; is not null. Valid values for &lt;TMPER&gt; are shown in the “TMPER” section on page 4-63. A null value is equivalent to ALL.</li> <li>• &lt;DATE&gt; is the beginning date of the PM or storage register period specified in &lt;TMPER&gt;. The format of &lt;MONDAT&gt; is MM-DD, where MM (month of year) ranges from 1–12 and DD (day of month) ranges from 1–31. A null value for &lt;MONDAT&gt; defaults to the current date. &lt;DATE&gt; is a date and a null value is equivalent to ALL.</li> <li>• &lt;TIME&gt; is the beginning time of day of the PM or storage register period specified in &lt;TMPER&gt;. The format for &lt;MONTM&gt; is HH-MM, where HH (hour of day) ranges from 0–23 and MM (minute of hour) ranges from 0–59. A null value for &lt;MONTM&gt; defaults to the current time (HH-MM). &lt;TIME&gt; is a time and a null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-PM-T1:TID:FAC-2-1:123::CVL,10-UP,NEND,BTH,15-MIN,04-11,12-45;

Section	RTRV-PM-<MOD2> Description (continued)
Output Format	<p>SID DATE TIME M CTAG COMPLD “&lt;AID&gt;,[&lt;AIDTYPE&gt;]:&lt;MONTYPE&gt;,&lt;MONVAL&gt;,[&lt;VLDTY&gt;], [&lt;LOCN&gt;],[&lt;DIRN&gt;],[&lt;TMPER&gt;],[&lt;MONDAT&gt;],[&lt;MONTM&gt;]” ;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ALL” section on page 4-5</li> <li>• &lt;AIDTYPE&gt; specifies the type of AID; valid values for &lt;AIDTYPE&gt; are shown in the “MOD2B” section on page 4-45, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;MONTYPE&gt; indicates the type of monitored parameter; valid values for &lt;MONTYPE&gt; are shown in the “ALL_MONTYPE” section on page 4-19</li> <li>• &lt;MONVAL&gt; is the measured value of the monitored parameter and is an integer</li> <li>• &lt;VLDTY&gt; is the validity indicator of historical monitoring information; valid values for &lt;VLDTY&gt; are shown in the “VALIDITY” section on page 4-64, &lt;VLDTY&gt; is optional</li> <li>• &lt;LOCN&gt; indicates the location; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42, &lt;LOCN&gt; is optional</li> <li>• &lt;DIRN&gt; is the direction of PM relative to the entity identified by the AID; valid values for &lt;DIRN&gt; are shown in the “DIRECTION” section on page 4-35, &lt;DIRN&gt; is optional</li> <li>• &lt;TMPER&gt; indicates the accumulation time period for the PM information; valid values for &lt;TMPER&gt; are shown in the “TMPER” section on page 4-63, &lt;TMPER&gt; is optional</li> <li>• &lt;MONDAT&gt; is the beginning date of the PM or storage register period specified in &lt;TMPER&gt;. The format of &lt;MONDAT&gt; is MM-DD, where MM (month of year) ranges from 1–12 and DD (day of month) ranges from 1–31. &lt;MONDAT&gt; is a string and is optional.</li> <li>• &lt;MONTM&gt; is the beginning time of the day of the PM or storage register period specified in &lt;TMPER&gt;. The format for &lt;MONTM&gt; is HH-MM, where HH (hour of day) ranges from 0–23 and MM (minute of hour) ranges from 0–59. &lt;MONTM&gt; is a string and is optional.</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00 M 001 COMPLD “FAC-2-1,DS1-14:CVL,21,COMPL,NEND,BTH,15-MIN,04-11,12-45” ;</p>
Errors	This message generates all the default errors

### 3.5.114 RTRV-PMMODE-<STS\_PATH>: Retrieve Performance Mode of PM Data Collection (STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C)

(STS192C supported for ONS 15454 only)

This command instructs a SONET NE to send the type of PM mode that has been previously set in the NE. This command can be used to identify whether the PM parameters are Section, Line or Path type, and to identify whether or not the PM are being collected by the NE.

This command returns the categories that are enabled only.

The PM mode and state of an entity is set by using the SET-PMMODE command.

Notes:

1. This near end monitoring of the intermediate-path PM (IPPM) only supports OC-3, OC-12, OC-48, OC-48AS, OC-192, and EC-1 on STS Path.
2. The far end PM data collection is not supported by the current ONS 15454 in this release.
3. This release of software will support only the Path (P) mode type PM parameters with this command, that is, this command will not be applicable for Line (L) and Section (S) mode types. It should be noted that the PM monitoring for Line (L) and Section (S) are supported by the ONS 15454, and the storing PM data is always performed.
4. This command only returns the categories that are enabled (pmstate is ON), and does not return the categories that are disabled (pmstate is OFF).

Section	RTRV-PMMODE-<STS_PATH> Description
Category	Performance
Security	Retrieve
Related Messages	INIT-REG-<MOD2> RTRV-PM-<MOD2> RTRV-TH-<MOD2> SET-PMMODE-<STS_PATH> SET-TH-<MOD2>
Input Format	RTRV-PMMODE-<STS_PATH>:[<TID>]:AID:<CTAG>::<LOCN>; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the entity from where the PM mode is being retrieved; &lt;AID&gt; is from the “STS” section on page 4-12 and must not be null</li> <li>• &lt;LOCN&gt; identifies the location from where the PM mode is being retrieved and valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42; &lt;LOCN&gt; must not be null</li> </ul>
Input Example	RTRV-PMMODE-ST51:CISCO:STS-4-2:123::NEND;

Section	RTRV-PMMODE-<STS_PATH> Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD “<AID>:[<LOCN>],<MODETYPE>” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the entity from where the PM mode is being retrieved; &lt;AID&gt; is from the “STS” section on page 4-12</li> <li>• &lt;LOCN&gt; identifies the location from where the PM mode is being retrieved; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42. &lt;LOCN&gt; is optional.</li> <li>• &lt;MODETYPE&gt; identifies whether or not the PM mode type is turned on or off; valid values for &lt;MODETYPE&gt; are shown in the “PM_MODE” section on page 4-52</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “STS-4-2:NEND,P” ;
Errors	This message generates all the default errors

### 3.5.115 RTRV-PTHTRC-<STS\_PATH>: Retrieve Path Trace (STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C)

(STS192C supported for ONS 15454 only)

This command instructs a SONET NE to retrieve the contents of the SONET path trace message that is transported in the J1 byte of the SONET STS Path.

The path trace message is a 64-character string with the last two characters reserved for the terminating CR (carriage return) and the LF (line feed). The message can be an incoming path trace message, an expected incoming path trace message, or an outgoing path trace message which is inserted into the path overhead of the outgoing signal.

The path trace mode has three modes: OFF, MANUAL, and AUTO. The path trace mode defaults to OFF mode. The MANUAL mode performs the comparison of the received string with the user-entered expected string. The AUTO mode performs the comparison of the present received string with an expected string set to a previously received string. If there is a mismatch, the TIM-P alarm is raised. When the path trace mode is in OFF mode, there is no path trace processing, and all the alarm and state conditions are reset.

When the expected string is queried under the OFF path trace mode, the expected string is a copy of the provisioned string or NULL. When an expected string is queried under the MANUAL path trace mode, the expected string is a copy of the user-entered string. When an expected string is queried under the AUTO path trace mode, the expected string is a copy of the acquired received string or NULL if the string has not been acquired.

When the incoming string is queried under the OFF path trace mode, the incoming string is NULL. When an incoming string is queried under the MANUAL or AUTO path trace mode, the incoming string is a copy of the received string or NULL if the string has not been received.

When the transmitted string is queried under the OFF, MANUAL or AUTO path trace mode, the transmitted string is the provisioned transmit string.

Notes:

1. A null value for the <MSGTYPE> defaults to INCTRC.
2. Only the NEND of the <LOCN> value is supported. A null value of the <LOCN> defaults to NEND.
3. Sending a FEND of the <LOCN> with this command, an “unsupported locn value” error message will display.
4. J1 (EXPTRC/INCTRC) is implemented on the DS1/DS1N, DS3E/DS3NE, DS3XM, EC1, OC3, OC48AS and OC192 cards.
5. TRC is supported only on DS1(N), DS3(N)E, and DS3XM cards.

Section	RTRV-PTHTRC-<STS_PATH> Description
Category	STS and VT Paths
Security	Retrieve
Related Messages	ED-<STS_PATH> ED-VT1 RTRV-<STS_PATH> RTRV-VT1
Input Format	RTRV-PTHTRC-<STS_PATH>[:<TID>]:<AID>:<CTAG>::[:<MSGTYPE>] [:<LOCN>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “STS” section on page 4-12 and must not be null</li> <li>• &lt;MSGTYPE&gt; is the type of trace message to be retrieved; valid values for &lt;MSGTYPE&gt; are shown in the “MSGTYPE” section on page 4-49 and a null value defaults to INCTRC. A null value is equivalent to ALL.</li> <li>• &lt;LOCN&gt; is the location of the trace message; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-PTHTRC-ST1:CISCO:STS-2-1:123::EXPTRC:NEND;
Output Format	SID DATE TIME M CTAG COMPLD “<TRACMSG>” ; where: <ul style="list-style-type: none"> <li>• &lt;TRACMSG&gt; is the Path Trace message returned to the requester. The message should be up 64 characters in length. The user is allowed to enter up to 62 characters, the last two characters are reserved for the terminating CR (carriage return) and LF (line feed); &lt;TRACMSG&gt; is a string</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “TRACMSG” ;
Errors	This message generates all the default errors

## 3.5.116 RTRV-SYNCN: Retrieve Synchronization

This command retrieves the synchronization reference list used to determine the sources for the NE's reference clock and the BITS output clock. For each clock, up to three synchronization sources may be specified (e.g. PRIMARY, SECOND, THIRD).

Notes:

1. To retrieve/set the timing mode, SSM message Set or Quality of RES information, use the RTRV-NE-SYNCN and ED-NE-SYNCN commands.
2. The output example shown here is under line timing mode.

Section	RTRV-SYNCN Description
Category	Synchronization
Security	Retrieve
Related Messages	ED-BITS RLS-SYNCNSW ED-NE-SYNCN RTRV-ALM-BITS ED-SYNCN RTRV-ALM-SYNCN OPR-SYNCNSW RTRV-BITS REPT ALM BITS RTRV-COND-BITS REPT ALM SYNCN RTRV-COND-SYNCN REPT EVT BITS RTRV-NE-SYNCN REPT EVT SYNCN
Input Format	RTRV-SYNCN:[<TID>]:<AID>:<CTAG>[::::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the synchronization reference to retrieve; &lt;AID&gt; is from the "SYNC_REF" section on page 4-15, is listable and must not be null</li> </ul>
Input Example	RTRV-SYNCN:BOYES:SYNC-NE:234;
Output Format	SID DATE TIME M CTAG COMPLD "<AID>:<REF>,<REFVAL>,<QREF>,<STATUS>]" ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the synchronization reference to be modified and is from the "SYNC_REF" section on page 4-15</li> <li>• &lt;REF&gt; is the rank of the synchronization reference and is the AID from the "SYNCSW" section on page 4-16</li> <li>• &lt;REFVAL&gt; is the value of the synchronization reference and is the AID from the "SYN_SRC" section on page 4-14</li> <li>• &lt;QREF&gt; is the quality of the RES; valid values for &lt;QREF&gt; are shown in the "SYNC_QUALITY_LEVEL" section on page 4-61, &lt;QREF&gt; is optional</li> <li>• &lt;STATUS&gt; is the active status of the synchronization source; valid values for &lt;STATUS&gt; are shown in the "STATUS" section on page 4-57, &lt;STATUS&gt; is optional</li> </ul>



Section	RTRV-SYNCN Description (continued)
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “SYNC-NE:PRI,FAC-1-2,PRS,ACT” ;
Errors	This message generates all the default errors

### 3.5.117 RTRV-T1: Retrieve T1 Facility

This command retrieves the DS-1 facilities configuration.

(The facilities are on the XTC card for the ONS 15327)

Section	RTRV-T1 Description
Category	Ports
Security	Retrieve
Related Messages	ED-<OCN_TYPE>                    RST <MOD_PORT> ED-DS1                            RTRV-<OCN_TYPE> ED-EC1                            RTRV-DS1 ED-G1000                         RTRV-EC1 ED-T1                              RTRV-G1000 ED-T3                              RTRV-T3 RMV <MOD_PORT>
Input Format	RTRV-T1:[<TID>]:<aid>:<CTAG>[:::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier; &lt;AID&gt; is the AID from the “FACILITY” section on page 4-11 and must not be null</li> </ul>
Input Example	RTRV-T1:TID:FAC-2-1:1223;

Section	RTRV-T1 Description (continued)
Output Format	<p>SID DATE TIME  M CTAG COMPLD  “&lt;AID&gt;::[LINECDE=&lt;LINECDE&gt;],[FMT=&lt;FMT&gt;],[  LBO=&lt;LBO&gt;],[TACC=&lt;TACC&gt;]:[&lt;PST&gt;]”  ;  where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “FACILITY” section on page 4-11</li> <li>• &lt;LINECDE&gt; is the line code; valid values for &lt;LINECDE&gt; are shown in the “LINE_CODE” section on page 4-42, &lt;LINECDE&gt; is optional</li> <li>• &lt;FMT&gt; is the frame format; valid values for &lt;FMT&gt; are shown in the “FRAME_FORMAT” section on page 4-41, &lt;FMT&gt; is optional</li> <li>• &lt;LBO&gt; is the line buildout; valid values for &lt;LBO&gt; are shown in the “LINE_BUILDOUT” section on page 4-42, &lt;LBO&gt; is optional</li> <li>• &lt;TACC&gt; defines the STS as a test access port with a selected unique TAP number. The TAP number ranges from 1–999; &lt;TACC&gt; is an integer and is optional.</li> <li>• &lt;PST&gt; is the state; valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53, &lt;PST&gt; is optional</li> </ul>
Output Example	<p>TID-000 1998-06-20 14:30:00  M 001 COMPLD  “FAC-2-1::LINECDE=AMI,FMT=ESF,LBO=0-131,TACC=8:OOS”  ;</p>
Errors	This message generates all the default errors

### 3.5.118 RTRV-T3: Retrieve T3

This command retrieves the facility properties of a DS3 and a DS3XM card.

(The facilities are on the XTC card for the ONS 15327)

Notes:

1. CTC can set the FMT attribute of a DS3(N)E line to autoprovision to set the framing based on the framing is coming in. This would result in the FMT field being blanked out for a few seconds blanked forever for a preprovisioned DS3(N)E card on CTC.
2. The autoprovision is not considered a valid DS3 framing type. It is used only to trigger an autosense and subsequent autoprovisioning of a valid DS3 framing type (unframed, M23, C-BIT).
3. TL1 does not have the autoprovision mode according to GR-199. TL1 maps/returns the autoprovision to be the unframed framing type.

Section	RTRV-T3 Description
Category	Ports
Security	Retrieve

Section	RTRV-T3 Description (continued)
Related Messages	ED-<OCN_TYPE>                    RST-<MOD_PORT> ED-DS1                            RTRV-<OCN_TYPE> ED-EC1                            RTRV-DS1 ED-G1000                         RTRV-EC1 ED-T1                             RTRV-G1000 ED-T3                             RTRV-T1 RMV-<MOD_PORT>
Input Format	RTRV-T3:[<TID>]:<aid>:<CTAG>[:::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “FACILITY” section on page 4-11 and must not be null</li> </ul>
Input Example	RTRV-T3:CISCO:FAC-1-2:123;
Output Format	SID DATE TIME M CTAG COMPLD “<AID>::[FMT=<FMT>],[LINECDE=<LINECDE>], [LBO=<LBO>],[TACC=<TACC>]:[<PST>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “FACILITY” section on page 4-11</li> <li>• &lt;FMT&gt; is the frame format; valid values for &lt;FMT&gt; are shown in the “DS_LINE_TYPE” section on page 4-36, &lt;FMT&gt; is optional</li> <li>• &lt;LINECDE&gt; is the line code; valid values for &lt;LINECDE&gt; are shown in the “DS_LINE_CODE” section on page 4-35, &lt;LINECDE&gt; is optional</li> <li>• &lt;LBO&gt; is the line buildout; valid values for &lt;LBO&gt; are shown in the “E_LBO” section on page 4-36, &lt;LBO&gt; is optional</li> <li>• &lt;TACC&gt; defines the STS as a test access port with a selected unique TAP number. The TAP number ranges from 1–999; &lt;TACC&gt; is an integer and is optional</li> <li>• &lt;PST&gt; is the state; valid values for &lt;PST&gt; are shown in the “PST” section on page 4-53, &lt;PST&gt; is optional</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “FAC-1-2::FMT=C-BIT,LINECDE=B3ZS,LBO=0-225,TACC=8:IS” ;
Errors	This message generates all the default errors

### 3.5.119 RTRV-TH-<MOD2>: Retrieve Threshold (DS1, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C, T1, T3, VT1)

(DS1, EC1, OC192, STS192C supported for ONS 15454 only)

This command retrieves the threshold level of one or more monitored parameters.

Section	RTRV-TH-<MOD2> Description
Category	Performance
Security	Retrieve
Related Messages	INIT-REG-<MOD2> RTRV-PM-<MOD2> RTRV-PMMODE-<STS_PATH> SET-PMMODE-<STS_PATH> SET-TH-<MOD2>
Input Format	RTRV-TH-<MOD2>:[<TID>]:<AID>:<CTAG>::[<MONTYPE>], [<LOCN>],[<TMPER>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ALL” section on page 4-5 and must not be null</li> <li>• &lt;MONTYPE&gt; is the monitored type and defaults to CVL; valid values for &lt;MONTYPE&gt; are shown in the “ALL_MONTYPE” section on page 4-19. A null value is equivalent to ALL.</li> </ul> <p><b>Note</b> &lt;MONTYPE&gt; defaults to: CVL for OCN, EC1 and DSN, ESP for STSp, UASV for VT1, AISSP for DS1 layer of DS3XM. LOCN defaults to NEND. TMPER defaults to 15 minutes.</p> <ul style="list-style-type: none"> <li>• &lt;LOCN&gt; is the location; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42. A null value is equivalent to ALL.</li> <li>• &lt;TMPER&gt; indicates the accumulation time period for the PM information; valid values for &lt;TMPER&gt; are shown in the “TMPER” section on page 4-63. A null value is equivalent to ALL.</li> </ul>
Input Example	RTRV-TH-T3:CISCO:FAC-1-3:1234::CVL,NEND,15-MIN;

Section	RTRV-TH-<MOD2> Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD “<AID>,[<AIDTYPE>]:<MONTYPE>,[<LOCN>],,<THLEV>,[<TMPER>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ALL” section on page 4-5</li> <li>• &lt;AIDTYPE&gt; specifies the type of AID; valid values for &lt;AIDTYPE&gt; are shown in the “MOD2B” section on page 4-45, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;MONTYPE&gt; indicates the monitored type; valid values for &lt;MONTYPE&gt; are shown in the “ALL_MONTYPE” section on page 4-19</li> <li>• &lt;LOCN&gt; is the location; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42, &lt;LOCN&gt; is optional</li> <li>• &lt;THLEV&gt; is the threshold value and is an integer</li> <li>• &lt;TMPER&gt; is the accumulation time period for the PM information; valid values for &lt;TMPER&gt; are shown in the “TMPER” section on page 4-63, &lt;TMPER&gt; is optional</li> </ul>
Output Example	TID-0001998-06-20 14:30:00 M 001 COMPLD “FAC-1-3,DS3:CVL,NEND,,1,15-MIN” ;
Errors	This message generates all the default errors

### 3.5.120 RTRV-TOD: Retrieve Time of Day

This command queries the NE and displays the system date and time at the instant when the command was executed. The time returned is in Coordinated Universal Time (UTC).

Section	RTRV-TOD Description
Category	System
Security	Retrieve
Related Messages	ALW-MSG-ALL RTRV-HDR ED-DAT RTRV-INV ED-NE-GEN RTRV-NE-GEN ED-NE-SYNCN RTRV-NE-IPMAP INH-MSG-ALL RTRV-NE-SYNCN INIT-SYS SET-TOD
Input Format	RTRV-TOD:[<TID>]::<CTAG>;
Input Example	RTRV-TOD:CAZADERO::230;

Section	RTRV-TOD Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD “<YEAR>,<MONTH>,<DAY>,<HOUR>, <MINUTE>,<SECOND>,<TMTYPE>” ; where: <ul style="list-style-type: none"> <li>• &lt;YEAR&gt; is the current calendar year and is a string</li> <li>• &lt;MONTH&gt; is the month of the year and ranges from 01–12; &lt;MONTH&gt; is a string</li> <li>• &lt;DAY&gt; is the day of the month and ranges from 01–31; &lt;DAY&gt; is a string</li> <li>• &lt;HOUR&gt; is the hour of the day and ranges from 00–23; &lt;HOUR&gt; is a string</li> <li>• &lt;MINUTE&gt; is the minute of the hour and ranges from 00–59; &lt;MINUTE&gt; is a string</li> <li>• &lt;SECOND&gt; is the second of the minute and ranges from 00–59; &lt;SECOND&gt; is a string</li> <li>• &lt;TMTYPE&gt; identifies the time zone and is a string</li> </ul>
Output Example	TID-000 1998-06-20 14:30:00 M 001 COMPLD “1998,05,08,17,01,33,UTC” ;
Errors	This message generates all the default errors

### 3.5.121 RTRV-VT1: Retrieve Virtual Tributary

This command retrieves the attributes associated with a VT1 path.



#### Note

Both RVRTV and RVTM parameters only apply to UPSR.

Section	RTRV-VT1 Description
Category	STS and VT Paths
Security	Retrieve
Related Messages	ED-<STS_PATH> ED-VT1 RTRV-<STS_PATH> RTRV-PTHTRC-<STS_PATH>
Input Format	RTRV-VT1:[<TID>]:<aid>:<CTAG>[:[:]]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “VT1_5” section on page 4-17 and must not be null</li> </ul>
Input Example	RTRV-VT1:CISCO:VT1-2-4-1-2:123;



Section	SET-ATTR-CONT Description (continued)
Input Format	SET-ATTR-CONT:[<TID>]:<AID>:<CTAG>[:<CONTTYPER>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the external control for which attributes are being retrieved and is from the “ENV” section on page 4-10</li> <li>• &lt;CONTTYPER&gt; is the type of external control for which the attribute is being retrieved; valid values for &lt;CONTTYPER&gt; are shown in the “CONTTYPER” section on page 4-34</li> </ul>
Input Example	SET-ATTR-CONT:CISCO:ENV-OUT-1:123::AIRCOND;
Errors	This message generates all the default errors

### 3.5.123 SET-ATTR-ENV: Set Attribute Environment

This command sets the attributes associated with an external control.


**Note**

If the <NTFCNCDE>, <ALMTYPE>, and <ALMMSG> parameters are omitted, the environmental alarm specified by <AID> is unprovisioned.

Section	SET-ATTR-ENV Description										
Category	Environmental Alarms and Controls										
Security	Provisioning										
Related Messages	<table> <tr> <td>OPR-EXT-CONT</td> <td>RTRV-ATTR-CONT</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-ATTR-ENV</td> </tr> <tr> <td>REPT EVT ENV</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>RLS-EXT-CONT</td> <td>RTRV-EXT-CONT</td> </tr> <tr> <td>RTRV-ALM-ENV</td> <td>SET-ATTR-CONT</td> </tr> </table>	OPR-EXT-CONT	RTRV-ATTR-CONT	REPT ALM ENV	RTRV-ATTR-ENV	REPT EVT ENV	RTRV-COND-ENV	RLS-EXT-CONT	RTRV-EXT-CONT	RTRV-ALM-ENV	SET-ATTR-CONT
OPR-EXT-CONT	RTRV-ATTR-CONT										
REPT ALM ENV	RTRV-ATTR-ENV										
REPT EVT ENV	RTRV-COND-ENV										
RLS-EXT-CONT	RTRV-EXT-CONT										
RTRV-ALM-ENV	SET-ATTR-CONT										
Input Format	SET-ATTR-ENV:[<TID>]:<AID>:<CTAG>[:<NTFCNCDE>], [<ALMTYPE>],[<ALMMSG>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ENV” section on page 4-10 and must not be null</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-49</li> <li>• &lt;ALMTYPE&gt; is the alarm type for the environmental alarm; valid values for &lt;ALMTYPE&gt; are shown in the “ENV_ALM” section on page 4-36</li> <li>• &lt;ALMMSG&gt; is the alarm message and is a string</li> </ul>										
Input Example	SET-ATTR-ENV:CISCO:ENV-IN-1:123::MJ,OPENDR,\'OPEN DOOR\';										
Errors	This message generates all the default errors										



### 3.5.124 SET-PMMODE-<STS\_PATH>: Set Performance Mode of PM Data Collection (STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C)

(STS192C supported for ONS 15454 only)

This command instructs a SONET NE to set the mode and to turn on or off the mode of the PM data collection. The Cisco ONS 15454 is capable of collecting and storing section, line and path PM data.

