

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

Product and Documentation Release 3.1

Last Updated: July 17, 2006

### **Corporate Headquarters**

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
<http://www.cisco.com>  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 526-4100

Customer Order Number: DOC-7813459  
Text Part Number: 78-13459-01=

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The following information is for FCC compliance of Class A devices: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

The following information is for FCC compliance of Class B devices: The equipment described in this manual generates and may radiate radio-frequency energy. If it is not installed in accordance with Cisco's installation instructions, it may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in part 15 of the FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

Modifying the equipment without Cisco's written authorization may result in the equipment no longer complying with FCC requirements for Class A or Class B digital devices. In that event, your right to use the equipment may be limited by FCC regulations, and you may be required to correct any interference to radio or television communications at your own expense.

You can determine whether your equipment is causing interference by turning it off. If the interference stops, it was probably caused by the Cisco equipment or one of its peripheral devices. If the equipment causes interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the equipment to one side or the other of the television or radio.
- Move the equipment farther away from the television or radio.
- Plug the equipment into an outlet that is on a different circuit from the television or radio. (That is, make certain the equipment and the television or radio are on circuits controlled by different circuit breakers or fuses.)

Modifications to this product not authorized by Cisco Systems, Inc. could void the FCC approval and negate your authority to operate the product.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

AccessPath, AtmDirector, Browse with Me, CCIP, CCSI, CD-PAC, *CiscoLink*, the Cisco *Powered* Network logo, Cisco Systems Networking Academy, the Cisco Systems Networking Academy logo, Cisco Unity, Fast Step, Follow Me Browsing, FormShare, FrameShare, IGX, Internet Quotient, IP/VC, iQ Breakthrough, iQ Expertise, iQ FastTrack, the iQ Logo, iQ Net Readiness Scorecard, MGX, the Networkers logo, ScriptBuilder, ScriptShare, SMARTnet, TransPath, Voice LAN, Wavelength Router, and WebViewer are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, and Discover All That's Possible are service marks of Cisco Systems, Inc.; and Aironet, ASIST, BPX, Catalyst, CCDA, CCDP, CCIE, CCNA, CCNP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, the Cisco IOS logo, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Empowering the Internet Generation, Enterprise/Solver, EtherChannel, EtherSwitch, FastHub, FastSwitch, GigaStack, IOS, IP/TV, LightStream, MICA, Network Registrar, *Packet*, PIX, Post-Routing, Pre-Routing, RateMUX, Registrar, SlideCast, StrataView Plus, Stratm, SwitchProbe, TeleRouter, and VCO are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.

All other trademarks mentioned in this document or Web site are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0110R)



## About This Manual **xxi**

- Audience **xxi**
- Organization **xxi**
- Related Documentation **xxii**
- Conventions **xxii**
- Obtaining Documentation **xxiii**
  - World Wide Web **xxiii**
  - Optical Networking Product Documentation CD-ROM **xxiii**
  - Ordering Documentation **xxiv**
  - Documentation Feedback **xxiv**
- Obtaining Technical Assistance **xxiv**
  - Cisco.com **xxiv**
  - Technical Assistance Center **xxv**
    - Contacting TAC by Using the Cisco TAC Website **xxv**
    - Contacting TAC by Telephone **xxv**

---

## CHAPTER 1

### Getting Started **1-1**

- 1.1 Setting up TL1 Communication **1-1**
  - 1.1.1 Open a TL1 session **1-2**
    - Procedure: Open a TL1 Session Via the CTC **1-2**
    - Procedure: Open a TL1 Session via Telnet **1-2**
    - Procedure: Open a TL1 Session via Craft Interface **1-3**
- 1.2 TL1 Command Syntax **1-4**
- 1.3 Autonomous Messages **1-5**
  - 1.3.1 Alarm Codes **1-5**
- 1.4 TL1 Commands by User Security **1-6**
- 1.5 Provisioning a DS3E Card in CTC Using TL1 **1-7**
- 1.6 Mixed Mode Timing Support **1-7**
- 1.7 TL1 Command Completion Behavior **1-7**
  - 1.7.1 General Rules **1-7**
    - 1.7.1.1 Explicit List of AIDs - No Wildcards **1-7**
    - 1.7.1.2 Implicit List of AIDs - Single AID With Wildcard **1-8**
    - 1.7.1.3 Explicit List Grouped With Implicit List **1-8**
  - 1.7.2 Retrieval of Cross Connections **1-8**

- 1.7.2.1 Explicit List of AIDs - No Wildcards [1-8](#)
- 1.7.2.2 Implicit List of AIDs - Single AID With Wildcard [1-8](#)
- 1.7.2.3 Explicit List Grouped With Implicit List [1-9](#)
- 1.8 Test Access [1-9](#)
  - 1.8.1 Test Access Configurations [1-9](#)
    - 1.8.1.1 Disconnecting and Removing Test Access Paths [1-11](#)
  - 1.8.2 Mode Definitions [1-11](#)
  - 1.8.3 Split E and F Access Modes [1-12](#)
  - 1.8.4 Loop E and F Modes [1-14](#)
  - 1.8.5 Split A and B Access Modes [1-15](#)

**CHAPTER 2**

**TL1 Gateway [2-1](#)**

- 2.1 Gateway Network Element Topology [2-1](#)
- 2.2 Implementing TL1 Gateway [2-3](#)
  - Log Into a Remote ENE [2-4](#)
  - Forward Commands by Specifying the ENE TID (Node 1 or Node 3) [2-5](#)
  - Receive Autonomous Messages from the Remote ENE [2-5](#)
  - Log Out of a Remote ENE [2-5](#)

**CHAPTER 3**

**TL1 Command Descriptions [3-1](#)**

- 3.1 TL1 Commands by Category [3-1](#)
- 3.2 TL1 Commands by Card [3-4](#)
- 3.3 TL1 Commands, Categories and Cards [3-14](#)
- 3.4 TL1 Commands [3-20](#)
  - 3.4.1 ACT-USER: Activate User [3-20](#)
  - 3.4.2 ALW-MSG-ALL: Allow Message All [3-21](#)
  - 3.4.3 ALW-SWDX-EQPT: Allow Switch Duplex Equipment [3-22](#)
  - 3.4.4 ALW-SWTOPROTN-EQPT: Allow Switch to Protection Equipment [3-23](#)
  - 3.4.5 ALW-SWTOWKGEQPT: Allow Switch to Working Equipment [3-24](#)
  - 3.4.6 CANC: Cancel [3-25](#)
  - 3.4.7 CANC-USER: Cancel User [3-26](#)
  - 3.4.8 CHG-ACCMD-<MOD\_TACC>: Change Access Mode (DS1, STS1, STS3C, STS6C, STS12C, STS48C, T1, T3, VT1) [3-27](#)
  - 3.4.9 CONN-TACC-<MOD\_TACC>: Connect TACC (DS1, STS1, STS3C, STS6C, STS12C, STS48C, T1, T3, VT1) [3-27](#)
  - 3.4.10 DISC-TACC: Disconnect TACC [3-29](#)
  - 3.4.11 DLT-CRS-<STS\_PATH>: Delete Cross Connection (STS1, STS3C, STS6C, STS12C, STS48C, STS192C) [3-29](#)
  - 3.4.12 DLT-CRS-VT1: Delete Virtual Tributary Cross Connect [3-30](#)

- 3.4.13 DLT-EQPT: Delete Equipment [3-32](#)
- 3.4.14 DLT-FFP-<OCN\_TYPE>: Delete Facilities Protection Group (OC3, OC12, OC48, OC192) [3-32](#)
- 3.4.15 DLT-USER-SECU: Delete User Security [3-33](#)
- 3.4.16 ED-<OCN\_TYPE>: Edit (OC3, OC12, OC48, OC192) [3-34](#)
- 3.4.17 ED-<STS\_PATH>: Edit (STS1, STS3C, STS6C, STS12C, STS48C, STS192C) [3-35](#)
- 3.4.18 ED-BITS: Edit Building Integrated Timing Supply [3-38](#)
- 3.4.19 ED-BLSR: Edit Bidirectional Line Switched Ring [3-39](#)
- 3.4.20 ED-DAT: Edit Date and Time [3-40](#)
- 3.4.21 ED-DS1: Edit DS1 Layer of DS3XM [3-40](#)
- 3.4.22 ED-EC1: Edit Electrical Carrier [3-41](#)
- 3.4.23 ED-EQPT: Edit Equipment [3-42](#)
- 3.4.24 ED-FFP-<OCN\_TYPE>: Edit Facilities Protection Group (OC3, OC12, OC48, OC192) [3-43](#)
- 3.4.25 ED-NE-GEN: Edit Network Element GEN [3-44](#)
- 3.4.26 ED-NE-SYNCN: Edit Network Element Synchronization [3-45](#)
- 3.4.27 ED-PID: Edit Password [3-47](#)
- 3.4.28 ED-SYNCN: Edit Synchronization [3-48](#)
- 3.4.29 ED-T1: Edit T1 Facility [3-49](#)
- 3.4.30 ED-T3: Edit T3 Facility [3-50](#)
- 3.4.31 ED-USER-SECU: Edit User Security [3-51](#)
- 3.4.32 ED-VT1: Edit Virtual Tributary [3-52](#)
- 3.4.33 ENT-CRS-<STS\_PATH>: Enter Cross Connect (STS1, STS3C, STS6C, STS12C, STS48C, STS192C) [3-53](#)
- 3.4.34 ENT-CRS-VT1: Enter Virtual Tributary Cross Connection [3-54](#)
- 3.4.35 ENT-EQPT: Enter Equipment [3-56](#)
- 3.4.36 ENT-FFP-<OCN\_TYPE>: Enter Facilities Protection Group (OC3, OC12, OC48, OC192) [3-58](#)
- 3.4.37 ENT-USER-SECU: Enter User Security [3-59](#)
- 3.4.38 EX-SW-<OCN\_BLSR>: Operate Protection Switch (OC12, OC48, OC192) [3-61](#)
- 3.4.39 INH-MSG-ALL: Inhibit Message All [3-62](#)
- 3.4.40 INH-SWDX-EQPT: Inhibit Switch Duplex Equipment [3-62](#)
- 3.4.41 INH-SWTOPROTN-EQPT: Inhibit Switch to Protection Equipment [3-63](#)
- 3.4.42 INH-SWTOWKGEQPT: Inhibit Switch to Working Equipment [3-65](#)
- 3.4.43 INIT-REG-<MOD2>: Initialize Register (DS1, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS12C, STS48C, STS192C, T1, T3, VT1) [3-66](#)
- 3.4.44 INIT-SYS: Initialize System [3-67](#)
- 3.4.45 OPR-EXT-CONT: Operate External Control [3-68](#)
- 3.4.46 OPR-LPBK-<MOD2\_IO>: Operate Loopback (DS1, EC1, OC3, OC12, OC48, OC192, T1, T3) [3-69](#)
- 3.4.47 OPR-PROTNSW-<OCN\_TYPE>: Operate Protection Switch (OC3, OC12, OC48, OC192) [3-69](#)
- 3.4.48 OPR-PROTNSW-<STS\_PATH>: Operate Protection Switch (STS1, STS3C, STS6C, STS12C, STS48C, STS192C) [3-71](#)
- 3.4.49 OPR-PROTNSW-VT1: Operate Virtual Tributary Protection Switch [3-72](#)

- 3.4.50 OPR-SYNCNSW: Operate Synchronization Switch **3-73**
- 3.4.51 REPT ALM <MOD2ALM>: Report Alarm (DS1, E100, E1000, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS12C, STS48C, STS192C, T1, T3, VT1) **3-74**
- 3.4.52 REPT ALM BITS: Report Alarm Building Integrated Timing Supply **3-75**
- 3.4.53 REPT ALM COM: Report Alarm COM **3-76**
- 3.4.54 REPT ALM ENV: Report Alarm Environment **3-77**
- 3.4.55 REPT ALM EQPT: Report Alarm Equipment **3-78**
- 3.4.56 REPT ALM RING: Report Alarm Ring **3-79**
- 3.4.57 REPT ALM SYNCN: Report Alarm Synchronization **3-80**
- 3.4.58 REPT DBCHG: Report Change **3-81**
- 3.4.59 REPT EVT <MOD2ALM>: Report Event (DS1, E100, E1000, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS12C, STS48C, STS192C, T1, T3, VT1) **3-82**
- 3.4.60 REPT EVT BITS: Report Event BITS **3-83**
- 3.4.61 REPT EVT ENV: Report Event Environment **3-84**
- 3.4.62 REPT EVT EQPT: Report Event Equipment **3-85**
- 3.4.63 REPT EVT RING: Report Event RING **3-86**
- 3.4.64 REPT EVT SECU: Report Event Security **3-87**
- 3.4.65 REPT EVT SYNCN: Report Event Synchronization **3-88**
- 3.4.66 REPT SW: Report Switch **3-89**
- 3.4.67 RLS-EXT-CONT: Release External Control **3-90**
- 3.4.68 RLS-LPBK-<MOD2\_IO>: Release Loopback (DS1, EC1, OC3, OC12, OC48, OC192, T1, T3) **3-91**
- 3.4.69 RLS-PROTNSW-<OCN\_TYPE>: Release Protection Switch (OC3, OC12, OC48, OC192) **3-92**
- 3.4.70 RLS-PROTNSW-<STS\_PATH>: Release Protection Switch (STS1, STS3C, STS6C, STS12C, STS48C, STS192C) **3-93**
- 3.4.71 RLS-PROTNSW-VT1: Release Virtual Tributary Protection Switch **3-93**
- 3.4.72 RLS-SYNCNSW: Release Synchronization Switch **3-94**
- 3.4.73 RMV-<MOD\_PORT>: Remove (EC1, OC3, OC12, OC48, OC192, T1, T3) **3-95**
- 3.4.74 RST-<MOD\_PORT>: Restore (EC1, OC3, OC12, OC48, OC192, T1, T3) **3-95**
- 3.4.75 RTRV-<OCN\_TYPE>: Retrieve (OC3, OC12, OC48, OC192) **3-96**
- 3.4.76 RTRV-<STS\_PATH>: Retrieve (STS1, STS3C, STS6C, STS12C, STS48C, STS192C) **3-98**
- 3.4.77 RTRV-ALM-<MOD2ALM>: Retrieve Alarm (DS1, E100, E1000, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS12C, STS48C, STS192C, T1, T3, VT1) **3-101**
- 3.4.78 RTRV-ALM-ALL: Retrieve Alarm All **3-103**
- 3.4.79 RTRV-ALM-BITS: Retrieve Alarm Building Integrated Timing Supply **3-104**
- 3.4.80 RTRV-ALM-ENV: Retrieve Alarm Environment **3-106**
- 3.4.81 RTRV-ALM-EQPT: Retrieve Alarm Equipment **3-107**
- 3.4.82 RTRV-ALM-SYCN: Retrieve Alarm Synchronization **3-109**
- 3.4.83 RTRV-ATTR-CONT: Retrieve Attribute Control **3-111**
- 3.4.84 RTRV-ATTR-ENV: Retrieve Attribute Environment **3-112**
- 3.4.85 RTRV-BITS: Retrieve Building Integrated Timing Supply **3-113**
- 3.4.86 RTRV-BLSR: Retrieve Bidirectional Line Switched Ring **3-115**

- 3.4.87 RTRV-COND-<MOD2ALM>: Retrieve Condition (DS1, E100, E1000, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS12C, STS48C, STS192C, T1, T3, VT1) **3-117**
- 3.4.88 RTRV-COND-ALL: Retrieve Condition All **3-118**
- 3.4.89 RTRV-COND-BITS: Retrieve Condition Building Integrated Timing Supply **3-120**
- 3.4.90 RTRV-COND-ENV: Retrieve Condition Environment **3-121**
- 3.4.91 RTRV-COND-EQPT: Retrieve Condition Equipment **3-123**
- 3.4.92 RTRV-COND-SYNCN: Retrieve Condition Synchronization **3-124**
- 3.4.93 RTRV-CRS-<STS\_PATH>: Retrieve Cross Connect (STS1, STS3C, STS6C, STS12C, STS48C, STS192C) **3-126**
- 3.4.94 RTRV-CRS-VT1: Retrieve Virtual Tributary Cross Connect **3-129**
- 3.4.95 RTRV-DS1: Retrieve DS1 Layer of DS3XM **3-131**
- 3.4.96 RTRV-EC1: Retrieve EC1 **3-132**
- 3.4.97 RTRV-EQPT: Retrieve Equipment **3-133**
- 3.4.98 RTRV-EXT-CONT: Retrieve External Control **3-135**
- 3.4.99 RTRV-FFP-<OCN\_TYPE>: Retrieve Facility Protection Group (OC3, OC12, OC48, OC192) **3-136**
- 3.4.100 RTRV-HDR: Retrieve Header **3-138**
- 3.4.101 RTRV-INV: Retrieve Inventory **3-138**
- 3.4.102 RTRV-LOG: Retrieve Log **3-139**
- 3.4.103 RTRV-NE-GEN: Retrieve Network Element General **3-141**
- 3.4.104 RTRV-NE-IPMAP: Retrieve Network Element IPMAP **3-142**
- 3.4.105 RTRV-NE-SYNCN: Retrieve Network Element Synchronization **3-143**
- 3.4.106 RTRV-PM-<MOD2>: Retrieve Performance (DS1, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS12C, STS48C, STS192C, T1, T3, VT1) **3-144**
- 3.4.107 RTRV-PMMODE-<STS\_PATH>: Retrieve Performance Mode of PM Data Collection (STS1, STS3C, STS6C, STS12C, STS48C, STS192C) **3-147**
- 3.4.108 RTRV-PTHTRC-<STS\_PATH>: Retrieve Path Trace (STS1, STS3C, STS6C, STS12C, STS48C, STS192C) **3-148**
- 3.4.109 RTRV-SYNCN: Retrieve Synchronization **3-151**
- 3.4.110 RTRV-T1: Retrieve T1 Facility **3-152**
- 3.4.111 RTRV-T3: Retrieve T3 **3-153**
- 3.4.112 RTRV-TH-<MOD2>: Retrieve Threshold (DS1, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS12C, STS48C, STS192C, T1, T3, VT1) **3-155**
- 3.4.113 RTRV-TOD: Retrieve Time of Day **3-156**
- 3.4.114 RTRV-VT1: Retrieve Virtual Tributary **3-157**
- 3.4.115 SET-ATTR-CONT: Set Attribute Control **3-158**
- 3.4.116 SET-ATTR-ENV: Set Attribute Environment **3-159**
- 3.4.117 SET-PMMODE-<STS\_PATH>: Set Performance Mode of PM Data Collection (STS1, STS3C, STS6C, STS12C, STS48C, STS192C) **3-160**
- 3.4.118 SET-TH-<MOD2>: Set Threshold (DS1, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS12C, STS48C, STS192C, T1, T3, VT1) **3-161**
- 3.4.119 SET-TOD: Set Time of Day **3-162**

- 3.4.120 SW-DX-EQPT: Switch Duplex Equipment [3-163](#)
- 3.4.121 SW-TOPROTN-EQPT: Switch to Protection Equipment [3-164](#)
- 3.4.122 SW-TOWKG-EQPT: Switch to Working Equipment [3-166](#)

**CHAPTER 4**

**TL1 Command Components [4-1](#)**

- 4.1 TL1 Default Values [4-1](#)
  - 4.1.1 BLSR [4-1](#)
  - 4.1.2 Cross Connections [4-1](#)
  - 4.1.3 Environmental Alarms and Controls [4-2](#)
  - 4.1.4 Equipment [4-2](#)
  - 4.1.5 Performance [4-2](#)
  - 4.1.6 Ports [4-3](#)
  - 4.1.7 SONET Line Protection [4-4](#)
  - 4.1.8 STS and VT Paths [4-4](#)
  - 4.1.9 Synchronization [4-5](#)
- 4.2 Access Identifiers [4-5](#)
  - 4.2.1 ALL [4-5](#)
  - 4.2.2 PRSLOT [4-7](#)
  - 4.2.3 BITS [4-7](#)
  - 4.2.4 BLSR [4-7](#)
  - 4.2.5 DS1 [4-8](#)
  - 4.2.6 ENV [4-8](#)
  - 4.2.7 EQPT [4-8](#)
  - 4.2.8 FACILITY [4-8](#)
  - 4.2.9 STS [4-9](#)
  - 4.2.10 SYN [4-10](#)
  - 4.2.11 SYN\_SRC [4-10](#)
  - 4.2.12 SYNC\_REF [4-10](#)
  - 4.2.13 SYNCSW [4-11](#)
  - 4.2.14 TAP [4-11](#)
  - 4.2.15 VT1\_5 [4-11](#)
- 4.3 Parameter Types [4-12](#)
  - 4.3.1 ATAG Description [4-12](#)
  - 4.3.2 CTAG Description [4-12](#)
  - 4.3.3 TID Description [4-12](#)
  - 4.3.4 Parameter Notes [4-12](#)
  - 4.3.5 ALL\_MONTYPE [4-13](#)
  - 4.3.6 ALL\_THR [4-14](#)
  - 4.3.7 BLSR\_MODE [4-15](#)



4.3.8	BLSR_TYPE	4-15
4.3.9	CCT	4-15
4.3.10	CMD_MODE	4-16
4.3.11	COND_EFF	4-16
4.3.12	CONDITION	4-16
4.3.13	CONTTYPE	4-19
4.3.14	DIRECTION	4-19
4.3.15	DIRN	4-20
4.3.16	DS3_FMT	4-20
4.3.17	DS_LINE_CODE	4-20
4.3.18	DS_LINE_TYPE	4-20
4.3.19	DURATION	4-21
4.3.20	E_LBO	4-21
4.3.21	ENV_ALM	4-21
4.3.22	ENV_CRTL_MODE	4-22
4.3.23	EQPT_TYPE	4-23
4.3.24	EQUIP	4-24
4.3.25	EQUIPMENT_TYPE	4-25
4.3.26	EXT_RING	4-25
4.3.27	FRAME_FORMAT	4-26
4.3.28	LINE_BUILDOUT	4-26
4.3.29	LINE_CODE	4-26
4.3.30	LOCATION	4-26
4.3.31	LPBK_TYPE	4-27
4.3.32	MOD2	4-27
4.3.33	MOD2_IO	4-28
4.3.34	MOD2ALM	4-28
4.3.35	MOD2B	4-29
4.3.36	MOD_PATH	4-30
4.3.37	MOD_PORT	4-30
4.3.38	MOD_TACC	4-30
4.3.39	MODIFIER	4-31
4.3.40	MODULE_OP	4-31
4.3.41	MSGTYPE	4-32
4.3.42	NOTIF_CODE	4-32
4.3.43	OCN_4F	4-33
4.3.44	OCN_BLSR	4-33
4.3.45	OCN_MONTYPE	4-33
4.3.46	OCN_TYPE	4-34
4.3.47	ON_OFF	4-34

4.3.48 OPTICAL\_MODE 4-34

4.3.49 PM\_MODE 4-34

4.3.50 PM\_STATE 4-35

4.3.51 PRIVILEGE 4-35

4.3.52 PROTECTION\_GROUP 4-35

4.3.53 PST 4-36

4.3.54 PSTQ 4-36

4.3.55 REVERTIVE\_TIME 4-37

4.3.56 RNG\_TYPE 4-37

4.3.57 SD\_BER 4-37

4.3.58 SDCC\_MODE 4-38

4.3.59 SERV\_EFF 4-38

4.3.60 SF\_BER 4-38

4.3.61 SIDE 4-38

4.3.62 SST 4-39

4.3.63 STATE 4-39

4.3.64 STATUS 4-40

4.3.65 STM\_TYPE 4-40

4.3.66 STS\_MAP 4-40

4.3.67 STS\_MONTYPE 4-40

4.3.68 STS\_PATH 4-41

4.3.69 SWITCH 4-41

4.3.70 SWITCH\_TYPE 4-42

4.3.71 SYNC\_GENERATION 4-42

4.3.72 SYNC\_QUALITY\_LEVEL 4-42

4.3.73 T1\_MONTYPE 4-43

4.3.74 T3\_MONTYPE 4-43

4.3.75 TACC\_MODE 4-43

4.3.76 TIMING\_MODE 4-44

4.3.77 TMG\_REF 4-45

4.3.78 TMPER 4-45

4.3.79 TRCMODE 4-45

4.3.80 UNI\_BI 4-45

4.3.81 USE\_DST 4-46

4.3.82 VALIDITY 4-46

4.3.83 VT1\_5\_MONTYPE 4-46

**CHAPTER 5**

**Ring Provisioning 5-1**

5.1 UPSR Topology 5-1

- 5.2 UPSR Cross-Connections [5-1](#)
- 5.3 Ring-to-Ring Interconnection [5-2](#)
  - 5.3.1 Sample UPSR to UPSR Connection [5-3](#)
  - 5.3.2 Sample UPSR to Two-Fiber BLSR Connection [5-4](#)
  - 5.3.3 Sample Two-Fiber BLSR to UPSR Connection [5-5](#)
  - 5.3.4 Sample Two-Fiber BLSR to Two-Fiber BLSR Connection [5-6](#)
  - 5.3.5 Sample Two-Fiber BLSR to Four-Fiber BLSR Connection [5-7](#)
  - 5.3.6 Sample UPSR to Four-Fiber BLSR Connection [5-8](#)
- 5.4 1WAY Drop and Continue [5-9](#)
  - 5.4.1 Sample Node 1 Configuration (Source Node) [5-9](#)
  - 5.4.2 Sample Node 2 Configuration (Drop and Continue Node) [5-10](#)
  - 5.4.3 Sample Node 3 Configuration (Destination Node) [5-10](#)

**CHAPTER 6****TL1 Performance Monitoring [6-1](#)**

- 6.1 Performance Monitoring by Card [6-1](#)
- 6.2 PM Parameters by Line Type [6-6](#)

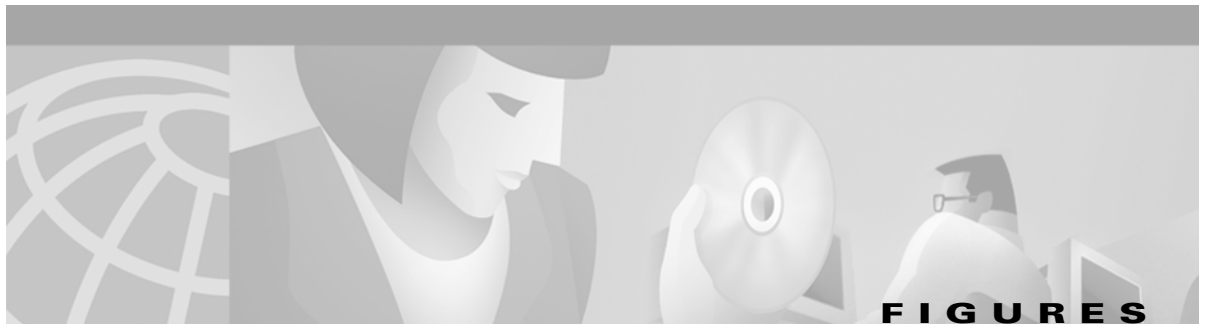
**CHAPTER 7****TL1 Alarms and Errors [7-1](#)**

- 7.1 Alarms [7-1](#)
  - 7.1.1 AIP [7-2](#)
  - 7.1.2 BPLANE [7-2](#)
  - 7.1.3 BITS [7-2](#)
  - 7.1.4 DS1 [7-3](#)
  - 7.1.5 DS3 [7-3](#)
  - 7.1.6 E100T [7-3](#)
  - 7.1.7 E1000F [7-4](#)
  - 7.1.8 EC1-12 [7-4](#)
  - 7.1.9 ENVALRM [7-4](#)
  - 7.1.10 EQPT [7-5](#)
  - 7.1.11 EXT-SREF [7-6](#)
  - 7.1.12 FAN [7-6](#)
  - 7.1.13 NE [7-6](#)
  - 7.1.14 NE-SREF [7-7](#)
  - 7.1.15 OCN [7-7](#)
  - 7.1.16 PS-STTS [7-8](#)
  - 7.1.17 PS-VT [7-8](#)
  - 7.1.18 RING [7-9](#)
  - 7.1.19 STSMON [7-9](#)
  - 7.1.20 STSTERM [7-9](#)

- 7.1.21 VT-MON [7-10](#)
- 7.1.22 VT-TERM [7-10](#)
- 7.2 Errors [7-10](#)
- 7.3 Echo [7-15](#)

---

**INDEX**



<i>Figure 1-1</i>	Autonomous message format	<b>1-5</b>
<i>Figure 1-2</i>	Single node view (Node 1)	<b>1-9</b>
<i>Figure 1-3</i>	Multi-node view	<b>1-10</b>
<i>Figure 1-4</i>	Circuit with no access	<b>1-11</b>
<i>Figure 1-5</i>	Monitor E (MONE) access	<b>1-11</b>
<i>Figure 1-6</i>	Monitor F (MONF) access	<b>1-12</b>
<i>Figure 1-7</i>	Monitor EF (MONEF) access	<b>1-12</b>
<i>Figure 1-8</i>	Split E (SPLTE) access	<b>1-12</b>
<i>Figure 1-9</i>	Split F (SPLTF) access	<b>1-13</b>
<i>Figure 1-10</i>	Split EF (SPLTEF) access	<b>1-13</b>
<i>Figure 1-11</i>	LOOPE access	<b>1-14</b>
<i>Figure 1-12</i>	LOOPF access	<b>1-14</b>
<i>Figure 1-13</i>	SPLTA access	<b>1-15</b>
<i>Figure 1-14</i>	SPLTB access	<b>1-15</b>
<i>Figure 2-1</i>	Example of a GNE topology	<b>2-2</b>
<i>Figure 2-2</i>	Four-node ring without TL1 Gateway	<b>2-4</b>
<i>Figure 2-3</i>	Four-node ring with TL1 Gateway	<b>2-4</b>
<i>Figure 5-1</i>	Network configured with a 1WAY UPSR circuit	<b>5-2</b>
<i>Figure 5-2</i>	Network map with Cisco node showing ring-to-ring interconnection	<b>5-3</b>
<i>Figure 5-3</i>	UPSR to UPSR connection specifications through the Cisco node	<b>5-3</b>
<i>Figure 5-4</i>	Selector between 5/1/1 and 6/1/1	<b>5-4</b>
<i>Figure 5-5</i>	Selector between 12/3/2 and 13/3/2	<b>5-4</b>
<i>Figure 5-6</i>	UPSR to two-fiber BLSR	<b>5-4</b>
<i>Figure 5-7</i>	Selector between 5/1/1 and 6/1/1	<b>5-5</b>
<i>Figure 5-8</i>	Bridge from 12/3/2 to Ring 1	<b>5-5</b>
<i>Figure 5-9</i>	Two-fiber BLSR to UPSR	<b>5-5</b>
<i>Figure 5-10</i>	Bridge from 6/1/1 to Ring 2	<b>5-6</b>
<i>Figure 5-11</i>	Selector between 12/3/2 and 13/3/2 to Ring 1	<b>5-6</b>
<i>Figure 5-12</i>	Two-fiber BLSR to two-fiber BLSR	<b>5-6</b>
<i>Figure 5-13</i>	2WAY connection from 5/1/1 to 13/3/2	<b>5-7</b>
<i>Figure 5-14</i>	Two-fiber BLSR to four-fiber BLSR	<b>5-7</b>

<i>Figure 5-15</i>	2WAY Connection from 1/1/1 to 5/1/1	<b>5-7</b>
<i>Figure 5-16</i>	UPSR to four-fiber BLSR	<b>5-8</b>
<i>Figure 5-17</i>	Selector between 1/1/1 and 2/1/1 to Ring 2 (5/1/190)	<b>5-8</b>
<i>Figure 5-18</i>	Bridge from 5/1/190 to Ring 1 (1/1/1 and 2/1/1)	<b>5-8</b>
<i>Figure 5-19</i>	1WAY drop and continue	<b>5-9</b>
<i>Figure 5-20</i>	Bridge from 1/1/1 to 5/1/1 and 6/1/1	<b>5-9</b>
<i>Figure 5-21</i>	Selector between 5/1/1 and 6/1/1 to 1/1/1	<b>5-10</b>
<i>Figure 5-22</i>	Selector between 5/1/1 and 6/1/1 to 1/1/1	<b>5-10</b>



<i>Table 1-1</i>	Command Access <a href="#">1-6</a>
<i>Table 1-2</i>	Security Idle Times <a href="#">1-6</a>
<i>Table 2-1</i>	Gateway Resource Pool <a href="#">2-2</a>
<i>Table 2-2</i>	Examples of a Single GNE Topology Showing How the GNE/ENE Resources can be Allocated <a href="#">2-3</a>
<i>Table 3-1</i>	TL1 Commands by Category <a href="#">3-1</a>
<i>Table 3-2</i>	TL1 Commands by Card <a href="#">3-4</a>
<i>Table 3-3</i>	TL1 Commands, Categories and Cards <a href="#">3-14</a>
<i>Table 4-1</i>	BLSR <a href="#">4-1</a>
<i>Table 4-2</i>	Cross Connections <a href="#">4-1</a>
<i>Table 4-3</i>	Environmental Alarms and Controls <a href="#">4-2</a>
<i>Table 4-4</i>	Equipment <a href="#">4-2</a>
<i>Table 4-5</i>	Performance <a href="#">4-2</a>
<i>Table 4-6</i>	Ports <a href="#">4-3</a>
<i>Table 4-7</i>	SONET Line Protection <a href="#">4-4</a>
<i>Table 4-8</i>	STS and VT Paths <a href="#">4-4</a>
<i>Table 4-9</i>	Synchronization <a href="#">4-5</a>
<i>Table 4-10</i>	ALL <a href="#">4-5</a>
<i>Table 4-11</i>	PR SLOT <a href="#">4-7</a>
<i>Table 4-12</i>	BITS <a href="#">4-7</a>
<i>Table 4-13</i>	BLSR <a href="#">4-7</a>
<i>Table 4-14</i>	DS1 <a href="#">4-8</a>
<i>Table 4-15</i>	ENV <a href="#">4-8</a>
<i>Table 4-16</i>	EQPT <a href="#">4-8</a>
<i>Table 4-17</i>	FACILITY <a href="#">4-8</a>
<i>Table 4-18</i>	STS <a href="#">4-9</a>
<i>Table 4-19</i>	SYN <a href="#">4-10</a>
<i>Table 4-20</i>	SYN_SRC <a href="#">4-10</a>
<i>Table 4-21</i>	SYNC_REF <a href="#">4-10</a>
<i>Table 4-22</i>	SYNCSW <a href="#">4-11</a>
<i>Table 4-23</i>	TAP <a href="#">4-11</a>
<i>Table 4-24</i>	VT1_5 <a href="#">4-11</a>

<i>Table 4-25</i>	ALL_MONTYPE Values	<a href="#">4-13</a>
<i>Table 4-26</i>	ALL_THR Value	<a href="#">4-14</a>
<i>Table 4-27</i>	BLSR_MODE Values	<a href="#">4-15</a>
<i>Table 4-28</i>	BLSR_TYPE Values	<a href="#">4-15</a>
<i>Table 4-29</i>	CCT Values	<a href="#">4-15</a>
<i>Table 4-30</i>	CMD_MODE Values	<a href="#">4-16</a>
<i>Table 4-31</i>	COND_EFF Values	<a href="#">4-16</a>
<i>Table 4-32</i>	CONDITION Values	<a href="#">4-16</a>
<i>Table 4-33</i>	CONTTYPE Values	<a href="#">4-19</a>
<i>Table 4-34</i>	DIRECTION Values	<a href="#">4-19</a>
<i>Table 4-35</i>	DIRN Values	<a href="#">4-20</a>
<i>Table 4-36</i>	DS3_FMT Values	<a href="#">4-20</a>
<i>Table 4-37</i>	DS_LINE_CODE Values	<a href="#">4-20</a>
<i>Table 4-38</i>	DS_LINE_TYPE Values	<a href="#">4-20</a>
<i>Table 4-39</i>	DURATION Values	<a href="#">4-21</a>
<i>Table 4-40</i>	E_LBO Values	<a href="#">4-21</a>
<i>Table 4-41</i>	ENV_ALM Values	<a href="#">4-21</a>
<i>Table 4-42</i>	ENV_CRTL Values	<a href="#">4-22</a>
<i>Table 4-43</i>	EQPT_TYPE Values	<a href="#">4-23</a>
<i>Table 4-44</i>	EQUIP Values	<a href="#">4-24</a>
<i>Table 4-45</i>	EQUIPMENT_TYPE Values	<a href="#">4-25</a>
<i>Table 4-46</i>	EXT_RING Values	<a href="#">4-25</a>
<i>Table 4-47</i>	FRAME_FORMAT Values	<a href="#">4-26</a>
<i>Table 4-48</i>	LINE_BUILDOUT Values	<a href="#">4-26</a>
<i>Table 4-49</i>	LINE_CODE Values	<a href="#">4-26</a>
<i>Table 4-50</i>	LOCATION Values	<a href="#">4-26</a>
<i>Table 4-51</i>	LPBK_TYPE Values	<a href="#">4-27</a>
<i>Table 4-52</i>	MOD2 Values	<a href="#">4-27</a>
<i>Table 4-53</i>	MOD2_IO Values	<a href="#">4-28</a>
<i>Table 4-54</i>	MOD2ALM Values	<a href="#">4-28</a>
<i>Table 4-55</i>	MOD2B Values	<a href="#">4-29</a>
<i>Table 4-56</i>	MOD_PATH Values	<a href="#">4-30</a>
<i>Table 4-57</i>	MOD_PORT Values	<a href="#">4-30</a>
<i>Table 4-58</i>	MOD_TACC Values	<a href="#">4-30</a>
<i>Table 4-59</i>	MODIFIER Values	<a href="#">4-31</a>

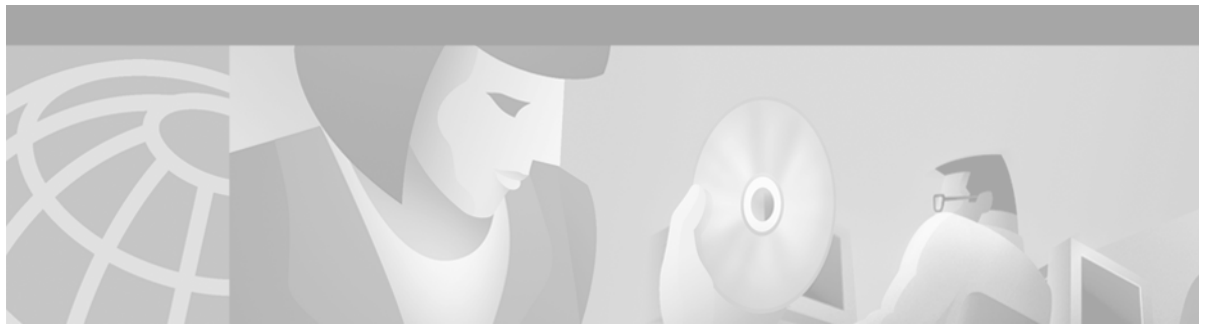


Table 4-60	MOD_OP Values	4-31
Table 4-61	MSGTYPE Values	4-32
Table 4-62	NOTIF_CODE Values	4-32
Table 4-63	OCN_4F Values	4-33
Table 4-64	OCN_BLSR Values	4-33
Table 4-65	OCN_MONTYPE Values	4-33
Table 4-66	OCN_TYPE Values	4-34
Table 4-67	ON_OFF Values	4-34
Table 4-68	OPTICAL_MODE Values	4-34
Table 4-69	PM_MODE Values	4-34
Table 4-70	PM_STATE Values	4-35
Table 4-71	PRIVILEGE Values	4-35
Table 4-72	PROTECTION_GROUP Values	4-35
Table 4-73	PST Values	4-36
Table 4-74	PSTQ Values	4-36
Table 4-75	REVERTIVE_TIME Values	4-37
Table 4-76	RNG_TYPE Values	4-37
Table 4-77	SD_BER Values	4-37
Table 4-78	SDCC_MODE Values	4-38
Table 4-79	SERV_EFF Values	4-38
Table 4-80	SF_BER Values	4-38
Table 4-81	SIDE Values	4-38
Table 4-82	SST Values	4-39
Table 4-83	STATE Values	4-39
Table 4-84	STATUS Values	4-40
Table 4-85	STM_TYPE Values	4-40
Table 4-86	STS_MAP Values	4-40
Table 4-87	STS_MONTYPE Values	4-40
Table 4-88	STS_PATH Values	4-41
Table 4-89	SWITCH Values	4-41
Table 4-90	SWITCH_TYPE Values	4-42
Table 4-91	SYNC_GENERATION Values	4-42
Table 4-92	SYNC_QUALITY_LEVEL Values	4-42
Table 4-93	T1_MONTYPE Values	4-43
Table 4-94	T3_MONTYPE Values	4-43

<i>Table 4-95</i>	TACC_MODE Values	<a href="#">4-43</a>
<i>Table 4-96</i>	TIMING_MODE Values	<a href="#">4-44</a>
<i>Table 4-97</i>	TMG_REF Values	<a href="#">4-45</a>
<i>Table 4-98</i>	TMPER Values	<a href="#">4-45</a>
<i>Table 4-99</i>	TRCMODE Values	<a href="#">4-45</a>
<i>Table 4-100</i>	UNI_BI Values	<a href="#">4-45</a>
<i>Table 4-101</i>	USE_DST Values	<a href="#">4-46</a>
<i>Table 4-102</i>	VALIDITY Values	<a href="#">4-46</a>
<i>Table 4-103</i>	VT1_5_MONTYPE Values	<a href="#">4-46</a>
<i>Table 6-1</i>	Near-End Section PMs	<a href="#">6-1</a>
<i>Table 6-2</i>	Near-End Line PMs	<a href="#">6-1</a>
<i>Table 6-3</i>	Near-End DS1 Line PMs	<a href="#">6-2</a>
<i>Table 6-4</i>	Near-End DS3 Line PMs	<a href="#">6-2</a>
<i>Table 6-5</i>	SONET Path PMs	<a href="#">6-2</a>
<i>Table 6-6</i>	DS1 Path PMs	<a href="#">6-3</a>
<i>Table 6-7</i>	DS3 Path PMs	<a href="#">6-4</a>
<i>Table 6-8</i>	VT Path PMs	<a href="#">6-5</a>
<i>Table 6-9</i>	PM Parameters by Line Type	<a href="#">6-6</a>
<i>Table 7-1</i>	AIP	<a href="#">7-2</a>
<i>Table 7-2</i>	BPLANE	<a href="#">7-2</a>
<i>Table 7-3</i>	BITS	<a href="#">7-2</a>
<i>Table 7-4</i>	DS1	<a href="#">7-3</a>
<i>Table 7-5</i>	DS3	<a href="#">7-3</a>
<i>Table 7-6</i>	E100T	<a href="#">7-3</a>
<i>Table 7-7</i>	E1000F	<a href="#">7-4</a>
<i>Table 7-8</i>	EC1-12	<a href="#">7-4</a>
<i>Table 7-9</i>	ENVALRM	<a href="#">7-4</a>
<i>Table 7-10</i>	EQPT	<a href="#">7-5</a>
<i>Table 7-11</i>	EXT-SREF	<a href="#">7-6</a>
<i>Table 7-12</i>	FAN	<a href="#">7-6</a>
<i>Table 7-13</i>	NE	<a href="#">7-6</a>
<i>Table 7-14</i>	NE-SREF	<a href="#">7-7</a>
<i>Table 7-15</i>	OCN	<a href="#">7-7</a>
<i>Table 7-16</i>	PS-STTS	<a href="#">7-8</a>
<i>Table 7-17</i>	PS-VT	<a href="#">7-8</a>

<i>Table 7-18</i>	RING	<a href="#">7-9</a>
<i>Table 7-19</i>	STSMON	<a href="#">7-9</a>
<i>Table 7-20</i>	STSTERM	<a href="#">7-9</a>
<i>Table 7-21</i>	VT-MON	<a href="#">7-10</a>
<i>Table 7-22</i>	VT-TERM	<a href="#">7-10</a>
<i>Table 7-23</i>	Error Codes	<a href="#">7-10</a>





## About This Manual

---

This section explains who should read the *Cisco ONS 15454 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 technicians and administrators who are responsible for installing, configuring, maintaining, and enhancing ONS 15454 networks.

## Organization

Chapter	Description
<a href="#">Chapter 1, “Getting Started”</a>	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.
<a href="#">Chapter 2, “TL1 Gateway”</a>	Describes the TL1 Gateway and provides procedures and examples for implementing TL1 Gateway on a four node ring.
<a href="#">Chapter 3, “TL1 Command Descriptions”</a>	Lists TL1 commands by category and then lists each command and autonomous message supported by the ONS 15454.
<a href="#">Chapter 4, “TL1 Command Components”</a>	Describes the components of TL1 commands including, default values, access identifiers (AIDs), and parameter types.
<a href="#">Chapter 5, “Ring Provisioning”</a>	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
<a href="#">Chapter 6, “TL1 Performance Monitoring”</a>	Provides TL1 performance monitoring (PM) information.
<a href="#">Chapter 7, “TL1 Alarms and Errors”</a>	Lists TL1 alarms and errors supported by the ONS 15454 including descriptions and severity.

# Related Documentation

- Cisco ONS 15454 Common TL1 Commands Quick Reference, Release 3.1*
- Cisco ONS 15454 Installation and Operations Guide, Release 3.1*
- Cisco ONS 15454 Troubleshooting and Maintenance Guide, Release 3.1*
- Cisco ONS 15454 Product Overview, Release 3.1*
- Release Notes for the Cisco ONS 15454, Release 3.1*
- Cisco Warranty Services for ONG Products*
- Cisco ONS 15454 Quick Configuration Guide*
- Cisco ONS 15454 Quick Installation Guide*
- Related products:
- Cisco ONS 15216 EDFAI Operations Guide*
- Installing the Cisco ONS 15216 DWDM Filters*
- Installing Cisco ONS 15216 OADMS*
- Installing Cisco ONS 15216 Optical Performance Manager Operations 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 provide sources for obtaining documentation from Cisco Systems.

### World Wide Web

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

- <http://www.cisco.com>
- <http://www-china.cisco.com>
- <http://www-europe.cisco.com>

### Optical Networking Product Documentation CD-ROM

Optical networking-related documentation, including Release 3.1 of the *Cisco ONS 15454 Installation and Operations Guide*, *Cisco ONS 15454 Troubleshooting and Maintenance Guide*, and the *Cisco ONS 15454 TL1 Command Guide*, is available in a CD-ROM package that ships with your product. The Optical Networking Product Documentation CD-ROM, a member of the Cisco Connection Family, is updated as required. Therefore, it might be more current than printed documentation. To order additional copies of the Optical Networking Product Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www.europe.cisco.com>.

## Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco Product documentation, including the *Optical Networking Product* CD-ROM, 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)
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

## Documentation Feedback

If you are reading Cisco product documentation on the World Wide Web, you can submit technical comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco.