The PM mode and state of an entity are retrieved by using the RTRV-PMMODE command.

Notes:

1. The near end monitoring of the intermediate-path PM (IPPM) only supports OC-3, OC-12, OC-48, OC-48AS, OC-192, and EC-1 on STS Path.
2. The far end PM data collection is not supported for the ONS 15454 in this release.
3. This release of software will support only the Path (P) mode type PM parameters with this command, that is, this command is not applicable for Line (L) and Section (S) mode types.



**Note** The PM monitoring for Line (L) and Section (S) are supported by the ONS 15454, and the storing PM data is always performed.

Section	RTRV-PMMODE-<STS_PATH> Description
Category	Performance
Security	Provisioning
Related Messages	INIT-REG-<MOD2> RTRV-PM-<MOD2> RTRV-PMMODE-<STS_PATH> RTRV-TH-<MOD2> SET-TH-<MOD2>
Input Format	SET-PMMODE-<STS_PATH>:[<TID>]:<AID>: <CTAG>::<LOCN>,<MODETYPE>,[<PMSTATE>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the entity from where the PM mode is being set; &lt;AID&gt; is from the “STS” section on page 4-12</li> <li>• &lt;LOCN&gt; identifies the location to which the PM mode is to be set and only supports near end PM data collection; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42</li> <li>• &lt;MODETYPE&gt; identifies the type of PM parameters; only the Path (P) PM parameter is supported and valid values for &lt;MODETYPE&gt; are shown in the “PM_MODE” section on page 4-52</li> <li>• &lt;PMSTATE&gt; directs the named PM mode type to turn On or Off and a null value defaults to On; valid values for &lt;PMSTATE&gt; are shown in the “PM_STATE” section on page 4-52</li> </ul>
Input Example	SET-PMMODE-STs1:CISCO:STs-4-2:123::NEND,P,ON;
Errors	This message generates all the default errors

### 3.5.125 SET-TH-<MOD2>: Set Threshold (DS1, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS9C, STS12C, STS24C, STS48C, STS192C, T1, T3, VT1)

(DS1, EC1, OC192, STS192C supported for ONS 15454 only)

This command sets the threshold of PM parameters.

Section	SET-TH-<MOD2> Description
Category	Performance
Security	Provisioning
Related Messages	INIT-REG-<MOD2> RTRV-PM-<MOD2> RTRV-PMODE-<STS_PATH> RTRV-TH-<MOD2> SET-PMODE-<STS_PATH>
Input Format	SET-TH-<MOD2>:[<TID>]:<AID>:<CTAG>::<MONTYPE>,<THLEV>,[<LOCN>],[<TMPER>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; indicates the access identifier. All the STS, VT1, Facility and DS1 AIDs are supported and &lt;AID&gt; is from the “ALL” section on page 4-5</li> <li>• &lt;MONTYPE&gt; is the monitored value; valid values for &lt;MONTYPE&gt; are shown in the “ALL_MONTYPE” section on page 4-19</li> <li>• &lt;THLEV&gt; is the threshold value and is an integer</li> <li>• &lt;LOCN&gt; is the location; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-42</li> <li>• &lt;TMPER&gt; is the accumulation time period for the PM information; valid values for &lt;TMPER&gt; are shown in the “TMPER” section on page 4-63</li> </ul>
Input Example	SET-TH-T3:CISCO:FAC-1-1:123::CVL,12,NEND,,15-MIN;
Errors	This message generates all the default errors

### 3.5.126 SET-TOD: Set Time of Day

This command sets the system date and time for the NE. The year should be entered using four digits while the hour should be entered using a 24-hour time period (i.e. military time).

Section	SET-TOD Description
Category	System
Security	Provisioning
Related Messages	ALW-MSG-ALL                      RTRV-HDR ED-DAT                                RTRV-INV ED-NE-GEN                          RTRV-NE-GEN ED-NE-SYCN                        RTRV-NE-IPMAP INH-MSG-ALL                       RTRV-NE-SYCN INIT-SYS                              RTRV-TOD

Section	SET-TOD Description (continued)
Input Format	SET-TOD:[<TID>]::<CTAG>::<YEAR>,<MONTH>,<DAY>,<HOUR>,<MINUTE>,<SECOND>,[<DIFFERENCE>][:DST=<DST>]; where: <ul style="list-style-type: none"> <li>• &lt;YEAR&gt; is the current calendar year and is an integer</li> <li>• &lt;MONTH&gt; is the month of the year and ranges from 01–12; &lt;MONTH&gt; is an integer</li> <li>• &lt;DAY&gt; is the day of the month and ranges from 01–31; &lt;DAY&gt; is an integer</li> <li>• &lt;HOUR&gt; is the hour of the day and ranges from 00–24; &lt;HOUR&gt; is an integer</li> <li>• &lt;MINUTE&gt; is the minute of the hour and ranges from 00–60; &lt;MINUTE&gt; is an integer</li> <li>• &lt;SECOND&gt; is the second of the minute and ranges from 00–59; second is an integer</li> <li>• &lt;DIFFERENCE&gt; is the number of minutes off UTC and is an integer</li> <li>• &lt;DST&gt; identifies if the time is a Daylight Saving Time (Y) or not (N); valid values for &lt;DST&gt; are shown in the “ON_OFF” section on page 4-51</li> </ul>
Input Example	SET-TOD:CAZADERO::240::1998,05,08,13,18,55,480:DST=Y;
Errors	This message generates all the default errors

### 3.5.127 SW-DX-EQPT: Switch Duplex Equipment

(Cisco ONS 15454 only)

This command switches an XC/XCVT card with the mate card within the NE.



**Note**

If sending a mode parameter with a value other than NORM, FRCD, or NULL, the IDNV (Input, Data Not Valid) error message will be returned.

Section	SW-DX-EQPT Description
Category	Equipment
Security	Maintenance
Related Messages	ALW-SWDX-EQPT                      INH-SWTOWKG-EQPT ALW-SWTOPROTN-EQPT                REPT ALM EQPT ALW-SWTOWKG-EQPT                  REPT EVT EQPT DLT-EQPT                                RTRV-ALM-EQPT ED-EQPT                                 RTRV-COND-EQPT ENT-EQPT                                RTRV-EQPT INH-SWDX-EQPT                        SW-TOPROTN-EQPT INH-SWTOPROTN-EQPT                 SW-TOWKG-EQPT

Section	SW-DX-EQPT Description (continued)
Input Format	SW-DX-EQPT:[<TID>]:<AID>:<CTAG>::[<MODE>][,]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the equipment (XC/XCVT) unit in the NE that is to be switched with its mate unit; &lt;AID&gt; is from the “EQPT” section on page 4-11</li> <li>• Valid values for &lt;MODE&gt; are shown in the “CMD_MODE” section on page 4-23</li> </ul>
Input Example	SW-DX-EQPT:CISCO:SLOT-1:123::FRCD
Errors	This message generates all the default errors

### 3.5.128 SW-TOPROTN-EQPT: Switch to Protection Equipment

(Cisco ONS 15454 only)

This command instructs the NE to perform an equipment unit protection switch.

This command is used for non-SONET line cards (e.g. DS1, DS3, DS3XM, and EC1). DS1 and DS3 cards have 1:1 and 1:N equipment protection. DS3XM and EC1 cards have only 1:1 equipment protection.

This command will switch the traffic from the working card specified in the AID to the protect card.

There is a priority for the switch to protection commands. In a 1:N protection group with  $N > 1$ , consider two working cards - A and B. Card A is switched to the protect card with the SW-TOPROTN command. If card B is pulled from the system, the protect card will carry the traffic of card B and card A will raise the FAILTOSW condition and carry traffic. When card B is replaced and the revert timer expires, card B will carry traffic and card A will switch to the protect card. The FAILTOSW condition on card A will be cleared. Note: 1:N protection groups in the system are always revertive.

In a revertive protection group, the unit specified by the AID will raise the standing condition of WKSWPR if the command were executed without an error. In a non-revertive protection group, the unit specified by the AID will raise the transient condition of WKSWPR if the command were executed without an error.

Notes:

1. The default PROTID is the protecting unit if there is only one protection unit per protection group in the NE, otherwise a DENY error message will be responded.
2. This command only supports one value of the <DIRN> parameter - BTH or null. A command with any other value is considered an incorrect use of the command. An IDNV (Input, Data Not Valid) error message will be responded
3. This command is not used for the common control (TCC+ or XC/XCVT) cards. A command on a common control card will generate an IIAC (Input, Invalid Access Identifier) error message. To use the common control card switching commands, use the SW-DX-EQPT and ALW-SWDX-EQPT commands.
4. This command is not used for SONET (OCN) cards. A command on a SONET card will generate an IIAC (Input, Invalid Access Identifier) error message. To use a SONET card switching command, use the OPR-PROTNSW and RLS-PROTNSW commands.
5. If this command is used on a card that is not in a protection group, the SNVS (Status, Not in Valid State) error message will be responded.

6. If this command is sent to a missing working card, the SWFA (Status, Working Unit Failed) error message will be responded.
7. If this command is used on a protection card, the IIAC (Input, Invalid Access Identifier) error message will be responded.
8. If sending a mode parameter with a value other than NORM, FRCD, or null, the IDNV (Input, Data Not Valid) error message will be responded.
9. If sending the SW-TOPROTN command to a working card when the working card has raised INHSWPR, the SWLD (Status, Working Unit Locked) error message will be responded.
10. If sending the SW-TOPROTN command to a working card when the protection card has raised INHSWPR, the SPLD (Status, Protection Unit Locked) error message will be responded.
11. If sending the SW-TOPROTN command to an active working card when the protect card is already carrying traffic. This only occurs in a 1:N protection group with N greater than one, the SNVS (Status, Not in Valid State) error message will be responded.
12. If sending the SW-TOPROTN command to an active working card when the protect card is failed or missing, the SPFA (Status, Protection Unit Failed) error message will be responded.
13. If sending this command to a standby working card, the SNVS (Status, Not in Valid State) error message will be responded.

Section	SW-TOPROTN-EQPT Description																
Category	Equipment																
Security	Maintenance																
Related Messages	<table border="0"> <tr> <td>ALW-SWDX-EQPT</td> <td>INH-SWTOWKG-EQPT</td> </tr> <tr> <td>ALW-SWTOPROTN-EQPT</td> <td>REPT ALM EQPT</td> </tr> <tr> <td>ALW-SWTOWKG-EQPT</td> <td>REPT EVT EQPT</td> </tr> <tr> <td>DLT-EQPT</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>ED-EQPT</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>ENT-EQPT</td> <td>RTRV-EQPT</td> </tr> <tr> <td>INH-SWDX-EQPT</td> <td>SW-DX-EQPT</td> </tr> <tr> <td>INH-SWTOPROTN-EQPT</td> <td>SW-TOWKG-EQPT</td> </tr> </table>	ALW-SWDX-EQPT	INH-SWTOWKG-EQPT	ALW-SWTOPROTN-EQPT	REPT ALM EQPT	ALW-SWTOWKG-EQPT	REPT EVT EQPT	DLT-EQPT	RTRV-ALM-EQPT	ED-EQPT	RTRV-COND-EQPT	ENT-EQPT	RTRV-EQPT	INH-SWDX-EQPT	SW-DX-EQPT	INH-SWTOPROTN-EQPT	SW-TOWKG-EQPT
ALW-SWDX-EQPT	INH-SWTOWKG-EQPT																
ALW-SWTOPROTN-EQPT	REPT ALM EQPT																
ALW-SWTOWKG-EQPT	REPT EVT EQPT																
DLT-EQPT	RTRV-ALM-EQPT																
ED-EQPT	RTRV-COND-EQPT																
ENT-EQPT	RTRV-EQPT																
INH-SWDX-EQPT	SW-DX-EQPT																
INH-SWTOPROTN-EQPT	SW-TOWKG-EQPT																
Input Format	<p>SW-TOPROTN-EQPT:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;MODE&gt;], [&lt;PROTID&gt;],[&lt;DIRN&gt;];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the parameter that specifies the working unit which will have traffic switched to protection and is from the “EQPT” section on page 4-11</li> <li>• &lt;MODE&gt; is the parameter that will only support the NORM value. The null value for &lt;MODE&gt; will default to NORM. Sending the FRCD value for &lt;MODE&gt; will generate the same switching behavior as sending the NORM value. Valid values for &lt;MODE&gt; are shown in the “CMD_MODE” section on page 4-23</li> <li>• &lt;PROTID&gt; identifies the protection unit to be switched when there is more than one protection unit within the NE; &lt;PROTID&gt; is the AID from the “PRSLOT” section on page 4-8</li> <li>• &lt;DIRN&gt; is the direction of transmission in which switching is to be made. The command only supports one value of the &lt;DIRN&gt; parameter - BTH. This parameter defaults to BTH; valid values for &lt;DIRN&gt; are shown in the “DIRECTION” section on page 4-35</li> </ul>																

Section	SW-TOPROTN-EQPT Description (continued)
Input Example	SW-TOPROTN-EQPT:CISCO:SLOT-1:123::FRCD,SLOT-3,BTH;
Errors	This message generates all the default errors

### 3.5.129 SW-TOWKG-EQPT: Switch to Working Equipment

(Cisco ONS 15454 only)

This command instructs the NE to switch the protected working unit back to working unit.

This command is used for non-SONET line cards (e.g. DS1, DS3, DS3XM, and EC1). DS1 and DS3 cards have 1:1 and 1:N equipment protection. DS3XM and EC1 cards have only 1:1 equipment protection cards.

This command will switch the traffic from the protection card to the working card specified by the AID.

In a revertive protection group, the unit specified by the AID will clear the standing condition of WKSWPR if the command were executed without an error. In a non-revertive protection group, the unit specified by the AID will raise the transient condition of WKSWBK if the command were executed without an error.

Notes:

1. This command only supports one value of the <DIRN> parameter - BTH or null. A command with any other value is considered an incorrect use of the command. An IDNV (Input, Data Not Valid) error message should be responded
2. This command is not used for the common control (TCC+ or XC/XCVT) cards. A command on a common control card will generate an IIAC (Input, Invalid Access Identifier) error message. To use the common control card switching commands, use the SW-DX-EQPT and ALW-SWDX-EQPT commands.
3. This command is not used for SONET (OCN) cards. A command on a SONET card will generate an IIAC (Input, Invalid Access Identifier) error message. To use a SONET card switching command, use the OPR-PROTNSW and RLS-PROTNSW commands.
4. If this command is used on a card that is not in a protection group, the SNVS (Status, Not in Valid State) error message will be responded.
5. If this command is sent to a missing working card, the SWFA (Status, Working Unit Failed) error message will be responded.
6. If this command is used on a protection card, the IIAC (Input, Invalid Access Identifier) error message will be responded.
7. If sending a mode parameter with a value other than NORM, FRCD, or null, the IDNV (Input, Data Not Valid) error message will be responded.
8. If sending the SW-TOWKG command to a working card when the working card has raised INHSWWKG, the SWLD (Status, Working Unit Locked) error message will be responded.
9. If sending the SW-TOWKG command to a working card when the protection card has raised INHSWWKG, the SPLD (Status, Protection Unit Locked) error message will be responded.
10. If sending the SW-TOWKG command to an active working card, the SNVS (Status, Not in Valid State) error message will be responded.

Section	SW-TOWKG-EQPT Description																
Category	Equipment																
Security	Maintenance																
Related Messages	<table border="0"> <tr> <td>ALW-SWDX-EQPT</td> <td>INH-SWTOWKG-EQPT</td> </tr> <tr> <td>ALW-SWTOPROTN-EQPT</td> <td>REPT ALM EQPT</td> </tr> <tr> <td>ALW-SWTOWKG-EQPT</td> <td>REPT EVT EQPT</td> </tr> <tr> <td>DLT-EQPT</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>ED-EQPT</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>ENT-EQPT</td> <td>RTRV-EQPT</td> </tr> <tr> <td>INH-SWDX-EQPT</td> <td>SW-DX-EQPT</td> </tr> <tr> <td>INH-SWTOPROTN-EQPT</td> <td>SW-TOPROTN-EQPT</td> </tr> </table>	ALW-SWDX-EQPT	INH-SWTOWKG-EQPT	ALW-SWTOPROTN-EQPT	REPT ALM EQPT	ALW-SWTOWKG-EQPT	REPT EVT EQPT	DLT-EQPT	RTRV-ALM-EQPT	ED-EQPT	RTRV-COND-EQPT	ENT-EQPT	RTRV-EQPT	INH-SWDX-EQPT	SW-DX-EQPT	INH-SWTOPROTN-EQPT	SW-TOPROTN-EQPT
ALW-SWDX-EQPT	INH-SWTOWKG-EQPT																
ALW-SWTOPROTN-EQPT	REPT ALM EQPT																
ALW-SWTOWKG-EQPT	REPT EVT EQPT																
DLT-EQPT	RTRV-ALM-EQPT																
ED-EQPT	RTRV-COND-EQPT																
ENT-EQPT	RTRV-EQPT																
INH-SWDX-EQPT	SW-DX-EQPT																
INH-SWTOPROTN-EQPT	SW-TOPROTN-EQPT																
Input Format	<p>SW-TOWKG-EQPT:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;MODE&gt;],[&lt;DIRN&gt;];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the parameter that identifies the working unit that is to be released from protection. &lt;AID&gt; is from the “PR SLOT” section on page 4-8</li> <li>• &lt;MODE&gt; is the parameter that will only support the NORM value. The null value will default to NORM. Sending the FRCD value will generate the same switching behavior as sending the NORM value. Valid values for &lt;MODE&gt; are shown in the “CMD_MODE” section on page 4-23</li> <li>• &lt;DIRN&gt; is the direction of transmission. The command only supports one value of the &lt;DIRN&gt; parameter - BTH. This parameter defaults to BTH; valid values for &lt;DIRN&gt; are shown in the “DIRECTION” section on page 4-35</li> </ul>																
Input Example	SW-TOWKG-EQPT:CISCO:SLOT-2:123::FRCD,BTH;																
Errors	This message generates all the default errors																







# TL1 Command Components

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This chapter describes the components of TL1 commands and autonomous messages for the Cisco ONS 15454 and the Cisco ONS 15327, Release 3.3, including:

- TL1 default values
- Access identifiers (AIDs)
- Parameter types

## 4.1 TL1 Default Values

### 4.1.1 BLSR

*Table 4-1 BLSR*

<b>BLSR</b>	<b>Default</b>
RVRTV	Y
RVTM	5.0 minutes
SRVRTV	Y
SRVTM	5.0 minutes

### 4.1.2 Cross Connections

*Table 4-2 Cross Connections*

<b>Cross Connections</b>	<b>Default</b>
CCT	2WAY for both STSp and VT1 cross connections

## 4.1.3 Environmental Alarms and Controls

**Table 4-3 Environmental Alarms and Controls**

Environmental Alarms and Controls	Default
OPR-EXT-CONT	CONTTYPE is set as one provisioned in the respective AID, there is not default for it. It is only used as a filter if entered. DUR is always taken as CONT.
RTRV-ATTR-CONT	There is no default for CONTTYPE. It is only used as a filter if entered.
RTRV-ATTR-ENV	There is no default for both NTFCNCDE and ALMTYPE, which are only used as filters if entered.
RTRV-EXT-CONT	CONTTYPE defaults to the conftype associated with the AID.
SET-ATTR-ENV	NTFCNCDE defaults to NR. ALMTYPE defaults to NULL. ALMMSG defaults to \“Env Alarm Input 1\”.

## 4.1.4 Equipment

**Table 4-4 Equipment**

Equipment	Default
ALW-SWTOPROTN-EQPT, INH-SWTOPROTN-EQPT and ALW-SWTOWKG-EQPT, ING-SWTOWKG-EQPT	DIRN defaults to BTH.
ENT-EQPT	PROTID, PRTYPE, RVRTV and RVTM defaults to NULL.
SW-DX-EQPT	MODE defaults to NORM.
SW-TOPROTN-EQPT and SW-TOWKG-EQPT	MODE defaults to NORM. DIRN defaults to BTH.

## 4.1.5 Performance

**Table 4-5 Performance**

Performance	Default
INIT-REG-<MOD2>	LOCN defaults to NEND (near end).
RTRV-PM-<MOD2>	LOCN defaults to NEND. TMPER defaults to 15 minutes.

Table 4-5 Performance (continued)

Performance	Default
RTRV-TH-<MOD2>	MONTYPE defaults to CVL for OCN, EC1, and DSN. MONTYPE defaults to ESP for STSp MONTYPE defaults to UASV for VT1. MONTYPE defaults to AISSP for the DS1 layer of the DS3XM card. LOCN defaults to NEND. TMPPER defaults to 15 minutes.
SET-PMMODE-<STS_PATH>	PMSTATE defaults to ON.
SET-TH-<MOD2>	LOCN defaults to NEND. TMPPER defaults to 15 minutes.

## 4.1.6 Ports

Table 4-6 Ports

Ports	Default
OCN Line	DCC defaults to N. TMGREF defaults to N. SYNCMSG defaults to Y. SENDDUS defaults to N. PJMON defaults to 0. SFBER defaults to 1E-4. SDBER defaults to 1E-7. MODE defaults to SONET. PST defaults to OOS.
EC1 Line	PJMON defaults to 0 (zero). LBO defaults to 0-225. RXEQUAL is Y. PST defaults to defaults to OOS.
T1 Line (DS1/DS1N)	LINECDE defaults to AMI. FMT defaults to D4. LBO defaults to 0-133. PST defaults to OOS.
T3 Line (DS3, DS3E, DS3NE, DS3XM)	DS3/T3 LINECDE defaults to 0-225. DS3 PST defaults to OOS. DS3E/DS3NE FMT defaults to UNFRAMED. DS3E.DS3NE LINECDE defaults to B3ZS. DS3E/DS3NE LBO defaults to 0-225. DS3 of DS3XM PST defaults to OOS.

## 4.1.7 SONET Line Protection

**Table 4-7 SONET Line Protection**

SONET Line Protection	Default
OCN Line Protection	<p>PROTID defaults to the protecting port of the protection group (SLOT-#(OCN)PORT-#). It is a string that can have a maximum length of 32 characters.</p> <p>RVRTV defaults to N (non-revertive mode).</p> <p>RVTM defaults to 5.0 minutes.</p> <p>PSDIRN defaults to UNI.</p>
OPR-PROTNSW-<OCN>	<p>ST (switch type) is optional and for BLSR protection switch only.</p> <p>ST defaults to BLSR RING switch type.</p>

## 4.1.8 STS and VT Paths

**Table 4-8 STS and VT Paths**

STS and VT Paths	Default
STS Path	<p>SFBER, SDBER, RVRTV, and RVTM apply to UPSR STS paths only.</p> <p>SFBER defaults to 1E-4.</p> <p>SDBER defaults to 1E-6.</p> <p>RVRTV defaults to N.</p> <p>RVTM defaults to empty because RVRTV is N when UPSR STSp is created.</p> <p>J1 is implemented on DS1, DS1N, DS3, DS3E, DS3NE, DS3XM, EC1, OC3, OC48AS AND OC192 cards.</p> <p>TRCMODE defaults to the OFF mode.</p> <p>EXPTRC defaults to a copy of the provisioned string or NULL when TRCMODE is OFF mode.</p> <p>EXPTRC defaults to the user entered string when the TRCMODE is MANUAL mode.</p> <p>EXPTRC defaults to a copy of the acquired received string or NULL if the string has not been acquired when the TRCMODE is AUTO mode.</p> <p>INCTRC defaults to the incoming string (NULL) when the TRCMODE is under OFF mode.</p> <p>INCTRC defaults to a copy of the received string or NULL if the string has not been received when the TRCMODE is under MANUAL or AUTO mode.</p>
VT Path	<p>RVRTV, RVTM apply to UPSR VT paths only.</p> <p>RVRTV defaults to N.</p> <p>RVTM defaults to empty because RVRTV is N when UPSR VT1 is created.</p>

## 4.1.9 Synchronization

**Table 4-9 Synchronization**

Synchronization	Default
BITS	LINECDE defaults to B8ZS. FMT defaults to ESF. SYNCMSG defaults to Y. PST defaults to OOS.
NE-SYCN	TMMDE defaults to EXTERNAL. SSMGEN defaults to GEN1. QRES defaults to SAM-AS-DUS. RVRTV defaults to Y. RVTM defaults to 5.0 minutes.
SYCN	PRI/SEC QRES defaults to ABOVE-STU. PRI STATUS defaults to ACT. SEC STATUS defaults to STBY. THIRD QRES and STATUS defaults to NULL.