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

To submit your comments by mail, for your convenience many documents contain a response card behind the front cover. Otherwise, you can mail your comments to the following address:

Cisco Systems, Inc.  
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. For Cisco.com registered users, additional troubleshooting tools are available from the TAC website.

## Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website: <http://www.cisco.com>



## Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

### Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

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

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

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

### Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. The toll-free Optical Networking Assistance number is 1-877-323-7368.

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.





# 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 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 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 allows 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+ 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. Refer to Chapter 1 in the *Cisco ONS 15454 Installation and Operations Guide* for craft interface installation procedures.

**Step 1** Connect the serial cable to the RS-232 port on the active TCC+ 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), 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 node, use the Network Element Name option of the Network Element Configuration menu.



### 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. 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 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 “.”).

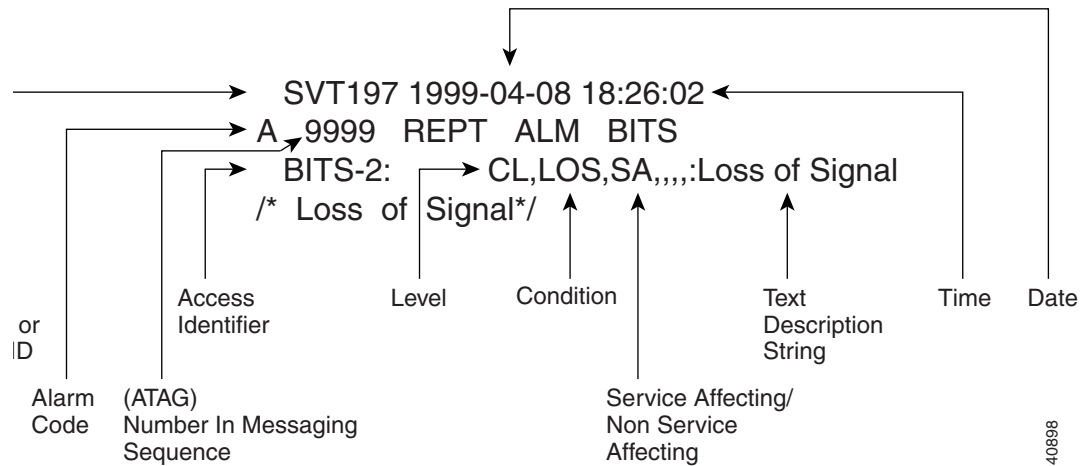
The following specification characters are used throughout this document as a vehicle for defining the syntax:

- < > 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. The ONS 15454 uses whole numbers 0000 to 9999.

**Figure 1-1 Autonomous message format**



### 1.3.1 Alarm Codes

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

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

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

The following 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 the *Cisco ONS 15454 Installation and Operations Guide, Release 3.1* for information about setting up ONS 15454 timing. Refer to Telcordia document GR-436-CORE, *Digital Network Synchronization Plan* for recommended synchronization planning. 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 RTVR-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 CMLPD 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 CMPLD, 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, CMPLD is returned with a matching list of cross-connections.
2. If some valid AIDs match but not all, CMPLD 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, CMPLD 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

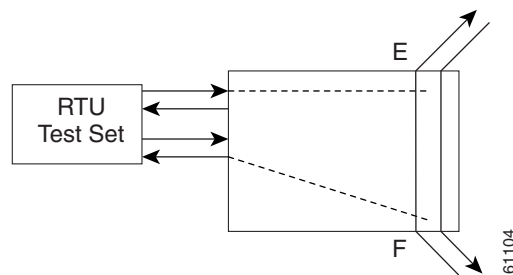
## 1.8 Test Access

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 Release 3.0. 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.

### 1.8.1 Test Access Configurations

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



**Example 1-1** `ED-ST51:NODE1:ST5-1-1:90::TACC=1;`

This command changes STS1 and STS2 on Slot 1 to a test access path (TAP). The <CTAG> is 90. The TAP number is set to one.

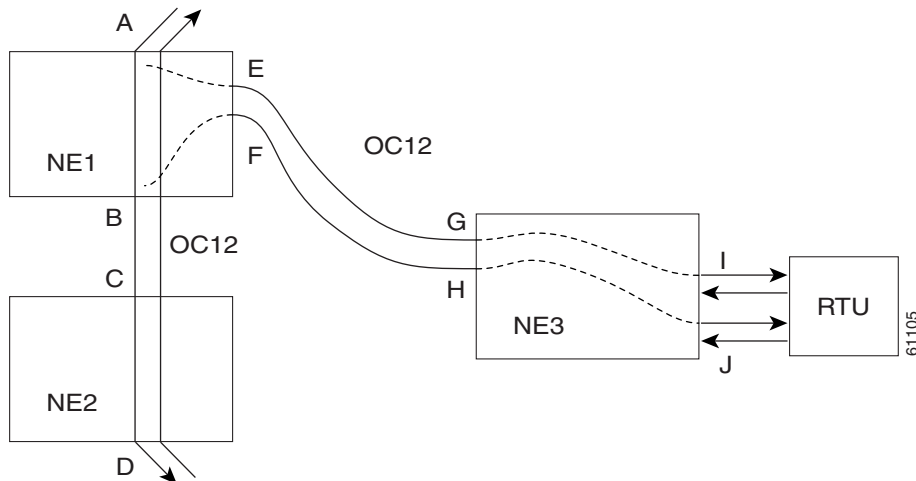
**Example 1-2** `CONN-TACC-ST51:NODE1:<AID for E or F depending on MD>:91::1:MONE;`

This command connects the <AID> to the TACC defined by FAD 1 on the E side. <CTAG> is 91.

**Note**

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.

**Figure 1-3 Multi-node view**



**Example 1-3** *ENT-CRS-ST51:NE3:<AID I-G>:100::2WAY;*

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

**Example 1-4** *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 1-3](#) 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 1-5** *ED-ST51:NE1:STS-1-1:TACC=4;*

This command creates a TAP with STS1-1-1 and STS1-1-2 through NE1. The TAP number assigned is four.

**Example 1-6** *CONN-TACC-ST51:NE1:<AID A or B>:102::4:<MD>*

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 1-3](#). CTC will not present TAPs as parts of circuits. TAPs will be displayed on a new node-level Maintenance/Test Access Tab. This tab will help to avoid confusion when a connection can be treated one way under TL1 but another way in CTC.

### 1.8.1.1 Disconnecting and Removing Test Access Paths

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+
- Use this command to remove a TAP: ED-<STS\_PATH>:[<TID>]:<AID>:<CTAG>:::TACC=0;;

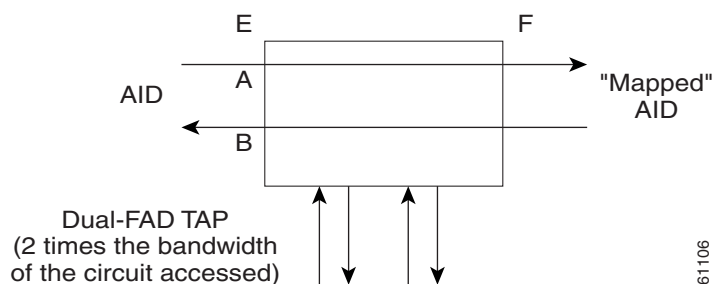


**Note** If a TAP is not removed the STS bandwidth will be stranded.

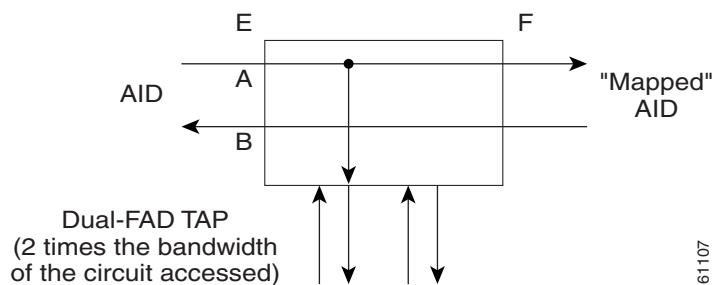
## 1.8.2 Mode Definitions

Figure 1-4 through Figure 1-7 show what the different <MD> test access modes refer to. The following descriptions are taken from GR-834-CORE, section 6-4.

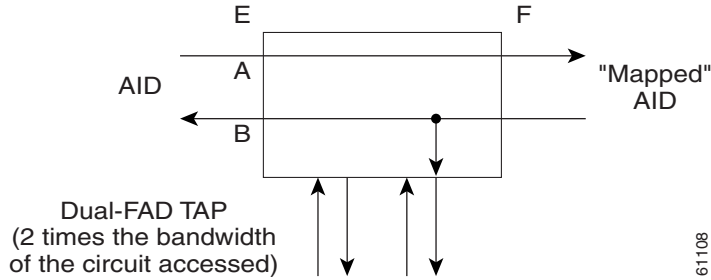
**Figure 1-4 Circuit with no access**



**Figure 1-5 Monitor E (MONE) access**



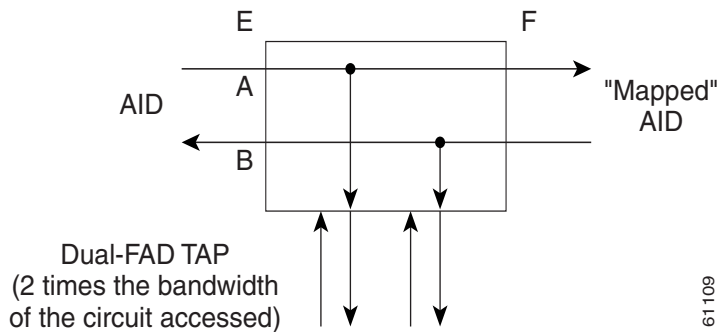
MONE indicates that a monitor connection is to be provided from the FAD to the A transmission path of the accessed circuit.

**Figure 1-6** Monitor F (MONF) access

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

**Note**

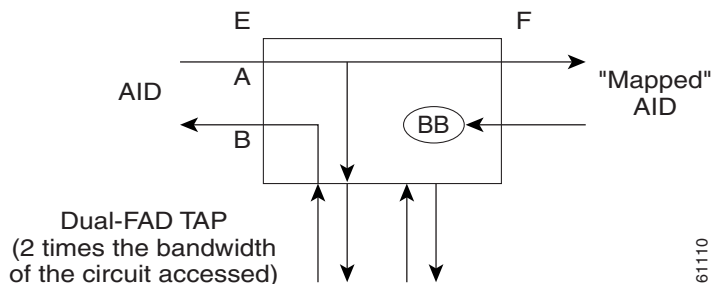
The MONE and SPLTAF modes are applicable to unidirectional circuits from E to F. The MONF and SPLTB modes are applicable to unidirectional circuits from F to E.

**Figure 1-7** 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.

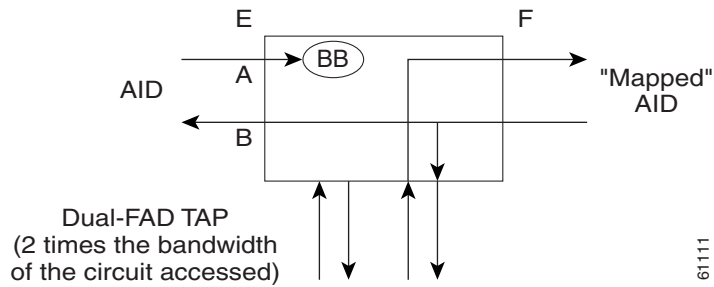
## 1.8.3 Split E and F Access Modes

Figure 1-8 through 1-10 show split E and F access modes.

**Figure 1-8** Split E (SPLTE) access

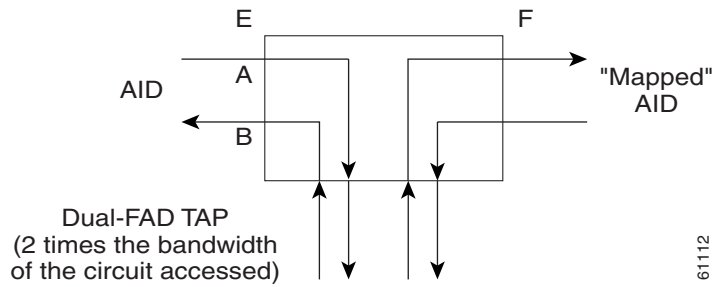
SPLTE indicates to split both the A and B paths and connect the E side of the accessed circuit to the FAD.

**Figure 1-9 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 1-10 Split EF (SPLTEF) access**

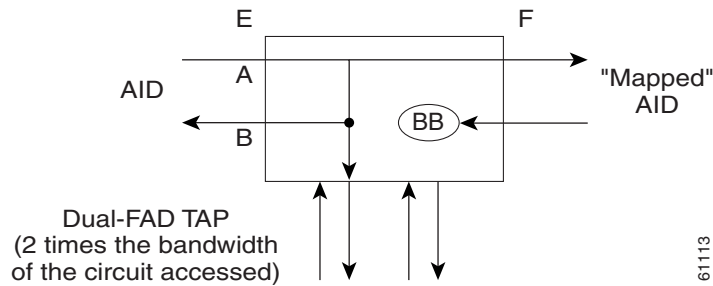


SPLTEF for T1 (DS1 HCDS) indicates to split both the A and B paths, connect the E side of the accessed circuit to FAD1 and the dual facility access digroup (DFAD) pair, and connect the F side to the FAD2 of the same DFAD pair. SPLTEF for T3 (DS3 HCDS) indicates to split both the A and B paths and connect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

## 1.8.4 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).

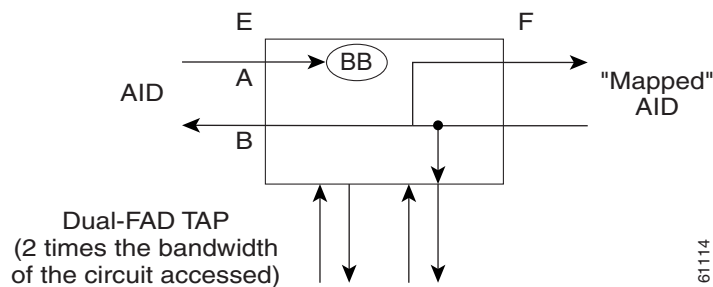
**Figure 1-11** LOOPE access



61113

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 1-12** LOOPF access



61114

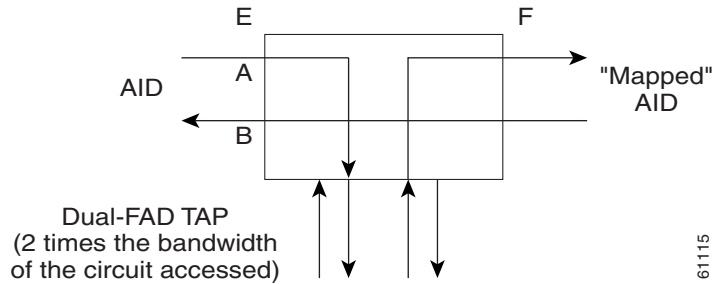
LOOPF indicates to split both the A and B paths, connect the incoming line from the F direction to the outgoing line in the F direction and connect this looped configuration to the FAD.



## 1.8.5 Split A and B Access Modes

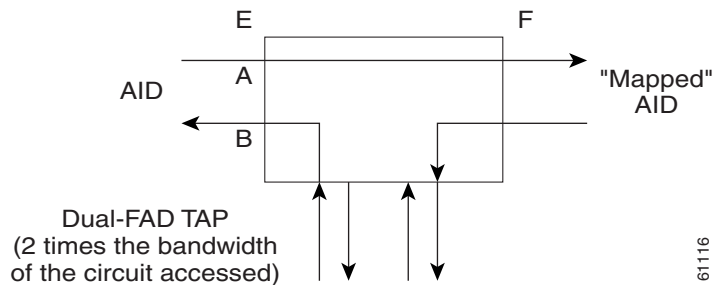
Split A and B access modes are shown in [Figure 1-13](#) and [Figure 1-14](#). These modes are similar to the Split E and F modes, except the signals are sent to the RTU, not the NE signal configuration.

**Figure 1-13 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 1-14 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.





## TL1 Gateway

---

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

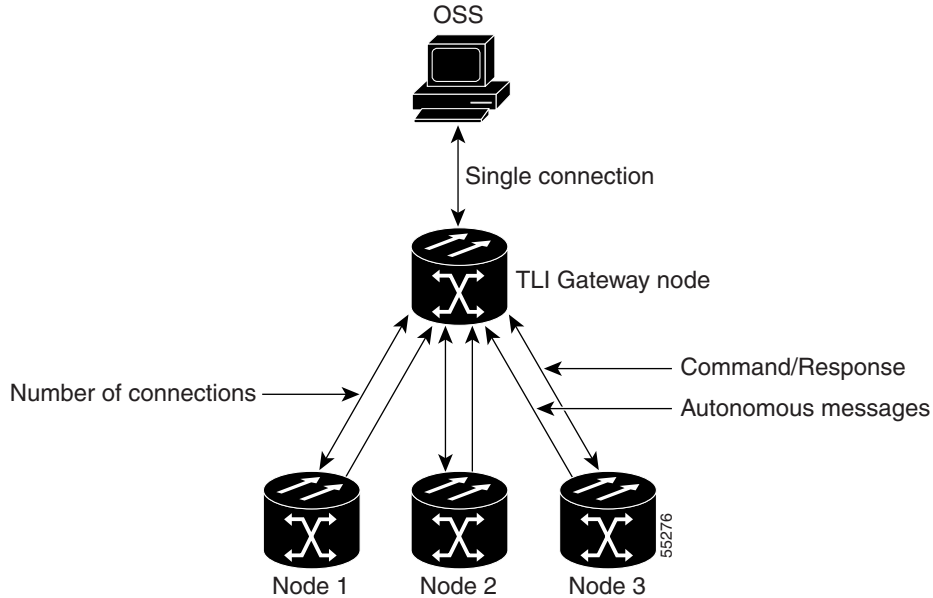
### 2.1 Gateway Network Element Topology

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**

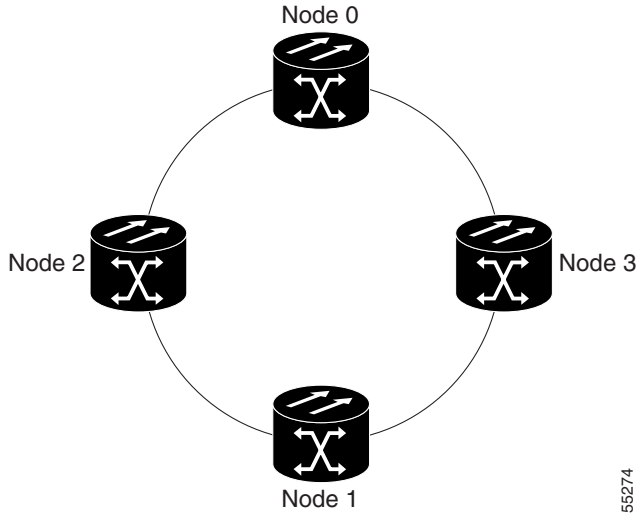
Issuing commands to specific nodes in the network is accomplished by entering a unique node name in the TID field in each TL1 message. The TID field is synonymous with the name of the node and is the second token in a TL1 command.

## 2.2 Implementing TL1 Gateway

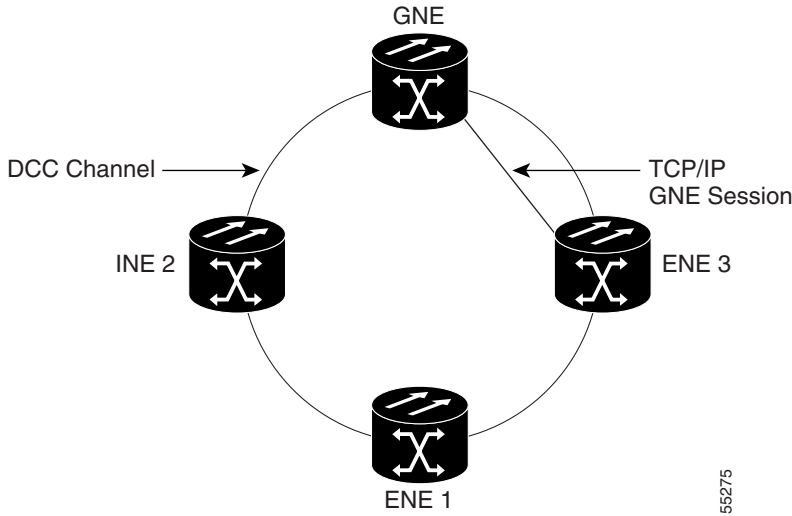
The following procedures demonstrate TL1 Gateway on a four-node ring (without TL1 Gateway in [Figure 2-2](#) and with TL1 Gateway in [Figure 2-3](#)), where:

- 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**



## Procedure: 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.

---

### Procedure: 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.
```

### Procedure: 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.

### Procedure: 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, Release 3.1, 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 RTRV-BLSR
Cross Connections	DLT-CRS-<STS_PATH> DLT-CRS-VT1 ENT-CRS-<STS_PATH> ENT-CRS-VT1 RTRV-CRS-<STS_PATH> RTRV-CRS-VT1
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

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

Category	Command or Autonomous Message
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 ALM RING REPT EVT <MOD2ALM> REPT EVT RING RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-COND-<MOD2ALM>
Log	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>
Ports	ED-<OCN_TYPE> ED-DS1 ED-EC1 ED-T1 ED-T3 RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-<OCN_TYPE> RTRV-DS1 RTRV-EC1 RTRV-T1 RTRV-T3

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

Category	Command or Autonomous Message
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-COND-ALL RTRV-FFP-<OCN_TYPE>
STS and VT Paths	ED-<STS_PATH> ED-VT1 RTRV-PTHTRC-<STS_PATH> RTRV-<STS_PATH> RTRV-VT1
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

Table 3-1 TL1 Commands by Category (continued)

Category	Command or Autonomous Message
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

Table 3-2 TL1 Commands by Card

Card	Command or Autonomous Message
EC1	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-EC1 ED-EQPT ED-VT1 ENT-CRS-<STS_PATH> ENT-EQPT INH-SWTOPROTN-EQPT INH-SWTOWKG-EQPT INIT-REG-<MOD2> INIT-SYS OPR-LPBK-<MOD2_IO> REPT ALM <MOD2ALM> REPT ALM EQPT 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-EC1 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 (continued)

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

Table 3-2 TL1 Commands by Card (continued)

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

Table 3-2 TL1 Commands by Card (continued)

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

Table 3-2 TL1 Commands by Card (continued)

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 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 (continued)

Card	Command or Autonomous Message
OC3	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-FFP-<OCN_TYPE>
	ED-VT1
	ENT-CRS-<STS_PATH>
	ENT-CRS-VT1
	ENT-EQPT
	ENT-FFP-<OCN_TYPE>
	INIT-REG-<MOD2>
	INIT-SYS
	OPR-LPBK-<MOD2_IO>
	OPR-PROTNSW-<OCN_TYPE>
	OPR-PROTNSW-<STS_PATH>
	OPR-PROTNSW-VT1
	OPR-SYCNNSW
	REPT ALM <MOD2ALM>
	REPT ALM EQPT
	REPT ALM SYNCN
	REPT EVT <MOD2ALM>
	REPT EVT EQPT
	REPT EVT SYNCN
	RLS-LPBK-<MOD2_IO>
	RLS-PROTNSW-<OCN_TYPE>
	RLS-PROTNSW-<STS_PATH>
	RLS-PROTNSW-VT1
	RLS-SYCNNSW
	RMV-<MOD_PORT>
	RST-<MOD_PORT>
	RTRV-<OCN_TYPE>
RTRV-<STS_PATH>	
RTRV-ALM-<MOD2ALM>	
RTRV-ALM-ALL	
RTRV-ALM-EQPT	
RTRV-ALM-SYCN	
RTRV-COND-<MOD2ALM>	
RTRV-COND-ALL	
RTRV-COND-EQPT	
RTRV-CRS-<STS_PATH>	
RTRV-CRS-VT1	
RTRV-EQPT	
RTRV-FFP-<OCN_TYPE>	
RTRV-INV	
RTRV-NE-IPMAP	
RTRV-PM-<MOD2>	
RTRV-PMMODE-<STS_PATH>	
RTRV-PTHTRC-<STS_PATH>	
RTRV-TH-<MOD2>	
RTRV-VT1	
SET-PMMODE-<STS_PATH>	
SET-TH-<MOD2>	

Table 3-2 TL1 Commands by Card (continued)

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-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 3-2 TL1 Commands by Card (continued)

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-SYNCN
	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 3-2 TL1 Commands by Card (continued)

Card	Command or Autonomous Message
OC192	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-SYNCN 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-PTHTRC-<STS_PATH> REPT ALM SYNCN RTRV-TH-<MOD2> REPT EVT <MOD2ALM> RTRV-VT1 REPT EVT EQPT SET-PMMODE-<STS_PATH> REPT EVT RING SET-TH-<MOD2>
E100T	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>
E1000	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>

Table 3-2 TL1 Commands by Card (continued)

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 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 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 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 (continued)

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

### 3.3 TL1 Commands, Categories and Cards

Table 3-3 TL1 Commands, Categories and Cards

Command or Autonomous Message	Category	Card(s)
ACT-USER	Security	—
ALW-MSG-ALL	System	—
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, OC192

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

Command or Autonomous Message	Category	Card(s)
CONN-TACC-<MOD_TACC>	Test Access	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
DISC-TACC	Test Access	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
DLT-CRS-<STS_PATH>	Cross Connection	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
DLT-CRS-VT1	Cross Connection	EC1, DS1, DS1N, DS3XM, OC3, OC12, OC48, OC192
DLT-EQPT	Equipment	All cards
DLT-FFP-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC192
DLT-USER-SECU	Security	—
ED-<OCN_TYPE>	Ports	OC3, OC12, OC48, OC192
ED-<STS_PATH>	STS and VT Paths	EC1, DS1, DS1N, DS3XM, OC3, OC12, OC48, OC192
ED-BITS	Synchronization	TCC+
ED-BLSR	Cross Connections	OC12, OC48, OC192
ED-DAT	System	—
ED-DS1	Ports	DS3XM
ED-EC1	Ports	EC1
ED-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM
ED-FFP-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC192
ED-NE-GEN	System	TCC+
ED-NE-SYCN	Synchronization	TCC+
ED-PID	Security	—
ED-SYCN	Synchronization	TCC+
ED-T1	Ports	DS1, DS1N
ED-T3	Ports	DS3, DS3N, DS3E, DS3NE, DS3XM
ED-USER-SECU	Security	—
ED-VT1	STS and VT Paths	EC1, DS1, DS1N, DS3XM, OC3, OC12, OC48, OC192

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

Command or Autonomous Message	Category	Card(s)
ENT-CRS-<STS_PATH>	Cross Connection	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
ENT-CRS-VT1	Cross Connection	DS3XM, OC3, OC12, OC48, OC192
ENT-EQPT	Equipment	All cards
ENT-FFP-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC192
ENT-USER-SECU	Security	—
EX-SW-<OCN_BLSR>	SONET Line Protection	OC12, OC48, OC192
INH-MSG-ALL	System	—
INH-SWDX-EQPT	Equipment	XC, XCVT, XC10G
INH-SWTOPTN-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM
INH-SWTOWKG-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM
INIT-REG-<MOD2>	Performance	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
INIT-SYS	System	All cards
OPR-EXT-CONT	Environmental Alarms and Controls	AIC
OPR-LPBK-<MOD2_IO>	Testing	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
OPR-PROTNSW-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC192
OPR-PROTNSW-<STS_PATH>	UPSR Switching	OC3, OC12, OC48, OC192
OPR-PROTNSW-VT1	UPSR Switching	OC3, OC12, OC48, OC192
OPR-SYNCNSW	Synchronization	OC3, OC12, OC48, OC192
REPT ALM <MOD2ALM>	Fault	All cards
REPT ALM BITS	Synchronization	TCC+
REPT ALM COM	Fault	—
REPT ALM ENV	Environmental Alarms and Controls	AIC
REPT ALM EQPT	Equipment	All cards
REPT ALM RING	Fault	OC12, OC48, OC192



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

Command or Autonomous Message	Category	Card(s)
REPT ALM SYNCN	Synchronization	OC3, OC12, OC48, OC192, TCC+
REPT DBCHG	Log	—
REPT EVT <MOD2ALM>	Fault	All cards
REPT EVT BITS	Synchronization	TCC+
REPT EVT ENV	Environmental Alarms and Controls	AIC
REPT EVT EQPT	Equipment	All cards
REPT EVT RING	Fault	OC12, OC48, OC192
REPT EVT SECU	Security	—
REPT EVT SYNCN	Synchronization	OC3, OC12, OC48, OC192, TCC+
REPT SW	Protection	XC, XCVT, XC10G
RLS-EXT-CONT	Environmental Alarms and Controls	AIC
RLS-LPBK-<MOD2_IO>	Testing	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
RLS-PROTNSW-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC48, OC192
RLS-PROTNSW-<STS_PATH>	UPSR Switching	OC3, OC12, OC48, OC192
RLS-PROTNSW-VT1	UPSR Switching	OC3, OC12, OC48, OC192
RLS-SYNCNSW	Synchronization	OC3, OC12, OC48, OC192, TCC+
RMV-<MOD_PORT>	Ports	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
RST-<MOD_PORT>	Ports	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
RTRV-<OCN_TYPE>	Ports	OC3, OC12, OC48, OC192
RTRV-<STS_PATH>	STS and VT Paths	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
RTRV-ALM-<MOD2ALM>	Fault	All cards
RTRV-ALM-ALL	Fault	All cards
RTRV-ALM-BITS	Synchronization	TCC+
RTRV-ALM-ENV	Environmental Alarms and Controls	AIC

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

Command or Autonomous Message	Category	Card(s)
RTRV-ALM-EQPT	Equipment	All cards
RTRV-ALM-SYCN	Synchronization	OC3, OC12, OC48, OC192, TCC+
RTRV-ATTR-CONT	Environmental Alarms and Controls	AIC
RTRV-ATTR-ENV	Environmental Alarms and Controls	AIC
RTRV-BITS	Synchronization	TCC+
RTRV-BLSR	SONET Line Protection	OC12, OC48, OC192
RTRV-COND-<MOD2ALM>	Fault	All cards
RTRV-COND-ALL	SONET Line Protection	All cards
RTRV-COND-BITS	Synchronization	TCC+
RTRV-COND-ENV	Environmental Alarms and Controls	AIC
RTRV-COND-EQPT	Equipment	All cards
RTRV-COND-SYCN	Synchronization	TCC+
RTRV-CRS-<STS_PATH>	Cross Connection	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
RTRV-CRS-VT1	Cross Connection	EC1, DS1, DS1N, DS3XM, OC3, OC12, OC48, OC192
RTRV-DS1	Ports	DS3XM
RTRV-EC1	Ports	EC1
RTRV-EQPT	Equipment	All cards
RTRV-EXT-CONT	Environmental Alarms and Controls	AIC
RTRV-FFP-<OCN_TYPE>	SONET Line Protection	OC3, OC12, OC 48, OC192
RTRV-HDR	System	—
RTRV-INV	System	All cards
RTRV-LOG	Log	—
RTRV-NE-GEN	System	TCC+
RTRV-NE-IPMAP	System	OC3, OC12, OC 48, OC192
RTRV-NE-SYCN	Synchronization	TCC+

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

Command or Autonomous Message	Category	Card(s)
RTRV-PM-<MOD2>	Performance	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
RTRV-PMODE-<STS_PATH>	Performance	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
RTRV-PTHTRC-<STS_PATH>	STS and VT Paths	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC192
RTRV-SYCN	Synchronization	TCC+
RTRV-T1	Ports	DS1, DS1N
RTRV-T3	Ports	DS3, DS3N, DS3E, DS3NE
RTRV-TH-<MOD2>	Performance	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC192
RTRV-TOD	System	—
RTRV-VT1	STS and VT Paths	EC1, DS1, DS1N, DS3XM, OC3, OC12, OC48, OC192
SET-ATTR-CONT	Environmental Alarms and Controls	AIC
SET-ATTR-ENV	Environmental Alarms and Controls	AIC
SET-PMODE-<STS_PATH>	Performance	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
SET-TH-<MOD2>	Performance	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM, OC3, OC12, OC48, OC192
SET-TOD	System	—
SW-DX-EQPT	Equipment	XC, XCVT, XC10G
SW-TOPROTN-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM
SW-TOWKG-EQPT	Equipment	EC1, DS1, DS1N, DS3, DS3N, DS3E, DS3NE, DS3XM

## 3.4 TL1 Commands

The commands and autonomous messages used in the Cisco ONS 15454, Release 3.1 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**

TL1 commands that are entered incorrectly are not completed.

### 3.4.1 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 is case sensitive. All user identifications (UIDs) and password identifications (PIDs) must be entered in uppercase.
3. 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.

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

Section	ACT-USER Description (continued)
Input Format	<p>ACT-USER:[&lt;TID&gt;]:&lt;UID&gt;:&lt;CTAG&gt;::&lt;PID&gt;;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;UID&gt; is the user identifier and is a string; &lt;UID&gt; must be a minimum of six, maximum of ten, alphanumeric and special 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; must be a minimum of six, maximum of ten, alphanumeric and special characters; +, #, % where at least two characters are non-alphabetic and at least one character is a special character (+, #, or %). &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;TID&gt;. For example, if issuing an ACT-USER command using the CTC-entered &lt;UID&gt; that is greater than 10 characters long, TL1 will respond with a DENY (Cannot login) error message.</p>
Example	<p>Input</p> <p>ACT-USER:PETALUMA:TERRI:100::MYPASSWD;</p>
Errors	This message generates all the default errors

## 3.4.2 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, Maintenance, Provisioning, Superuser
Related Messages	ED-DAT ED-NE-GEN INH-MSG-ALL INIT-SYS RTRV-HDR RTRV-INV RTRV-NE-GEN RTRV-NE-IPMAP RTRV-TOD SET-TOD
Input Format	ALW-MSG-ALL:[<TID>]::<CTAG>[:.,,];

Section	ALW-MSG-ALL Description (continued)
Example	Input ALW-MSG-ALL:PETALUMA::549;
Errors	This message generates all the default errors

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

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	Retrieve, Maintenance, Provisioning, Superuser																		
Related Messages	<table border="0"> <tr> <td>ALW-SWTOPROTN-EQPT</td> <td>REPT EVT EQPT</td> </tr> <tr> <td>ALW-SWTOWKG-EQPT</td> <td>REPT SW</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> <tr> <td>INH-SWTOWKG-EQPT</td> <td>SW-TOWKG-EQPT</td> </tr> <tr> <td>REPT ALM EQPT</td> <td></td> </tr> </table>	ALW-SWTOPROTN-EQPT	REPT EVT EQPT	ALW-SWTOWKG-EQPT	REPT SW	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	REPT ALM EQPT	
ALW-SWTOPROTN-EQPT	REPT EVT EQPT																		
ALW-SWTOWKG-EQPT	REPT SW																		
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																		
REPT ALM 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 <a href="#">“EQPT” section on page 4-8</a></li> </ul>																		
Example	Input ALW-SWDX-EQPT:CISCO:SLOT-8:1234;																		
Errors	This message generates all the default errors																		

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

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	Retrieve, Maintenance, Provisioning, Superuser	
Related Messages	ALW-SWDX-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 REPT SW RTRV-ALM-EQPT RTRV-COND-EQPT RTRV-EQPT SW-DX-EQPT SW-TORPROTN-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 4-8.</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 4-19.</li> </ul>
Example	Input ALW-SWTOPROTN-EQPT:CISCO:SLOT-2:123::BTH;
Errors	This message generates all the default errors

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

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 INHSWWKG.

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 INHSWWKG 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	Retrieve, Maintenance, Provisioning, Superuser																		
Related Messages	<table> <tr> <td>ALW-SWDX-EQPT</td> <td>REPT EVT EQPT</td> </tr> <tr> <td>ALW-SWTOPROTN-EQPT</td> <td>REPT SW</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> <tr> <td>INH-SWTOWKG-EQPT</td> <td>SW-TOWKG-EQPT</td> </tr> <tr> <td>REPT ALM EQPT</td> <td></td> </tr> </table>	ALW-SWDX-EQPT	REPT EVT EQPT	ALW-SWTOPROTN-EQPT	REPT SW	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	REPT ALM EQPT	
ALW-SWDX-EQPT	REPT EVT EQPT																		
ALW-SWTOPROTN-EQPT	REPT SW																		
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																		
REPT ALM EQPT																			
Input Format	<p>ALW-SWTOWKG-EQPT:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;[:&lt;DIRN&gt;];</p> <p>where:</p> <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 <a href="#">“EQPT” section on page 4-8</a>.</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 <a href="#">“DIRECTION” section on page 4-19</a>.</li> </ul>																		
Example	<p>Input</p> <p>ALW-SWTOWKG-EQPT:CISCO:SLOT-2:123::BTH;</p>																		
Errors	This message generates all the default errors																		

### 3.4.6 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, Maintenance, Provisioning, Superuser
Related Messages	<p>ACT-USER</p> <p>CANC-USER</p> <p>REPT EVT SECU</p>

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 a string.</li> </ul>
Example	Output TID-000 98-06-20 14:30:00 A 001 CANC “CISCO15” ;

### 3.4.7 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, Maintenance, Provisioning, Superuser
Related Messages	ACT-USER 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; defaults to the login UID and is a string; &lt;USERID&gt; must be a minimum of six, maximum of ten, alphanumeric and special 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;TID&gt;. For example, if issuing an ACT-USER command using the CTC-entered &lt;UID&gt; that is greater than 10 characters long, TL1 will respond with a DENY (Cannot login) error message.</p>
Example	Input CANC-USER:PETALUMA:TERRI:101;
Errors	This message generates all the default errors

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

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, Provisioning, Superuser
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 TAP is used to identify all messages between the TSC and NE until the access path is released. The TAP number must be an integer with a range of 1 to 999; &lt;TAP&gt; is a number from the <a href="#">“TAP” section on page 4-11</a>.</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 <a href="#">“TACC_MODE” section on page 4-43</a></li> </ul>
Example	Input CHG-ACCMD-ST1:CISCO:8:123::MONE;
Errors	This message generates all the default errors

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

This command connects the STS or VT defined by AID to the STS 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, Superuser
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.</li> <li>• &lt;TAP&gt; indicates the test access path number selected by the NE. The TAP is used to identify all messages between the TSC and the NE until the access path is released. The TAP number must be an integer with a range of 1 to 999. &lt;TAP&gt; is a number from the “TAP” section on page 4-11.</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 4-43.</li> </ul>
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 TAP number must be an integer with a range of 1 - 999; &lt;TAP&gt; is a number of the “TAP” section on page 4-11.</li> </ul>
Example	Input CONN-TACC-ST51:CISCO:STS-2-4:123::8:MD=MONE;  Output TID-000 1998-06-20 14:30:00 M 001 COMPLD “8” ;
Errors	This message generates all the default errors

### 3.4.10 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, Superuser
Related Messages	CHG-ACCMD-<CHG-ACCMD> 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 TAP is used to identify all messages between the TSC and the NE until the access path is released. The TAP number must be an integer with a range of 1 - 999; &lt;TAP&gt; is a number of the <a href="#">“TAP” section on page 4-11</a>.</li> </ul> <p><b>Note</b> This command only disconnects a single TAP at a time.</p>
Example	Input DISC-TACC:CISCO:8:123;
Errors	This message generates all the default errors

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

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.

Section	DLT-CRS-<STS_PATH> Description
Category	Cross Connection
Security	Provisioning, Superuser
Related Messages	DLT-CRS-VT1 ENT-CRS-<STS_PATH> ENT-CRS-VT1 RTRV-CRS-<STS_PATH> RTRV-CRS-VT1
Input Format	DLT-CRS-<STS_PATH>:[<TID>]:<FROM>,<TO>:<CTAG>[::]; where: <ul style="list-style-type: none"> <li>• &lt;FROM&gt; indicates an identifier at one end of the STS cross connection; &lt;FROM&gt; is the AID from the “STS” section on page 4-9.</li> <li>• &lt;TO&gt; indicates an identifier at the other end of the STS cross connection; &lt;TO&gt; is the AID from the “STS” section on page 4-9.</li> </ul>
Example	Input DLT-CRS-STS12C:VINBURG:STS-1-1, STS-12-1:102;
Errors	This message generates all the default errors

### 3.4.12 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 Connection
Security	Provisioning, Superuser
Related Messages	DLT-CRS-<STS_PATH> ENT-CRS-<STS_PATH> ENT-CRS-VT1 RTRV-CRS-<STS_PATH> RTRV-CRS-VT1
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 4-11.</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 4-11.</li> </ul>
Example	Input DLT-CRS-VT1:CISCO:VT1-2-3-7-2,VT1-4-4-5-2:1234;
Errors	This message generates all the default errors

### 3.4.13 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, Superuser	
Related Messages	ALW-SWDX-EQPT ALW-SWTOPROTN-EQPT ALW-SWTOWKG-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	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 <a href="#">“EQPT” section on page 4-8</a>.</li> </ul>	
Example	Input DLT-EQPT:SONOMA:SLOT-1:104;	
Errors	This message generates all the default errors	

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

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, Superuser



Section	DLT-FFP-<OCN_TYPE> Description (continued)
Related Messages	ED-FFP-<OCN_TYPE> ENT-FFP-<OCN_TYPE> 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 4-8.</li> <li>&lt;PROTECT&gt; identifies the protect facility and is the AID “FACILITY” section on page 4-8.</li> </ul>
Example	Input DLT-FFP-OC3:PETALUMA:FAC-2-1,FAC-1-1:1;
Errors	This message generates all the default errors

### 3.4.15 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.

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.

Section	DLT-USER-SECU Description
Category	Security
Security	Superuser
Related Messages	ACT-USER 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; must be a minimum of six, maximum of ten, alphanumeric and special 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;TID&gt;. For example, if issuing an ACT-USER command using the CTC-entered &lt;UID&gt; that is greater than 10 characters long, TL1 will respond with a DENY (Cannot login) error message.</p>

Section	DLT-USER-SECU Description (continued)
Example	Input DLT-USER-SECU:PETALUMA:CISCO15:123;
Errors	This message generates all the default errors

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

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

Section	ED-<OCN_TYPE> Description
Category	Ports
Security	Provisioning, Superuser
Related Messages	ED-EC1 ED-T1 RTRV-<OCN_TYPE> RTRV-EC1 RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-T1 RTRV-T3

Section	ED-<OCN_TYPE> Description (continued)
Input Format	<p>ED-&lt;OCN_TYPE&gt;:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;:::[DCC=&lt;DCC&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;][:&lt;PST&gt;];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “FACILITY” section on page 4-8</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 4-38</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 4-34</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 4-34</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 4-38</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 4-37</li> <li>• &lt;MODE&gt; identifies an OC-N port mode (e.g. SONET or SDH); valid values for &lt;MODE&gt; are shown in the “OPTICAL_MODE” section on page 4-34</li> <li>• &lt;PST&gt; identifies the primary state of an OC-N port state (e.g. IS or OOS); valid values for &lt;PST&gt; are shown in the “PST” section on page 4-36</li> </ul>
Example	<p>Input</p> <p>ED-OC48:PENNGROVE:FAC-6-1:114:::DCC=Y,SYNCSMSG=Y,SENDDUS=N,PJMON=48,SFBER=1E-4,SDBER=1E-6,MODE=SONET:IS;</p>
Errors	This message generates all the default errors

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

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, E100T, and E1000 cards do not support path trace.

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

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

**Note**

Use ED-<STS\_PATH>:[<TID>]:<AID>:<CTAG>::TACC=0;; to remove a TAP. If a TAP is not removed the STS bandwidth will be stranded.

**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.

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, Superuser
Related Messages	ED-VT1 RTRV-PTHTRC-<STS_PATH> RTRV-<STS_PATH> RTRV-VT1
Input Format	<p>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>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “STS” section on page 4-9</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 4-38</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 4-37</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 4-34 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 4-37 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 4-45</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.</li> </ul>
Example	<p>Input</p> <pre>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;</pre>
Errors	This message generates all the default errors

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

This command edits the BITS reference attributes.

Section	ED-BITS Description
Category	Synchronization
Security	Provisioning, Superuser
Related Messages	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
Input Format	ED-BITS:[<TID>]:<AID>:<CTAG>:::[LINECDE=<LINECDE>], [FMT=<FMT>],[SYNCMSG=<SYNCMSG>][:<PST>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “BITS” section on page 4-7</li> <li>• &lt;LINECDE&gt; is the line code; valid values for &lt;LINECDE&gt; are shown in the “LINE_CODE” section on page 4-26</li> <li>• &lt;FMT&gt; is the frame format; valid values for &lt;FMT&gt; are shown in the “FRAME_FORMAT” section on page 4-26</li> <li>• &lt;SYNCMSG&gt; indicates if this BITS facility supports synchronization status messaging; &lt;SYNCMSG&gt; defaults to on (Y) and valid values are shown in the “ON_OFF” section on page 4-34</li> <li>• &lt;PST&gt; is the state; valid values for &lt;PST&gt; are shown in the “PST” section on page 4-36</li> </ul>
Example	Input ED-BITS:SONOMA:BITS-2:779:::LINECDE=AMI,FMT=ESF, SYNCMSG=Y:IS;
Errors	This message generates all the default errors

## 3.4.19 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, Superuser
Related Messages	RTRV-BLSR
Input Format	<p>ED-BLSR:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&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 4-7 (the AID “ALL” is not allowed for edition BLSR)</li> <li>• &lt;RVRTV&gt; identifies the revertive mode and valid values are shown in the “ON_OFF” section on page 4-34</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 4-37</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 4-34</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 4-37</li> </ul>
Example	<p>Input</p> <p>ED-BLSR:PETALUMA:BLSR-2:123:::RVRTV=Y,RVTM=2.0,SRVRTV=Y, SRVTM=5.0;</p>
Errors	This message generates all the default errors

### 3.4.20 ED-DAT: Edit Date and Time

This command edits the date and the time

Section	ED-DAT Description
Category	System
Security	Superuser
Related Messages	ALM-MSG-ALL ED-NE-GEN INH-MSG-ALL INIT-SYS RTRV-HDR RTRV-INV RTRV-NE-GEN RTRV-NE-IPMAP 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>
Example	Input ED-DAT:CISCO::1234::99-12-21,14-35-15;
Errors	This message generates all the default errors

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

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, Superuser
Related Messages	RTRV-DS1



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 4-8</li> <li>• &lt;TACC&gt; defines the DS1 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.</li> </ul>
Example	Input ED-DS1:PETALUMA:DS1-2-6-12:123:::TACC=8;
Errors	This message generates all the default errors

### 3.4.22 ED-EC1: Edit Electrical Carrier

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, Superuser
Related Messages	ED-<OCN_TYPE> ED-T1 ED-T3 RTRV-<OCN_TYPE> RTRV-EC1 RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-T1 RTRV-T3
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 4-8</li> <li>• &lt;PJMON&gt; is the SONET pointer number (0 or 1) of an EC1 port and is an integer</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 4-21</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 4-36</li> </ul>

Section	ED-EC1 Description (continued)
Example	Input ED-EC1:CISCO:FAC-1-1:123::PJMON=0,LBO=0-225:IS;
Errors	This message generates all the default errors

### 3.4.23 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. Editing RVTM (revertive time) when RVRTV (revertive mode) = N for 1:1 protection.
5. Failed to remove, currently switched to protect.

Section	ED-EQPT Description																
Category	Equipment																
Security	Provisioning, Superuser																
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>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> <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	ENT-EQPT	RTRV-EQPT	INH-SWDX-EQPT	SW-DX-EQPT	INH-SWTOPROTN-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																
ENT-EQPT	RTRV-EQPT																
INH-SWDX-EQPT	SW-DX-EQPT																
INH-SWTOPROTN-EQPT	SW-TOPROTN-EQPT																
INH-SWTOWKG-EQPT	SW-TOWKG-EQPT																
Input Format	<p>ED-EQPT:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;:::[PROTID=&lt;PROTID&gt;], [PRTYPE=&lt;PRTYPE&gt;],[RVRTV=&lt;RVRTV&gt;],[RVTM=&lt;RVTM&gt;][:];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “EQPT” section on page 4-8</li> <li>• &lt;PROTID&gt; is the protecting card slot number of the protection group. &lt;PROTID&gt; accepts Slot 1, 3, 5, 13, 15, and 17 for 1:1 and Slot 3, and 15 for 1:N protection. &lt;PROTID&gt; is the AID from the “PR SLOT” section on page 4-7</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 4-35</li> <li>• &lt;RVRTV&gt; is the revertive mode; valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-34</li> <li>• &lt;RVTM&gt; is the revertive time; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-37</li> </ul>																
Example	<p>Input</p> <p>ED-EQPT:CISCO:SLOT-2:123:::PROTID=SLOT-1,PRTYPE=1-1,RVRTV=Y, RVTM=9.0;</p>																
Errors	This message generates all the default errors																

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

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, Superuser

Section	ED-FFP-<OCN_TYPE> Description (continued)
Related Messages	DLT-FFP-<OCN_TYPE> ENT-FFP-<OCN_TYPE> OPR-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<OCN_TYPE> RTRV-FFP-<OCN_TYPE>
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 “<a href="#">FACILITY</a>” section on page 4-8</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 “<a href="#">ON_OFF</a>” section on page 4-34</li> <li>• &lt;RVTM&gt; identifies a revertive time; valid values for &lt;RVTM&gt; are shown in the “<a href="#">REVERTIVE_TIME</a>” section on page 4-37</li> <li>• &lt;PSDIRN&gt; identifies the switching mode; valid values for &lt;PSDIRN&gt; are shown in the “<a href="#">UNI_BI</a>” section on page 4-45</li> </ul>
Example	Input 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

### 3.4.25 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.

Section	ED-NE-GEN Description
Category	System
Security	Superuser

Section	ED-NE-GEN Description (continued)
Related Messages	ALW-MSG-ALL ED-DAT ED-NE-SYNCN INH-MSG-ALL INIT-SYS RTRV-HDR RTRV-INV RTRV-NE-GEN RTRV-NE-IPMAP RTRV-NE-SYNCN RTRV-TOD SET-TOD
Input Format	ED-NE-GEN:[<TID>]::<CTAG>:::[NAME=<NAME>],[IPADDR=<IPADDR>],[IPMASK=<IPMASK>],[DEFRTR=<DEFRTR>]; 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;DEFRTR&gt; indicates the node default router and is a string</li> </ul>
Example	Input ED-NE-GEN:CISCO::123:::NAME=NODENAME,IPADDR=192.168.100.52,IPMASK=255.255.255.0,DEFRTR=192.168.100.1;
Errors	This message generates all the default errors

### 3.4.26 ED-NE-SYNCN: 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 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-SYNCN Description
Category	Synchronization
Security	Provisioning, Superuser

Section	ED-NE-SYNCN Description (continued)
Related Messages	ED-BITS 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
Input Format	ED-NE-SYNCN:[<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 <a href="#">“TIMING_MODE” section on page 4-44</a></li> <li>• &lt;SSMGEN&gt; is the SSM message set; valid values for &lt;SSMGEN&gt; are shown in the <a href="#">“SYNC_GENERATION” section on page 4-42</a></li> <li>• &lt;QRES&gt; is the quality of the RES; valid values for &lt;QRES&gt; are shown in the <a href="#">“SYNC_QUALITY_LEVEL” section on page 4-42</a></li> <li>• &lt;RVRTV&gt; is the revertive mode; valid values for &lt;RVRTV&gt; are shown in the <a href="#">“ON_OFF” section on page 4-34</a></li> <li>• &lt;RVTM&gt; is the revertive time; valid values for &lt;RVTM&gt; are shown in the <a href="#">“REVERTIVE_TIME” section on page 4-37</a></li> </ul>
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

## 3.4.27 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, Superuser
Related Messages	ACT-USER CANC-USER DLT-USER-SECU ED-USER-SECU ENT-USER-SECU REPT EVT SECU
Input Format	<p>ED-PID:[&lt;TID&gt;]:&lt;UID&gt;:&lt;CTAG&gt;::&lt;OLDPID&gt;,&lt;NEWPID&gt;;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;UID&gt; is the user identifier and is a string; &lt;UID&gt; must be a minimum of six, maximum of ten, alphanumeric and special characters; +, #, %.</li> <li>• &lt;OLDPID&gt; is the old password and is a string.</li> <li>• &lt;NEWPID&gt; is the user login password and is a string; &lt;NEWPID&gt; must be a minimum of six, maximum of ten, alphanumeric and special characters; +, #, % where at least two characters are non-alphabetic and at least one character is a 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;TID&gt;. For example, if issuing an ACT-USER command using the CTC-entered &lt;UID&gt; that is greater than 10 characters long, TL1 will respond with a DENY (Cannot login) error message.</p>
Example	<p>Input</p> <p>ED-PID:CISCO:UID:123::OLDPID,NEWPID;</p>
Errors	This message generates all the default errors

## 3.4.28 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, Superuser
Related Messages	ED-BITS ED-NE-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
Input Format	ED-SYNCN:[<TID>]:<AID>:<CTAG>:::[PRI=<PRI>],[SEC=<SEC>],[THIRD=<THIRD>][:]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the synchronization reference to be modified and is from the <a href="#">“SYNC_REF” section on page 4-10</a></li> <li>• &lt;PRI&gt; is the primary reference of the synchronization and is the AID from the <a href="#">“SYN_SRC” section on page 4-10</a></li> <li>• &lt;SEC&gt; is the secondary reference of the synchronization and is the AID from the <a href="#">“SYN_SRC” section on page 4-10</a></li> <li>• &lt;THIRD&gt; is the third reference of the synchronization and is the AID from the <a href="#">“SYN_SRC” section on page 4-10</a></li> </ul>
Example	Input ED-SYNCN:BOYES:SYNC-NE:112:::PRI=INTERNAL,SEC=INTERNAL,THIRD=INTERNAL;
Errors	This message generates all the default errors



## 3.4.29 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, Superuser
Related Messages	ED-<OCN_TYPE> ED-EC1 ED-T3 RTRV-<OCN_TYPE> RTRV-EC1 RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-T1 RTRV-T3
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 <a href="#">“FACILITY” section on page 4-8</a></li> <li>• &lt;LINECDE&gt; is the line coding; valid values for &lt;LINECDE&gt; are shown in the <a href="#">“LINE_CODE” section on page 4-26</a></li> <li>• &lt;FMT&gt; is the frame format; valid values for &lt;FMT&gt; are shown in the <a href="#">“FRAME_FORMAT” section on page 4-26</a></li> <li>• &lt;LBO&gt; is the line build out; valid values for &lt;LBO&gt; are shown in the <a href="#">“LINE_BUILDOUT” section on page 4-26</a></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 <a href="#">“PST” section on page 4-36</a></li> </ul>
Example	Input 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

### 3.4.30 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. Sending this command to edit FMT, or Line code on an unsupported card will return an IDNV error message.
4. 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.
5. Editing TACC via an ED-xxx command is only allowed when there is no circuit/cross connection on this port. Otherwise, and error message (VT in Use) will be returned.
6. TACC creation will also be denied on the protect ports/cards.

Section	ED-T3 Description
Category	Ports
Security	Provisioning, Superuser
Related Messages	ED-<OCN_TYPE> ED-EC1 ED-T1 RTRV-<OCN_TYPE> RTRV-EC1 RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-T1 RTRV-T3
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 <a href="#">“FACILITY” section on page 4-8</a></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 <a href="#">“DS_LINE_TYPE” section on page 4-20</a></li> <li>• &lt;LINECDE&gt; is the line code; valid values for &lt;LINECDE&gt; are shown in the <a href="#">“DS_LINE_CODE” section on page 4-20</a></li> <li>• &lt;LBO&gt; is the line buildout; valid values for &lt;LBO&gt; are shown in the <a href="#">“E_LBO” section on page 4-21</a></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 primary state; valid values for &lt;PST&gt; are shown in the <a href="#">“PST” section on page 4-36</a></li> </ul>

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

### 3.4.31 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.

Notes:

1. If the password is changed with this command, the password should be blanked out in the TL1 log.
2. You must use the ED-USER-SECU command to change the empty password (Superuser CISCO15 default humpy 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-USER-SECU Description
Category	Security
Security	Superuser
Related Messages	ACT-USER CANC-USER DLT-USER-SECU ED-PID ENT-USER-SECU REPT EVT SECU

Section	ED-USER-SECU Description (continued)
Input Format	<p>ED-USER-SECU:[&lt;TID&gt;]:&lt;UID&gt;:&lt;CTAG&gt;::&lt;NEWUID&gt;,&lt;NEWPID&gt;,,&lt;UAP&gt;;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;UID&gt; is the user identifier and is a string; &lt;UID&gt; must be a minimum of six, maximum of ten, alphanumeric and special characters; +, #, %.</li> <li>• &lt;NEWUID&gt; is the new user identifier and is a string. The &lt;NEWUID&gt; must be a minimum of six, maximum of ten, alphanumeric and special characters; +, #, %.</li> <li>• &lt;NEWPID&gt; is the new password. The &lt;NEWPID&gt; must be a minimum of six, maximum of ten, alphanumeric and special characters; +, #, % where at least two characters are non-alphabetic and at least one character is a special character (+, #, or %).</li> <li>• &lt;UAP&gt; is the user access privilege; valid values for &lt;UAP&gt; are shown in the <a href="#">“PRIVILEGE” section on page 4-35</a></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;TID&gt;. For example, if issuing an ACT-USER command using the CTC-entered &lt;UID&gt; that is greater than 10 characters long, TL1 will respond with a DENY (Cannot login) error message.</p>
Example	<p>Input</p> <p>ED-USER-SECU:PETALUMA:CISCO15:123::NEWUID,NEWPID,,MAINT;</p>
Errors	This message generates all the default errors

### 3.4.32 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 VT and changes it to a test access path. The command assigns another VT as part of the same TAP for the second connection. The second VT is arrived at by incrementing the VT group by one and keeping the VT number the same.

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, 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, Superuser
Related Messages	ED-<STS_PATH> RTRV-PTHTRC-<STS_PATH> RTRV-<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 4-11 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 4-34 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 4-37</li> <li>• &lt;TACC&gt; defines the VT 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.</li> </ul>
Example	Input  ED-VT1:CISCO:VT1-4-2-1-3:230:::TACC=8; to create a TAP, or ED-VT1:CISCO:VT1-4-2-1-3:230:::RVRTV=Y,RVTM=1.0; to edit UPSR cross-connects.
Errors	This message generates all the default errors

### 3.4.33 ENT-CRS-<STS\_PATH>: Enter Cross Connect (STS1, STS3C, STS6C, STS12C, STS48C, STS192C)

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}:[<]:f1&f2,s1&s2::2WAY;
```

5. All a&b AIDs in the TL1 cross connection command are in the format of WorkingAid&ProtectAid.

Section	ENT-CRS- <b>&lt;STS_PATH&gt;</b> Description
Category	Cross Connection
Security	Provisioning, Superuser
Related Messages	DLT-CRS- <b>&lt;STS_PATH&gt;</b> DLT-CRS-VT1 ENT-CRS-VT1 RTRV-CRS- <b>&lt;STS_PATH&gt;</b> RTRV-CRS-VT1
Input Format	ENT-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>[&lt;CCT&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 and is the AID from the “STS” section on page 4-9</li> <li>• <b>&lt;TO&gt;</b> indicates an identifier at the other end of the STS cross connection and is the AID from the “STS” section on page 4-9</li> <li>• <b>&lt;CCT&gt;</b> identifies the cross connection type; valid values for <b>&lt;CCT&gt;</b> are shown in the “CCT” section on page 4-15</li> </ul>
Example	Input ENT-CRS-STS1:BODEGA:STS-5-1,STS-12-5:116::2WAY;
Errors	This message generates all the default errors

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

This command creates a VT1 cross connect.

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.

Section	ENT-CRS-VT1 Description
Category	Cross Connection
Security	Provisioning, Superuser
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 4-11</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 4-11</li> <li>• &lt;CCT&gt; identifies the cross connection type; valid values for &lt;CCT&gt; are shown in the “CCT” section on page 4-15</li> </ul>

Section	ENT-CRS-VT1 Description (continued)
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

### 3.4.35 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 port and path attributes.

The command supports optional parameters RVTM (revertive time), RVRTV (revertive behavior), PROTID (unique protection id) and PRTYPE (protection type) for configuring the card in an equipment protection group. PRTYPE 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,PRTYPE=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,PRTYPE=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,PRTYPE=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,PRTYPE=1-N,RVTM=5.0;
```

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.
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, Superuser	
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 4-8</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 4-25</li> <li>• &lt;PROTID&gt; is the protecting card slot identifier of the protection group and is the AID from the “PR SLOT” section on page 4-7</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 4-35</li> <li>• valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-34</li> <li>• &lt;RVTM&gt; is the revertive time; valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-37</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

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

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, Superuser
Related Messages	DLT-FFP-<OCN_TYPE> ED-FFP-<OCN_TYPE> OPR-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<OCN_TYPE> RTRV-FFP-<OCN_TYPE>

Section	ENT-FFP-<OCN_TYPE> Description (continued)
Input Format	<p>ENT-FFP-&lt;OCN_TYPE&gt;:[&lt;TID&gt;]:&lt;WORK&gt;,&lt;PROTECT&gt;:            &lt;CTAG&gt;:::[PROTID=&lt;PROTID&gt;],[RVRTV=&lt;RVRTV&gt;],[RVTM=&lt;RVTM&gt;],            [PSDIRN=&lt;PSDIRN&gt;][:];</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;WORK&gt; identifies a working port and is the AID from the “FACILITY” section on page 4-8</li> <li>• &lt;PROTECT&gt; identifies a protection port and is the AID from the “FACILITY” section on page 4-8</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</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 4-34</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 4-37</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 4-45</li> </ul>
Example	<p>Input</p> <pre>ENT-FFP-OC3:PETALUMA:FAC-2-1,FAC-1-1:1:::PROTID=PROT_NAME, RVRTV=Y,RVTM=1.0,PSDIRN=BI;</pre>
Errors	This message generates all the default errors

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



#### Note

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.

This command adds a user account. Only a Superuser may 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.

Section	ENT-USER-SECU Description
Category	Security
Security	Superuser
Related Messages	ACT-USER CANC-USER DLT-USER-SECU ED-PID ED-USER-SECU REPT EVT SECU
Input Format	<p>ENT-USER-SECU:[&lt;TID&gt;]:&lt;UID&gt;:&lt;CTAG&gt;::&lt;PID&gt;,,&lt;UAP&gt;;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;UID&gt; is the user identifier and is a string; &lt;UID&gt; must be a minimum of six, maximum of ten, alphanumeric and special characters; +, #, %.</li> <li>• &lt;PID&gt; is the user login password and is a string; &lt;PID&gt; must be a minimum of six, maximum of ten, alphanumeric and special characters; +, #, % where at least two characters are non-alphabetic and at least one character is a 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;TID&gt;. For example, if issuing an ACT-USER command using the CTC-entered &lt;UID&gt; that is greater than 10 characters long, TL1 will respond with a DENY (Cannot login) error message.</p> <ul style="list-style-type: none"> <li>• &lt;UAP&gt; is the user access privilege value; valid values for &lt;UAP&gt; are shown in the <a href="#">“PRIVILEGE” section on page 4-35</a></li> </ul>
Example	<p>Input</p> <p>ENT-USER-SECU:PETALUMA:CISCO15:123::PSWD,,MAINT;</p>
Errors	This message generates all the default errors

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

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, Provisioning, Superuser
Related Messages	OPR-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<OCN_TYPE> RTRV-BLSR
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 4-8.</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 4-42.</li> </ul>
Example	Input EX-SW-OC48:CISCO:FAC-12-1:204::SPAN;
Errors	This message generates all the default errors

### 3.4.39 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 returned.

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

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

This command instructs the NE to inhibit automatic or manual switching on a system containing duplex equipment. Use the ALW-SWDX-EQPT 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	Retrieve, Maintenance, Provisioning, Superuser

Section	INH-SWDX-EQPT Description (continued)
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 REPT SW 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 <a href="#">“EQPT” section on page 4-8</a></li> </ul>
Example	Input INH-SWDX-EQPT:CISCO:SLOT-1:1234;
Errors	This message generates all the default errors

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

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	Retrieve, Maintenance, Provisioning, Superuser																		
Related Messages	<table border="0"> <tr> <td>ALW-SWDX-EQPT</td> <td>REPT EVT EQPT</td> </tr> <tr> <td>ALW-SWTOPROTN-EQPT</td> <td>REPT SW</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> <tr> <td>REPT ALM EQPT</td> <td></td> </tr> </table>	ALW-SWDX-EQPT	REPT EVT EQPT	ALW-SWTOPROTN-EQPT	REPT SW	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	REPT ALM EQPT	
ALW-SWDX-EQPT	REPT EVT EQPT																		
ALW-SWTOPROTN-EQPT	REPT SW																		
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																		
REPT ALM EQPT																			
Input Format	<p>INH-SWTOPROTN-EQPT:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;[::&lt;DIRN&gt;];</p> <p>where:</p> <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 <a href="#">“EQPT” section on page 4-8</a></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 <a href="#">DIRECTION, page 19</a></li> </ul>																		
Example	<p>Input</p> <p>INH-SWTOPROTN-EQPT:CISCO:SLOT-2:123::BTH;</p>																		
Errors	This message generates all the default errors																		



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

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 lockout 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 INHSWWKG 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 INHSWPR, 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 INHSWPR, 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 SNVS (Status, Not in Valid State) 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	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	ALW-SWDX-EQPT REPT EVT EQPT ALW-SWTOPROTN-EQPT REPT SW 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 REPT ALM EQPT
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 4-8</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 19</li> </ul>
Example	Input INH-SWTOWKG-EQPT:CISCO:SLOT-2:123::BTH;
Errors	This message generates all the default errors

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

This command initializes the performance monitoring (PM) registers.

Section	INIT-REG-<MOD2> Description
Category	Performance
Security	Maintenance, Provisioning, Superuser
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>],[<TMPER>],; where: <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</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 4-26</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 4-45. A null value of &lt;TMPER&gt; defaults to 15-MIN.</li> </ul>
Example	Input INIT-REG-OC3:CISCO:FAC-1-1:1234::,;NEND,,15-MIN,;
Errors	This message generates all the default errors

### 3.4.44 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, Provisioning, Superuser
Related Messages	ALW-MSG-ALL ED-DAT ED-NE-GEN INH-MSG-ALL RTRV-HDR RTRV-INV RTRV-NE-GEN RTRV-NE-IPMAP RTRV-TOD 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 4-8</li> </ul>

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

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

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

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 a RLS-EXT-CONT command might not produce any contact state change.
3. If sending the OPR-EXT-CONT command to operate an external control with CONTS duration, the CONSTATE will be changed to the CLOSE state with CONTS duration, which can be retrieved in RTRV-EXT-CONT command.

Section	OPR-EXT-CONT Description
Category	Environmental Alarms and Controls
Security	Maintenance, Provisioning, Superuser
Related Messages	REPT ALM 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
Input Format	OPR-EXT-CONT:[<TID>]:<AID>:<CTAG>::[<CONTTYPE>],[<DUR>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ENV” section on page 4-8 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 4-19</li> <li>• &lt;DUR&gt; is the duration of the external control release, it is not supported and a null value defaults to CONTS; valid values for &lt;DUR&gt; are shown in the “DURATION” section on page 4-21</li> </ul>
Example	Input OPR-EXT-CONT:CISCO:ENV-OUT-2:123::AIRCOND,CONTS;
Errors	This message generates all the default errors

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

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, Provisioning, Superuser
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 4-27</li> </ul>
Example	Input OPR-LPBK-DS1:PTREYES:DS1-4-2-13:203::,FACILITY;
Errors	This message generates all the default errors

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

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 view current PROTNSW operation on a facility in a two-fiber BLSR configuration, you need to issue two separate commands; RTRV-BLSR and RTRV-COND-ALL. RTRV-BLSR determines the facility for EASTWORK and WESTWORK, for example:

```
RTRV-BLSR:::C0;
RTRV-BLSR:::C0; IP C0
<
  vadv-o7 1970-01-01 19:10:39
M C3 COMPLD
  "BLSR-45::RINGID=45,NODEID=1,MODE=2F,RVRTV=Y,RVTM=5.0,EASTWORK=FAC-13-1,
  WESTWORK=FAC-12-1,"
;
```

From the East or West facilities, you can determine the actual facilities, for example, using RTRV-COND-ALL:::C4, you can see the available PROTNSW operate status for the facilities:

```
RTRV-COND-ALL:::C4;
RTRV-COND-ALL:::C4; IP C4
<
  vadv-07 1970-01-01 19:12:59
M C4 COMPLD
  "FAC-13-1,OC48:NA,RING-SW-EAST ,NSA,,,,,\"Ring Switch is active on the East Side\"
  "FAC-12-1,OC48:NA,FORCED-REQ-RING,NSA,,,,,\"Force switch request on ring\"
  "FAC-13-1,OCN48:NA,MANUAL-REQ-RING,NSA,,,,,\"Manual switch request on Ring\"
;
```

In above examples, through RTRV-COND-ALL, you will know that FAC-12-1 and FAC-13-1 have PRTNSW status FORCED-REQ-RING and MANUAL-REQ-RING.

Section	OPR-PROTNSW-<OCN_TYPE> Description
Category	SONET Line Protection
Security	Maintenance, Provisioning, Superuser
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 4-8</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 4-41</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 4-42</li> </ul>
Example	Input OPR-PROTNSW-OC48:CHICKALUMA:FAC-6-1:204::LOCKOUT,SPAN;
Errors	This message generates all the default errors

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

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. Sending this command on the Drop AID, a DENY (Invalid AID, should use working/protect AID) message will be returned.

Section	OPR-PROTNSW-<STS_PATH> Description
Category	UPSR Switching
Security	Maintenance, Provisioning, Superuser

Section	OPR-PROTNSW-<STS_PATH> Description (continued)
Related Messages	OPR-PROTNSW-VT1 REPT SW RLS-PROTNSW-<STS_PATH> RLS-PROTNSW-VT1
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 4-9</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 4-41</li> </ul>
Example	Input OPR-PROTNSW-ST51:CISCO:STS-2-1:123::MAN;
Errors	This message generates all the default errors

### 3.4.49 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. Sending this command on the Drop AID, a DENY (Invalid AID, should use working/protect AID) message will be returned.

Section	OPR-PROTNSW-VT1 Description
Category	UPSR Switching
Security	Maintenance, Provisioning, Superuser
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 4-11</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 4-41</li> </ul>



Section	OPR-PROTNSW-VT1 Description (continued)
Example	Input OPR-PROTNSW-VT1:CISCO:VT1-5-2-4-1:123::MAN;
Errors	This message generates all the default errors

### 3.4.50 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, Provisioning, Superuser														
Related Messages	<table border="0"> <tr> <td>ED-BITS</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>ED-NE-SYCN</td> <td>RTRV-ALM-SYCN</td> </tr> <tr> <td>ED-SYCN</td> <td>RTRV-BITS</td> </tr> <tr> <td>RLS-SYNCNSW</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-COND-SYCN</td> </tr> <tr> <td>REPT ALM SYCN</td> <td>RTRV-NE-SYCN</td> </tr> <tr> <td>REPT EVT SYCN</td> <td>RTRV-SYCN</td> </tr> </table>	ED-BITS	RTRV-ALM-BITS	ED-NE-SYCN	RTRV-ALM-SYCN	ED-SYCN	RTRV-BITS	RLS-SYNCNSW	RTRV-COND-BITS	REPT ALM BITS	RTRV-COND-SYCN	REPT ALM SYCN	RTRV-NE-SYCN	REPT EVT SYCN	RTRV-SYCN
ED-BITS	RTRV-ALM-BITS														
ED-NE-SYCN	RTRV-ALM-SYCN														
ED-SYCN	RTRV-BITS														
RLS-SYNCNSW	RTRV-COND-BITS														
REPT ALM BITS	RTRV-COND-SYCN														
REPT ALM SYCN	RTRV-NE-SYCN														
REPT EVT SYCN	RTRV-SYCN														
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 “<a href="#">SYNC_REF</a>” section on page 4-10. 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 “<a href="#">SYNCSW</a>” section on page 4-11</li> </ul>														
Example	Input OPR-SYNCNSW:CISCO:SYNC-NE:3::PRI;														
Errors	This message generates all the default errors														

### 3.4.51 REPT ALM <MOD2ALM>: Report Alarm (DS1, E100, E1000, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS12C, STS48C, STS192C, T1, T3, VT1)

Reports an alarm condition against a facility or a path.

Section	REPT ALM <MOD2ALM> Description														
Category	Fault														
Security	Retrieve, Maintenance, Provisioning, Superuser														
Related Messages	<table border="0"> <tr> <td>REPT ALM BITS</td> <td>REPT EVT EQPT</td> </tr> <tr> <td>REPT ALM COM</td> <td>REPT EVT RING</td> </tr> <tr> <td>REPT ALM ENV</td> <td>REPT EVT SECU</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>REPT EVT SYNCN</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-ALM-ALL</td> </tr> <tr> <td>REPT EVT &lt;MOD2ALM&gt;</td> <td>RTRV-COND-ENV</td> </tr> </table>	REPT ALM BITS	REPT EVT EQPT	REPT ALM COM	REPT EVT RING	REPT ALM ENV	REPT EVT SECU	REPT ALM EQPT	REPT EVT SYNCN	REPT ALM RING	RTRV-ALM-<MOD2ALM>	REPT ALM SYNCN	RTRV-ALM-ALL	REPT EVT <MOD2ALM>	RTRV-COND-ENV
REPT ALM BITS	REPT EVT EQPT														
REPT ALM COM	REPT EVT RING														
REPT ALM ENV	REPT EVT SECU														
REPT ALM EQPT	REPT EVT SYNCN														
REPT ALM RING	RTRV-ALM-<MOD2ALM>														
REPT ALM SYNCN	RTRV-ALM-ALL														
REPT EVT <MOD2ALM>	RTRV-COND-ENV														
Output Format	<p>SID DATE TIME  ** ATAG REPT ALM &lt;MOD2ALM&gt;  “&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,,,,:[&lt;CONDDDESCR&gt;],  [&lt;AIDDET&gt;]”  ;  where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier</li> <li>• &lt;NTFCNCDE&gt; indicates a 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the <a href="#">“NOTIF_CODE” section on page 4-32</a></li> <li>• &lt;CONDTYPE&gt; indicates an alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a></li> <li>• &lt;CONDDDESCR&gt; is the condition description; conddescr is a string and is optional</li> <li>• &lt;AIDDET&gt; specifies the AID type; valid values for &lt;AIDDET&gt; are shown in the <a href="#">“EQPT_TYPE” section on page 4-23</a>, &lt;AIDDET&gt; is optional</li> </ul>														
Example	<p>Output</p> <pre>TID-000 98-06-20 14:30:00 ** 001 REPT ALM OC12 “FAC-2-1:MJ,LOS,SA,,,,:\”LOSS OF SIGNAL\”,OC12” ;</pre>														

## 3.4.52 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, Maintenance, Provisioning, Superuser																		
Related Messages	<table border="0"> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>REPT EVT RING</td> </tr> <tr> <td>REPT ALM COM</td> <td>REPT EVT SECU</td> </tr> <tr> <td>REPT ALM ENV</td> <td>REPT EVT SYNCN</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RLS-SYNCNSW</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-ALM-ALL</td> </tr> <tr> <td>REPT EVT &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>REPT EVT BITS</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT EVT EQPT</td> <td>RTRV-COND-ENV</td> </tr> </table>	REPT ALM <MOD2ALM>	REPT EVT RING	REPT ALM COM	REPT EVT SECU	REPT ALM ENV	REPT EVT SYNCN	REPT ALM EQPT	RLS-SYNCNSW	REPT ALM RING	RTRV-ALM-<MOD2ALM>	REPT ALM SYNCN	RTRV-ALM-ALL	REPT EVT <MOD2ALM>	RTRV-ALM-BITS	REPT EVT BITS	RTRV-COND-ALL	REPT EVT EQPT	RTRV-COND-ENV
REPT ALM <MOD2ALM>	REPT EVT RING																		
REPT ALM COM	REPT EVT SECU																		
REPT ALM ENV	REPT EVT SYNCN																		
REPT ALM EQPT	RLS-SYNCNSW																		
REPT ALM RING	RTRV-ALM-<MOD2ALM>																		
REPT ALM SYNCN	RTRV-ALM-ALL																		
REPT EVT <MOD2ALM>	RTRV-ALM-BITS																		
REPT EVT BITS	RTRV-COND-ALL																		
REPT EVT EQPT	RTRV-COND-ENV																		
Output Format	<pre>SID DATE TIME ** ATAG REPT ALM BITS "&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,;,;:[&lt;CONDDDESCR&gt;]" ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the <a href="#">"BITS" section on page 4-7</a></li> <li>• &lt;NTFCNCDE&gt; identifies a 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the <a href="#">"NOTIF_CODE" section on page 4-32</a></li> <li>• &lt;CONDTYPE&gt; indicates an alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the <a href="#">"CONDITION" section on page 4-16</a></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 <a href="#">"SERV_EFF" section on page 4-38</a></li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul> </pre>																		
Example	<pre>Output TID-000 98-06-20 14:30:00 ** 001 REPT ALM BITS "BITS-1:MJ,SYNC,SA,,;,\\"LOSS OF TIMING\\"" ;</pre>																		

### 3.4.53 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, Maintenance, Provisioning, Superuser
Related Messages	REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM ENV REPT ALM EQPT REPT ALM SYNCN REPT EVT SECU REPT EVT <MOD2ALM> REPT EVT EQPT REPT EVT SYNCN RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-COND-ALL RTRV-COND-ENV
Output Format	SID DATE TIME ** ATAG REPT ALM COM “[<AID>]:<NTFCNCDE>,<CONDTYPE>,<SRVEFF>,;,;:[<CONDDDESCR>]” ; 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 “<a href="#">NOTIF_CODE</a>” section on page 4-32</li> <li>• &lt;CONDTYPE&gt; indicates an alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “<a href="#">CONDITION</a>” section on page 4-16</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 “<a href="#">SERV_EFF</a>” section on page 4-38</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>
Example	Output TID-000 98-06-20 14:30:00 ** 001 REPT ALM COM “COM:MJ,FAN,NSA,;,;:\”FAN FAILURE\”” ;

### 3.4.54 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, Maintenance, Provisioning, Superuser
Related Messages	REPT ALM <MOD2ALM> REPT ALM COM REPT ALM EQPT REPT ALM SYNCN REPT EVT <MOD2ALM> REPT EVT ENV REPT EVT EQPT REPT EVT SECU REPT EVT SYNCN RTRV-ALM-ALL RTRV-COND-ALL RTRV-COND-ENV
Output Format	<pre> SID DATE TIME ** ATAG REPT ALM ENV "&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;ALMTYPE&gt;,,[&lt;ALMMSG&gt;]" ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies an environmental input and is from the "ENV" section on page 4-8</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 4-32</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 4-21</li> <li>• &lt;ALMMSG&gt; is the alarm message; almsg is a string and is optional</li> </ul> </pre>
Example	<pre> Output TID-000 98-06-20 14:30:00 ** 001 REPT ALM ENV "ENV-IN-1:MJ,OPENDR,,\"OPEN DOOR\"" ; </pre>

### 3.4.55 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, Maintenance, Provisioning, Superuser																														
Related Messages	<table border="0"> <tr> <td>ALW-SWDX-EQPT</td> <td>REPT EVT &lt;MOD2ALM&gt;</td> </tr> <tr> <td>ALW-SWTOPROTN-EQPT</td> <td>REPT EVT EQPT</td> </tr> <tr> <td>ALW-SWTOWKG-EQPT</td> <td>REPT EVT SYNCN</td> </tr> <tr> <td>DLT-EQPT</td> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>ED-EQPT</td> <td>RTRV-ALM-ALL</td> </tr> <tr> <td>ENT-EQPT</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>INH-SWDX-EQPT</td> <td>RTRV-ALM-ENV</td> </tr> <tr> <td>INH-SWTOPROTN-EQPT</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>INH-SWTOWKG-EQPT</td> <td>RTRV-ALM-SYNCN</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT ALM ENV</td> <td>SW-DX-EQPT</td> </tr> <tr> <td>REPT EVT SECU</td> <td>SW-TOPROTN-EQPT</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>SW-TOWKG-EQPT</td> </tr> </table>	ALW-SWDX-EQPT	REPT EVT <MOD2ALM>	ALW-SWTOPROTN-EQPT	REPT EVT EQPT	ALW-SWTOWKG-EQPT	REPT EVT SYNCN	DLT-EQPT	RTRV-ALM-<MOD2ALM>	ED-EQPT	RTRV-ALM-ALL	ENT-EQPT	RTRV-ALM-BITS	INH-SWDX-EQPT	RTRV-ALM-ENV	INH-SWTOPROTN-EQPT	RTRV-ALM-EQPT	INH-SWTOWKG-EQPT	RTRV-ALM-SYNCN	REPT ALM <MOD2ALM>	RTRV-COND-<MOD2ALM>	REPT ALM BITS	RTRV-COND-ALL	REPT ALM COM	RTRV-COND-ENV	REPT ALM ENV	SW-DX-EQPT	REPT EVT SECU	SW-TOPROTN-EQPT	REPT ALM SYNCN	SW-TOWKG-EQPT
ALW-SWDX-EQPT	REPT EVT <MOD2ALM>																														
ALW-SWTOPROTN-EQPT	REPT EVT EQPT																														
ALW-SWTOWKG-EQPT	REPT EVT SYNCN																														
DLT-EQPT	RTRV-ALM-<MOD2ALM>																														
ED-EQPT	RTRV-ALM-ALL																														
ENT-EQPT	RTRV-ALM-BITS																														
INH-SWDX-EQPT	RTRV-ALM-ENV																														
INH-SWTOPROTN-EQPT	RTRV-ALM-EQPT																														
INH-SWTOWKG-EQPT	RTRV-ALM-SYNCN																														
REPT ALM <MOD2ALM>	RTRV-COND-<MOD2ALM>																														
REPT ALM BITS	RTRV-COND-ALL																														
REPT ALM COM	RTRV-COND-ENV																														
REPT ALM ENV	SW-DX-EQPT																														
REPT EVT SECU	SW-TOPROTN-EQPT																														
REPT ALM SYNCN	SW-TOWKG-EQPT																														
Output Format	<pre>SID DATE TIME ** ATAG REPT ALM EQPT "&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;CONDITION&gt;,&lt;SRVEFF&gt;,;,;:[&lt;CONDDDESCR&gt;], [&lt;AIDDET&gt;]" ;</pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the equipment AID SLOT-{1-17} from the <a href="#">“EQPT” section on page 4-8</a></li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the <a href="#">“NOTIF_CODE” section on page 4-32</a></li> <li>• &lt;CONDITION&gt; is the type of alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a></li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&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 <a href="#">“EQPT_TYPE” section on page 4-23</a>, &lt;AIDDET&gt; is optional</li> </ul>																														
Example	<pre>Output TID-000 98-06-20 14:30:00 ** 001 REPT ALM EQPT “SLOT-7:MJ,CONTR,NSA,;,;\”CONTROLLER FAILURE”,TCC” ;</pre>																														

## 3.4.56 REPT ALM RING: Report Alarm Ring

Reports an alarm condition against a ring object for BLSR.

Section	REPT ALM RING Description
Category	Fault
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM SYNCN REPT EVT SECU REPT EVT <MOD2ALM> REPT EVT RING REPT EVT SYNCN RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-COND-ALL RTRV-COND-ENV
Output Format	<pre> SID DATE TIME A ATAG REPT ALM RING   "&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,;;;[&lt;CONDDDESCR&gt;]" ; </pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies a BLSR ring ID with alarm condition; &lt;AID&gt; is a string.</li> <li>• &lt;NTFCNCDE&gt; indicates a 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the <a href="#">“NOTIF_CODE” section on page 4-32</a></li> <li>• &lt;CONDTYPE&gt; indicates a BLSR ring alarm; valid values for &lt;CONDTYPE&gt; are shown in the <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a></li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>
Example	<pre> Output TID-000 98-06-20 14:30:00 A 001 REPT ALM RING   "RING-999:MJ,PRC-DUPID,SA,,,,;\“DUPLICATE NODE ID\”," ; </pre>

### 3.4.57 REPT ALM SYNCN: Report Alarm Synchronization

Reports an alarm condition against a synchronization reference.

Section	REPT ALM SYNCN Description																								
Category	Synchronization																								
Security	Retrieve, Maintenance, Provisioning, Superuser																								
Related Messages	<table border="0"> <tr> <td>ED-BITS</td> <td>REPT EVT RING</td> </tr> <tr> <td>ED-NE-SYNCN</td> <td>REPT EVT SECU</td> </tr> <tr> <td>ED-SYNCN</td> <td>REPT EVT SYNCN</td> </tr> <tr> <td>OPR-SYNCNSW</td> <td>RLS-SYNCNSW</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-ALL</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-NE-SYNC</td> </tr> <tr> <td>REPT EVT &lt;MOD2ALM&gt;</td> <td>RTRV-SYNCN</td> </tr> <tr> <td>REPT EVT EQPT</td> <td></td> </tr> </table>	ED-BITS	REPT EVT RING	ED-NE-SYNCN	REPT EVT SECU	ED-SYNCN	REPT EVT SYNCN	OPR-SYNCNSW	RLS-SYNCNSW	REPT ALM <MOD2ALM>	RTRV-ALM-ALL	REPT ALM BITS	RTRV-ALM-BITS	REPT ALM COM	RTRV-COND-ALL	REPT ALM ENV	RTRV-COND-BITS	REPT ALM EQPT	RTRV-COND-ENV	REPT ALM RING	RTRV-NE-SYNC	REPT EVT <MOD2ALM>	RTRV-SYNCN	REPT EVT EQPT	
ED-BITS	REPT EVT RING																								
ED-NE-SYNCN	REPT EVT SECU																								
ED-SYNCN	REPT EVT SYNCN																								
OPR-SYNCNSW	RLS-SYNCNSW																								
REPT ALM <MOD2ALM>	RTRV-ALM-ALL																								
REPT ALM BITS	RTRV-ALM-BITS																								
REPT ALM COM	RTRV-COND-ALL																								
REPT ALM ENV	RTRV-COND-BITS																								
REPT ALM EQPT	RTRV-COND-ENV																								
REPT ALM RING	RTRV-NE-SYNC																								
REPT EVT <MOD2ALM>	RTRV-SYNCN																								
REPT EVT EQPT																									
Output Format	<pre>SID DATE TIME ** ATAG REPT ALM SYNCN "&lt;AID&gt;:&lt;NTFCNCDE&gt;,&lt;CONDTYPE&gt;,&lt;SRVEFF&gt;,;,;:[&lt;CONDDDESCR&gt;]" ;</pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies a synchronization reference with alarm condition and is from the <a href="#">“SYNC_REF” section on page 4-10</a></li> <li>• &lt;NTFCNCDE&gt; indicates a 2-letter notification code; valid values for &lt;NTFCNCDE&gt; are shown in the <a href="#">“NOTIF_CODE” section on page 4-32</a></li> <li>• &lt;CONDTYPE&gt; indicates an alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a></li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>																								
Example	<pre>Output TID-000 98-06-20 14:30:00 ** 001 REPT ALM SYNCN “SYNC-NE:MJ,MAN,SA,;,;:\”MANUAL SWITCH\” ;</pre>																								



## 3.4.58 REPT DBCHG: Report Change

Reports an 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, Maintenance, Provisioning, Superuser
Related Messages	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>
Example	<p>Output  TID-000 98-06-20 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>

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

Reports the occurrence of a non-alarmed event.

Section	REPT EVT <MOD2ALM> Description
Category	Fault
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	REPT ALM <MOD2ALM>                      REPT EVT EQPT REPT ALM BITS                                REPT EVT RING REPT ALM COM                                REPT EVT SECU REPT ALM ENV                                REPT EVT SYNCN REPT ALM EQPT                               RTRV-ALM-<MOD2ALM> REPT ALM RING                                RTRV-ALM-ALL REPT ALM SYNCN                              RTRV-COND-ALL
Output Format	SID DATE TIME A ATAG REPT EVT <MOD2ALM> “<AID>:<CONDTYPE>,<CONDEFF>],, [<LOCN>],,<MONVAL>], [<THLEV>],<TMPER>]:<CONDDDESCR>,<AIDDET>” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; indicates an event with the condition type and is from the <a href="#">“ALL” section on page 4-5</a></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 <a href="#">“COND_EFF” section on page 4-16</a>, &lt;CONDEFF&gt; is optional</li> <li>• &lt;LOCN&gt; indicates the location; valid values for &lt;LOCN&gt; are shown in the <a href="#">“LOCATION” section on page 4-26</a>, &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 <a href="#">“TMPER” section on page 4-45</a></li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&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 <a href="#">“EQPT_TYPE” section on page 4-23</a>, &lt;AIDDET&gt; is optional</li> </ul>
Example	Output TID-000 98-06-20 14:30:00 A 001 REPT EVT OC48 “FAC-5-1:WKS WPR,TC,,FEND,,12,13,15-MIN:\”WORKING SWITCH TO PROTECTION”,OC48” ;

## 3.4.60 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, Maintenance, Provisioning, Superuser																								
Related Messages	<table border="0"> <tr> <td>ED-BITS</td> <td>REPT EVT EQPT</td> </tr> <tr> <td>ED-NE-SYCN</td> <td>REPT EVT SECU</td> </tr> <tr> <td>ED-SYCN</td> <td>REPT EVT RING</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RLS-SYCN</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-ALM-SYCN</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-BITS</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-COND-SYCN</td> </tr> <tr> <td>REPT ALM SYCN</td> <td>RTRV-NE-SYCN</td> </tr> <tr> <td>REPT EVT &lt;MOD2ALM&gt;</td> <td>RTRV-SYCN</td> </tr> <tr> <td>REPT EVT ENV</td> <td></td> </tr> </table>	ED-BITS	REPT EVT EQPT	ED-NE-SYCN	REPT EVT SECU	ED-SYCN	REPT EVT RING	REPT ALM <MOD2ALM>	RLS-SYCN	REPT ALM BITS	RTRV-ALM-BITS	REPT ALM COM	RTRV-ALM-SYCN	REPT ALM ENV	RTRV-BITS	REPT ALM EQPT	RTRV-COND-BITS	REPT ALM RING	RTRV-COND-SYCN	REPT ALM SYCN	RTRV-NE-SYCN	REPT EVT <MOD2ALM>	RTRV-SYCN	REPT EVT ENV	
ED-BITS	REPT EVT EQPT																								
ED-NE-SYCN	REPT EVT SECU																								
ED-SYCN	REPT EVT RING																								
REPT ALM <MOD2ALM>	RLS-SYCN																								
REPT ALM BITS	RTRV-ALM-BITS																								
REPT ALM COM	RTRV-ALM-SYCN																								
REPT ALM ENV	RTRV-BITS																								
REPT ALM EQPT	RTRV-COND-BITS																								
REPT ALM RING	RTRV-COND-SYCN																								
REPT ALM SYCN	RTRV-NE-SYCN																								
REPT EVT <MOD2ALM>	RTRV-SYCN																								
REPT EVT ENV																									
Output Format	<pre>SID DATE TIME A ATAG REPT EVT BITS "&lt;AID&gt;:&lt;CONDTYPE&gt;,[&lt;CONDEFF&gt;],,,,,,;[&lt;CONDDDESCR&gt;]" ;</pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies a BITS facility with the condition and is from the <a href="#">“BITS” section on page 4-7</a></li> <li>• &lt;CONDTYPE&gt; indicates a condition type and the valid values are shown in the <a href="#">“CONDITION” section on page 4-16</a></li> <li>• &lt;CONDEFF&gt; indicates an effect of the condition on the NE; valid values for are shown in the <a href="#">“COND_EFF” section on page 4-16</a>, &lt;CONDEFF&gt; is optional</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>																								
Example	<pre>Output TID-000 98-06-20 14:30:00 A 001 REPT EVT BITS “BITS-1:SSM-STU,TC,,,,,;\”SYNCHRONIZED - TRACEABILITY UNKNOWN”” ;</pre>																								

### 3.4.61 REPT EVT ENV: Report Event Environment

Reports the occurrence of a non-alarmed event against an environment alarm input.

Section	REPT EVT ENV Description																						
Category	Environmental Alarms and Controls																						
Security	Retrieve, Maintenance, Provisioning, Superuser																						
Related Messages	<table border="0"> <tr> <td>OPR-EXT-CONT</td> <td>REPT EVT RING</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>REPT EVT SECU</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RLS-EXT-CONT</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-ALM-SYCN</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-BITS</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM SYCN</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT EVT &lt;MOD2ALM&gt;</td> <td>RTRV-COND-SYCN</td> </tr> <tr> <td>REPT EVT BITS</td> <td>RTRV-NE-SYCN</td> </tr> <tr> <td>REPT EVT EQPT</td> <td>RTRV-SYCN</td> </tr> </table>	OPR-EXT-CONT	REPT EVT RING	REPT ALM <MOD2ALM>	REPT EVT SECU	REPT ALM BITS	RLS-EXT-CONT	REPT ALM COM	RTRV-ALM-BITS	REPT ALM ENV	RTRV-ALM-SYCN	REPT ALM EQPT	RTRV-BITS	REPT ALM RING	RTRV-COND-BITS	REPT ALM SYCN	RTRV-COND-ENV	REPT EVT <MOD2ALM>	RTRV-COND-SYCN	REPT EVT BITS	RTRV-NE-SYCN	REPT EVT EQPT	RTRV-SYCN
OPR-EXT-CONT	REPT EVT RING																						
REPT ALM <MOD2ALM>	REPT EVT SECU																						
REPT ALM BITS	RLS-EXT-CONT																						
REPT ALM COM	RTRV-ALM-BITS																						
REPT ALM ENV	RTRV-ALM-SYCN																						
REPT ALM EQPT	RTRV-BITS																						
REPT ALM RING	RTRV-COND-BITS																						
REPT ALM SYCN	RTRV-COND-ENV																						
REPT EVT <MOD2ALM>	RTRV-COND-SYCN																						
REPT EVT BITS	RTRV-NE-SYCN																						
REPT EVT EQPT	RTRV-SYCN																						
Output Format	<pre>SID DATE TIME A ATAG REPT EVT ENV "&lt;AID&gt;:&lt;ALMTYPE&gt;,&lt;CONDEFF&gt;],,,,,,:[&lt;CONDDDESCR&gt;]" ;</pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies an environmental input and is from the <a href="#">“ENV” section on page 4-8</a></li> <li>• &lt;ALMTYPE&gt; an abbreviated code identifying the alarm and the valid values are shown in the <a href="#">“ENV_ALM” section on page 4-21</a></li> <li>• &lt;CONDEFF&gt; indicates an effect of the condition on the NE; valid values for &lt;CONDEFF&gt; are shown in the <a href="#">“COND_EFF” section on page 4-16</a>, &lt;CONDEFF&gt; is optional</li> <li>• &lt;CONDDDESCR&gt; is an alarm message; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>																						
Example	<pre>Output TID-000 98-06-20 14:30:00 A 001 REPT EVT ENV “ENV-IN-2:OPENDR,TC,,,,,,:\”OPEN DOOR\”” ;</pre>																						

### 3.4.62 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, Maintenance, Provisioning, Superuser	
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-SYNCN
	INH-SWDX-EQPT	RTRV-ATTR-CONT
	INH-SWTOPROTN-EQPT	RTRV-ATTR-ENV
	INH-SWTOWKG-EQPT	RTRV-COND-<MOD2ALM>
	REPT ALM <MOD2ALM>	RTRV-COND-ALL
	REPT ALM BITS	RTRV-COND-BITS
	REPT ALM COM	RTRV-COND-EQPT
	REPT ALM ENV	RTRV-COND-SYNCN
	REPT ALM EQPT	RTRV-EQPT
	REPT EVT SECU	SW-DX-EQPT
	REPT ALM SYNCN	SW-TOPROTN-EQPT
	REPT EVT <MOD2ALM>	SW-TOWKG-EQPT
	REPT EVT SYNCN	

Section	REPT EVT EQPT Description (continued)
Output Format	<pre>SID DATE TIME A ATAG REPT EVT EQPT "&lt;AID&gt;:&lt;CONDTYPE&gt;,&lt;CONDEFF&gt;],,,,,,:[&lt;CONDDDESCR&gt;], [&lt;AIDDET&gt;]" ;</pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; indicates an equipment AID SLOT-<math>\{1-17\}</math> and is from the <a href="#">“EQPT” section on page 4-8</a></li> <li>• &lt;CONDTYPE&gt; indicates an event condition type; &lt;CONDTYPE&gt; defaults to EQPT and the valid values are shown in the <a href="#">“CONDITION” section on page 4-16</a></li> <li>• &lt;CONDEFF&gt; indicates an effect of the condition on the NE; valid values for &lt;CONDEFF&gt; are shown in the <a href="#">“COND_EFF” section on page 4-16</a>, &lt;CONDEFF&gt; is optional</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&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 <a href="#">“EQPT_TYPE” section on page 4-23</a>, &lt;AIDDET&gt; is optional</li> </ul>
Example	<pre>Output TID-000 98-06-20 14:30:00 A 001 REPT EVT EQPT “SLOT-7:PLUGIN,TC,,,,,:\”EQUIPMENT PLUG-IN”,TCC” ;</pre>

### 3.4.63 REPT EVT RING: Report Event RING

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

Section	REPT EVT RING Description
Category	Fault
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	<pre>REPT ALM &lt;MOD2ALM&gt;      REPT EVT SECU REPT ALM BITS           REPT EVT SYNCN REPT ALM RING           RTRV-ALM-&lt;MOD2ALM&gt; REPT ALM SYNCN         RTRV-ALM-ALL REPT EVT &lt;MOD2ALM&gt;      RTRV-COND-ALL</pre>

Section	REPT EVT RING Description (continued)
Output Format	<pre>SID DATE TIME A ATAG REPT EVT RING "&lt;AID&gt;:&lt;CONDTYPE&gt;,&lt;CONDEFF&gt;],,,,,,:[&lt;CONDDDESCR&gt;]" ;</pre> <p>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 <a href="#">“CONDITION”</a> section on page 4-16</li> <li>• &lt;CONDEFF&gt; is the effect of the condition on the NE; valid values for &lt;CONDEFF&gt; are shown in the <a href="#">“COND_EFF”</a> section on page 4-16</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>
Example	<pre>Output TID-000 98-06-20 14:30:00 A 001 REPT EVT RING “RING-88:BLSR-RESYNC,TC,,,,,:\“BLSR TABLES RESYNCHRONIZED\”,” ;</pre>

### 3.4.64 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, Maintenance, Provisioning, Superuser
Related Messages	<pre>ACT-USER REPT ALM EQPT CANC-USER REPT ALM RING DLT-USER-SECU REPT ALM SYNCN ED-PID REPT EVT &lt;MOD2ALM&gt; ED-USER-SECU REPT EVT EQPT ENT-USER-SECU REPT EVT RING REPT ALM &lt;MOD2ALM&gt; REPT EVT SYNCN REPT ALM BITS RTRV-ALM-&lt;MOD2ALM&gt; REPT ALM COM RTRV-ALM-ALL REPT ALM ENV RTRV-COND-ALL</pre>

Section	REPT EVT SECU Description (continued)
Output Format	<pre>SID DATE TIME ** ATAG REPT EVT SECU "&lt;AID&gt;:&lt;CONDTYPE&gt;,&lt;CONDEFF&gt;],,,,,,:[&lt;CONDDDESCR&gt;]" ;</pre> <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 4-16</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 4-16; &lt;CONDEFF&gt; is optional</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>
Example	<pre>Output TID-000 98-06-20 14:30:00 ** 001 REPT EVT SECU "COM:INTRUSION,TC,,,,,:\\"SECURITY: INVALID LOGIN (SEE AUDIT TRIAL)\\" ;</pre>

### 3.4.65 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, Maintenance, Provisioning, Superuser
Related Messages	<pre>ED-BITS REPT EVT ENV ED-NE-SYNCN REPT EVT RING ED-SYNCN REPT EVT EQPT OPR-SYNCNSW REPT EVT SECU REPT ALM &lt;MOD2ALM&gt; RLS-SYNCNSW REPT ALM BITS RTRV-ALM-BITS REPT ALM COM RTRV-ALM-SYNCN REPT ALM ENV RTRV-BITS REPT ALM EQPT RTRV-COND-BITS REPT ALM RING RTRV-COND-SYNCN REPT ALM SYNCN RTRV-NE-SYNCN REPT EVT &lt;MOD2ALM&gt; RTRV-SYNCN</pre>



Section	REPT EVT SYNCN Description (continued)
Output Format	<p>SID DATE TIME  A ATAG REPT EVT SYNCN  “&lt;AID&gt;:&lt;CONDTYPE&gt;,&lt;CONDEFF&gt;],,,,,,:[&lt;CONDDDESCR&gt;],  [&lt;AIDDET&gt;]”  ;  where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the synchronization entity with the condition and is from the “<a href="#">SYNC_REF</a>” section on page 4-10</li> <li>• &lt;CONDTYPE&gt; indicates the condition type; &lt;CONDTYPE&gt; defaults to SYNCN and the valid values are shown in the “<a href="#">CONDITION</a>” section on page 4-16</li> <li>• &lt;CONDEFF&gt; indicates the effect of the condition on the NE; valid values for &lt;CONDEFF&gt; are shown in the “<a href="#">COND_EFF</a>” section on page 4-16, &lt;CONDEFF&gt; is optional</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&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 “<a href="#">EQPT_TYPE</a>” section on page 4-23, &lt;AIDDET&gt; is optional</li> </ul>
Example	<p>Output  TID-000 98-06-20 14:30:00  A 001 REPT EVT SYNCN  “SYNC-NE:SWTOINT,SC,,,,,:\”SWITCH TO INTERNAL CLOCK\”,TCC”  ;</p>

### 3.4.66 REPT SW: Report Switch

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	Protection
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	ALW-SWDX-EQPT ALW-SWTOPROTN-EQPT ALW-SWTOWKG-EQPT INH-SWDX-EQPT INH-SWTOPROTN-EQPT INH-SWTOWKG-EQPT SW-DX-EQPT SW-TOPROTN-EQPT SW-TOWKG-EQPT

Section	REPT SW Description (continued)
Output Format	SID DATE TIME A ATAG REPT SW “<ACTID>,<STDBYID>” ; where: <ul style="list-style-type: none"> <li>• &lt;ACTID&gt; identifies the equipment unit that has been placed in the active state. Parameter grouping shall not be used with this parameter; &lt;ACTID&gt; is the AID from the “EQPT” section on page 4-8</li> <li>• &lt;STDBYID&gt; identifies the equipment unit that was placed in the standby state. Parameter grouping shall not be used with this parameter; &lt;STDBYID&gt; is the AID from the “EQPT” section on page 4-8</li> </ul>
Example	Output TID-000 98-06-20 14:30:00 A 001 REPT SW “SLOT-8,SLOT-10” ;

### 3.4.67 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	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	OPR-EXT-CONT REPT ALM ENV RTRV-ALM-ENV RTRV-ATTR-CONT RTRV-ATTR-ENV RTRV-COND-ENV RTRV-EXT-CONT SET-ATTR-CONT SET-ATTR-ENV

Section	RLS-EXT-CONT Description (continued)
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 4-8</li> </ul>
Example	Input RLS-EXT-CONT:CISCO:ENV-OUT-2:123;
Errors	This message generates all the default errors

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

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

Notes:

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

Section	RLS-LPBK-<MOD2_IO> Description
Category	Testing
Security	Maintenance, Provisioning, Superuser
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 4-27</li> </ul>
Example	Input RLS-LPBK-DS1:PTREYES:DS1-4-2-13:203::,,FACILITY;
Errors	This message generates all the default errors

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

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.

Section	RLS-PROTNSW-<OCN_TYPE> Description
Category	SONET Line Protection
Security	Maintenance, Provisioning, Superuser
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 4-8</li> </ul>
Example	Input RLS-PROTNSW-OC48:CHICKALUMA:FAC-6-1:209;
Errors	This message generates all the default errors

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

This command instructs a SONET NE to release (clear) 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. Sending this command on the Drop AID, a DENY (Invalid AID, should use working/protect AID) message will be returned.

Section	RLS-PROTNSW-<STS_PATH> Description
Category	UPSR Switching
Security	Maintenance, Provisioning, Superuser
Related Messages	OPR-PROTNSW-VT1 REPT SW RLS-PROTNSW-<STS_PATH> OPR-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 4-9</li> </ul>
Example	Input RLS-PROTNSW-ST1:CISCO:STS-2-1:123;
Errors	This message generates all the default errors

### 3.4.71 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.

Section	RLS-PROTNSW-VT1 Description
Category	UPSR Switching
Security	Maintenance, Provisioning, Superuser

Section	RLS-PROTNSW-VT1 Description (continued)
Related Messages	OPR-PROTNSW-VT1 REPT SW OPR-PROTNSW-<STS_PATH> 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 <a href="#">“VT1_5” section on page 4-11</a></li> </ul>
Example	Input RLS-PROTNSW-VT1:CISCO:VT1-4-2-3-1:123;
Errors	This message generates all the default errors

### 3.4.72 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, Provisioning, Superuser
Related Messages	ED-BITS ED-NE-SYNCN ED-SYNCN OPR-SYNCNSW REPT ALM BITS REPT ALM SYNCN REPT EVT SYNCN RTRV-ALM-BITS RTRV-ALM-SYNCN RTRV-BITS RTRV-COND-BITS RTRV-COND-SYNCN RTRV-NE-SYNCN RTRV-SYNCN
Input Format	RLS-SYNCNSW:[<TID>]:<AID>:<CTAG>; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; is the access identifier from the <a href="#">“SYNC_REF” section on page 4-10</a>. A null value of AID defaults to SYNC-NE.</li> </ul>
Example	Input RLS-SYNCNSW:CISCO:SYNC-NE:3;
Errors	This message generates all the default errors

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

This command removes a facility from service.

Section	RMV-<MOD_PORT> Description
Category	Ports
Security	Maintenance, Provisioning, Superuser
Related Messages	ED-<OCN_TYPE> ED-EC1 ED-T1 ED-T3 RMV RST <MOD_PORT> RTRV-<OCN_TYPE> RTRV-EC1 RST-<MOD_PORT> RTRV-T1 RTRV-T3
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 <a href="#">“FACILITY” section on page 4-8</a></li> </ul>
Example	Input RMV-EC1:CISCO:FAC-1-1:1234;
Errors	This message generates all the default errors

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

This command provisions a facility in service.

Section	RST-<MOD_PORT> Description
Category	Ports
Security	Maintenance, Provisioning, Superuser
Related Messages	ED-<OCN_TYPE> ED-EC1 ED-T1 ED-T3 RTRV-<OCN_TYPE> RTRV-EC1 RMV-<MOD_PORT> RTRV-T1 RTRV-T3
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 <a href="#">“FACILITY” section on page 4-8</a></li> </ul>

Section	RST-<MOD_PORT> Description (continued)
Example	Input RST-EC1:CISCO:FAC-1-1:1234;
Errors	This message generates all the default errors

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

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 port within a BLSR connection. The RTRV-BLSR command with the AID RINGID, can provide more information on this BLSR. This command does not show the DCC attribute fro the protect OCN port which is in 1+1 or 4F 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, Maintenance, Provisioning, Superuser
Related Messages	ED-<OCN_TYPE> ED-EC1 ED-T1 ED-T3 RTRV-EC1 RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-T1 RTRV-T3
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 <a href="#">“FACILITY” section on page 4-8</a> and must not be null.</li> </ul>



Section	RTRV-<OCN_TYPE> Description (continued)
Output Format	<p>SID DATE TIME M CTAG COMPLD “&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;]:[&lt;PST&gt;]” ; where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the <a href="#">“FACILITY” section on page 4-8</a></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 <a href="#">“SIDE” section on page 4-38</a>, &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 <a href="#">“STATUS” section on page 4-40</a>, &lt;STATUS&gt; is optional</li> <li>• &lt;DCC&gt; identifies the OCN port DCC connection; valid values for &lt;DCC&gt; are shown in the <a href="#">“ON_OFF” section on page 4-34</a>, &lt;DCC&gt; is optional</li> <li>• &lt;TMGREF&gt; identifies if the OCN port has timing reference; valid values for &lt;TMGREF&gt; are shown in the <a href="#">“ON_OFF” section on page 4-34</a>, &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 <a href="#">“ON_OFF” section on page 4-34</a></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;senddonotuse&gt; defaults to N and the valid values are shown in the <a href="#">“ON_OFF” section on page 4-34</a>. &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 <a href="#">“SF_BER” section on page 4-38</a>, &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 <a href="#">“SD_BER” section on page 4-37</a>, &lt;SDBER&gt; is optional</li> <li>• &lt;MODE&gt; identifies the OCN port mode (e.g. SONET, SDH); valid values for &lt;MODE&gt; are shown in the <a href="#">“OPTICAL_MODE” section on page 4-34</a>, &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 ring 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>• &lt;BLSRTYPE&gt; identifies the BLSR type with which the port is connected; valid values for &lt;BLSRTYPE&gt; are shown in the “BLSR_TYPE” section on page 4-15 and &lt;BLSRTYPE&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 4-36, &lt;PST&gt; is optional.</li> </ul>
Example	<p>Input</p> <pre>RTRV-OC48:PENNGROVE:FAC-6-1:236;</pre> <p>Output</p> <pre>TID-000 98-06-20 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:OOS” ;</pre>
Errors	This message generates all the default errors

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

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-STIS\_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, 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 is implemented on the DS1/DS1N, DS3, DS3E/DS3NE, DS3XM, EC1, OC3, OC48AS and OC192 cards.

TRC is supported only on DS1(N), DS3(N)E, and DS3XM cards.

Section	RTRV-<STS_PATH> Description
Category	STS and VT Paths
Security	Retrieve, Maintenance, Provisioning, Superuser
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 4-9 and must not be null</li> </ul>

Section	RTRV-<STS_PATH> Description (continued)
Output Format	<p>SID DATE TIME</p> <p>M CTAG COMPLD</p> <p>“&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>;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “<a href="#">STS</a>” section on page 4-9</li> <li>• &lt;LEVEL&gt; indicates the rate of the cross connected channel; valid values for &lt;LEVEL&gt; are shown in the “<a href="#">STS_PATH</a>” section on page 4-41, &lt;LEVEL&gt; is optional</li> <li>• &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 “<a href="#">SF_BER</a>” section on page 4-38, &lt;SFBER&gt; is optional</li> <li>• &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 “<a href="#">SD_BER</a>” section on page 4-37, &lt;SDBER&gt; is optional</li> <li>• &lt;RVRTV&gt; identifies a revertive mode which only applies to UPSR and defaults to N (non-revertive mode); valid values for &lt;RVRTV&gt; are shown in the “<a href="#">ON_OFF</a>” section on page 4-34 and &lt;RVRTV&gt; is optional</li> <li>• &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 “<a href="#">REVERTIVE_TIME</a>” section on page 4-37 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 and is optional</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 (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; is a string and is optional</li> <li>• &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>• &lt;TRCMODE&gt; indicates the path trace mode, and defaults to the OFF mode; valid values for &lt;TRCMODE&gt; are shown in the “<a href="#">TRCMODE</a>” section on page 4-45 and &lt;TRCMODE&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 0–999; &lt;TACC&gt; is optional.</li> </ul>

Section	RTRV-<STS_PATH> Description (continued)
Example	Input RTRV-STTS1:FERNDAL:STS-2-4:238;  Output TID-000 98-06-20 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

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

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 alarms AID.
2. The [<AIDTYPE>] shows STS1 for STS alarms.

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

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 4-32</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-16</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 4-38</li> </ul>
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;CONDDDESCR&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; is the type of access identifier; valid values for &lt;AIDTYPE&gt; are shown in the “MOD2ALM” section on page 4-28, &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 4-32</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-16</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 4-38</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>
Example	<p>Input</p> <p>RTRV-ALM-OC12:ELDRIDGE:FAC-5-1:225::MN,SD,SA;</p> <p>Output</p> <p>TID-000 98-06-20 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

### 3.4.78 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-SYNCN
```