## 4.2 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.

### 4.2.1 ALL

**Table 4-10 ALL for ONS 15454 and ONS 15327**

AID	ONS 15454	ONS 15327
CrossConnect ID	FACILITY STS	—
PR SLOT	NULL SLOT-1 SLOT-3 SLOT-5 SLOT-13 SLOT-15 SLOT-17	—
BITS	BITS-ALL BITS-{1,2}	BITS-ALL BITS-{1,2}
BLSR	ALL BLSR-{0-9999}	ALL BLSR-ALL BLSR-{0-9999}
DS1	DS1-{1-6,12-17}-{1-6}-{1-28}	—

Table 4-10 ALL for ONS 15454 and ONS 15327 (continued)

AID	ONS 15454	ONS 15327
ENV	ENV-{IN,OUT}-ALL ENV-{IN,OUT}-{1-4} 4 Input, 4 Output	ENV-{IN,OUT}-ALL ENV-{IN,OUT}-{1-6} 6 Input, 2 Output
EQPT	AIP ALL BP FAN SLOT-ALL SLOT-{1-17} SLOT-{1-6,12-17}	SLOT-ALL SLOT-{1-8}
FACILITY	FAC-{1-6,12-17}-ALL FAC-{1-6,12-17}-{1-12} FAC-{1-6,12-17}-{1-14} FAC-{1-6,12-17}-{1-4} FAC-{1-6,12-17}-{1-6} FAC-{1-6,12-17}-{1-8} FAC-{1-6,12-17}-{1} FAC-{5,6,12,13}-{1}	FAC-{1-6}-ALL FAC-{1-4}-{1} OC12, OC48 FAC-{5-6}-{1-3} XTC-DS3 FAC-{5-6}-{1-28} XTC-DS1 FAC-{1-4}-{1-4} OC3
STS	FAC-{1-6,12-17}-{1-4} STS-{1-6,12-17}-ALL STS-{1-6,12-17}-{1,10,-,37} STS-{1-6,12-17}-{1,13,25,37} STS-{1-6,12-17}-{1,25} STS-{1-6,12-17}-{1,4,7,-,22} STS-{1-6,12-17}-{1,4,7,10-46} STS-{1-6,12-17}-{1,4,7,10} STS-{1-6,12-17}-{1,7,13,19,-,43} STS-{1-6,12-17}-{1,7,13,19-43} STS-{1-6,12-17}-{1,7} STS-{1-6,12-17}-{1-12} STS-{1-6,12-17}-{1-48} STS-{1-6,12-17}-{1-6} STS-{1-6,12-17}-{1} STS-{5,6,12,13}-{1,13,25,37-81} STS-{5,6,12,13}-{1,13,25,37} STS-{5,6,12,13}-{1,4,7,10-190} STS-{5,6,12,13}-{1,4,7,10-46} STS-{5,6,12,13}-{1,4,97,145} STS-{5,6,12,13}-{1,7,13,19-187} STS-{5,6,12,13}-{1,7,13,19-43} STS-{5,6,12,13}-{1-192} STS-{5,6,12,13}-{1-48} STS-{5,6,12,13}-{1}	STS-{1-6}-ALL STS-{5-6}-{1} STS1 for XTC-DS1 STS-{5-6}-{2-4} STS1 for XTC-DS3 STS-{1-4}-{1} STS48C for OC48 STS-{1-4}-{1,13,25,37} STS12C for OC48 STS-{1-4}-{1,7,13,19,...,43} STS6C for OC48 STS-{1-4}-{1,7} STS6C for OC12 STS-{1-4}-{1,4,7,10,...,46} STS3C for OC48 STS-{1-4}-{1,4,7,10} STS3C for OC3 and OC12 STS-{1-4}-{1-12} STS1 for OC3, OC12 STS-{1-4}-{1-48} STS1 for OC48
SYN	SYNC-NE	SYNC-NE

Table 4-10 ALL for ONS 15454 and ONS 15327 (continued)

AID	ONS 15454	ONS 15327
SYN_SRC	BITS-1 BITS-2 FAC-{1-6,12-17}-{1-4} FAC-{1-6,12-17}-{1} FAC-{5,6,12,13}-{1} INTERNAL NONE SYNC-NE	FAC-{1-4}-{1} OC12, OC48 FAC-{1-4}-{1-4} OC3 INTERNAL SYNC-NE SYNC-{BITS1,BITS2}
SYNC_REF	SYNC-ALL SYNC-NE SYNC-{BITS1,BITS2}	SYNC-ALL SYNC-NE SYNC-{BITS1,BITS2}
SYNCSW	INT PRI SEC THIRD	INT PRI SEC THIRD
TAP	{0, 1-999}	{0, 1-999}
VT1_5	VT1-{1-6,12-17}-1-{1-7}-{1-2} VT1-{1-6,12-17}-{1-12}-{1-7}-{1-4} VT1-{1-6,12-17}-{1-24}-{1-7}-{1-4} VT1-{1-6,12-17}-{1-48}-{1-7}-{1-4} VT1-{1-6,12-17}-{1-6}-{1-7}-{1-4} VT1-{5,6,12,13}-{1-192}-{1-7}-{1-4} VT1-{5,6,12,13}-{1-48}-{1-7}-{1-4}	ALL VT1-{5-6}-{1-2}-{1-7}-{1-4} XTC-DS1 VT1-{5-6}-{1-3}-{1-7}-{1-4} XTC-DS3 VT1-{1-4}-{1-12}-{1-7}-{1-4} OC3, OC12 VT1-{1-4}-{1-48}-{1-7}-{1-4} OC48

## 4.2.2 CrossConnectID

(ONS 15454 only)

Table 4-11 CrossConnectID for ONS 15454

AID	ONS 15454 Pattern
FACILITY	FAC-{1-6,12-17}-ALL FAC-{1-6,12-17}-{1-12} FAC-{1-6,12-17}-{1-14} FAC-{1-6,12-17}-{1-4} FAC-{1-6,12-17}-{1-6} FAC-{1-6,12-17}-{1-8} FAC-{1-6,12-17}-{1} FAC-{5,6,12,13}-{1}

**Table 4-11 CrossConnectID for ONS 15454 (continued)**

AID	ONS 15454 Pattern
STS	FAC-{1-6,12-17}-{1-4} STS-{1-6,12-17}-ALL STS-{1-6,12-17}-{1,10,-,37} STS-{1-6,12-17}-{1,13,25,37} STS-{1-6,12-17}-{1,25} STS-{1-6,12-17}-{1,4,7,-,22} STS-{1-6,12-17}-{1,4,7,10-46} STS-{1-6,12-17}-{1,4,7,10} STS-{1-6,12-17}-{1,7,13,19,-,43} STS-{1-6,12-17}-{1,7} STS-{1-6,12-17}-{1-12} STS-{1-6,12-17}-{1-48} STS-{1-6,12-17}-{1-6} STS-{1-6,12-17}-{1} STS-{5,6,12,13}-{1,13,25,37-81} STS-{5,6,12,13}-{1,13,25,37} STS-{5,6,12,13}-{1,4,7,10-190} STS-{5,6,12,13}-{1,4,7,10-46} STS-{5,6,12,13}-{1,49,97,145} STS-{5,6,12,13}-{1,7,13,19-187} STS-{5,6,12,13}-{1,7,13,19-43} STS-{5,6,12,13}-{1-192} STS-{5,6,12,13}-{1-48} STS-{5,6,12,13}-{1}

## 4.2.3 PRSLOT

(ONS 15454 only)

Valid protection slots for the electrical cards

**Table 4-12 PRSLOT for ONS 15454**

Pattern	Description
NULL	Indicates there is no protection group. Used when trying to delete a protection group.
SLOT-1	The No.1 slot of an NE
SLOT-3	The No.3 slot of an NE
SLOT-5	The No.5 slot of an NE
SLOT-13	The No.13 slot of an NE
SLOT-15	The No.15 slot of an NE
SLOT-17	The No.17 slot of an NE



## 4.2.4 BITS

### 4.2.4.1 BITS for ONS 15454

AID for BITS

**Table 4-13 BITS for ONS 15454**

Pattern	Description
BITS-ALL	BITS AIDS of both BITS-1 and BITS-2 in the RTRV-BITS command
BITS-{1,2}	Individual BITS AID

### 4.2.4.2 BITS for ONS 15327

AID for BITS

**Table 4-14 BITS for ONS 15327**

Pattern	Description
BITS-ALL	BITS AIDS of both BITS-1 and BITS-2 in the RTRV-BITS command
BITS-{1,2}	Individual BITS AID

## 4.2.5 BLSR

### 4.2.5.1 BLSR for ONS 15454

BLSR AIDs are used to access the specific BLSR of the NE.

**Table 4-15 BLSR for ONS 15454**

Pattern	Description
ALL	The whole BLSR of the NE
BLSR-{0-9999}	Individual BLSR of the NE

## 4.2.5.2 BLSR for ONS 15327

BLSR AIDs are used to access the specific BLSR of the NE.

**Table 4-16 BLSR for ONS 15327**

Pattern	Description
ALL	The whole BLSR of the NE
BLSR-ALL	The whole BLSR of the NE
BLSR-{0-9999}	Individual BLSR of the NE

## 4.2.6 DS1

(ONS 15454 only)

Used to access the DS-1 frame layer of the DS3XM.

**Table 4-17 DS1 for ONS 15454**

Pattern	Description
DS1-{1-6,12-17}-{1-6}-{1-28} (ONS 15454 only)	DS1 AID for the DX3XM card

## 4.2.7 ENV

### 4.2.7.1 ENV for ONS 15454

The environmental AID for the AIC card

**Table 4-18 ENV for ONS 15454**

Pattern	Description
ENV-{IN,OUT}-{1-4} 6 Input, 2 Output	Environmental alarm AID. "IN" is used for environmental AID, "OUT" is used for control AID.

### 4.2.7.2 ENV for ONS 15327

The environmental components within the XTC card.

**Table 4-19 ENV for ONS 15327**

Pattern	Description
ENV-{IN,OUT}-{1-6} 4 Input, 4 Output	Environmental alarm AID. "IN" is used for environmental AID, "OUT" is used for control AID.

## 4.2.8 EQPT

### 4.2.8.1 EQPT for ONS 15454

Equipment AIDs are used to access specific cards. The OC48/OC192 cards can only use the high speed slots (Slot 5, Slot 6, Slot 12, Slot 13).

**Table 4-20 EQPT for ONS 15454**

Pattern	Description
AIP	The AID for the AIP. It is used for RTRV-INV output only.
ALL	The ALL AID is only used for the RTRV-INV input command. It reports all of the inventory information of the whole NE: AIP, BP, FAN and SLOT-ALL.
BP	The AID for the backplane. It is used for RTRV-INV output only.
FAN	The AID for the fan tray. It is used for RTRV-INV output only.
SLOT-ALL	All of the NE equipment AIDs
SLOT-{1-17}	Individual equipment AID of an NE
SLOT-{1-6,12-17}	Individual equipment AID of the I/O card units or slots

### 4.2.8.2 EQPT for ONS 15327

Equipment AIDs are used to access specific cards. The I/O cards can only use the I/O slots (Slots 1–4). Slots 5 and 6 are reserved for the XTC cards and Slots 7 and 8 are reserved for MIC cards.

**Table 4-21 EQPT for ONS 15327**

Pattern	Description
SLOT-ALL	All of the NE equipment AIDs
SLOT-{1-8}	Individual equipment AID of an NE

## 4.2.9 FACILITY

### 4.2.9.1 FACILITY for ONS 15454

Facilities AIDs are used to access specific ports.

**Table 4-22 FACILITY for ONS 15454**

Pattern	Description
FAC-{1-6,12-17}-ALL	All the facilities of an I/O unit or slot
FAC-{1-6,12-17}-{1-12}	Facilities AID for the EC1 and DS3 cards
FAC-{1-6,12-17}-{1-14}	Facilities for the DS1 card
FAC-{1-6,12-17}-{1-4}	Facilities for the four-port OC3 card and four-port OC12 card

**Table 4-22 FACILITY for ONS 15454 (continued)**

Pattern	Description
FAC-{1-6,12-17}-{1-6}	Facilities for the DS3XM card
FAC-{1-6,12-17}-{1}	Facility AID for the one-port OC12, and OC48AS cards
FAC-{5,6,12,13}-{1}	Facility AID for the OC48/OC192 card. The OC48/OC192 cards can only use the high speed slots (Slot 5, Slot 6, Slot 12, Slot 13).

## 4.2.9.2 FACILITY for ONS 15327

Facilities AIDs are used to access specific ports.

**Table 4-23 FACILITY for ONS 15327**

Pattern	Description
FAC-{1-6}-ALL	All the facilities of an I/O unit or slot
FAC-{5-6}-{1-28}	Facilities AID for the DS1 on the XTC card
FAC-{5-6}-{1-3}	Facilities AID for the DS3 on the XTC card
FAC-{1-4}-{1}	Facilities AID for the OC12 and OC48 cards
FAC-{1-4}-{1-4}	Facilities AID for the OC3 card

## 4.2.10 STS

### 4.2.10.1 STS for ONS 15454

SONET frame-level AID set

**Table 4-24 STS for ONS 15454**

Pattern	Description
FAC-{1-6,12-17}-{1-4}	Dynamically allocated STSs of all widths for the G1000-4 card
STS-{1-6,12-17}-ALL	All the STSs of an STS bandwidth on an I/O unit
STS-{1-6,12,-17}-{1,10,-,37}	STS9C AID for an OC48AS and four-port OC12 card
STS-{1-6,12-17}-{1,13,25,37}	STS12C AID for an OC48AS and four-port OC12 card
STS-{1-6,12-17}-{1,25}	STS24C AID for an OC48AS card
STS-{1-6,12-17}-{1,4,7,10-46}	STS3C AID for an OC48AS and four-port OC12 card
STS-{1-6,12-17}-{1,4,7,10}	STS3C AID for a four-port OC3 and one-port OC12 card
STS-{1-6,12-17}-{1,7,13,19-43}	STS6C AID for an OC48AS and four-port OC12 card
STS-{1-6,12-17}-{1-12}	STS1 AID for a one-port OC12, EC1, DS3 and four-port OC3 card
STS-{1-6,12-17}-{1,7}	STS6C AID for one-port OC12 card
STS-{1-6,12-17}-{1-48}	STS1 AID for an OC48AS and four-port OC12 card
STS-{1-6,12-17}-{1-6}	STS1 AID for a DS3XM card

**Table 4-24 STS for ONS 15454 (continued)**

Pattern	Description
FAC-{1-6,12-17}-{1-4}	Dynamically allocated STSs of all widths for the G1000-4 card
STS-{1-6,12-17}-{1}	STS1 AID for a DS1 card STS3C AID for a four-port OC3 card STS9C AID for a one-port OC12 and four-port OC12 card STS12C AID for a one-port OC12 card STS48C AID for an OC48AS card
STS-{5,6,12,13}-{1,13,25,37-81}	STS12C AID for an OC192 card
STS-{5,6,12,13}-{1,13,25,37}	STS12C AID for an OC48 card
STS-{5,6,12,13}-{1,4,7,10-190}	STS3C AID for an OC192 card
STS-{5,6,12,13}-{1,4,7,10-46}	STS3C AID for an OC48 card
STS-{5,6,12,13}-{1,49,97,145}	STS48C AID for an OC192 card
STS-{5,6,12,13}-{1,7,13,19-187}	STS6C AID for an OC192 card
STS-{5,6,12,13}-{1,7,13,19-43}	STS6C AID for an OC48 card
STS-{5,6,12,13}-{1-192}	STS1 AID for an OC192 card
STS-{5,6,12,13}-{1-48}	STS1 AID for an OC48 card
STS-{5,6,12,13}-{1}	STS48C AID for an OC48 card STS192C AID for the OC192 card
FAC-{1-6,12-17}-{1-4}	Dynamically allocated STSs of all widths for the G1000-4 card

### 4.2.10.2 STS for ONS 15327

SONET frame-level AID set

**Table 4-25 STS for ONS 15327**

Pattern	Description
STS-{1-6}-ALL	All the STSs of an STS bandwidth on an I/O unit
STS-{5-6}-{1}	STS1 AID for the DS1 in the XTC card
STS-{5-6}-{2-4}	STS1 AID for the DS3 in the XTC card
STS-{1-4}-{1}	STS48C AID for the OC48 card STS12C for the OC12 card
STS-{1-4}-{1,13,25,37}	STS12C AID for the OC48 card
STS-{1-4}-{1,7,13,19,...43}	STS6C AID for the OC48 card
STS-{1-4}-{1,7}	STS6C AID for the OC12 card
STS-{1-4}-{1,4,7,10,...,46}	STS3C AID for the OC48 card
STS-{1-4}-{1,4,7,10}	STS3C AID for the OC3 and OC12 card
STS-{1-4}-{1-12}	STS1 AID for the OC3 and OC12 card
STS-{1-4}-{1-48}	STS1 AID for the OC48 card

## 4.2.11 SYN

### 4.2.11.1 SYN for ONS 15454

Synchronization AIDs

**Table 4-26 SYN for ONS 15454**

Pattern	Description
SYNC-NE	NE sync AID

### 4.2.11.2 SYN for ONS 15327

Synchronization AIDs

**Table 4-27 SYN for ONS 15327**

Pattern	Description
SYNC-NE	NE sync AID

## 4.2.12 SYN\_SRC

### 4.2.12.1 SYN\_SRC for ONS 15454

Synchronization source

**Table 4-28 SYN\_SRC for ONS 15454**

Pattern	Description
BITS-1	Sync source is BITS-1
BITS-2	Sync source is BITS-2
FAC-{1-6,12-17}-{1-4}	Sync source is the optical card (four-port OC3 and four-port OC12) facility
FAC-{1-6,12-17}-{1}	Sync source is the optical card (one-port OC12 and OC48AS) facility
FAC-{5,6,12,13}-{1}	Sync source is the optical card (OC48,OC192) facility
INTERNAL	Set the SYN_SRC to be the system default value. The “Internal” value of the SYN_SRC is only applied for the SYNC-NE AID on the ED-SYNCN command.
NONE	Set the SYNC_SRC value to the default value for BITS-OUT. The “NONE” value of SYNC_SRC only applies to the BITS-1 and BITS-2 AID of the ED-SYNCN command.
SYNC-NE	SYNC-NE source. It is only used in the alarm report or alarm retrieve commands.

## 4.2.12.2 SYN\_SRC for ONS 15327

Synchronization source

**Table 4-29 SYN\_SRC for ONS 15327**

Pattern	Description
FAC-{1-4}-{1-4}	Sync source is the optical card (OC3) facility
FAC-{1-4}-{1}	Sync source is the optical card (OC12, OC48) facility
INTERNAL	Set the SYN_SRC to be the system default value. The “Internal” value of the SYN_SRC is only applied for the SYNC-NE AID on the ED-SYNCN command.
SYNC-NE	SYNC-NE source. It is only used in the alarm report or alarm retrieve commands.
{BITS-1,BITS-2}	BITS-1 or BITS-2 of the synchronization source

## 4.2.13 SYNC\_REF

### 4.2.13.1 SYNC\_REF for ONS 15454

Synchronization AIDs

**Table 4-30 SYNC\_REF for ONS 15454**

Pattern	Description
SYNC-ALL	NE, BITS1 and BITS2 sync AIDs used for the RTRV-SYNCN command only
SYNC-NE	NE sync AID
SYNC-{BITS1,BITS2}	BITS1 and BITS2 sync AIDs

## 4.2.13.2 SYNC\_REF for ONS 15327

Synchronization AIDs

**Table 4-31 SYNC\_REF for ONS 15327**

Pattern	Description
SYNC-ALL	NE, BITS1 and BITS2 sync AIDs used for the RTRV-SYCN command only
SYNC-NE	NE sync AID
SYNC-{BITS1,BITS2}	BITS1 and BITS2 sync AIDs

## 4.2.14 SYNC\_SW

### 4.2.14.1 SYNC\_SW for ONS 15454

New synchronization reference that will be used

**Table 4-32 SYNC\_SW for ONS 15454**

Pattern	Description
INT	Internal clock. The "INT" value of the syncsw is only applied for the SYNC-NE AID on the OPR-SYNC-SW command.
PRI	Primary timing reference
SEC	Secondary timing reference
THIRD	Third timing reference

### 4.2.14.2 SYNC\_SW for ONS 15327

New synchronization reference that will be used

**Table 4-33 SYNC\_SW for ONS 15327**

Pattern	Description
INT	Internal clock. The "INT" value of the syncsw is only applied for the SYNC-NE AID on the OPR-SYNC-SW command.
PRI	Primary timing reference
SEC	Secondary timing reference
THIRD	Third timing reference



## 4.2.15 TAP

### 4.2.15.1 TAP for ONS 15454

Test access path AID which indicates the TAP number

**Table 4-34 TAP for ONS 15454**

Pattern	Description
{0, 1-999}	Indicates individual TAP number of the NE. The zero (0) TAP number is used in the [<TACC>] field of the ED-rr test access related commands. When [<TACC>] is zero (0), the TAP is deleted.

### 4.2.15.2 TAP for ONS 15327

Test access path AID which indicates the TAP number

**Table 4-35 TAP for ONS 15327**

Pattern	Description
{0, 1-999}	Indicates individual TAP number of the NE. The zero (0) TAP number is used in the [<TACC>] field of the ED-rr test access related commands. When [<TACC>] is zero (0), the TAP is deleted.

## 4.2.16 VT1\_5

### 4.2.16.1 VT1\_5 for ONS 15454

Virtual termination AIDs

**Table 4-36 VT1\_5 for ONS 15454**

Pattern	Description
VT1-{1-6,12-17}-1-{1-7}-{1-2}	DS1 card VT AID set
VT1-{1-6,12-17}-{1-12}-{1-7}-{1-4}	EC1, one-port OC12, four-port OC3 card VT AID set
VT1-{1-6,12-17}-{1-48}-{1-7}-{1-4}	OC48AS and four-port OC12 card VT AID set
VT1-{1-6,12-17}-{1-6}-{1-7}-{1-4}	DS3XM card VT AID set
VT1-{5-6,12-13}-{1-192}-{1-7}-{1-4}	OC192 card VT AID set
VT1-{5,6,12,13}-{1-48}-{1-7}-{1-4}	OC48 card VT AID set

## 4.2.16.2 VT1\_5 for ONS 15327

Virtual termination AIDs

**Table 4-37 VT1\_5 for ONS 15327**

Pattern	Description
ALL	All the VT cross connections of the NE. This <ALL> AID is only used for the RTRV-CRS-VT1 command.
VT1-{5-6}-{1-2}-{1-7}-{1-4}	DS1 on XTC card VT AID set
VT1-{5-6}-{1-3}-{1-7}-{1-4}	DS3 on XTC card VT AID Set
VT1-{1-4}-{1-12}-{1-7}-{1-4}	OC3 and OC12 card VT AID set
VT1-{1-4}-{1-48}-{1-7}-{1-4}	OC48 card VT AID set

## 4.3 Parameter Types

This section provides a description of all message parameter types defined for the TL1 messages used in the ONS 15454 and ONS 15327. The TL1 message descriptions frequently refer to this section.

### 4.3.1 ATAG Description

The ATAG is used for message sequencing. The number is incremented by one for each autonomous message sent by the NE. The ONS 15454 and ONS 15327 use whole numbers 0000 to 9999.

### 4.3.2 CTAG Description

The 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 “.”).

### 4.3.3 TID Description

The TID is the name of the NE where the command is addressed. TID is the Telcordia name for the system.

## 4.3.4 Parameter Notes

1. If a parameter is set to a value that is inconsistent with something already in the database, and that value is not changed to a consistent value then the command will be denied.
2. If a parameter is set to a value that is consistent with what is already in the database, but another parameter in the same command is incompatible, then the command will be denied.
3. The correct way to issue a command where parameters may be in conflict is to:
  - a. First issue that command and change all relevant parameters to compatible values,
  - b. Then issue the command again to change the target values.

For example, OC-N is syncmsg=y, to change SDH to y, ED-OCN needs to be called to set syncmsg=N, then called again to set SDH=y.