Section	RTRV-ALM-ALL Description
Category	Fault
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	<pre>REPT ALM &lt;MOD2ALM&gt;      REPT EVT SYNCN REPT ALM BITS            RTRV-ALM-&lt;MOD2ALM&gt; REPT ALM COM             RTRV-ALM-BITS REPT ALM ENV             RTRV-ALM-ENV REPT ALM EQPT            RTRV-ALM-EQPT REPT ALM RING            RTRV-ALM-SYNCN REPT ALM SYNCN           RTRV-ATTR-ENV REPT EVT &lt;MOD2ALM&gt;       RTRV-COND-&lt;MOD2ALM&gt; REPT EVT EQPT            RTRV-COND-ALL REPT EVT RING            RTRV-COND-ENV REPT EVT SECU</pre>
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 <a href="#">“NOTIF_CODE”</a> section on page 4-32</li> <li>• &lt;CONDITION&gt; is the type of alarm condition; valid values for &lt;CONDITION&gt; are shown in the <a href="#">“CONDITION”</a> section on page 4-16</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 <a href="#">“SERV_EFF”</a> section on page 4-38</li> </ul>

Section	RTRV-ALM-ALL 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;CONDDDESCR&gt;],[&lt;AIDDET&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 <a href="#">“ALL” section on page 4-5</a>, &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 <a href="#">“MOD2B” section on page 4-29</a>, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the <a href="#">“NOTIF_CODE” section on page 4-32</a></li> <li>• &lt;CONDTYPE&gt; is the single type of alarm condition being reported on this particular line; valid values are shown in the <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a></li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> <li>• &lt;AIDDET&gt; is the supplementary equipment identification; valid values for &lt;AIDDET&gt; are shown in the <a href="#">“EQPT_TYPE” section on page 4-23</a>, &lt;AIDDET&gt; is optional</li> </ul>
Example	<p>Input RTRV-ALM-ALL:COTATI::229::MN,PWRRESTART,NSA;</p> <p>Output TID-000 98-06-20 14:30:00 M 001 COMPLD “SLOT-2,EQPT:MN,PWRRESTART,NSA,.,.,:\”POWER FAIL RESTARTV”,DS1-14” ;</p>
Errors	This message generates all the default errors

### 3.4.79 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, Maintenance, Provisioning, Superuser



Section	RTRV-ALM-BITS Description (continued)
Related Messages	ED-BITS ED-NE-SYNCN ED-SYNCN OPR-SYNCNSW REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT EVT SECU REPT ALM SYNCN REPT EVT <MOD2ALM> REPT EVT EQPT REPT EVT SYNCN RLS-SYNCNSW RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL 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-COND-SYNCN RTRV-NE-SYNCN RTRV-SYNCN
Input Format	RTRV-ALM-BITS:[<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 <a href="#">“BITS” section on page 4-7</a>; &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 <a href="#">“NOTIF_CODE” section on page 4-32</a></li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a></li> </ul>
Output Format	SID DATE TIME M CTAG COMPLD “<AID>,[<AIDTYPE>]:<NTFCNCDE>,<CONDTYPE>,<SRVEFF>,...; [<CONDDDESCR>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the <a href="#">“BITS” section on page 4-7</a></li> <li>• &lt;AIDTYPE&gt; is the type of access identifier; valid values for &lt;AIDTYPE&gt; are shown in the <a href="#">“MOD2B” section on page 4-29</a> 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 <a href="#">“NOTIF_CODE” section on page 4-32</a></li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a></li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>

Section	RTRV-ALM-BITS Description (continued)
Example	Input RTRV-ALM-BITS:ELVERANO:BITS-1:228::CR,LOS,SA;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “BITS-1,;CR,LOS,SA,,,:\\”LOSS OF SIGNAL\\”,” ;
Errors	This message generates all the default errors

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

This command retrieves the environmental alarms.