4. The attribute defaults have also been presented under RTRV commands, and they can be retrieved only if the RTRV commands follow the card/entity original provision.
5. The default for an optional field of an ED command is either the provisioned default value or the last provisioned value in the previous ED command.

## 4.3.5 ALL\_MONTYPE

Monitoring type list

**Table 4-38 ALL\_MONTYPE Values**

<b>ALL_MONTYPE Values</b>	<b>Description</b>
AISSP	Alarm Indication Signal Seconds - Path
CVCPP	Coding Violations - CP-Bit Path
CVL	Coding Violations - Line
CVP	Coding Violations - Path
CVS	Coding Violations - Section
CVV	Coding Violations - Section
ESCPP	Errored Seconds - CP- Bit Path
ESL	Errored Seconds - Line
ESP	Errored Seconds - Path
ESS	Errored Seconds - Section
ESV	Errored Seconds - VT Path
FCL	Failure Count - Line
FCP	Failure Count - Path
LOSSL	Loss of Signal Seconds - Line
NPJC-PDET	PPJC-PDET:Negative Pointer Justification
NPJC-PGEN	PPJC-PGEN:Negative Pointer Justification
PPJC-PDET	PPJC-PDET:Positive Pointer Justification

**Table 4-38 ALL\_MONTYPE Values (continued)**

<b>ALL_MONTYPE Values</b>	<b>Description</b>
PPJC-PGEN	PPJC-PGEN:Positive Pointer Justification
PSC	Protection Switching Count
PSC-R	Protection Switching Count - Ring
PSC-S	Protection Switching Count - Span
PSC-W	Protection Switching Count - Working
PSD	Protection Switching Duration
PSD-R	Protection Switching Duration - Ring
PSD-S	Protection Switching Duration - Span
PSD-W	Protection Switching Duration - Working
SASCPP	Severely Errored Framing/AIS Second - CP-Bit Path
SASP	Severely Errored Framing/AIS Seconds Path
SEFS	Severely Errored Framing Seconds
SESCPP	Severely Errored Second - CP-Bit Path
SESL	Severely Errored Second - Line
SESP	Severely Errored Second - Path
SESS	Severely Errored Second - Section
SESV	Severely Errored Second - VT Path
UASCPP	Unavailable Second - CP-Bit Path
UASL	Unavailable Second - Line
UASP	Unavailable Second - Path
UASV	Unavailable Second - VT Path

## 4.3.6 ALL\_THR

Threshold list

**Table 4-39 ALL\_THR Value**

<b>ALL_THR Values</b>	<b>Description</b>
T-AISSP	Alarm Indication Signal Seconds - Path
T-BBEHP	Background Block Errors - High Order Path -VC4/VC4-nc
T-BBEMS	Background Block Errors- Multiplex Section
T-BBERS	Background Block Errors - Regenerator Section
T-CVCP	Coding Violations - CP-Bit Path
T-CVL	Coding Violations - Line
T-CVP	Coding Violations - Path
T-CVS	Coding Violations - Section

**Table 4-39 ALL\_THR Value (continued)**

<b>ALL_THR Values</b>	<b>Description</b>
T-CVV	Coding Violations - VT Path
T-EBHP	EB - High Order Path
T-EBLP	EB Low Order Path VC3/VC12
T-EBMS	EB Multiplex Section
T-EBRS	EB Regenerator Section
T-ESCPP	Errored Seconds - CP-Bit Path
T-ESHP	ED High Order Path VC4/VC4-nc
T-ESL	Errored Seconds - Line
T-ESLP	ES Low Order Path VC3/VC12
T-ESMS	ES Multiplex Section
T-ESP	Errored Seconds - Path
T-ESRS	ES Regenerator Section
T-ESS	Errored Seconds - Section
T-ESV	Errored Seconds - VT Path
T-FCHP	FC High Order Path
T-FCL	Failure Count - Line
T-FCP	Failure Count - Path
T-FCLP	FC Low Order Path
T-FCMS	FC Multiplex Section
T-FCP	Failure Count - Line
T-LOSSL	Loss of Signal Seconds - Line
T-PJNEG	PPJC-PDET:Negative Pointer Justification
T-PJNEG-GEN	PPJC-PGEN:Negative Pointer Justification
T-PJPOS	PPJC-PDET:Positive Pointer Justification
T-PJPOS-GEN	PPJC-PGEN:Positive Pointer Justification
T-PSC	Protection Switching Count
T-PSD	Protection Switching Duration
T-SASCPP	Severely Errored Framing/AIS Second - CP-Bit Path
T-SASP	Severely Errored Framing/AIS Seconds
T-SEFS	Severely Errored Framing Seconds
T-SEFSRS	SEFRS
T-SESCPP	Severely Errored Second - CP-Bit Path
T-SESHP	SES High Order Path
T-SESL	Severely Errored Second - Line
T-SESLP	SES Low Order Path
T-SESMS	SES Multiplex Section

**Table 4-39 ALL\_THR Value (continued)**

<b>ALL_THR Values</b>	<b>Description</b>
T-SESP	Severely Errored Second - Path
T-SESRS	SES Regeneration Section
T-SESS	Severely Errored Second - Section
T-SESV	Severely Errored Second - VT Path
T-UASCPP	Unavailable Second - CP-Bit Path
T-UASHP	UA High Order Path
T-UASL	Unavailable Second - Line
T-UASLP	UA Low Order Path
T-UASMS	UA Multiplex Section
T-UASP	Unavailable Second - Path
T-UASV	Unavailable Second - VT Path

## 4.3.7 BITS\_LineBuildOut

BITS Line buildout

**Table 4-40 BITS\_LineBuildOut Values**

<b>BITS_LineBuildOut Values</b>	<b>Description</b>
0–133	BITS line buildout range is 0–133
134–266	BITS line buildout range is 134–266
267–399	BITS line buildout range is 267–399
400–533	BITS line buildout range is 400–533
534–655	BITS line buildout range is 534–655

## 4.3.8 BLSR\_MODE

BLSR mode

**Table 4-41 BLSR\_MODE Values**

<b>BLSR_MODE Values</b>	<b>Description</b>
2F	Two fiber BLSR
4F	Four fiber BLSR

## 4.3.9 BLSR\_TYPE

BLSR type of an OCN port

**Table 4-42 BLSR\_TYPE Values**

BLSR_TYPE Values	Description
EASTPROT	Identifies that the OCN port is an east protecting port
EASTWORK	Identifies that the OCN port is an east working port
WESTPROT	Identifies that the OCN port is a west protecting port
WESTWORK	Identifies that the OCN port is a west working port

## 4.3.10 CCT

Defines the type of cross-connect to be created

**Table 4-43 CCT Values**

CCT Values	Description
1WAY	A unidirectional connection from a source tributary to a destination tributary
1WAYDC	UPSR mcast drop with (1-way) continue
1WAYEN	UPSR mcast end node (1-way continue)
2WAY	A bidirectional connection between the two tributaries

## 4.3.11 CMD\_MODE

Command mode is used to force the system to execute a given command regardless of any standing conditions. Normal mode is the default behavior for all commands but the user may specify FRCD to force the system to override a state in which the command would normally be denied.

**Table 4-44 CMD\_MODE Values**

CMD_MODE Values	Description
FRCD	Force the system to override a state in which the command would normally be denied
NORM	Execute the command normally. Do not override any conditions that may make the command fail.

## 4.3.12 COND\_EFF

The affected unit's condition

**Table 4-45 COND\_EFF Values**

COND_EFF Values	Description
CL	Standing condition cleared
SC	Standing condition raised
TC	Transient condition

## 4.3.13 CONDITION

The condition type of the alarm indication

**Table 4-46 CONDITION Values**

CONDITION Values	Description
ACOMAN	Alarm cutoff is in manual mode
AIS	External failure - Incoming - Alarm Indication Signal
AIS-L	External failure - Incoming - Alarm Indication Signal - Line
AIS-P	External failure - Incoming - Alarm Indication Signal - Path
AIS-V	External failure - Incoming - Alarm Indication Signal - VT layer
ALM-SUPPRESS	Alarms/Events Suppressed for this Object
APSB	External failure - Incoming - Automatic Protection Switching Channel - Byte failure
APSC	External failure - Incoming - Automatic Protection Switching Channel failure
APSC-IMP	External failure - Incoming - Automatic Protection Switching-Invalid K bytes
APSCCONNL	External failure - Incoming -Automatic Protection Switching -Connection Loss
APSCDFLTK	External failure - Incoming -Automatic Protection Switching -Default K byte
APSCINCON	External failure - Incoming -Automatic Protection Switching -Inconsistent
APSCM	External failure - Incoming - Automatic Protection Switching Channel - Protection Switching Channel Match failure
APSCNMIS	APS Channel - BLSR - Node Id Mismatch
APSM	External failure - Incoming -Automatic Protection Switching Channel - Automatic Protection Switch Mode Mismatch
AUTOLSROFF	Internal hardware - Facility Termination Equipment - Automatic Laser Shutdown
AUTORESET	Recovery action - Automatic system Reset



**Table 4-46** *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
AUTOSW-AIS	Automatic Switch - Alarm Indication Signal
AUTOSW-LOP	Automatic Switch - Loss of Pointer
AUTOSW-PDI	Automatic Switch - Payload Defect Indication
AUTOSW-SDBER	Automatic Switch - Signal Degrade Bit Error Rate
AUTOSW-SFBER	Automatic Switch - Signal Fail Bit Error Rate
AUTOSW-UNEQ	Automatic Switch - Unequipped
BKUPMEMP	Internal hardware - Control Equipment - Primary non-volatile Backup Memory failure
BKUPMEMS	Internal hardware - Control Equipment - Secondary non-volatile Backup Memory failure
BLSR-RESYNC	Bidirectional Line Switched Ring - Tables Resynchronized
BLSR-UPDATED	BLSR Multiple Node Table Update Finished
BLSROSYNC	Bidirectional Line Switched Ring - Out of Synchronization
BPV	External failure - Incoming - Bipolar Violation
CARLOSS	External failure - Incoming - Carrier Loss on the LAN
CLDRESTART	Recovery action - Cold Restart
CONCAT	Control Bus Failure
CONTBUS-1	Control Bus Failure - Bus 1
CONTBUS-2	Control Bus Failure - Bus 2
CONTBUS-A-X	TCC/TCC+ card in Slot 7 has lost communication with the card in Slot X
CONTBUS-B-X	TCC/TCC+ card in Slot 11 has lost communication with the card in Slot X
CONTBUS_A	TCC A to Shelf Slot communication failure
CONTBUS_B	TCC B to shelf Slot communication failure
CONTBUS_IO_A	Peer to Peer Slot communication failure
CONTBUS_IO_B	Peer to Peer Slot communication failure
CONTCOM	Internal hardware - Control Equipment - Control Communications equipment failure
CONTEQPT	Internal hardware - Control Equipment failure
CONTR	Internal hardware - Control Equipment - Control processor failure
CTNEQPT	Internal hardware - Interconnection Equipment failure
CTNEQPT-PBXPROT	Failure of the main payload between the protect XC/XCVT card in Slot 10 and the reporting I/O card in Slot X
CTNEQPT-PBXWORK	Failure of the main payload bus between the active XC/XCVT card in Slot 8 and the reporting I/O card in Slot X
CTNEQPT-PBPROT	Interconnection Equipment Failure - Protect XC Payload Bus
CTNEQPT-PBWORK	Interconnection Equipment Failure - Working XC Payload Bus

Table 4-46 *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
DATAFLT	Internal Error - Software Fault - Data integrity fault
DS3-MISM	DS3 Frame Format Mismatch
E-W-MISMATCH	Procedural Error - Mis-connect East/West Direction
EOC	Embedded Operations Channel (Section DCC) failure
EOC-DOWN	Embedded Operations Channel (Section DCC) failure
EQPT	Internal hardware - Critical alarm caused by equipment failure
EQPT-FAIL	Equipment failure - Board Failure
EQPT-MAC	Equipment failure - Medium Access Control
EQPT-MISS	Replaceable Equipment/Unit is Missing
ESW	External error - Excessive Switching
EXCCOL	External failure - Incoming - Excess collisions on the LAN
EXERCISE-RING- FAIL	Exercise Ring Failed
EXERCISE-RING-REQ	Exercise Ring
EXERCISE-SPAN-FAIL	Exercise Span Failed
EXERCISE-SPAN-REQ	Exercise Span
EXERCISING-RING	Exercise Ring Completed
EXERCISING-SPAN	Exercise Span Completed
EXT	Failure detected External to the NE
EXTERR	External Error
EXTR-DROP	BLSR Extra Traffic Dropped
EXTRA-TRAF-PREEMPT	Extra Traffic preempted
FA	Internal hardware - Power failure - Fuse Alarm
FAC	External failure - Incoming - Facility, critical alarm caused by DS3 facility failure
FACTERM	Internal hardware - Facility Termination equipment failure
FAILTORLS	Internal hardware - Failure To Release from protection
FAILTOSW	Internal hardware - Failure To Switch to protection
FAILTOSW-PATH	Failure to switch from the working path to the protection path on an UPSR
FAILTOSWR	Failure to Switch to Protection in a Ring
FAN	Fan Tray failure
FANDEGRADE	Partial Failure of cooling fan tray
FE-AIS	Far-end DS3 node is reporting an AIS
FE-DS1-MULTLOS	Multiple inputs detect a loss on the far-end
FE-DS1-NSA	Non-service affecting failure detected from the far-end DS1
FE-DS1-SA	Service affecting failure detected from the far-end DS1
FE-DS1-SNGLLOS	One of the DS1 inputs on the far-end detects a LOS

**Table 4-46** *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
FE-DS3-NSA	Non-service affecting failure detected from the far-end DS3
FE-DS3-SA	Service affecting failure detected from the far-end DS3
FE-EQPT-NSA	Non-service affecting equipment failure is detected from the far-end DS3
FE-EXERCISING-RING	Far End Exercise Ring
FE-EXERCISING-SPAN	Far End Exercise Span
FE-FRCDWKSWPR-RING	Working facility forced to switch to protection unit - Ring Far end
FE-FRCDWKSWPR-SPAN	Working facility forced to switch to protection unit - Span Far end
FE-IDLE	Far end node detects an idle DS3 signal
FE-LOCKOUTOFPR-ALL	Far end LockOut All Protection Channels of the network
FE-LOCKOUTOFPR-RING	Far End Lockout Of Protection - Ring
FE-LOCKOUTOFPR-SPAN	Far End Lockout Of Protection - Span
FE-LOCKOUTOFWK-RING	Far End Lockout Of Working - Ring
FE-LOCKOUTOFWK-SPAN	Far End Lockout Of Working - Span
FE-LOF	Far end node reports a DS3 loss of frame
FE-LOS	Far end node reports a DS3 loss of signal
FE-MANWKSWPR-RING	Far end Manual Ring Switching command is activated
FE-MANWKSWPR-SPAN	Far end Manual Span Switching command is activated
FE-SD-RING	Far end detected SD on Working channel and issued a Ring Switch
FE-SD-SPAN	Far end detected SD on Working channel and issued a Span Switch
FE-SDPRLF	Far end detected SD on Protection Channel
FE-SF-RING	Far end detected SF on Working channel and issued a Ring Switch
FE-SF-SPAN	Far end detected SF on Working channel and issued a Span Switch
FEBE	External failure - Incoming - Far End Block Error
FEPRLF	External failure - Incoming - Automatic Protection Switching Channel - Far End Protection Line Failure
FORCED-REQ	Forced switch request on facility/equipment
FORCED-REQ-RING	Forced switch request on a Ring
FORCED-REQ-SPAN	Forced switch request on a Span
FRCDWKSWBK	Recovery action - Working facility/equipment forced to switch back to working
FRCDWKSWPR	Recovery action - Working facility/equipment forced to switch to protection unit
FRCDWKSWPR-PATH	Recovery action - Working facility/equipment forced to switch to protection unit - Path
FRCWKBK-R	Working facility/equipment forced to switch back to working - Ring
FRCWKBK-S	Working facility/equipment forced to switch back to working - Span

Table 4-46 *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
FRCWKBK-S	Working facility/equipment forced to switch back to working - Span
FRCWKPR-R	Working facility/equipment forced to switch to protection unit - Ring
FRCWKPR-S	Working facility/equipment forced to switch to protection unit - Span
FRNGSYNC	Free Running Synchronization mode
FSTSYNC	Fast Start synchronization mode
FULLPASSTHR-BI	Bi-direction Full Pass Through is active
FULLPASSTHR-UNI	Uni-direction Full Pass Through is active
HITEMP	Internal hardware - Equipment failure - High temperature
HLDOVRSYNC	Holdover synchronization mode
IMPROPRMVL	Procedural Error - Improper Removal
INC	Incoming failure condition
INC-ISD	Incoming failure condition - Idle Signal Path
INHMSG	ALM/EVT Messages Suppressed for object & sub-objects
INHMSG-DBCHG	DBCHG Messages Suppressed for entire shelf
INHSWPR	Inhibit switch to protect request on equipment
INHSWWKG	Inhibit switch to working request on equipment
INIT	Recovery action - Initialization initiated
INT	Internal hardware fault or failure
INTER-RING-STARTUP	Far end LockOut All Protection Channels of the network
INTERR	Error Internal to the NE Detected
INTMSGERR	One or more ALM/EVT/DBCHG messages lost
INTRUSION	Security: invalid login with user-ID %s
INTSFT	Internal Error - Software Fault or failure
INVMACADR	Equipment failure - Invalid MAC Address
KB_PASSTHR	K-Byte Pass Through is active
LANOVERFLOW	Traffic storm on LAN. LAN temporarily disabled
LKOUTPR-R	Lockout of Protection - Ring
LKOUTPR-S	Lockout of Protection - Span
LKOUTWK-R	Lockout of working - Ring
LKOUTWK-S	Lockout of working - Span
LOCKOUT-REQ	Lockout switch request on facility/equipment
LOCKOUT-REQ-RING	Lockout switch request on a Ring
LOCKOUT-REQ-SPAN	Lockout switch request on a Span
LOCKOUTOFPR	Recovery action - Lockout of Protection
LOCKOUTOFPR-ALL	Far end LockOut All Protection Channels of the network
LOCKOUTOFPR-PATH	Recovery action - Lockout of Protection - Path

**Table 4-46** *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
LOCKOUTOFWK	Recovery action - Lockout of working
LOF	External failure - Incoming - Loss of Frame
LOP	External failure - Incoming - Loss of Pointer
LOP-P	External failure - Incoming - Loss of Pointer - Path
LOP-V	Loss of pointer at the VT level
LOS	External failure - Incoming - Loss of Signal
LOS-ABBX	VIC loss of audio base band channel X signal
LOS-AFM	VIC loss of Audio FM signal
LOS-VBB	VIC loss of Video Base Band Signal
LOS-VIF	Video Interface Card Loss of Video IF signal
LPBK	Loopback
LPBKDS1FEAC	DS1 loopback signal is received from the far-end due to a Far-End Alarm and Control (FEAC) command
LPBKDS1FEAC-CMD	DS1 loopback command sent by the ONS 15454 to the far-end equipment
LPBKDS3FEAC	DS3 loopback signal is received from the far-end due to a Far-End Alarm and Control (FEAC) command
LPBKDS3FEAC-CMD	DS3 loopback command sent by the ONS 15454 to the far-end equipment
LPBKFACILITY	Loopback, Facility
LPBKM23	Loopback, Facility
LPBKM23-CMD	DS2 Loopback due to Far End Command
LPBKNETWORK	DS2 Loopback Command sent to Far End
LPBKTERMINAL	Loopback, Terminal
MAN	Manually caused abnormal condition
MAN-REQ	Manual Switch Request on facility/equipment
MANRESET	Recovery action - Manual system Reset
MANSWTOFIFTH	Recovery action - Manual synchronization Switch To Fifth reference
MANSWTOFOURTH	Recovery action - Manual synchronization Switch To Fourth reference
MANSWTOINT	Recovery action - Manual synchronization switch to internal clock
MANSWTOPRI	Recovery action - Manual synchronization Switch To Primary reference
MANSWTOSEC	Recovery action - Manual synchronization Switch To Second reference
MANSWTOSEXTH	Recovery action - Manual synchronization Switch To Sixth reference
MANSWTOSECOND	Recovery action - Manual synchronization Switch To Third reference
MANUAL-REQ-RING	Manual switch request on a Ring
MANUAL-REQ-SPAN	Manual switch request on a Span

Table 4-46 *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
MANWKBK-R	Manual Switch of working facility/equipment to protection - Ring
MANWKBK-S	Manual Switch of working facility/equipment to protection - Span
MANWKPR-R	Manual Switch of Working facility/equipment to Protection unit -Ring
MANWKPR-S	Manual Switch of Working facility/equipment to Protection unit -Span
MANWKSWBK	Recovery action - Manual Switch of working facility/equipment to protection
MANWKSWPR	Recovery action - Manual Switch of Working facility/equipment to Protection unit
MANWKSWPR-PATH	Manual Switch of working facility/equipment to Protection - Path
MEA	Internal error - Mismatch of Equipment and Attributes
MEM-GONE	Software operations exceed the memory capacity of the TCC/TCC+ card
MEM-LOW	Data generated by software operations is close to exceeding the memory capacity of the TCC/TCC+ card
MFGMEM	Manufacturing Data Memory (EEPROM) Failure
NEW-ROOT	NewRoot trap in BRIDGE-MIB
NORMAL	Normal condition. This condition type is used by the NE to report the returning to normal from a previous off-normal condition
OG	External failure - Outgoing failure condition
OOF	External failure - Incoming - Out of Frame
PATHSEL	External failure - Incoming - Path Selector inability to switch to a valid signal
PDI	External failure - Incoming - Signal Label Mismatch Failure - Payload Defect Indication
PDI-P	External failure - Incoming - Signal Label Mismatch Failure - Payload Defect Indication - Path
PEER-MISM	Peer State Mismatch
PEER-NORESPONSE	Peer card not responding
PLM-P	External failure - Incoming - Signal Label Mismatch Failure - Payload Label Mismatch - Path
PLM-V	Content of the V5 byte in the SONET overhead is inconsistent or invalid
PLUG-IN	Internal hardware - Equipment unit plug-in
PM-TCA	Performance Monitoring - Threshold Crossing Alert
PRC-DUPID	Procedural Error - Duplicate Node ID
PRCDRERR	Procedural Error
PROGFLT	Internal Error - Software Fault - Program failure
PROTNA	Protection unit not available

**Table 4-46** *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
PS	Occurrence of a protection switching event
PWR	Internal hardware - Power failure (detected internal to NE)
PWR-A	Internal hardware - Power failure (detected internal to NE) on slot 7
PWR-B	Internal hardware - Power failure (detected internal to NE) on slot 11
PWRRESTART	Recovery action - Powerfail Restart
RAI	External failure - Incoming - Remote Alarm Indication
RCVR	Internal hardware - Facility Termination equipment - Receiver failure
RCVR-MISS	Facility termination equipment detects a missing receive cable on the DS1 port or a possible mismatch of backplane equipment
RCVRY	Recovery or service protection action has been initiated
RDI-L	External failure - Outgoing - Remote Defect Indication - Line
RDI-P	External failure - Outgoing - Remote Defect Indication - Path
RFI	External failure - Incoming - Remote Failure Indication
RFI-L	External failure - Incoming - Remote Failure Indication - Line
RFI-P	External failure - Incoming - Remote Failure Indication - Path
RFI-V	Upstream failure has occurred at the VT layer
RFLOWCTL	Receive pause frames Threshold crossing alert
RING-MISMATCH	Procedural Error - Mis-connected Ring
RING-SEGMENT	Ring Is Segmented
RING-SW-EAST	Ring switch is active on the East side
RING-SW-WEST	Ring switch is active on the West side
RMON-ALARM	An RMON Alarm
RMON-RESET	RMON histories and alarms have been reset due to chipset reboot
ROVERSUB	Receive packets dropped - internal congestion Threshold crossing alert
SD	Facility has passed BER Threshold for Signal Degrade
SD-L	BER threshold exceeded for Signal Degrade - Line
SD-P	BER threshold exceeded for Signal Degrade - Path
SEF	External failure - Incoming - Severely Errored Frame
SF	Facility has passed BER threshold for Signal Failure
SF-L	BER threshold exceeded for Signal Failure - Line
SF-P	BER threshold exceeded for Signal Failure - Path
SFTWDOWN	Recovery action - Software download in progress
SFTWDOWN-FAIL	Software Download Failed
SLMF	External failure - Incoming - Signal Label Mismatch Failures - SONET
SNTP-HOST	SNTP host not alive condition

Table 4-46 *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
SPAN-SW-EAST	Span switch is active on the East side
SPAN-SW-WEST	Span switch is active on the West side
SQUELCH	Ring is isolated into two or more segments
SQUELCH-PATH	Squelching - Path level
SSM-DUS	Synchronization Status Messaging - Do Not Use for Synchronization
SSM-FAIL	Synchronization Status Messaging - Failed
SSM-OFF	Synchronization Status Messaging - Off
SSM-PRC	G811 Primary Reference Clock traceable
SSM-PRS	Synchronization Status Messaging - Primary reference source - Stratum 1
SSM-RES	Synchronization Status Messaging - Reserved - quality level set by user
SSM-SMC	Synchronization Status Messaging - SONET minimum clock
SSM-ST2	Synchronization Status Messaging - Stratum 2
SSM-ST3	Synchronization Status Messaging - Stratum 3
SSM-ST3E	Synchronization Status Messaging - Stratum 3E
SSM-ST4	Synchronization Status Messaging - Stratum 4
SSM-STU	Synchronization Status Messaging - Synchronized traceability unknown
SSM-TNC	Synchronization Status Messaging - Transit Node Clock traceable
SWMTXMOD	Switching Matrix Module Failure
SWTOFIFTH	Recovery action - Synchronization Switch To Fifth reference
SWTOFOURTH	Recovery action - Synchronization Switch To Fourth reference
SWTOINT	Recovery action - Synchronization Switch To Internal clock
SWTOPRI	Recovery action - Synchronization Switch To Primary reference
SWTOSEC	Recovery action - Synchronization Switch To Second reference
SWTOSIXTH	Recovery action - Synchronization Switch To Sixth reference
SWTOTHIRD	Recovery action - Synchronization Switch To Third reference
SYNC	External failure - Incoming - Loss of timing on synchronization link
SYNC-FREQ	Synchronization Reference Frequency Out Of Bounds
SYNCCLK	Internal hardware - Synchronization unit failure
SYNCEQPT	Internal hardware - Synchronization switching Equipment failure
SYNCFIFTH	External failure - Incoming - Loss of timing on fifth synchronization link
SYNCFOURTH	External failure - Incoming - Loss of timing on fourth synchronization link
SYNCOOS	External failure - Incoming - Loss of timing on all specified synchronization links



Table 4-46 *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
SYNCPRI	External failure - Incoming - Loss of timing on primary synchronization link
SYNCSEC	External failure - Incoming - Loss of timing on secondary synchronization link
SYNCSIXTH	External failure - Incoming - Loss of timing on sixth synchronization link
SYNCTHIRD	External failure - Incoming - Loss of timing on third synchronization link
SYSBOOT	Activation of new software
T-UIDAGE	Security: user-ID %s has expired
TFLOWCTL	Transmit pause frames Threshold crossing alert
TIM-P	SONET Trace Identifier message defect - Path
TOP-CHANGE	Topology Change trap in BRIDGE-MIB
TOVERSUB	Transmit packets dropped - internal congestion Threshold crossing alert
TPTFAIL	Transport Layer Failure
TRMT	Internal hardware - Facility Termination equipment - Transmit failure
TRMT-MISS	Facility termination equipment detects a missing transmit cable on the DS1 port or a possible mismatch of backplane equipment
TSI	Internal hardware - Interconnection Equipment - Time slot interchange equipment failure
TUNDERRUN	Buffer Underrun Alarm
UNEQ-P	External failure - Incoming - Signal Label Mismatch Failure - Unequipped - Path
UNEQ-V	VT is receiving an unequipped signal
UNPLUG	Internal hardware - Equipment unit un-plug
WATM-TO	Internal Error - Watchdog Timer Timeout
WKGMEM	Internal hardware - Control Equipment - Working memory failure
WKSWBK	Recovery action - Working facility/equipment switched back to working
WKSWPR	Recovery action - Working facility/equipment switched to protection unit
WRMRESTART	Recovery action - Warm Restart
WTR-RING	Recovery action - SONET ring is in Wait To Restore state
WTR-SPAN	Recovery action - SONET span is in Wait To Restore state

## 4.3.14 CONT\_MODE

Current state of environmental control

**Table 4-47** CONT\_MODE Values

CONT_MODE Values	Description
OPR	Indicates that the environment control state is CLOSE
RLS	Indicates that the environment control state is OPEN

## 4.3.15 CONTTYPE

The Environmental control types as defined by Telcordia GR-833-CORE, Issue 2, November 1996, Appendix G.

**Table 4-48** CONTTYPE Values

CONTTYPE Values	Description
AIRCOND	Air conditioning
ENGINE	Engine
FAN	Fan
GEN	Generator
HEAT	Heat
LIGHT	Light
MISC	Miscellaneous
SPKLR	Sprinkler

## 4.3.16 CRS\_TYPE

Indicates the cross-connection type

**Table 4-49** CRS\_TYPE Values

CRS_TYPE Values	Description
STS	Indicates all the STS cross connections
VT	Indicates all the VT1 cross connections

## 4.3.17 DIRECTION

Transmit and receive directions

**Table 4-50 DIRECTION Values**

DIRECTION Values	Description
BTH	Both transmit and receive directions
RCV	Receive direction only
TRMT	Transmit direction only

## 4.3.18 DIRN

Specifies the discriminating level for the requested monitored parameter

**Table 4-51 DIRN Values**

DIRN Values	Description
DN	Monitored parameter with values equal to or greater than the level of LEV will be reported
UP	Monitored parameter with values equal to or less than the value of LEV will be reported

## 4.3.19 DS3\_FMT

Indicates a DS3 digital signal format

**Table 4-52 DS3\_FMT Values**

DS3_FMT Values	Description
ASYNC	The DS3 digital signal format is ASYNC
CBIT	The DS3 digital signal format is C-BIT
SYNC	The DS3 digital signal format is SYNC
UNFR	The DS3 digital signal format is unframed

## 4.3.20 DS\_LINE\_CODE

DS123 Line Code

**Table 4-53 DS\_LINE\_CODE Values**

DS_LINE_CODE Values	Description
B3ZS	Bipolar with Three-Zero Substitution

## 4.3.21 DS\_LINE\_TYPE

DS123 Line type

**Table 4-54 DS\_LINE\_TYPE Values**

DS_LINE_TYPE Values	Description
C-BIT	C-BIT line type applies to DS3XM and DS3E card
M23	M23 line type applies to DS3XM and DS3E card
UNFRAMED	Line Type is unframed. The old DS3 (L3M) and DS3CR cards can only run in unframed mode.

## 4.3.22 DURATION

Duration

**Table 4-55 DURATION Values**

DURATION Values	Description
CONTS	Continuous duration

## 4.3.23 E\_LBO

Electrical signal line buildout

**Table 4-56 E\_LBO Values**

E_LBO Values	Description
0-225	Electrical signal buildout range is 0-225
226-450	Electrical signal buildout range is 226-450

## 4.3.24 ENV\_ALM

Environmental alarm types as defined by Telcordia GR-833-CORE, Issue 2, November 1996, Appendix F.

**Table 4-57 ENV\_ALM Values**

ENV_ALM Values	Description
AIRCOMPR	Air compressor failure
AIRCOND	Air conditioning failure
AIRDRYR	Air dryer failure
BATDSCHRG	Battery discharging
BATTERY	Battery failure

**Table 4-57 ENV\_ALM Values (continued)**

<b>ENV_ALM Values</b>	<b>Description</b>
CLFAN	Cooling fan failure
CPMAJOR	Centralized power major failure
CPMINOR	Centralized power minor failure
ENGINE	Engine failure
ENGOPRG	Engine operating
EXPLGS	Explosive gas
FIRDETR	Fire detector failure
FIRE	Fire
FLOOD	Flood
FUSE	Fuse failure
GEN	Generator failure
HIAIR	High airflow
HIHUM	High humidity
HITEMP	High temperature
HIWTR	High water
INTRUDER	Intrusion
LWBATVG	Low battery voltage
LWFUEL	Low fuel
LWHUM	Low humidity
LWPRES	Low cable pressure
LWTEMP	Low temperature
LWWTR	Low water
MISC	Miscellaneous
OPENDR	Open door
POWER	Commercial power failure
PUMP	Pump failure
PWR-48	48 Volt power supply failure
RECT	Rectifier failure
RECTHI	Rectifier high voltage
RECTLO	Rectifier low voltage
SMOKE	Smoke
TOXICGAS	Toxic gas
VENTN	Ventilation system failure

## 4.3.25 ENV\_CTRL\_MODE

Current state of the environmental control

**Table 4-58 ENV\_CTRL\_MODE Values**

ENV_CTRL_MODE Values	Description
CLOSE	Environmental control state is closed
OPEN	Environmental control state is opened

## 4.3.26 EQPT\_TYPE

Identifies the type of equipment being provisioned into a slot

**Table 4-59 EQPT\_TYPE Values**

EQPT_TYPE Values	Description
AIC	The Alarm Interface Controller Card is an optional card which expands system management capabilities for the customer defined alarm I/O and orderwire functionality
AIP	The Alarm Indicator Panel
BP	The Backplane of the NE
DCC	The Data Communications Channel
DS1-14	A 14 port interface card supporting DS1 facilities
DS1N-14	A 14 port interface card supporting DS1 facilities
DS3-12	A 12 port interface card supporting DS3 facilities
DS3-3	A 3 port interface card supporting DS3 facilities
DS3ATM-12	A 12 port interface card supporting DS3 ATM facilities
DS3CR-12	Cost reduced DS3
DS3E-12	A 12 port interface card supporting DS3E facilities
DS3NE-12	A 12 port interface card supporting DS3E facilities
DS3N-12	A 12 port interface card supporting DS3 facilities
DS3XM-6	An interface card that converts six framed DS-3 network connections to 28x6 or 168 VT1.5s
E1000T-2	A 2 port interface card supporting 1000 Base T Ethernet facilities
E100T-12	A 12 port interface card supporting 100 Base T Ethernet facilities
E100T-4	A four port interface card supporting 100 Base T Ethernet facilities.
EC1-12	A 12 port interface card supporting EC1 facilities
EC1N-12	A 12 port interface card supporting EC1 facilities
FTA	The Fan Tray of the NE
FTA1	The Fan Tray 1 of the NE
FTA2	The Fan Tray 2 of the NE

**Table 4-59 EQPT\_TYPE Values (continued)**

<b>EQPT_TYPE Values</b>	<b>Description</b>
G1000-4	A four port G1000 card
MIC-28-3-A	ONS 15327 MIC card A
MIC-28-3-B	ONS 15327 MIC card B
MIC-EXT	ONS 15327 MIC card
MIC-GEN	ONS 15327 MIC card
OC12	An interface card that supports one or more OC-12 (622Mbps) optical facilities
OC12-327	ONS 15327 OC12 card
OC12-4	A four port OC12 card
OC12-IR-1	An interface card that supports one intermediate range OC-12 (622Mbps) optical facilities
OC12-LR-1	An interface card that supports one long range OC-12 (622Mbps) optical facilities
OC12-SR-1	An interface card that supports one short range OC-12 (622Mbps) optical facilities
OC192-LR-1	An interface card that supports one or more OC-192 optical facilities
OC3	An interface card that supports multiple OC-3 (155Mbps) optical facilities
OC3-327	ONS 15327 OC3 card
OC3-IR-4	An interface card that supports four intermediate range OC-3 (155Mbps) optical facilities
OC3-SR-4	An interface card that supports four short range OC-3 (155Mbps) optical facilities
OC3ATM-IR-6	An interface card that supports six intermediate range OC-3 (155Mbps) ATM optical fibers
OC3POS-SR-4	An interface card that supports four short range OC-3 (155Mbps) POS optical facilities
OC48	An interface card that supports one or more OC-48 (10Gbs) optical facilities
OC48-327	ONS 15327 OC48 card
OC48-AS-1	An interface card that supports one short range OC-48 (10Gbs) optical facilities that can be provisioned in any I/O slot
OC48-ELR-1	An interface card that supports one short range OC-48 (2.5Gbs) optical facility
OC48-IR-1	An interface card that supports one intermediate range OC-48 (10Gbs) optical facility
OC48-LR-1	An interface card that supports one long range OC-48 (10Gbs) optical facility
OC48-SR-1	An interface card that supports one short range OC-48 (10Gbs) optical facilities
TCC	The Timing Communication and Control card
XC	A cross-connect card

**Table 4-59 EQPT\_TYPE Values (continued)**

<b>EQPT_TYPE Values</b>	<b>Description</b>
XCVT	A Cross-Connect card.
XC10G	XC10G Card
XTC	ONS 15327 XTC card
XTC-DS1-14	ONS 15327 XTC DS1-14 card
XTC-DS1-28	ONS 15327 XTC DS1-28 card
XTC-DS1-56	ONS 15327 XTC DS1-56 card
XTC-DS3-3	ONS 15327 XTC DS3-3 card

## 4.3.27 EQUIP

Indicates the presence of a plug-in unit

**Table 4-60 EQUIP Values**

<b>EQUIP Values</b>	<b>Description</b>
EQUIP	The unit is Equipped - present
UNEQUIP	The unit is Unequipped - absent

## 4.3.28 EQUIPMENT\_TYPE

Equipment type

**Table 4-61 EQUIPMENT\_TYPE Values**

<b>EQUIPMENT_TYPE Values</b>	<b>Description</b>
AIC	AIC card
DS1	DS1 card
DS1N	DS1N card
DS3	DS3 card
DS3E	DS3E card
DS3N	DS3N card
DS3NE	DS3NE card
DS3XM	DS3XM card
E1000T	E1000T card
E100T	E100T card
EC1	EC1 card
G1000-4	A four port G1000 card
MIC	ONS 15327 MIC card
MIC-EXT	ONS 15327 XC-EXT card



**Table 4-61** *EQUIPMENT\_TYPE Values (continued)*

<b>EQUIPMENT_TYPE Values</b>	<b>Description</b>
OC3	OC3 card
OC12	OC12 card
OC12-4	A four port OC12 card
OC48	OC48 card
OC192	OC192 card
TCC	TCC card
XC	XC card
XCVT	XCVT card
XTC	ONS 15327 XTC card

### 4.3.29 EXT\_RING

Indicates if the ring supports the extended K1/K2/K3 protocol

**Table 4-62** *EXT\_RING Values*

<b>EXT_RING Values</b>	<b>Description</b>
N	Indicates the Ring does not support the extended K1/K2/K3 protocol
Y	Indicates the Ring does support the extended K1/K2/K3 protocol

### 4.3.30 FLOW

Indicates the type of flow control that has been negotiated for an Ethernet port

**Table 4-63** *FLOW Values*

<b>FLOW Values</b>	<b>Description</b>
ASYMMETRIC	Asymmetric flow control
NONE	No flow control

### 4.3.31 FRAME\_FORMAT

The frame format for a T1 port

**Table 4-64** *FRAME\_FORMAT Values*

<b>FRAME_FORMAT Values</b>	<b>Description</b>
D4	Frame format is D4
ESF	Frame format is ESF
UNFRAMED	Frame format is unframed

### 4.3.32 LINE\_BUILDOUT

Line buildout

**Table 4-65** *LINE\_BUILDOUT Values*

<b>LINE_BUILDOUT Values</b>	<b>Description</b>
0-131	Line buildout range is 0-131
132-262	Line buildout range is 132-262
263-393	Line buildout range is 263-393
394-524	Line buildout range is 394-524
525-655	Line buildout range is 525-655

### 4.3.33 LINE\_CODE

Line code

**Table 4-66** *LINE\_CODE Values*

<b>LINE_CODE Values</b>	<b>Description</b>
AMI	Line code value is AMI
B8ZS	Line code value is B8ZS (Bipolar with Three-Zero Substitution)

### 4.3.34 LOCATION

Identifies the location where the action is to take place

**Table 4-67** *LOCATION Values*

<b>LOCATION Values</b>	<b>Description</b>
FEND	Action occurs on the Far End of the facility
NEND	Action occurs on the Near End of the facility

### 4.3.35 LPBK\_TYPE

Indicates the type of loopback that is to be operated or released

**Table 4-68 LPBK\_TYPE Values**

LPBK_TYPE Values	Description
FACILITY	A type of loopback that connects the incoming received signal immediately following the optical-to-electrical conversion (after descrambling) to the associated transmitter in the return direction
TERMINAL	A loopback that connects the signal that is about to be transmitted (after scrambling but before the electrical-to-optical conversion) is connected to the associated, incoming receiver

### 4.3.36 MFS\_TYPE

Indicates the maximum frame size used by an Ethernet card

**Table 4-69 MFS\_TYPE Values**

MFS_TYPE Values	Description
1548	Normal frame size
JUMBO	Jumbo frame size

### 4.3.37 MOD2

Line/Path Modifier

**Table 4-70 MOD2 Values**

MOD2 Values	Description
DS1	DS1 line of a DS3XM card
EC1	EC1 facility
OC3	OC3 facility
OC12	OC12 facility
OC48	OC48 facility
OC192	OC192 facility
STS1	STS1 path
STS3C	STS3C path
STS6C	STS6C path
STS9C	STS9C path
STS12C	STS12C path
STS48C	STS48C path
STS192C	STS192C path

*Table 4-70 MOD2 Values (continued)*

<b>MOD2 Values</b>	<b>Description</b>
T1	T1/DS1 facility/line
T3	T3/DS3 facility/line
VT1	VT1_5 path

### 4.3.38 MOD2\_IO

Facility/Line Modifier

*Table 4-71 MOD2\_IO Values*

<b>MOD2_IO Values</b>	<b>Description</b>
DS1	DS1 line of a DS3XM card
EC1	EC1 facility
G1000	G1000 facility
OC3	OC3 facility
OC12	OC12 facility
OC48	OC48 facility
OC192	OC192 facility
T1	T1/DS1 facility
T3	T3/DS3 facility

### 4.3.39 MOD2ALM

Alarm type for certain generic TL1 commands

*Table 4-72 MOD2ALM Values*

<b>MOD2ALM Values</b>	<b>Description</b>
DS1	DS1 alarm
E100	E100 alarm
E1000	E1000 alarm
EC1	EC1 alarm
G1000	G1000 alarm
OC3	OC3 alarm
OC12	OC12 alarm
OC48	OC48 alarm
OC192	OC192 alarm
STS1	STS alarm
STS3C	STS alarm

**Table 4-72 MOD2ALM Values (continued)**

<b>MOD2ALM Values</b>	<b>Description</b>
STS6C	STS alarm
STS9C	STS alarm
STS12C	STS alarm
STS48C	STS alarm
STS192C	STS alarm
T1	T1 alarm
T3	T3 alarm
VT1	VT1 alarm

## 4.3.40 MOD2B

Alarm type for certain generic TL1 commands

**Table 4-73 MOD2B Values**

<b>MOD2B Values</b>	<b>Description</b>
BITS	BITS alarm
COM	Common alarm
DS1	DS1 alarm
E100	E100 alarm
E1000	E1000 alarm
EC1	EC1 alarm
ENV	ENV alarm
EQPT	EQPT alarm
G1000	G1000 alarm
MIC	MIC Alarm (ONS 15327)
MIC-EXT	MIC-EXT Alarm (ONS 15327)
OC3	OC3 alarm
OC12	OC12 alarm
OC48	OC48 alarm
OC192	OC192 alarm
STS1	STS alarm
STS3C	STS alarm
STS6C	STS alarm
STS9C	STS alarm
STS12C	STS alarm
STS24C	STS alarm

**Table 4-73 MOD2B Values (continued)**

<b>MOD2B Values</b>	<b>Description</b>
STS48C	STS alarm
STS192C	STS Alarm
SYNCN	SYNCN alarm
T1	T1 alarm
T3	T3 alarm
TCC	TCC alarm
VT1	VT alarm
XTC	ONS 15327 XTC Alarm

## 4.3.41 MOD\_PATH

STS/VT Path Modifier

**Table 4-74 MOD\_PATH Values**

<b>MOD_PATH Values</b>	<b>Description</b>
STS1	STS1 path
STS3C	STS3C path
STS6C	STS6C path
STS9C	STS9C path
STS12C	STS12C path
STS 24C	STS 24C path
STS48C	STS48C path
STS192	STS192C path
VT1	VT1_5 path

## 4.3.42 MOD\_PORT

Move from MOD2\_IO without DS1

**Table 4-75 MOD\_PORT Values**

<b>MOD_PORT Values</b>	<b>Description</b>
EC1	EC1 port
G1000	G1000 port
OC3	OC3 port
OC12	OC12 port
OC48	OC48 port
OC192	OC192 port
T1	T1/DS1 port
T3	T3/DS3 port

## 4.3.43 MOD\_TACC

Test Access Modifier

**Table 4-76 MOD\_TACC Values**

<b>MOD_TACC Values</b>	<b>Description</b>
DS1	DS1 line of a DS3XM card
STS1	STS1 path
STS3C	STS3C path
STS6C	STS6C path
STS9C	STS9C path
STS12C	STS12C path
STS24C	STS24C path
STS48C	STS48C path
STS192C	STS192C path
T1	T1/DS1 facility/line
T3	T3/DS3 facility/line
VT1	VT1_5 path

## 4.3.44 MODIFIER

Modifier for certain TL1 commands that are generic in syntax

*Table 4-77 MODIFIER Values*

<b>MODIFIER Values</b>	<b>Description</b>
BITS	BITS command modifier
EQPT	Equipment command modifier
OC3	OC-3 command modifier
OC12	OC-12 command modifier
OC48	OC-48 command modifier
OC192	OC-192 command modifier
STS1	STS-1 command modifier
STS3C	STS-3C command modifier
STS9C	STS-9C command modifier
STS12C	STS-12C command modifier
STS24C	STS-24C command modifier
STS48C	STS-48C command modifier
SYNCN	Synchronization command modifier
T3	T3/DS3 command modifier

## 4.3.45 MODULE\_OP

Module operation mode

*Table 4-78 MOD\_OP Values*

<b>MODULE_OP Values</b>	<b>Description</b>
CLR	Clear switch operation mode
LOCKDX	Lock duplex switch operation mode
LOCKPRT	Lock switch to protection operation mode
LOCKWKG	Lock switch to working operation mode
RST	Reset operation mode
SWITCHDX	Switch duplex operation mode
SWITCHPRT	Switch to protection operation mode
SWITCHWKG	Switch to working operation mode
UNLOCKDX	Unlock duplex switch operation mode
UNLOCKPRT	Unlock switch to protection operation mode
UNLOCKWKG	Unlock switch to working operation mode
UPGRADE	Upgrade operation mode



## 4.3.46 MSGTYPE

Type of trace message

**Table 4-79 MSGTYPE Values**

MSGTYPE Values	Description
EXPTRC	Expected incoming Path trace message
INCTRC	Incoming Path trace message
TRC	Outgoing Path trace message

## 4.3.47 MUX\_TYPE

BLSR Extension Byte

**Table 4-80 MUX\_TYPE Values**

MUX_TYPE Values	Description
E2	E2 Byte (orderwire)
F1	F1 Byte (user)
K3	K3 Byte
Z2	Z2 Byte

## 4.3.48 NOTIF\_CODE

The 2-character Notification Code associated with an autonomous message

**Table 4-81 NOTIF\_CODE Values**

NOTIF_CODE Values	Description
CL	The condition causing the alarm has Cleared
CR	A Critical alarm
MJ	A Major alarm
MN	A Minor alarm
NA	The condition is Not Alarmed
NR	The alarm is not reported

### 4.3.49 OCN\_4F

Modifier used to differentiate the various levels of OC-N in 4F BLSR

**Table 4-82 OCN\_4F Values**

OCN_4F Values	Description
OC48	Optical Carrier level-48 (2.4Gbs)
OC192	Optical Carrier level-192 (10Gbs)

### 4.3.50 OCN\_BLSR

Modifier used to differentiate the various levels of OC-N in BLSR

**Table 4-83 OCN\_BLSR Values**

OCN_BLSR Values	Description
OC12	Optical Carrier level-12 (662Mbs)
OC48	Optical Carrier level-48 (2.4Gbs)
OC192	Optical Carrier level-192 (10Gbs)

### 4.3.51 OCN\_MONTYPE

OCN monitor type

**Table 4-84 OCN\_MONTYPE Values**

OCN_MONTYPE Values	Description
CVL	Coding Violation - Line
ESL	Errored Second - Line
PJNEG	PPJC-PDET:Negative Pointer Justification
PJPOS	PPJC-PFEN:Negative Pointer Justification
PSC	Protection Switching Count
PSD	Protection Switching Duration
SEFS	Severely Errored Framing Seconds
UASL	Unavailable Second -Line

## 4.3.52 OCN\_TYPE

Modifier used to differentiate the various levels of OC-N in the ENT/ED/DLT/RTRV commands

**Table 4-85 OCN\_TYPE Values**

OCN_TYPE Values	Description
OC3	Optical Carrier level-3 (155Mbs)
OC12	Optical Carrier level-12 (622Mbs)
OC48	Optical Carrier level-48 (2.4Gbs)
OC192	Optical Carrier level-192 (10Gbs)

## 4.3.53 ON\_OFF

Disable or Enable an attribute

**Table 4-86 ON\_OFF Values**

ON_OFF Values	Description
N	Disable the attribute
Y	Enable the attribute

## 4.3.54 OPTICAL\_MODE

The facility optical mode

**Table 4-87 OPTICAL\_MODE Values**

OPTICAL_MODE Values	Description
SDH	The SDH optical mode the European format
SONET	The SONET optical mode the American format

## 4.3.55 OPTICS

The type of gigabyte Ethernet optics in place

**Table 4-88 OPTICS Values**

OPTICS Values	Description
1000_BASE_LX	1000 Base LX
1000_BASE_SX	1000 Base SX
1000_BASE_ZX	1000 Base ZX
UNKNOWN	Unknown Optical Type
UNPLUGGED	Unplugged

## 4.3.56 PM\_MODE

Identifies the type of PM parameters. Only P type is supported.

**Table 4-89 PM\_MODE Values**

PM_MODE Values	Description
I	Transport Intermediate Node PM parameters
L	Transport Line PM parameters
NONE	No PM parameters are being stored for the entity
P	Transport Path PM parameters
S	Transport Section PM parameters
SEG	Transport Path Segment PM parameters (e.g., ISDN BRA)

## 4.3.57 PM\_STATE

Directs the named PM mode type - path (P) state

**Table 4-90 PM\_STATE Values**

PM_STATE Values	Description
OFF	Disable the mode
ON	Enable the mode

## 4.3.58 PRIVILEGE

Security level

**Table 4-91 PRIVILEGE Values**

PRIVILEGE Values	Description
MAINT	Maintenance security level
PROV	Provisioning security level
RTRV	Retrieve security level
SUPER	Superuser security level

## 4.3.59 PRODUCT\_TYPE

Product (NE) type

**Table 4-92** *PRODUCT\_TYPE Values*

<b>PRODUCT_TYPE Values</b>	<b>Description</b>
15327	Cisco ONS 15327 NE
15454	Cisco ONS 15454 NE
UNKNOWN	Unknown product type

## 4.3.60 PROTECTION\_GROUP

Protection group type

**Table 4-93** *PROTECTION\_GROUP Values*

<b>PROTECTION_GROUP Values</b>	<b>Description</b>
1-1	1 to 1 protection group
1-N	1 to N protection group

## 4.3.61 PST

Primary State. This parameter indicates the current overall service condition of an entity.

**Table 4-94** *PST Values*

<b>PST Values</b>	<b>Description</b>
IS	In-service
OOS	Out-of-Service

## 4.3.62 PSTQ

Primary State Qualifier. This parameter qualifies PST. If the entity is in-service, PSTQ indicates whether it is totally or partially in service. If the entity is out-of-service, PSTQ indicates whether this is due to an external management command or is determined by the NE itself based on an event that occurred in the NE.

**Table 4-95 PSTQ Values**

PSTQ Values	Description
ANR	(Abnormal)—The entity is allowed to perform all of its provisioned functions, but it is capable of performing only part of (but not none) these functions or of performing these functions at a degraded level. This value of PSTQ qualifies the PST value of IS.
ANRST	(Abnormal and Restricted)—The entity is capable of performing only part (but not none) of its provisioned functions or of performing these functions at a degraded level. This value of PSTQ qualifies the PST value of IS.
AU	(Autonomous)—The entity is incapable of performing any of its provisioned functions, and there is no external administrative restriction inhibiting the entity from performing this functions. This value of PSTQ qualifies the PST value of OOS.
AUMA	(Autonomous and Management)—The entity is incapable of performing any of its provisioned functions, and at the same time has been intentionally suspended from performing all of its provisioned functions. This value of PSTQ qualifies the PST value of OOS.
AURST	(Autonomous and Restricted)—The entity is incapable of performing any of its provisioned functions and at the same time being intentionally suspended from performing part of its provisioned functions. This value of PSTQ qualifies the PST value of OOS.
MA	(Management)—The entity is intentionally suspended by the external management command from performing all of its provisioned functions. This value of PSTQ qualifies the PST value of OOS.
MAANR	(Management and Abnormal)—The entity is operationally capable of performing only part of its provisioned functions or at a degraded level, and at the same time is intentionally suspended from performing all of its provisioned functions. This value of PSTQ qualifies the PST value of OOS.
NR	(Normal)—This value implies that the entity is normally in service. It is capable and allowed to provide all of its provisioned functions. This value of PSTQ qualifies the PST value of IS.
RST	(Restricted)—The entity is capable of performing all of its provisioned functions but is intentionally suspended from performing part of, but not all, these functions. This value of PSTQ qualifies the PST value of IS.

### 4.3.63 REVERTIVE\_TIME

Revertive time

**Table 4-96 REVERTIVE\_TIME Values**

REVERTIVE_TIME Values	Description
0.5 – 12.0	Revertive time is 0.5 to 12.0 minutes

### 4.3.64 RNG\_TYPE

Defines the type of ring that is to be deployed for this path

**Table 4-97 RNG\_TYPE Values**

RNG_TYPE Values	Description
BLSR2	2-Fiber Bidirectional Line Switched Ring
BLSR4	4-Fiber Bidirectional Line Switched Ring
UPSR	Unidirectional Path Switched Ring

### 4.3.65 SD\_BER

The threshold for declaring Signal Degrade on a facility or path

**Table 4-98 SD\_BER Values**

SD_BER Values	Description
1E-5–1E-9	SDBER is the 1E-5–1E-9

### 4.3.66 SDCC\_MODE

Enables or disables the Section Data Communications Channel (SDCC) for the specified facility

**Table 4-99 SDCC\_MODE Values**

SDCC_MODE Values	Description
N	Section Data Communications Channel is disabled for this facility
Y	Section Data Communications Channel is enabled for this facility

### 4.3.67 SERV\_EFF

Indicates the effect of the alarm on service

*Table 4-100 SERV\_EFF Values*

SERV_EFF Values	Description
NSA	The condition is Non-Service Affecting
SA	The condition is Service Affecting

### 4.3.68 SF\_BER

The threshold for declaring Signal Failure on a facility or path

*Table 4-101 SF\_BER Values*

SF_BER Values	Description
1E-3–1E-5	SFBER is the 1E-3–1E-5

### 4.3.69 SIDE

The role the unit is playing in the protection group

*Table 4-102 SIDE Values*

SIDE Values	Description
PROT	The entity is the protection unit in the protection group
WORK	The entity is a working unit in the protection group

### 4.3.70 SST

Secondary State. This parameter provides additional information pertaining to PST and PSTQ. Values for this state included here are a subset of the list in the GR document.

*Table 4-103 SST Values*

SST Values	Description
ACT	Active
FLT	Fault
LPBK	Loopback
MEA	Mismatch of Equipment and Attributes
STBYH	Standby Hot
STBYI	Standby Inhibited
STBYS	Standby Switched



**Table 4-103 SST Values**

<b>SST Values</b>	<b>Description</b>
SWDL	Software Downloading
UAS	Unassigned
UEQ	Unequipped
WKR	Working

## 4.3.71 STATE

The provisioned state of the equipment unit or facility

According to the Telcordia State Model which describes the current state of an NE defined in GR-1093-CORE, the ONS 15454's Equipment state is mapped (roughly) to the Telcordia State Model.

The optional [ ] field in the autonomous messages REPT RMV EQPT and REPT RST EQPT can be populated with the values below.

The [ ] field is populated by the combination of the PST-PSTQ-SST. For the REPT RMV rr and REPT RST rr, the optional [ ] field will be populated with just PST.

**Table 4-104 STATE Values**

<b>STATE Values</b>	<b>Description</b>
IS-NR-ACT	This Telcordia State Model is mapped to the 15454 State of ACTIVE.
IS-NR-STBYH	This Telcordia State Model is mapped to the 15454 State of STANDBY.
OOS-AU-FLT	This Telcordia State Model is mapped to the 15454 State of FAILED.
OOS-AU-MEA	This Telcordia State Model is mapped to the 15454 State of MISMATCH.
OOS-AUMA-UEQ	This Telcordia State Model is mapped to the 15454 State of NOT_PRESENT.
OOS-MA-UAS	This Telcordia State Model is mapped to the 15454 State of LOADING.

## 4.3.72 STATUS

Indicates whether the unit in the protection pair is active or standby

**Table 4-105 STATUS Values**

<b>STATUS Values</b>	<b>Description</b>
ACT	The entity is the active unit on the shelf
NA	Status is unavailable
STBY	The entity is the standby unit on the shelf

### 4.3.73 STM\_TYPE

The Synchronous Transport Mode of the NE

*Table 4-106 STM\_TYPE Values*

STM_TYPE Values	Description
SDH	The NE is operating in Synchronous Digital Hierarchy mode
SONET	The NE is operating in Synchronous Optical Network mode

### 4.3.74 STS\_MAP

The payload mapping of a terminated STS path

*Table 4-107 STS\_MAP Values*

STS_MAP Values	Description
ASYN	The STS path is carrying an Asynchronous DS3 payload
ATM	The STS path is carrying ATM cells
NONE	The STS path is not terminated

### 4.3.75 STS\_MONTYPE

STS Monitor Type

*Table 4-108 STS\_MONTYPE Values*

STS_MONTYPE Values	Description
CVP	Coding Violation - P
ESP	Errored Second - Path
SESP	Severely Errored Second - Path
UASP	Unavailable Second - Path

## 4.3.76 STS\_PATH

Modifier for some of the STS commands. This table does not include STS for the RTRV-CRS command, because STS is not a standard designator.

**Table 4-109 STS\_PATH Values**

STS_PATH Values	Description
STS1	Synchronous Transport Signal level-1 (51 Mbs)
STS3C	Synchronous Transport Signal level-3 Concatenated (155 Mbs)
STS6C	Synchronous Transport Signal level-6 Concatenated (310 Mbs)
STS9C	Synchronous Transport Signal level-9 Concatenated (465 Mbs)
STS12C	Synchronous Transport Signal level-12 Concatenated (622 Mbs)
STS24C	Synchronous Transport Signal level-24 Concatenated (1240 Mbs)
STS48C	Synchronous Transport Signal level-48 Concatenated (2488 Mbs)
STS192C	Synchronous Transport Signal level-192 (9952 Mbs)

## 4.3.77 SWITCH

The type of switch to be initiated

**Table 4-110 SWITCH Values**

SWITCH Values	Description
FRCD	Force a switch unless another FRCD or LOCKOUT is in effect
LOCKOUT	Locks the facility out of switching. The system cannot switch to the protect facility to carry service.
MAN	Requests a manual switch of the facility

## 4.3.78 SWITCH\_TYPE

BLSR switch type

**Table 4-111 SWITCH\_TYPE Values**

SWITCH_TYPE Values	Description
RING	BLSR ring switch type
SPAN	BLSR span switch type

### 4.3.79 SYNC\_CLOCK\_REF\_QUALITY\_LEVEL

Clock Source Quality Level

*Table 4-112 SYNC\_CLOCK\_REF\_QUALITY\_LEVEL Values*

<b>SYNC_CLOCK_REF_QUALITY_LEVEL Values</b>	<b>Description</b>
DUS	Don't Use for Synchronization
PRS	Primary Reference Source, Stratum 1 Traceable
RES	Reserved for network synchronization use
SMC	SONET Minimum Clock Traceable
ST2	Stratum 2 Traceable
ST3	Stratum 3 Traceable
ST3E	Stratum 3E Traceable (2nd generation only)
ST4	Stratum 4 Traceable
STU	Synchronized, Traceability Unknown
TNC	Transit Node Clock (2nd generation only)

### 4.3.80 SYNC\_GENERATION

Synchronization status message set generation

*Table 4-113 SYNC\_GENERATION Values*

<b>SYNC_GENERATION Values</b>	<b>Description</b>
GEN1	First generation SSM set
GEN2	Second generation SSM set

### 4.3.81 SYNC\_MODE

Synchronization mode

*Table 4-114 SYNC\_MODE Values*

<b>SYNC_MODE Values</b>	<b>Description</b>
FRNG	Reset operation mode
FST	Reset operation mode
HLDOVR	Reset operation mode
NORM	Reset operation mode

## 4.3.82 SYNC\_QUALITY\_LEVEL

Reserved for network synchronization quality level

**Table 4-115 SYNC\_QUALITY\_LEVEL Values**

<b>SYNC_QUALITY_LEVEL Values</b>	<b>Description for Generation-1</b>	<b>Description for Generation-2</b>
ABOVE-PRS	Better than Primary Reference Source	Better than Primary Reference Source
ABOVE-STU	Between STU and PRS	Between STU and PRS
ABOVE-ST2	Between ST2 and STU	Between ST2 and STU
ABOVE-TNC	—	Between TNC and ST2
ABOVE-ST3E	—	Between ST3E and TNC
ABOVE-ST3	Between ST3 and ST2	Between ST3 and ST3E
ABOVE-SMC	Between SMC and ST3	Between SMC and ST3
ABOVE-ST4	Between ST4 and SMC	Between ST4 and SMC
BELOW-ST4	Below ST4 but still usable	Below ST4 but still usable
SAME-AS-DUS	Disable the RES message by equating it to DUS	Disable the RES message by equating it to DUS

## 4.3.83 T1\_MONTYPE

T1 monitor type

**Table 4-116 T1\_MONTYPE Values**

<b>T1_MONTYPE</b>	<b>Description</b>
CVL	Coding Violation - Line
CVP	Coding Violation - Path
ESL	Errored Second - Line
SASP	Severely Errored Framing/AIS Seconds
SESL	Severely Errored Second - Line
SESP	Severely Errored Second - Path
UASP	Unavailable Second - Path

## 4.3.84 T3\_MONTYPE

T3 monitor type

**Table 4-117 T3\_MONTYPE Values**

T3_MONTYPE Values	Description
CVL	Coding Violation - Line
ESL	Errored Second - Line
SESL	Severely Errored Second - Line

## 4.3.85 TACC\_MODE

Test access mode

**Table 4-118 TACC\_MODE Values**

TACC_MODE Values	Description
LOOPE	Indicates to split both the A and B paths, connect the line incoming from E direction to the line outgoing in the E direction, and connect this looped configuration to the FAD. The line outgoing in the F direction shall have a QRS connected, and the line incoming from the F direction shall be terminated by the nominal characteristic impedance of the line.
LOOPF	Indicates to split both the A and B paths, connect the line incoming from F direction to the line outgoing in the F direction, and connect this looped configuration to the FAD. The line outgoing in the E direction shall have a QRS connected, and the line incoming from the E direction shall be terminated by the nominal characteristic impedance of the line.
MONE	Indicates that a monitor connection is to be provided from the FAD to the A transmission path of the accessed circuit.
MONEF	Indicates that a monitor connection is to be provided from the FAD1 to a DFAD, or the odd pair of a FAP, to the A transmission path and from FAD2 of the same DFAD, or the even pair of a FAP, to the B transmission path of the accessed circuit.
MONF	Indicates that a monitor connection is to be provided from the FAD to the B transmission path of the accessed circuit.
SPLTA	Indicates that a connection is to be provided from both the E and F sides of the A transmission path of the circuit under test to the FAD and split the A transmission path.
SPLTB	Indicates that a connection is to be provided from both the E and F sides of the B transmission path of the circuit under test to the FAD and split the B transmission path.
SPLTE	Indicates to split both the A and B paths and connect the E side of the accessed circuit to the FAD. The line outgoing in the F direction shall have a QRS connected, and the line incoming from the F direction shall have a QRS connected, and the line incoming from the E direction shall be terminated by the nominal characteristic impedance of the line.

*Table 4-118 TACC\_MODE Values (continued)*

<b>TACC_MODE Values</b>	<b>Description</b>
SPLTEF	Indicates to split both the A and B paths, and connect the E side of the accessed circuit to FAD1 and the F side to FAD2.
SPLTF	Indicates to split both the A and B paths, and connect the F side of the accessed circuit to the FAD. The line outgoing in the E direction shall have a QRS connected, and the line incoming in the E direction shall have a QRS connected, and the line incoming from the E direction shall be terminated by the nominal characteristic impedance of the line.

### 4.3.86 TIMING\_MODE

Timing mode for the current node

*Table 4-119 TIMING\_MODE Values*

<b>TIMING_MODE Values</b>	<b>Description</b>
EXTERNAL	The node derives its clock from the BITS input
LINE	The node derives its clock from the SONET lines
MIXED	The node derives its clock from the mixed timing mode

### 4.3.87 TMG\_REF

Identifies whether or not this entity is the Timing Reference for its group. For equipment, it identifies the facility that is supplying the timing reference. For interface groups, it identifies the card that is supplying the main timing reference.

*Table 4-120 TMG\_REF Values*

<b>TMG_REF Values</b>	<b>Description</b>
N	This facility or card is not a timing reference
Y	This facility or card is a timing reference

### 4.3.88 TMPER

Performance parameter

*Table 4-121 TMPER Values*

<b>TMPER Values</b>	<b>Description</b>
15-MIN	Performance Parameter Accumulation Interval Length - Every 15 Minutes
1-DAY	Performance Parameter Accumulation Interval Length - Every 24 Hours

## 4.3.89 TRCMODE

Path Trace Mode

*Table 4-122 TRCMODE Values*

TRCMODE Values	Description
AUTO	Use the previously received path trace string as the expected string
AUTO-NO-AIS	Use the previously received path trace string as the expected string and do not turn on AIS and RDI if TIMP detected
MAN	Use the provisioned expected string as the expected string
MAN-NO-AIS	Use the provisioned expected string as the expected string and do not turn on AIS and RDI if TIMP detected
OFF	Turn off path trace capability. Nothing will be reported

## 4.3.90 UNI\_BI

Unidirectional and Bidirectional switch operations

*Table 4-123 UNI\_BI Values*

UNI_BI Values	Description
BI	Bidirectional protection switching
UNI	Unidirectional protection switching

## 4.3.91 USE\_DST

Identifies whether Daylight Saving Time is recognized in the area where this NE is deployed.

*Table 4-124 USE\_DST Values*

USE_DST Values	Description
N	Daylight Saving Time is not recognized
Y	Daylight Saving Time is recognized

## 4.3.92 VALIDITY

Response validity

*Table 4-125 VALIDITY Values*

VALIDITY Values	Description
COMPL	Complete Response
PRTL	Partial Response



### 4.3.93 VT1\_5\_MONTYPE

VT1\_5 Monitor Type

*Table 4-126 VT1\_5\_MONTYPE Values*

<b>VT1_5_MONTYPE Values</b>	<b>Description</b>
CVV	Coding Violation - VT Path
ESV	Errored Seconds - VT Path
SESV	Severely Errored Seconds - VT Path
UASV	Unavailable Second - VT Path





## Ring Provisioning

This chapter provides information and sample procedures for setting up STS or VT circuits over existing unidirectional path switched ring (UPSR) and bidirectional line switch ring (BLSR) configurations using TL1, including:

- UPSR topology
- UPSR cross-connections
- Ring-to-ring interconnection
- 1WAY drop and continue



### Note

Because the ONS 15454/ONS 15327 implements logical UPSR, there are no defined east and west ports. Instead, the east STS path for one circuit can exit a different port than the east STS path of another circuit, even though the west STS paths for both circuits may share the same port.

## 5.1 UPSR Topology

No special configuration of the physical UPSR topology is required other than connecting the fibers to the desired ports on the desired nodes. The east and west paths must exit a node at different ports (to ensure link diversity), but there are no other physical topology restrictions

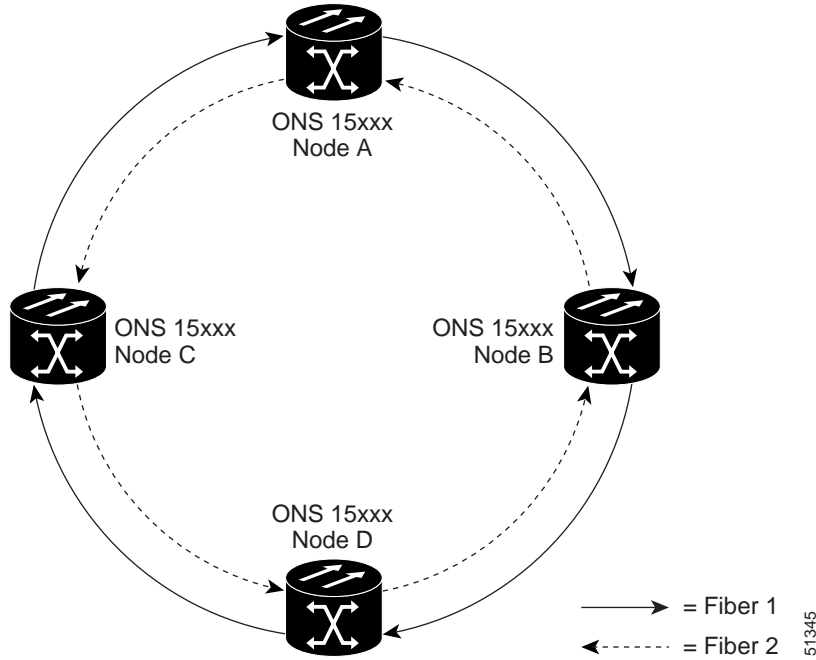
ONS 15xxx networks give you the option to set up path-protected mesh networks (PPMNs). PPMNs extend the protection scheme of a UPSR from the basic ring configuration to the meshed architecture of several interconnected rings. For more information about PPMN refer to the *Cisco ONS 15454 Procedure Guide* or the *Cisco ONS 15327 User Documentation*.

## 5.2 UPSR Cross-Connections

To create a UPSR cross-connection using TL1, you only need to designate whether it is a 1WAY or 2WAY cross-connect, but the access identifier (AID) must be more explicit. For example, to create a 1WAY UPSR circuit over the network with nodes A, B, C, and D and segments A-B, B-D, A-C, C-D as shown in Figure 5-1, enter the following commands:

```
ENT-CRS-STS1:A:FROM,TO1&TO2:CTAG1::1WAY;  
ENT-CRS-STS1:B:FROM,TO:CTAG2::1WAY;  
ENT-CRS-STS1:C:FROM,TO:CTAG3::1WAY;  
ENT-CRS-STS1:D:FROM1&FROM2,TO:CTAG4::1WAY;
```

Figure 5-1 Network configured with a 1WAY UPSR circuit

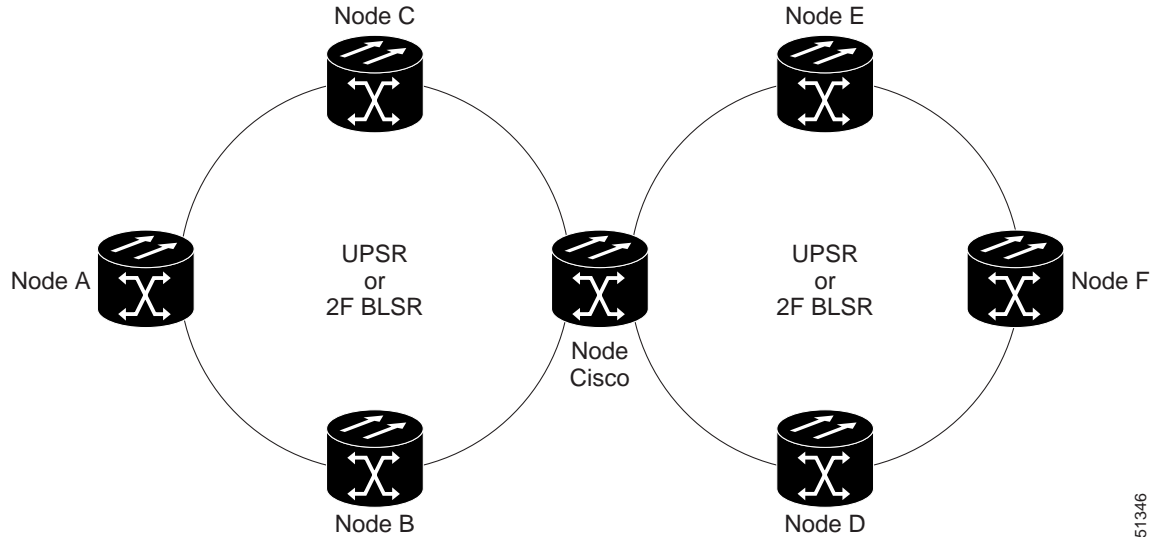


### 5.3 Ring-to-Ring Interconnection

In the following examples, the form “5/1/1” represents “Slot 5, Port 1, STS 1.” For VTs add the normal VT Group and VT ID extensions. These examples also assume that the slots/ports have been auto-provisioned (via a plug-in event) and that the ports involved have been placed into the in service state using a port configuration command, for example, ED-OCN.

For the examples in this section, both rings traverse the same node; therefore, only a single cross-connection is required to create the ring-to-ring connection. Use the network map shown in Figure 5-2 with the node named “Cisco” in the nexus.

Figure 5-2 Network map with Cisco node showing ring-to-ring interconnection



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### 5.3.1 Sample UPSR to UPSR Connection

Ring 1 = UPSR

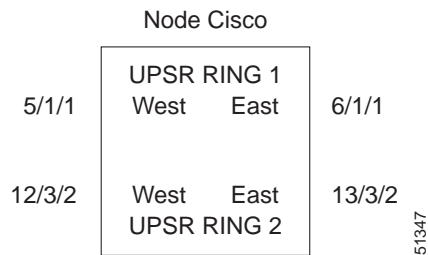
Ring 2 = UPSR

This example, illustrated in Figure 5-3, uses a 4-port OC-3 to feed Ring 2. Ring 1 can have any OC-N trunk card, but the trunk card is most likely a single-port OC-48 or OC-12.

  
**Note**

STS 12/3/2 maps to STS-12-8 (((3-1)\*3) +2).  
The STS calculation formula is: (((Port # -1)\*Number of STS per port)+STS#).

Figure 5-3 UPSR to UPSR connection specifications through the Cisco node

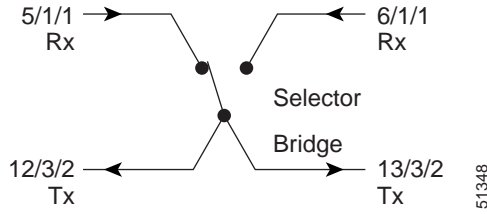


51347

Use the ENT-CRS-STS1:CISCO:STS-5-1&STS-6-1,STS-12-8&STS-13-8:CTAG1::2WAY; input format.

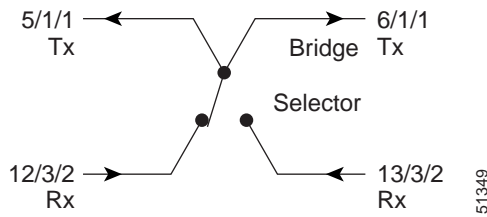
This command creates a selector between 5/1/1 and 6/1/1 which is bridged to Ring 2 (12/3/2 and 13/3/2), as shown in Figure 5-4.

**Figure 5-4 Selector between 5/1/1 and 6/1/1**



The command also creates a selector between 12/3/2 and 13/3/2 to a bridge to Ring 1 (5/1/1 and 6/1/1), as shown in Figure 5-5.

**Figure 5-5 Selector between 12/3/2 and 13/3/2**



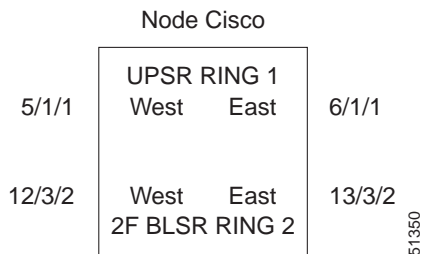
### 5.3.2 Sample UPSR to Two-Fiber BLSR Connection

Ring 1 = UPSR

Ring 2 = Two-fiber BLSR

This example, illustrated in Figure 5-6, uses a UPSR end-point with a drop on a two-fiber BLSR and the west span of the two-fiber BLSR (Ring 2) for the active path of the circuit. The example also uses multiport addressing for Ring 2 even though a two-fiber BLSR cannot traverse OC-3 and OC-3 is the only multiport card for this release. This example is based on the future release of a multiport OC-12 that will support two-fiber BLSR. Therefore, assume a 4-port OC-12 card (this is only important for computing the STS AID for multiport cards) where 13/3/2 = STS-13-26 and where  $26 = (((3-1)*12) + 2)$ .

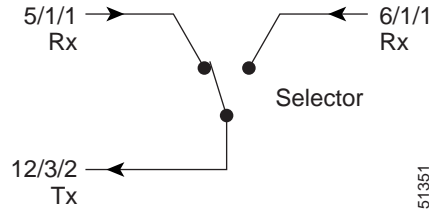
**Figure 5-6 UPSR to two-fiber BLSR**



Use the ENT-CRS-ST51:CISCO:STS-5-1&STS-6-1,STS12-26:CTAG2::2WAY; input format.

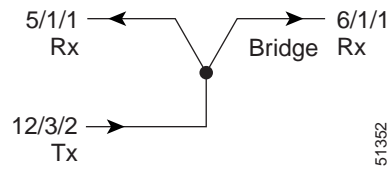
This command creates a selector between 5/1/1 and 6/1/1 which connects to 12/3/2 on Ring 2, as shown in Figure 5-7.

**Figure 5-7 Selector between 5/1/1 and 6/1/1**



The command also creates a bridge from 12/3/2 to Ring 1 (5/1/1 and 6/1/1), as shown in Figure 5-8.

**Figure 5-8 Bridge from 12/3/2 to Ring 1**



In this configuration a two-fiber BLSR switch can automatically reconnect the selector output to the protection path on the east port (12/3/2 assuming OC-12) if necessary.

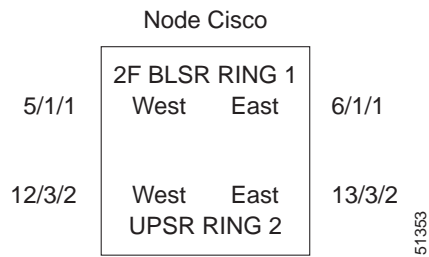
### 5.3.3 Sample Two-Fiber BLSR to UPSR Connection

Ring 1 = Two-fiber BLSR

Ring 2 = UPSR

This example, illustrated in Figure 5-9, uses a UPSR end-point with a drop on a two-fiber BLSR and uses the east span of the two-fiber BLSR (Ring 1) for the active path of the circuit. For STS addressing, the UPSR is an OC-3 (e.g. STS-13-8).

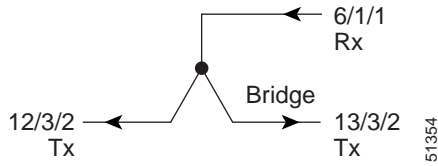
**Figure 5-9 Two-fiber BLSR to UPSR**



Use the ENT-CRS-ST51:CISCO:STS-6-1,STS-12-8&STS-13-8:CTAG3::2WAY; input format.

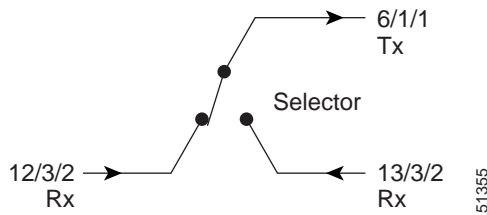
This command creates a bridge from 6/1/1 to Ring 2 (12/3/2 and 13/3/2), as shown in Figure 5-10.

**Figure 5-10 Bridge from 6/1/1 to Ring 2**



The command also creates a selector between 12/3/2 and 13/3/2 to Ring 1 (6/1/1) as shown in Figure 5-11.

**Figure 5-11 Selector between 12/3/2 and 13/3/2 to Ring 1**



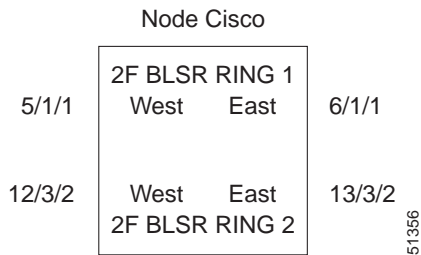
### 5.3.4 Sample Two-Fiber BLSR to Two-Fiber BLSR Connection

Ring 1 = Two-fiber BLSR

Ring 2 = Two-fiber BLSR

All protection for a two-fiber BLSR interconnecting to a two-fiber BLSR is performed at the line level. You can make the connection with a 2WAY cross-connect from an STS on the working side of the two-fiber BLSR span of Ring 1 to an STS on the working side of a two-fiber BLSR span on Ring 2. The connections can be east to east, east to west, west to east, and west to west. This example, illustrated in Figure 5-12, uses Ring 1 west to Ring 2 east and assumes a 4-port OC-12 in Slots 12 and 13 for subtending to a two-fiber BLSR (Ring 2).

**Figure 5-12 Two-fiber BLSR to two-fiber BLSR**

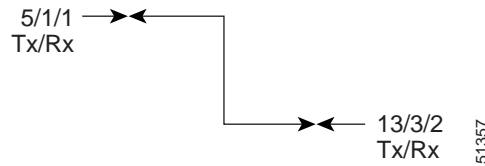


Use the ENT-CRS-STS1:CISCO:STS-5-1,STS-13-26:CTAG4::2WAY; input format.

This command creates a 2WAY connection from 5/1/1 to 13/3/2 as shown in Figure 5-13.



**Figure 5-13 2WAY connection from 5/1/1 to 13/3/2**



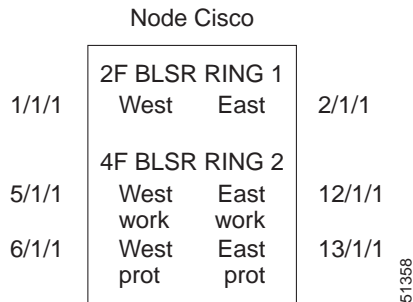
### 5.3.5 Sample Two-Fiber BLSR to Four-Fiber BLSR Connection (ONS 15454)

Ring 1 = Two-fiber BLSR

Ring 2 = Four-fiber BLSR

All protection for a two-fiber BLSR interconnecting to a four-fiber BLSR is performed at the line level. You can make the connection with a simple 2WAY cross-connection from the appropriate side, east or west, of the two-fiber BLSR to the working fiber of the appropriate side, east or west, of the four-fiber BLSR, as shown in Figure 5-14.

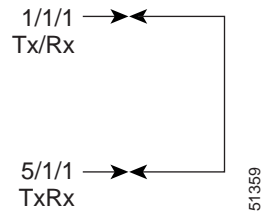
**Figure 5-14 Two-fiber BLSR to four-fiber BLSR**



Use the ENT-CRS-ST51:CISCO:STS-1-1,STS-5-1:CTAG5::2WAY; input format.

This command creates a 2WAY connection from 1/1/1 to 5/1/1, as shown in Figure 5-15.

**Figure 5-15 2WAY Connection from 1/1/1 to 5/1/1**



In the event of a failure, the software will automatically switch the traffic to the appropriate line and path.

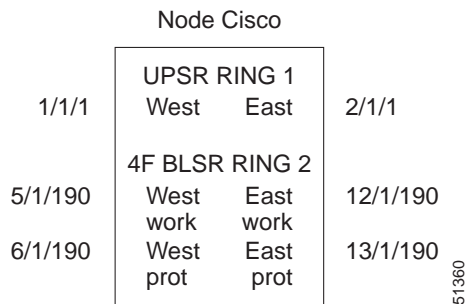
### 5.3.6 Sample UPSR to Four-Fiber BLSR Connection (ONS 15454)

Ring 1 = UPSR

Ring 2 = Four-fiber BLSR

This example uses the west span of the four-fiber BLSR (Ring 2) for the active path of the circuit. The example also assumes that the four-fiber BLSR travels over OC-192 spans, as shown in Figure 5-16.

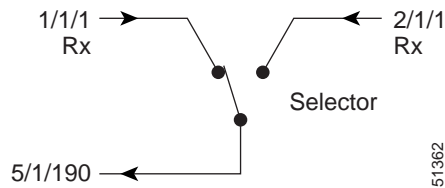
**Figure 5-16 UPSR to four-fiber BLSR**



Use the ENT-CRS-ST51:CISCO:STS-1-1&STS-2-1&STS-5-190:CTAG6::2WAY; input format.

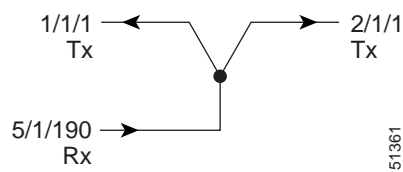
This command creates a selector between 1/1/1 and 2/1/1 to Ring 2 (5/1/190), as shown in Figure 5-17.

**Figure 5-17 Selector between 1/1/1 and 2/1/1 to Ring 2 (5/1/190)**



The command also creates a bridge from 5/1/190 to Ring 1 (1/1/1 and 2/1/1), as shown in Figure 5-18.

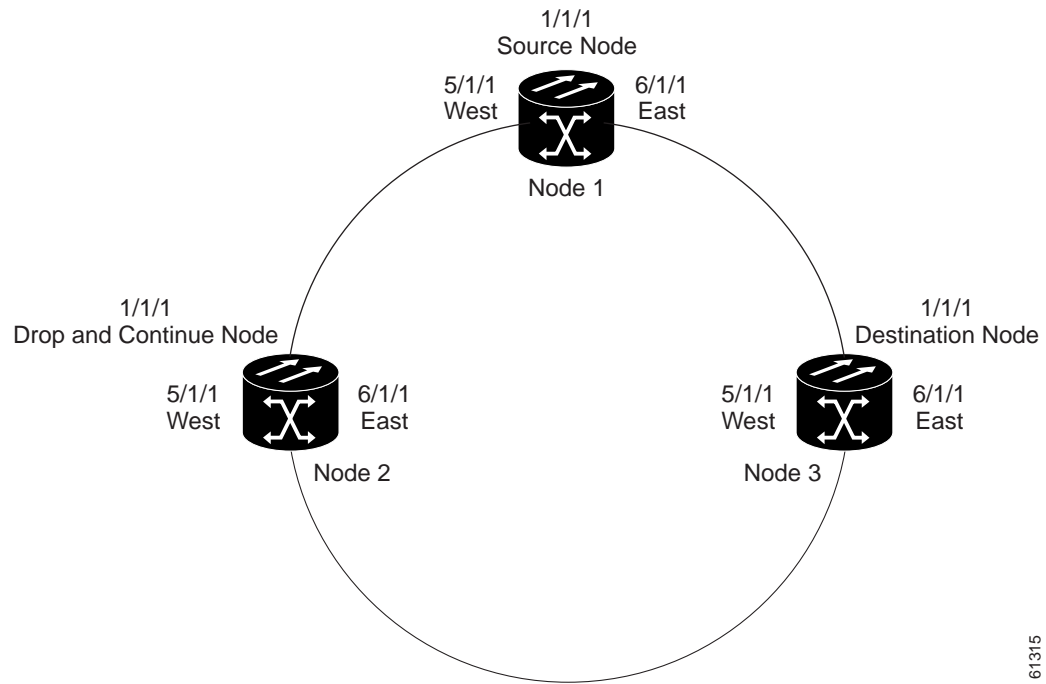
**Figure 5-18 Bridge from 5/1/190 to Ring 1 (1/1/1 and 2/1/1)**



## 5.4 1WAY Drop and Continue

The following examples show how to create a 1WAY drop and continue cross-connect. The examples use three nodes (Node 1, Node 2, and Node 3) in a ring configuration. Node 1 is the source node, Node 2 has the drop and continue, and Node 3 is the destination.

**Figure 5-19** 1WAY drop and continue

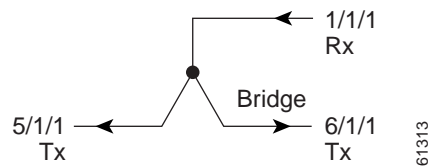


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### 5.4.1 Sample Node 1 Configuration (Source Node)

Issue the `ENT-CRS-STSn::STS-1-1,STS-5-1&STS-6-1:CTAG::1WAY;` command on this Node 1.

**Figure 5-20** Bridge from 1/1/1 to 5/1/1 and 6/1/1

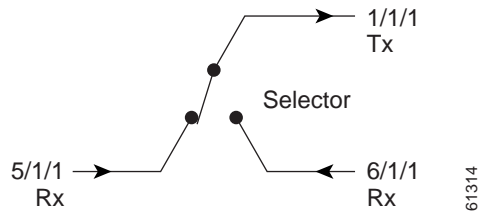


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## 5.4.2 Sample Node 2 Configuration (Drop and Continue Node)

Issue the ENT-CRS-STSn::STS-5-1&STS-6-1,STS-1-1:CTAG::1WAYDC; on this Node 2.

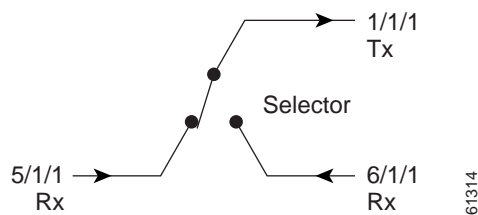
**Figure 5-21** Selector between 5/1/1 and 6/1/1 to 1/1/1



## 5.4.3 Sample Node 3 Configuration (Destination Node)

Issue the ENT-CRS-STSn::STS-5-1&STS-6-1,STS-1-1:CTAG::1WAY; on this Node 3.

**Figure 5-22** Selector between 5/1/1 and 6/1/1 to 1/1/1





# TL1 Performance Monitoring

Performance information is continuously monitored and stored in individual performance monitoring (PM) registers and can be retrieved upon request or when a preset threshold is exceeded. For more detailed information on performance monitoring, refer to the *Cisco ONS 15454 Reference Guide* and the *Cisco ONS 15327 User Documentation* for more information on performance monitoring.

This chapter provides TL1 performance monitoring information for the Cisco ONS 15454 and the Cisco ONS 15327, including:

- Performance monitoring by card
- PM parameters by line type

## 6.1 Performance Monitoring by Card

**Table 6-1 Near-End Section PMs**

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
CV-S					X	X	X
ES-S					X	X	X
SES-S					X	X	X
SEFS-S					X	X	X

**Table 6-2 Near-End Line PMs**

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
<b>Near-End Line</b>							
CV-L					X	X	X
ES-L					X	X	X
SES-L					X	X	X
UAS-L					X	X	X

Table 6-2 Near-End Line PMs (continued)

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
FC-L					X	X	X
PSC					X (1+1)	X (1+1, BLSR)	
PSC-R						X (OC48, OC192)	
PSC-S						X (OC48, OC192)	
PSC-W						X	
PSD					X (1+1)	X (1+1, BLSR)	
PSD-R						X (OC48, OC192)	
PSD-S						X (OC48, OC192)	
PSD-W						X	
<b>Far-End Line</b>							
CV-L FE					X	X	
ES-L FE					X	X	
FC-L FE					X	X	
SES-L FE					X	X	
UAS-L FE					X	X	

Table 6-3 Near-End DS1 Line PMs

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
DS1 CV-L	X						
DS1 ES-L	X						
DS1 SES-L	X						
DS1 LOSS-L	X						

Table 6-4 Near-End DS3 Line PMs

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
DS3 CV-L		X	X	X			
DS3 ES-L		X	X	X			
DS3 SES-L		X	X	X			
DS3 LOSS-L		X	X	X			

Table 6-5 SONET Path PMs

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
<b>Near-End SONET Path</b>							
STS CV-P	X	X	X	X	X	X	X
STS ES-P	X	X	X	X	X	X	X
STS FC-P	X	X	X	X	X	X	X
STS SES-P	X	X	X	X	X	X	X
STS UAS-P	X	X	X	X	X	X	X
PPJC-Pdet					X	X	
NPJC-Pdet					X	X	
PPJC-Pgen					X	X	
NPJC-Pgen					X	X	
<b>Far-End SONET Path</b>							
STS CV-P FE				X	X	X	X
STS ES-P FE				X	X	X	X
STS FC-P FE				X	X	X	X
STS SES-P FE				X	X	X	X
STS UAS-P FE				X	X	X	X

Table 6-6 DS1 Path PMs

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
<b>DS1 Path (Rx and Tx)</b>							
DS1 Rx AISS-P	X						
DS1 Rx CV-P	X						
DS1 Rx ES-P	X						

Table 6-6 DS1 Path PMs (continued)

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
DS1 Rx SAS-P	X						
DS1 Rx SES-P	X						
DS1 Rx UAS-P	X						
DS1 Tx AISS-P	X						
DS1 Tx CV-P	X						
DS1 Tx ES-P	X						
DS1 Tx SAS-P	X						
DS1 Tx SES-P	X						
DS1 Tx UAS-P	X						
<b>Near-End DS1 Path</b>							
DS1 AISS-P				X			
DS1 ES-P				X			
DS1 SAS-P				X			
DS1 SES-P				X			
DS1 UAS-P				X			

Table 6-7 DS3 Path PMs

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
<b>Near-End DS3 Path</b>							
DS3 AISS-P		X	X	X			
DS3 CVP-P		X	X	X			
DS3 ESP-P		X	X	X			
DS3 SASP-P		X	X	X			
DS3 SESP-P		X	X	X			
DS3 UASP-P		X	X	X			
<b>Near-End C-bit DS3 Path</b>							
DS3 CVCP-P			X	X			
DS3 ESCP-P			X	X			
DS3 SESP-P			X	X			
DS3 UASP-P			X	X			
<b>Far-End C-bit DS3 Path</b>							
DS3 CVCP-P FE			X	X			
DS3 ESCP-P FE			X	X			



**Table 6-7 DS3 Path PMs (continued)**

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
DS3 SASCP-P FE			X	X			
DS3 SESCO-P FE			X	X			
DS3 UASCP-P FE			X	X			

**Table 6-8 VT Path PMs**

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
<b>Near-End VT Path</b>							
CV-V	X			X			
ES-V	X			X			
SES-V	X			X			
UAS-V	X			X			
<b>Far-End VT Path</b>							
CV-V FE	X			X			
ES-V FE	X			X			
SES-V FE	X			X			
UAS-V FE	X			X			

## 6.2 PM Parameters by Line Type

*Table 6-9 PM Parameters by Line Type*

Parameter	OC-N	T1	T3	STS	VT1.5
CVL	Y	Y	Y		
CVP		Y	Y	Y	
CVS	Y				
CVV					Y
ESL	Y	Y	Y		
ESP		Y	Y	Y	
ESS	Y				
ESV					Y
FCP				Y	
FCL	Y				
PJNEG	Y				
PJPOS	Y				
PSC	Y				
PSD	Y				
SASP		Y	Y		
SEFS	Y				
SESL	Y	Y	Y		
SESP		Y	Y	Y	
SESS	Y				
SESV					Y
UASL	Y				
UASP		Y	Y	Y	
UASV					Y
AISSP		Y	Y		
CVCPP			Y		
ESCPP			Y		
LOSSL			Y		
SASCPP			Y		
SESCPP			Y		
UASCPP			Y		



## TL1 Alarms and Errors

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This chapter provides TL1 alarm and error information supported by the Cisco ONS 15454 and Cisco ONS 15327, including:

- Alarms
- Errors
- Echo

Each alarm includes a description and severity. Each error is listed by error code and includes error type and error message. For a list of TL1 conditions, see Table 4-46 on page 4-24.

### 7.1 Alarms

Refer to “Alarm Troubleshooting” in the *Cisco ONS 15454 Troubleshooting Guide* and in the *Cisco ONS 15327 User Documentation* for complete alarm definitions, trouble notifications, and fault recovery procedures. The alarms are listed alphabetically by alarmable object:

- AIP
- BITS
- BPLANE
- DS1
- DS3
- E1000F
- E100(T)
- EC1-12
- ENVALRM
- EQPT
- EXT-SREF
- FAN
- G1000
- NE
- NE-SREF
- OCN
- STSMON
- STSTRM
- VT-MON
- VT-TERM

For a sample of each TL1 alarm that can be generated by the ONS 15454, refer to the file 15454\_r33\_tl1\_alarms.txt on the Cisco ONS 15454 Software CD in the subdirectory \TL1. For a sample of each TL1 alarm that can be generated by the ONS 15327, refer to the file 15327\_r33\_tl1\_alarms.txt on the Cisco ONS 15327 Software CD in the subdirectory \TL1. These files can be used to test an operations support system’s ability to receive alarms which the ONS 15454/ONS 15327 can raise.

## 7.1.1 AIP

Auxiliary interface protection module

**Table 7-1 AIP**

<b>AIP Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
INVMACADR	MA/NSA	The ONS 15454/15327 media access control layer address (MAC address) is invalid.
MEA	CR/SA	The mismatch between entity/equipment type and provisioned attributes alarm occurs when the physical card inserted in a slot does not match the card type that is provisioned for that slot in the CTC.
MFGMEM	CR/SA	The manufacturing data memory failure alarm means that the ONS 15454/15327 cannot access the data on the erasable programmable read-only memory (EPROM).

## 7.1.2 BITS

Building integration timing supply (BITS) incoming references (BITS-1, BITS-2)

**Table 7-2 BITS**

<b>BITS Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
LOF	MA/SA	A port on the TCC+/MIC BITS input detects a loss of frame (LOF) on the incoming BITS timing reference signal.
LOS	MA/SA	The TCC+/MIC card has a loss of signal (LOS) condition from the BITS timing source.
SSM-FAIL	MI/NSA	Synchronization status messaging failed.

## 7.1.3 BPLANE

The backplane

**Table 7-3 BPLANE**

<b>BPLANE Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
MFGMEM	CR/SA	The manufacturing data memory failure alarm means that the ONS 15454/15327 cannot access the data on the erasable programmable read-only memory (EPROM).

## 7.1.4 DS1

A DS1 line on a DS1 or DS3XM card

**Table 7-4 DS1**

<b>DS1 Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
LOF	MA/SA	The receiving ONS 15454/15327 has lost frame delineation in the incoming data.
LOS	MA/SA	A loss of signal (LOS) at the card for either a DS-3 port or a DS-1 port.
RCVR-MISS	MA/SA	The facility termination equipment detects a missing receive cable on the DS-1 port or a possible mismatch of backplane equipment.
TRMT	MA/SA	There is a transmission failure on the DS-1 card due to an internal hardware failure.
TRMT-MISS	MA/SA	The facility termination equipment detects a missing transmit cable on the DS-1 port or a possible mismatch of backplane equipment.

## 7.1.5 DS3

A DS3 line

**Table 7-5 DS3**

<b>DS3 Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
LOF	CR/SA	The receiving ONS 15454/15327 has lost frame delineation in the incoming data.
LOS	CR/SA	Loss of signal at the card for either a DS-3 port or a DS-1 port.

## 7.1.6 E1000F

An Ethernet line on an E1000

**Table 7-6 E1000F**

<b>E1000F Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
CARLOSS	MA/SA	The Ethernet card has lost its link and is not receiving any signal, even an invalid one.

## 7.1.7 E100(T)

An Ethernet line on an E10 or E100

**Table 7-7 E100(T)**

<b>E100T Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
CARLOSS	MA/SA	The Ethernet card has lost its link and is not receiving any signal, even an invalid one.

## 7.1.8 EC1-12

An EC1 line on an EC1 card (ONS 15454 only)

**Table 7-8 EC1-12**

<b>EC1-12 Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
LOF	CR/SA	The receiving ONS 15454 has lost frame delineation in the incoming data.
LOS	CR/SA	A port on the reporting EC-1 card has a loss of signal condition. A SONET receiver detects an all-zero pattern for 10 microseconds or longer.

## 7.1.9 ENVALRM

An environmental alarm port on an AIC card (ONS 15454) or MIC card (ONS 15327)

**Table 7-9 ENVALRM**

<b>ENVALRM Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
EXT	MA/SA	A facility alarm is detected external to the node because an environmental alarm is present.

## 7.1.10 EQPT

A card in any of the card slots. This object is used for alarms that refer to the card itself and all other objects on the card including ports, lines, STS and VT.

**Table 7-10 EQPT**

<b>EQPT Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
AUTORESET	MI/NSA	The card is performing a warm reboot automatically.
BKUPMEMP	CR/NSA	A problem with the TCC+/XTC card's flash memory.
CARLOSS	MI/NSA	The Ethernet card has lost its link and is not receiving any signal, even an invalid one.
CONTBUS-A-18	MA/NSA	The main processor on the TCC+/XTC card in Slot 7/Slot 5 has lost communication with the coprocessor on the second TCC+/XTC card in Slot 11/Slot 6.
CONTBUS-A	MA/NSA	The TCC+/XTC card in Slot 7/Slot 5 has lost communication with a line card.
CONTBUS-B-18	MA/NSA	The main processor on the TCC+/XTC card in Slot 11/Slot 6 has lost communication with the coprocessor on the TCC+/XTC card in Slot 7/Slot 5.
CONTBUS-B	MA/NSA	The TCC+/XTC card in Slot 11/Slot 6 has lost communication with a line card.
CTNEQPT-PBPROT	CR/SA	A failure of the main payload between the protect cross-connect (XC/XCVT/XC10G) card in Slot 10, or the protect XTC card, and the reporting traffic card.
CTNEQPT-PBWORK	CR/SA	The main payload bus between the active cross-connect (XC/XCVT/XC10G) card in Slot 8, or the active XTC card, and the reporting traffic card.
EQPT	CR/SA	A hardware failure occurred on the reporting card.
EXCCOL	MI/NSA	There are too many collisions are occurring on the network management LAN.
HITEMP	MI/NSA	The temperature of the ONS 15454/ONS 15327 is above 50 degrees Celsius.
IMPROPRMVL	CR/SA	A card was physically removed from its slot before the card was deleted in CTC.
MEA	CR/SA	The mismatch between entity/equipment type and provisioned attributes alarm occurs when the physical card inserted in a slot does not match the card type that is provisioned for that slot in the CTC.
MEM-GONE	MA/NSA	Data generated by software operations exceeds the memory capacity of the TCC+/XTC card.
MEM-LOW	MI/NSA	Data generated by software operations is close to exceeding the memory capacity of the TCC+XTC card.

**Table 7-10 EQPT (continued)**

<b>EQPT Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
PEER-NORESPONSE	MA/NSA	The switch agent raises a Peer Card Not Responding alarm if either I/O card in a protection group does not receive a response to the peer status request message.
SFTWDOWN-FAIL	MI/NSA	The software download from the TCC+/XTC card to the ONS 15454 failed.
SNTP-HOST	MI/NSA	An ONS node serving as an IP proxy for the other ONS nodes in the ring is not forwarding SNTP information to the other ONS nodes in the network.
SWMTXMOD	CR/SA	Traffic on the reporting card is lost when this failure occurs.

## 7.1.11 EXT-SREF

BITS outgoing references (SYNC-BITS1, SYNC-BITS2)

**Table 7-11 EXT-SREF**

<b>EXT-SREF Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
SYNCPRI	MI/NSA	A loss of the primary timing source (reference 1).
SYNCSEC	MI/NSA	A loss of the secondary timing source (reference 2).
SYNCTHIRD	MI/NSA	A loss of the third timing source (reference 3).

## 7.1.12 FAN

Fan-tray assembly

**Table 7-12 FAN**

<b>FAN Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
EQPT-MISS	CR/SA	Indicates the replaceable fan tray assembly unit is missing or not fully inserted.
FAN	CR/SA	A problem with the fan-tray assembly.
MEA	CR/SA	The mismatch between entity/equipment type and provisioned attributes alarm occurs when the physical card inserted in a slot does not match the card type that is provisioned for that slot in the CTC.
MFGMEM	CR/SA	The manufacturing data memory failure alarm means that the ONS 15454/ONS 15327 cannot access the data on the erasable programmable read-only memory (EPROM).



## 7.1.13 G1000

An Ethernet line on a G1000 (ONS 15454 only)

**Table 7-13 G1000**

NE Alarm	Severity (Active)	Description
CARLOSS	MA/SA	A carrier loss on the LAN is the data equivalent of a SONET LOS alarm. The Ethernet card has lost its link and is not receiving a valid signal.
TPTFAIL	MA/SA	Indicates a break in the end-to-end Ethernet link integrity feature of the G1000-4 cards. This alarm indicates a far-end condition and not a problem with the port reporting TPTFAIL.

## 7.1.14 NE

The entire network element (SYSTEM)

**Table 7-14 NE**

NE Alarm	Severity (Active)	Description
BLSROSYNC	MA/SA	The mapping table needs updating.
DATAFLT	MI/NSA	The database exceeded the capacity of the flash memory on the TCC+/XTC.
EHIBATVG-A	MA/SA	The voltage level on battery lead A exceeds -56.7 Vdc. (ONS 15454)
EHIBATVG-B	MA/SA	The voltage level on battery lead B exceeds -56.7 Vdc. (ONS 15454)
ELWBATVG-A	MA/SA	The voltage on battery feed A is extremely low or has been lost, and power redundancy is no longer guaranteed. (ONS 15454)
ELWBATVG-B	MA/SA	The voltage on battery feed B is extremely low or has been lost, and power redundancy is no longer guaranteed. (ONS 15454)
HITEMP	CR/SA	The temperature of the ONS 15454/ONS 15327 is above 50 degrees Celsius (122 degrees Fahrenheit).
PRC-DUPID	MA/SA	Two identical node IDs exist in the same ring.
PWR-A	MA/SA	This alarm applies to the NE rack. It is raised when there is no power supplied to the main power connector or if power is connected to the backup power connector (Connector B) but not to Connector A. (ONS 15454)
PWR-B	MA/SA	This alarm applies to the NE rack. It is raised when there is no power supplied to the backup power connector or if power is connected to the main power connector (Connector A) but not to Connector B. (ONS 15454)

**Table 7-14 NE**

RING-MISMATCH	MA/SA	The Ring ID of the ONS 15454/ONS 15327 that is reporting the alarm does not match the Ring ID of another ONS node in the BLSR.
SYSBOOT	MA/SA	New software is booting on the TCC+/XTC card.

## 7.1.15 NE-SREF

Represents the timing status of the NE

**Table 7-15 NE-SREF**

NE-SREF Alarm	Severity (Active)	Description
FRNGSYNC	MA/SA	The reporting ONS 15454/ONS 15327 is in free run synchronization mode.
FSTSYNC	MI/NSA	A fast start synchronization. The ONS 15454/ ONS 15327 is choosing a new timing reference.
HLDOVRSYNC	MA/SA	A loss of primary/secondary timing reference.
SYNCPRI	MI/NSA	A loss of the primary timing source (reference 1).
SYNCSEC	MI/NSA	A loss of the secondary timing source (reference 2).
SYNCTHIRD	MI/NSA	A loss of the third timing source (reference 3).

## 7.1.16 OCN

An OCN line on an OCN card

**Table 7-16 OCN**

OCN Alarm	Severity (Active)	Description
APSB	MI/NSA	The line terminating equipment detects protection switching byte failure in the incoming automatic protection switching (APS) signal if an inconsistent APS byte or invalid code is detected.
APSCDFLTK	MI/NSA	A BLSR is not properly configured.
APSC-IMP	MI/NSA	Invalid K bytes.
APSCINCON	MI/SA	The SONET overhead contains K1/K2 APS bytes that notify receiving equipment, such as the ONS 15454/ONS 15327, to switch the SONET signal from a working to a protect path.
APSCM	MA/SA	The ONS 15454/ONS 15327 expects a working channel but receives a protection channel.
APSCNMIS	MA/SA	The node ID contained in the K2 byte of the APS channel being received is not present in the ring map.

Table 7-16 OCN (continued)

OCN Alarm	Severity (Active)	Description
APSM	MI/NSA	There is a mismatch of the protection switching schemes at the two ends of the span.
AUTOLSROFF	CR/SA	The OC-192 card temperature exceeds 90 degrees Centigrade. The internal equipment automatically shuts down the OC-192 laser when the card temperature rises to prevent the card from self-destructing.(ONS 15454)
AUTORESET	MI/NSA	A card performs a warm reboot automatically.
EOC	MA/NSA	The ONS 15454/ONS 15327 has lost its data communications channel (DCC).
E-W-MISMATCH	MA/SA	Nodes in a ring have an east slot/port misconnected to another east slot/port or a west slot/port misconnected to another west slot/port.
FEPRLF	MI/NSA	An automatic protection switching channel failure on a signal coming into the node.
LOF	CR/SA	A port on the reporting OC-N card has an LOF condition.
LOS	CR/SA	A port on the reporting OC-N card has a LOS condition.
SSM-FAIL	MI/NSA	Synchronization status messaging received by the ONS 15454/ONS 15327 failed

## 7.1.17 STSMON

STS alarm detection at the monitor point (upstream of cross-connect)

Table 7-17 STSMON

STSMON Alarm	Severity (Active)	Description
CONCAT	CR/SA	The transmitted STSc circuit is smaller than the provisioned STSc causing a mismatch of the circuit type on the concatenation facility.
FAILTOSW	MI/NSA	Fail to switch to protection.
LOP-P	CR/SA	A loss of pointer (LOP) condition at the path level.
PLM-P	CR/SA	A signal label mismatch failure (SLMF).
TIM-P	MI/NSA	The expected path trace string does not match the received path trace string.
UNEQ-P	CR/SA	The path does not have a valid sender.

## 7.1.18 STSTRM

STS alarm detection at termination (downstream of cross-connect)

**Table 7-18 STSTRM**

STSTRM Alarm	Severity (Active)	Description
LOP-P	CR/SA	A loss of pointer (LOP) condition at the path level.
PLM-P	CR/SA	A signal label mismatch failure (SLMF).
TIM-P	MI/NSA	The expected path trace string does not match the received path trace string. Path trace mode can be set to auto or manual for this alarm to occur.
UNEQ-P	CR/SA	The path does not have a valid sender.

## 7.1.19 VT-MON

VT1 alarm detection at the monitor point (upstream of cross-connect)

**Table 7-19 VT-MON**

VT-MON Alarm	Severity (Active)	Description
AUTOSW-LOP	MI/SA	Automatic UPSR protection switching took place because of an LOP alarm.
AUTOSW-UNEQ	MI/SA	Automatic UPSR protection switching took place because of an UNEQ alarm.
LOP-V	MA/SA	A loss of pointer at the VT level.
UNEQ-V	MA/SA	The node is receiving SONET path overhead with bits 5, 6 and 7 of the V5 overhead byte all set to zeroes. The failure has occurred at the VT layer.

## 7.1.20 VT-TERM

VT1 alarm detection at termination (downstream of cross-connect)

**Table 7-20 VT-TERM**

VT-TERM Alarm	Severity (Active)	Description
LOP-V	MA/SA	A loss of pointer at the VT level.
PLM-V	MI/SA	The content of the V5 byte in the SONET overhead is inconsistent or invalid.
UNEQ-V	MA/SA	The node is receiving SONET path overhead with bits 5, 6 and 7 of the V5 overhead byte all set to zeroes. The failure has occurred at the VT layer.

## 7.2 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 7-21 Error Codes**

Error Code (ERRCDE)	Error Type	Error Message (ERRMSG)
EANS	EQUIPAGE	Access Not Supported
EATN	EQUIPAGE	Not Valid for Access Type
EFON	EQUIPAGE	Feature Option not Provided
EN2T	EQUIPAGE	Not 2-wire Terminate and Leave
ENAC	EQUIPAGE	Not Equipped with Alarm Cutoff
ENAD	EQUIPAGE	Not Equipped with Audit Capability
ENAR	EQUIPAGE	Not Equipped with Automatic Reconfiguration
ENAT	EQUIPAGE	Request Not Valid for Access Type
ENDG	EQUIPAGE	Not Equipped with Diagnostic Capability
ENDS	EQUIPAGE	Not Equipped with Duplex Switching
ENEA	EQUIPAGE	Not Equipped with Error Analysis Capability
ENEQ	EQUIPAGE	Not Equipped
ENEX	EQUIPAGE	Not Equipped with Exercise Capability
ENFE	EQUIPAGE	Feature not Provided
ENFL	EQUIPAGE	Not Equipped for Fault Locating
ENHN	EQUIPAGE	Not Hybrid Network
ENMB	EQUIPAGE	Not Multipoint Bridge
ENMD	EQUIPAGE	Not Equipped with Memory Device
ENPM	EQUIPAGE	Not Equipped for Performance Monitoring
ENPS	EQUIPAGE	Not Equipped with Protection Switching
ENRE	EQUIPAGE	Not Recognized Equipage
ENRI	EQUIPAGE	Not Equipped for Retrieving Specified Information
ENRS	EQUIPAGE	Not Equipped for Restoration
ENSA	EQUIPAGE	Not Equipped for Scheduling Audit
ENSG	EQUIPAGE	Not Software Generic
ENSI	EQUIPAGE	Not Equipped for Setting Specified Information
ENSS	EQUIPAGE	Not Equipped with Synchronization Switching

Table 7-21 Error Codes (continued)

Error Code (ERRCDE)	Error Type	Error Message (ERRMSG)
ENTL	EQUIPAGE	Not Terminate and Leave
ERLC	EQUIPAGE	Red-Lined Circuit
ERNS	EQUIPAGE	RTU Does Not Support Command
ESPG	EQUIPAGE	Software Program
ETNS	EQUIPAGE	TSC Does Not Support Command
FNCR	FAULT	NE Failure - Circuit Restored to Last Condition - Monitor or Terminate
FNDT	FAULT	No Dial Tone Detected
FNEC	FAULT	NTE Has Lost 8-KHZ Byte Clock
FNSC	FAULT	NTE Has Lost 16-KHZ Byte Clock
FRCE	FAULT	RTU Component or Configuration Error
FRDA	FAULT	RTU Does Not Answer the Call
FREC	FAULT	RTU Eight KHZ Byte Clock Lost
FRNR	FAULT	RTU Does Not Reply
IBEX	INPUT	Block Extra
IBMS	INPUT	Block Missing
IBNC	INPUT	Block Not Consistent
ICNV	INPUT	Command Not Valid
IDMS	INPUT	Data Missing
IDNC	INPUT	Data Not Consistent
IDNV	INPUT	Data Not Valid
IDRG	INPUT	Data Range Error
IIAC	INPUT	Invalid Access Identifier (AID)
IICM	INPUT	Invalid Command
IICT	INPUT	Invalid Correlation Tag
IIDT	INPUT	Invalid Data Parameter
IIFM	INPUT	Invalid Data Format
IIPG	INPUT	Invalid Parameter Grouping
IISP	INPUT	Invalid Syntax or Punctuation
IITA	INPUT	Invalid Target Identifier
INAC	INPUT	Access Number Not Correct
INUP	INPUT	Non-Null Unimplemented Parameter
IPEX	INPUT	Parameter Extra
IPMS	INPUT	Parameter Missing
IPNC	INPUT	Parameter Not Consistent
IPNV	INPUT	Parameter Not Valid

Table 7-21 Error Codes (continued)

Error Code (ERRCDE)	Error Type	Error Message (ERRMSG)
ISCH	INPUT	Syntax Invalid Character
ISPC	INPUT	Syntax Punctuation
ITSN	INPUT	Invalid/Inactive Test Session Number
PICC	PRIVILEGE	Illegal Command Code
PIMA	PRIVILEGE	Invalid Memory Address
PIMF	PRIVILEGE	Invalid Memory File
PIUC	PRIVILEGE	Illegal Privilege Code
PLNA	PRIVILEGE	Login Not Active
RABY	RESOURCE	All Taps Busy
RALB	RESOURCE	All Units of Requested Type are Busy
RANB	RESOURCE	Access Network Busy
RCBY	RESOURCE	Circuit Busy
RCIN	RESOURCE	Requested Circuit ID Does Not Exist
RNAN	RESOURCE	Requested NE Access Number Does Not Exist
RNAU	RESOURCE	Requested NE Access Number Unassigned
RNBY	RESOURCE	NE is Busy
RRCP	RESOURCE	Unit Specified by Routing Code Busy
RRNG	RESOURCE	Requested Changes Exceeds Range
RTBY	RESOURCE	Requested Tap Busy
RTEN	RESOURCE	Requested Tab Does Not Exist
RTUB	RESOURCE	Test Unit Busy
SAAL	STATUS	Already Allowed
SAAS	STATUS	Already Assigned
SABT	STATUS	Aborted
SACS	STATUS	Access Unit Cannot Sync on Facility Signal
SADC	STATUS	Already Disconnected
SADS	STATUS	Access Unit in Diagnostic State
SAIN	STATUS	Already Inhibited
SAIS	STATUS	Already In-Service
SAMS	STATUS	Already in Maintenance State
SAOP	STATUS	Already Operated
SAOS	STATUS	Already Out-of-Service
SAPF	STATUS	Access Path Continuity Check Failed
SAPR	STATUS	Already in Protection State
SARB	STATUS	All Resources Busy

Table 7-21 Error Codes (continued)

Error Code (ERRCDE)	Error Type	Error Message (ERRMSG)
SATF	STATUS	Automatic Test Failed
SCAT	STATUS	Circuit is Already Connected to Another Tap
SCBS	STATUS	Channel Busy
SCIS	STATUS	Circuit in Split Condition
SCNA	STATUS	Command Not Able to be Aborted
SCNF	STATUS	Command Not Found
SCNS	STATUS	Circuit Not in Split Condition
SCOS	STATUS	Channel Out-of-Service
SCSD	STATUS	Can't Split DS0B Circuit
SCSN	STATUS	Invalid Command Sequence
SDAS	STATUS	Diagnosis Already Started
SDBE	STATUS	Internal Data Base Error
SDFA	STATUS	Duplex Unit Failed
SDL D	STATUS	Duplex Unit Locked
SDNA	STATUS	Duple Unit Not Available
SDNC	STATUS	Input Data is Not Consistent With NE Data
SDNR	STATUS	Data Not Ready
SDNS	STATUS	Diagnosis Not Started Yet
SEOS	STATUS	NTE is Out-of-Service
SFAS	STATUS	Fault Locating Already Started
SFNS	STATUS	Fault Locating Not Started yet
SFYA	STATUS	Facility Reports Amber Alarm
SLNS	STATUS	Log Not Started Yet
SLOS	STATUS	TSC to RTU Link Out-of-Service
SNCC	STATUS	Not Cross-Connected
SNCN	STATUS	NTE Unable to Execute Command
SNDS	STATUS	NTE is in a Diagnostic State
SNIM	STATUS	NTE Access Complete, Circuit was in Monitor State
SNIS	STATUS	Not in Service
SNML	STATUS	No Monitor Line Established
SNNB	STATUS	NTE Could Not Sync on DS0B Signal
SNNS	STATUS	NTE Could Not Sync on DS-1 Signal
SNOS	STATUS	NTE is Out-of-Service
SNPR	STATUS	Not in Protection State
SNRM	STATUS	System Not in Restoration Mode



Table 7-21 Error Codes (continued)

Error Code (ERRCDE)	Error Type	Error Message (ERRMSG)
SNRS	STATUS	Not Reserved
SNSR	STATUS	No Switch Request Outstanding
SNVS	STATUS	Not in Valid State
SNYA	STATUS	NTE has Detected an Amber Alarm
SOSE	STATUS	Operating System Error
SOST	STATUS	Out-of-Service, Testing
SPFA	STATUS	Protection Unit Failed
SPLD	STATUS	Protection Unit Locked
SPNA	STATUS	Process Not Able to be Aborted
SPNF	STATUS	Process Not Found
SRAC	STATUS	Requested Access Configuration is Invalid
SRAN	STATUS	Unable to Release Access System
SRCI	STATUS	Requested Command(s) Inhibited
SRCN	STATUS	Requested Condition Already Exists
SROF	STATUS	Requested Operation Failed
SROS	STATUS	Required RTU Out of Service
SRQN	STATUS	Invalid Request
SRTN	STATUS	Unable to Release Tap
SRTO	STATUS	Reply Timeout Occurred
SSCE	STATUS	Systemic (SNIDER) Communications Error
SSNG	STATUS	Subrate Selected is Incorrect
SSNP	STATUS	Speed Selected is Incorrect
SSNQ	STATUS	Test Signal Not QRS
SSRD	STATUS	Switch Request Denied
SSRE	STATUS	System Resources Exceeded
STAB	STATUS	Test Aborted
STLC	STATUS	Tap Unable to Locate Channel
STNO	STATUS	TSC/RTU to TAU Link Out of service
STOS	STATUS	Test Access Unit Out of Service
STTI	STATUS	Tap Idle
SWFA	STATUS	Working Unit Failed
SWLD	STATUS	Working Unit Locked

## 7.3 Echo

In order to improve telnet functionality for automated systems, the echo function has been turned off since ONS 15454 Release 3.0. This change is transparent to users running standard UNIX-compliant telnet clients; however, PC users may need to change their client setup to enable “local echo.” This is normally accomplished by a pull-down menu or a preference attribute.

To test the local echo on your PC client, use the RTRV-HDR command. If you receive a response but no data, set local echo ON. Cisco recommends that you close any windows containing sensitive information after exiting a TL1 session.



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