Section	RTRV-ALM-ENV Description																												
Category	Environmental Alarms and Controls																												
Security	Retrieve, Maintenance, Provisioning, Superuser																												
Related Messages	<table> <tbody> <tr> <td>OPR-EXT-CONT</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-ALM-SYNCN</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 EVT SECU</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT EVT &lt;MOD2ALM&gt;</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT EVT EQPT</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>REPT EVT SYNCN</td> <td>RTRV-COND-SYNCN</td> </tr> <tr> <td>RLS-EXT-CONT</td> <td>RTRV-EXT-CONT</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td>SET-ATTR-CONT</td> </tr> <tr> <td>RTRV-ALM-ALL</td> <td>SET-ATTR-ENV</td> </tr> </tbody> </table>	OPR-EXT-CONT	RTRV-ALM-BITS	REPT ALM <MOD2ALM>	RTRV-ALM-EQPT	REPT ALM BITS	RTRV-ALM-SYNCN	REPT ALM COM	RTRV-ATTR-CONT	REPT ALM ENV	RTRV-ATTR-ENV	REPT ALM EQPT	RTRV-COND-<MOD2ALM>	REPT EVT SECU	RTRV-COND-ALL	REPT ALM SYNCN	RTRV-COND-BITS	REPT EVT <MOD2ALM>	RTRV-COND-ENV	REPT EVT EQPT	RTRV-COND-EQPT	REPT EVT SYNCN	RTRV-COND-SYNCN	RLS-EXT-CONT	RTRV-EXT-CONT	RTRV-ALM-<MOD2ALM>	SET-ATTR-CONT	RTRV-ALM-ALL	SET-ATTR-ENV
OPR-EXT-CONT	RTRV-ALM-BITS																												
REPT ALM <MOD2ALM>	RTRV-ALM-EQPT																												
REPT ALM BITS	RTRV-ALM-SYNCN																												
REPT ALM COM	RTRV-ATTR-CONT																												
REPT ALM ENV	RTRV-ATTR-ENV																												
REPT ALM EQPT	RTRV-COND-<MOD2ALM>																												
REPT EVT SECU	RTRV-COND-ALL																												
REPT ALM SYNCN	RTRV-COND-BITS																												
REPT EVT <MOD2ALM>	RTRV-COND-ENV																												
REPT EVT EQPT	RTRV-COND-EQPT																												
REPT EVT SYNCN	RTRV-COND-SYNCN																												
RLS-EXT-CONT	RTRV-EXT-CONT																												
RTRV-ALM-<MOD2ALM>	SET-ATTR-CONT																												
RTRV-ALM-ALL	SET-ATTR-ENV																												
Input Format	RTRV-ALM-ENV:[<TID>]:<AID>:<CTAG>::[<NTFCNCDE>], [<ALMTYPE>];  where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ENV” section on page 4-8; &lt;AID&gt; must not be null</li> <li>• &lt;NTFCNCDE&gt; is the notification; valid values for &lt;NOTIFCODE&gt; are shown in the “NOTIF_CODE” section on page 4-32</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 4-21</li> </ul>																												

Section	RTRV-ALM-ENV Description (continued)
Output Format	SID DATE TIME M CTAG COMPLD "<AID>:<NTFCNCDE>,<ALMTYPE>,,[<ALMMSG>]" ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the "ENV" section on page 4-8</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the "NOTIF_CODE" section on page 4-32</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 4-21</li> <li>• &lt;ALMMSG&gt; is the alarm message; &lt;ALMMSG&gt; is a string and is optional</li> </ul>
Example	Input RTRV-ALM-ENV:CISCO:ENV-IN-1:123::MJ,OPENDR;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD "ENV-IN-1:MJ,OPENDR,,,\"OPEN DOOR\"" ;
Errors	This message generates all the default errors

### 3.4.81 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, Maintenance, Provisioning, Superuser

Section	RTRV-ALM-EQPT Description (continued)
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 <MOD2ALM> REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT EVT SECU REPT ALM SYNCN REPT EVT <MOD2ALM> REPT EVT EQPT REPT EVT SYNCN RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-ALM-BITS RTRV-ALM-ENV RTRV-ALM-SYNCN RTRV-ATTR-CONT RTRV-ATTR-ENV RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-BITS RTRV-COND-ENV RTRV-COND-EQPT RTRV-COND-SYNCN RTRV-EQPT SET-ATTR-CONT SET-ATTR-ENV SW-DX-EQPT SW-TOPROTN-EQPT SW-TOWKG-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 <a href="#">“EQPT” section on page 4-8</a>; &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 <a href="#">“NOTIF_CODE” section on page 4-32</a></li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a></li> </ul>

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;CONDDDESCR&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 4-8; &lt;AID&gt; is optional</li> <li>• valid values for &lt;AIDTYPE&gt; are shown in the “MOD2B” section on page 4-29; &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 4-32</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-16</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 4-38</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>
Example	<p>Input RTRV-ALM-EQPT:TWOROCK:SLOT-7:227::MJ,HITEMP,NSA;</p> <p>Output TID-000 98-06-20 14:30:00 M 001 COMPLD “SLOT-7,EQPT:MJ,HITEMP,NSA,,,,:\”HI TEMPERATURE\”,” ;</p>
Errors	This message generates all the default errors

### 3.4.82 RTRV-ALM-SYCN: 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-SYCN Description
Category	Synchronization
Security	Retrieve, Maintenance, Provisioning, Superuser

Section	RTRV-ALM-SYNCN Description (continued)
Related Messages	ED-BITS ED-NE-SYNCN ED-SYNCN OPR-SYNCNSW REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT EVT SECU REPT ALM SYNCN REPT EVT <MOD2ALM> REPT EVT EQPT REPT EVT SYNCN RLS-SYNCNSW RTRV-ALM-<MOD2ALM> RTRV-ALM-ALL RTRV-ALM-BITS RTRV-ALM-ENV RTRV-ALM-EQPT RTRV-ATTR-CONT RTRV-ATTR-ENV RTRV-BITS RTRV-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-BITS RTRV-COND-ENV RTRV-COND-EQPT RTRV-COND-SYNCN RTRV-NE-SYNCN RTRV-SYNCN
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 4-10, &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 4-32</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-16</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 4-38</li> </ul>
Output Format	SID DATE TIME M CTAG COMPLD “<AID>,[<AIDTYPE>]:<NTFCNCDE>,<CONDTYPE>,<SRVEFF>,,,,; [<CONDDDESCR>” ; 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 4-10</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 4-29 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 4-32</li> <li>• &lt;CONDTYPE&gt; is the alarm condition; valid values for &lt;CONDTYPE&gt; are shown in the “CONDITION” section on page 4-16</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 4-38</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>

Section	RTRV-ALM-SYNCN Description (continued)
Example	Input RTRV-ALM-SYNCN:FULTON:SYNC-NE:226::CR,FAILTOSW,SA;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “SYNC-NE,SYNCN:CR,FAILTOSW,SA,,,,:”FAILURE TO SWITCH TO PROTECTION”, ;
Errors	This message generates all the default errors

### 3.4.83 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, Maintenance, Provisioning, Superuser																												
Related Messages	<table border="0"> <tr> <td>OPR-EXT-CONT</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-SYNCN</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 EVT SECU</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT EVT &lt;MOD2ALM&gt;</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT EVT EQPT</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>REPT EVT SYNCN</td> <td>RTRV-COND-SYNCN</td> </tr> <tr> <td>RLS-EXT-CONT</td> <td>RTRV-EXT-CONT</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td>SET-ATTR-CONT</td> </tr> <tr> <td>RTRV-ALM-ALL</td> <td>SET-ATTR-ENV</td> </tr> </table>	OPR-EXT-CONT	RTRV-ALM-BITS	REPT ALM <MOD2ALM>	RTRV-ALM-ENV	REPT ALM BITS	RTRV-ALM-EQPT	REPT ALM COM	RTRV-ALM-SYNCN	REPT ALM ENV	RTRV-ATTR-ENV	REPT ALM EQPT	RTRV-COND-<MOD2ALM>	REPT EVT SECU	RTRV-COND-ALL	REPT ALM SYNCN	RTRV-COND-BITS	REPT EVT <MOD2ALM>	RTRV-COND-ENV	REPT EVT EQPT	RTRV-COND-EQPT	REPT EVT SYNCN	RTRV-COND-SYNCN	RLS-EXT-CONT	RTRV-EXT-CONT	RTRV-ALM-<MOD2ALM>	SET-ATTR-CONT	RTRV-ALM-ALL	SET-ATTR-ENV
OPR-EXT-CONT	RTRV-ALM-BITS																												
REPT ALM <MOD2ALM>	RTRV-ALM-ENV																												
REPT ALM BITS	RTRV-ALM-EQPT																												
REPT ALM COM	RTRV-ALM-SYNCN																												
REPT ALM ENV	RTRV-ATTR-ENV																												
REPT ALM EQPT	RTRV-COND-<MOD2ALM>																												
REPT EVT SECU	RTRV-COND-ALL																												
REPT ALM SYNCN	RTRV-COND-BITS																												
REPT EVT <MOD2ALM>	RTRV-COND-ENV																												
REPT EVT EQPT	RTRV-COND-EQPT																												
REPT EVT SYNCN	RTRV-COND-SYNCN																												
RLS-EXT-CONT	RTRV-EXT-CONT																												
RTRV-ALM-<MOD2ALM>	SET-ATTR-CONT																												
RTRV-ALM-ALL	SET-ATTR-ENV																												
Input Format	RTRV-ATTR-CONT:[<TID>]:<AID>:<CTAG>[:<CONTTYPE>]; 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 4-8 and must not be null</li> <li>&lt;CONTTYPE&gt; is the type of external control; valid values for &lt;CONTTYPE&gt; are shown in the “CONTTYPE” section on page 4-19, &lt;CONTTYPE&gt; is optional</li> </ul>																												

Section	RTRV-ATTR-CONT Description (continued)
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 4-8</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 4-19 and &lt;CONTTYPER&gt; is optional</li> </ul>
Example	Input RTRV-ATTR-CONT:CISCO:ENV-OUT-2:123::AIRCOND;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “ENV-OUT-2:AIRCOND” ;
Errors	This message generates all the default errors

### 3.4.84 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, Maintenance, Provisioning, Superuser																												
Related Messages	<table border="0"> <tr> <td>OPR-EXT-CONT</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-SYCN</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-ATTR-CONT</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT EVT SECU</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM SYCN</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT EVT &lt;MOD2ALM&gt;</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT EVT EQPT</td> <td>RTRV-COND-EQPT</td> </tr> <tr> <td>REPT EVT SYCN</td> <td>RTRV-COND-SYCN</td> </tr> <tr> <td>RLS-EXT-CONT</td> <td>RTRV-EXT-CONT</td> </tr> <tr> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> <td>SET-ATTR-CONT</td> </tr> <tr> <td>RTRV-ALM-ALL</td> <td>SET-ATTR-ENV</td> </tr> </table>	OPR-EXT-CONT	RTRV-ALM-BITS	REPT ALM <MOD2ALM>	RTRV-ALM-ENV	REPT ALM BITS	RTRV-ALM-EQPT	REPT ALM COM	RTRV-ALM-SYCN	REPT ALM ENV	RTRV-ATTR-CONT	REPT ALM EQPT	RTRV-COND-<MOD2ALM>	REPT EVT SECU	RTRV-COND-ALL	REPT ALM SYCN	RTRV-COND-BITS	REPT EVT <MOD2ALM>	RTRV-COND-ENV	REPT EVT EQPT	RTRV-COND-EQPT	REPT EVT SYCN	RTRV-COND-SYCN	RLS-EXT-CONT	RTRV-EXT-CONT	RTRV-ALM-<MOD2ALM>	SET-ATTR-CONT	RTRV-ALM-ALL	SET-ATTR-ENV
OPR-EXT-CONT	RTRV-ALM-BITS																												
REPT ALM <MOD2ALM>	RTRV-ALM-ENV																												
REPT ALM BITS	RTRV-ALM-EQPT																												
REPT ALM COM	RTRV-ALM-SYCN																												
REPT ALM ENV	RTRV-ATTR-CONT																												
REPT ALM EQPT	RTRV-COND-<MOD2ALM>																												
REPT EVT SECU	RTRV-COND-ALL																												
REPT ALM SYCN	RTRV-COND-BITS																												
REPT EVT <MOD2ALM>	RTRV-COND-ENV																												
REPT EVT EQPT	RTRV-COND-EQPT																												
REPT EVT SYCN	RTRV-COND-SYCN																												
RLS-EXT-CONT	RTRV-EXT-CONT																												
RTRV-ALM-<MOD2ALM>	SET-ATTR-CONT																												
RTRV-ALM-ALL	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 4-8 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 4-32</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 4-21</li> </ul>
Output Format	<p>SID DATE TIME M CTAG COMPLD “&lt;AID&gt;[:&lt;NTFCNCDE&gt;],[:&lt;ALMTYPE&gt;],[:&lt;ALMMSG&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 4-8</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 4-32, &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 4-21, &lt;ALMTYPE&gt; is optional</li> <li>• &lt;ALMMSG&gt; is the alarm description; &lt;ALMMSG&gt; is a string and is optional</li> </ul>
Example	<p>Input</p> <p>RTRV-ATTR-ENV:CISCO:ENV-IN-1:123::MJ,OPENDR;</p> <p>Output</p> <p>TID-000 98-06-20 14:30:00 M 001 COMPLD “ENV-IN-1:MJ,OPENDR,\”OPEN DOOR\”” ;</p>
Errors	This message generates all the default errors

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

This command retrieves the BITS configuration command.

Section	RTRV-BITS Description
Category	Synchronization
Security	Retrieve, Maintenance, Provisioning, Superuser

Section	RTRV-BITS Description (continued)
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-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 4-7 and must not be null</li> </ul>
Output Format	SID DATE TIME M CTAG COMPLD “<AID>::[LINECDE=<LINECDE>],[FMT=<FMT>], [SYNCMSG=<SYNCMSG>]:[<PST>]” ; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; is the access identifier from the “BITS” section on page 4-7</li> <li>&lt;LINECDE&gt; is the line code; valid values for &lt;LINECDE&gt; are shown in the “LINE_CODE” section on page 4-26, &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 4-26, &lt;FMT&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 4-34, &lt;SYNCMSG&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 4-36, &lt;PST&gt; is optional</li> </ul>
Example	Input RTRV-BITS:SONOMA:BITS-1:782;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “BITS-1::LINECDE=AMI,FMT=ESF,SYNCMSG=Y:IS” ;
Errors	This message generates all the default errors

## 3.4.86 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:

```
2F BLSR
"BLSR-12 : :RINGID=12 ,NODEID=2 ,MODE=2F ,RVRTV=Y ,RVTM=5 . 0 ,
EASTWORK=FAC-5-1 ,WESTWORK=FAC-6-1 "
```

```
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 "
```

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 of 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" with empty information to the user. Data error will be returned.

Section	RTRV-BLSR Description
Category	BLSR
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	ED-BLSR EX-SW-<OCN_BLSR>
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 <a href="#">"BLSR" section on page 4-7</a></li> </ul>

Section	RTRV-BLSR Description (continued)
Output Format	<p>SID DATE TIME</p> <p>M CTAG COMPLD</p> <p>“&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;]”</p> <p>;</p> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; identifies the BLSR of the NE and is from the <a href="#">“BLSR” section on page 4-7</a></li> <li>• &lt;RINGID&gt; identifies the BLSR ring 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 <a href="#">“BLSR_MODE” section on page 4-15</a></li> <li>• &lt;RVRTV&gt; identifies the revertive mode and valid values for &lt;RVRTV&gt; are shown in the <a href="#">“ON_OFF” section on page 4-34</a></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 <a href="#">“REVERTIVE_TIME” section on page 4-37</a> and &lt;RVTM&gt; is optional</li> <li>• &lt;SRVRTV&gt; identifies the span revertive mode for 4F BLSR only; valid values for &lt;SRVRTV&gt; are shown in the <a href="#">“ON_OFF” section on page 4-34</a> and &lt;SRVRTV&gt; is optional</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; valid values for &lt;SRVTM&gt; are shown in the <a href="#">“REVERTIVE_TIME” section on page 4-37</a></li> <li>• &lt;EASTWORK&gt; identifies the east working facility and is the AID from the <a href="#">“FACILITY” section on page 4-8</a>; &lt;EASTWORK&gt; is optional</li> <li>• &lt;WESTWORK&gt; identifies the west working facility and is the AID from the <a href="#">“FACILITY” section on page 4-8</a>; &lt;WESTWORK&gt; is optional</li> <li>• &lt;EASTPROT&gt; identifies the east protecting facility and is the AID from the <a href="#">“FACILITY” section on page 4-8</a>; &lt;EASTPROT&gt; is optional</li> <li>• &lt;WESTPROT&gt; identifies the west protecting facility and is the AID from the <a href="#">“FACILITY” section on page 4-8</a>; &lt;WESTPROT&gt; is optional</li> </ul>

Section	RTRV-BLSR Description (continued)
Example	Input RTRV-BLSR:PETALUMA:BLSR-43:123;  Output “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”
Errors	This message generates all the default errors

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

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

Section	RTRV-COND-<MOD2ALM> Description														
Category	Fault														
Security	Retrieve, Maintenance, Provisioning, Superuser														
Related Messages	<table border="0"> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>REPT EVT &lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM BITS</td> <td>REPT EVT EQPT</td> </tr> <tr> <td>REPT ALM COM</td> <td>REPT EVT SYNCN</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-ALM-ALL</td> </tr> <tr> <td>REPT EVT SECU</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-COND-ENV</td> </tr> </table>	REPT ALM <MOD2ALM>	REPT EVT <MOD2ALM>	REPT ALM BITS	REPT EVT EQPT	REPT ALM COM	REPT EVT SYNCN	REPT ALM ENV	RTRV-ALM-<MOD2ALM>	REPT ALM EQPT	RTRV-ALM-ALL	REPT EVT SECU	RTRV-COND-ALL	REPT ALM SYNCN	RTRV-COND-ENV
REPT ALM <MOD2ALM>	REPT EVT <MOD2ALM>														
REPT ALM BITS	REPT EVT EQPT														
REPT ALM COM	REPT EVT SYNCN														
REPT ALM ENV	RTRV-ALM-<MOD2ALM>														
REPT ALM EQPT	RTRV-ALM-ALL														
REPT EVT SECU	RTRV-COND-ALL														
REPT ALM SYNCN	RTRV-COND-ENV														
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 <a href="#">“ALL” section on page 4-5</a> 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 <a href="#">“CONDITION” section on page 4-16</a></li> </ul>														

Section	RTRV-COND-<MOD2ALM> Description (continued)
Output Format	<pre>SID DATE TIME M CTAG COMPLD "&lt;AID&gt;,[&lt;AIDTYPE&gt;]:[&lt;NTFCNCDE&gt;],&lt;TYPEREQ&gt;,[&lt;SRVEFF&gt;],,,,, [&lt;CONDDDESCR&gt;]" ;</pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the <a href="#">“ALL” section on page 4-5</a></li> <li>• &lt;AIDTYPE&gt; specifies the type of condition to be retrieved; valid values for &lt;AIDTYPE&gt; are shown in the <a href="#">“MOD2ALM” section on page 4-28</a>, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the <a href="#">“NOTIF_CODE” section on page 4-32</a>, &lt;NTFCNCDE&gt; is optional</li> <li>• &lt;TYPEREQ&gt; is the condition itself; valid values for &lt;TYPEREQ&gt; are shown in the <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a>, &lt;SRVEFF&gt; is optional</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>
Example	<pre>Input RTRV-COND-T3:TID:FAC-2-1:229::LOS;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD "FAC-2-1,T3:CR,LOS,SA,,,,,\"LOS OF SIGNAL\""</pre>
Errors	This message generates all the default errors

### 3.4.88 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, RING, COM, and rr (T1, T3, OCN, EC1, STSN, VT1, and DS1) conditions.

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

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

Section	RTRV-COND-ALL Description																				
Category	SONET Line Protection																				
Security	Retrieve, Maintenance, Provisioning, Superuser																				
Related Messages	<table border="0"> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>REPT EVT SECU</td> </tr> <tr> <td>REPT ALM BITS</td> <td>REPT EVT SYNCN</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-ALM-ALL</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>REPT ALM RING</td> <td>RTRV-ALM-ENV</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>REPT EVT &lt;MOD2ALM&gt;</td> <td>RTRV-ALM-SYNCN</td> </tr> <tr> <td>REPT EVT EQPT</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT EVT RING</td> <td></td> </tr> </table>	REPT ALM <MOD2ALM>	REPT EVT SECU	REPT ALM BITS	REPT EVT SYNCN	REPT ALM COM	RTRV-ALM-<MOD2ALM>	REPT ALM ENV	RTRV-ALM-ALL	REPT ALM EQPT	RTRV-ALM-BITS	REPT ALM RING	RTRV-ALM-ENV	REPT ALM SYNCN	RTRV-ALM-EQPT	REPT EVT <MOD2ALM>	RTRV-ALM-SYNCN	REPT EVT EQPT	RTRV-COND-ENV	REPT EVT RING	
REPT ALM <MOD2ALM>	REPT EVT SECU																				
REPT ALM BITS	REPT EVT SYNCN																				
REPT ALM COM	RTRV-ALM-<MOD2ALM>																				
REPT ALM ENV	RTRV-ALM-ALL																				
REPT ALM EQPT	RTRV-ALM-BITS																				
REPT ALM RING	RTRV-ALM-ENV																				
REPT ALM SYNCN	RTRV-ALM-EQPT																				
REPT EVT <MOD2ALM>	RTRV-ALM-SYNCN																				
REPT EVT EQPT	RTRV-COND-ENV																				
REPT EVT RING																					
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 <a href="#">“CONDITION” section on page 4-16</a></li> </ul>																				
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;CONDDDESCR&gt;]” ; 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 <a href="#">“ALL” section on page 4-5</a></li> <li>&lt;AIDTYPE&gt; is the type of access identifier; valid values for &lt;AIDTYPE&gt; are shown in the <a href="#">“MOD2B” section on page 4-29</a>, &lt;AIDTYPE&gt; is optional</li> <li>&lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the <a href="#">“NOTIF_CODE” section on page 4-32</a>, &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 <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a>, &lt;SRVEFF&gt; is optional</li> <li>&lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>																				

Section	RTRV-COND-ALL Description (continued)
Example	Input RTRV-COND-ALL:TID::229::LOS;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD "FAC-2-1,OC3:CR,LOS,SA,,,,,\"LOS OF SIGNAL\"" ;
Errors	This message generates all the default errors

### 3.4.89 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, Maintenance, Provisioning, Superuser
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-SYNCN REPT ALM BITS RTRV-ATTR-CONT REPT ALM COM RTRV-ATTR-ENV REPT ALM ENV RTRV-BITS REPT ALM EQPT RTRV-COND-<MOD2ALM> REPT EVT SECU RTRV-COND-ALL REPT ALM SYNCN RTRV-COND-ENV REPT EVT <MOD2ALM> RTRV-COND-EQPT REPT EVT EQPT RTRV-COND-SYNCN REPT EVT SYNCN RTRV-NE-SYNCN RLS-SYNCNSW RTRV-SYNCN RTRV-ALM-<MOD2ALM>
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 <a href="#">“BITS” section on page 4-7</a> 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 <a href="#">“CONDITION” section on page 4-16</a></li> </ul>



Section	RTRV-COND-BITS 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;CONDDDESCR&gt;]” ; where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is an identifier that has an alarm condition and is from the <a href="#">“BITS” section on page 4-7</a></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 <a href="#">“MOD2B” section on page 4-29</a>, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the <a href="#">“NOTIF_CODE” section on page 4-32</a>, &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 <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a>, &lt;SRVEFF&gt; is optional</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>
Example	<p>Input RTRV-COND-BITS:TID:BITS-1:229::LOS;</p> <p>Output TID-000 98-06-20 14:30:00 M 001 COMPLD “BITS-1,BITS:CR,LOS,SA,,,,,\”LOS OF SIGNAL\”” ;</p>
Errors	This message generates all the default errors

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

This command retrieves the environmental conditions.

Section	RTRV-COND-ENV Description
Category	Environmental Alarms and Controls
Security	Retrieve, Maintenance, Provisioning, Superuser

Section	RTRV-COND-ENV Description (continued)
Related Messages	<pre> OPR-EXT-CONT REPT ALM &lt;MOD2ALM&gt; REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT ALM RING REPT ALM SYNCN REPT EVT ENV RLS-EXT-CONT RTRV-ALM-&lt;MOD2ALM&gt; RTRV-ALM-ALL RTRV-ALM-BITS RTRV-ALM-ENV RTRV-ALM-EQPT RTRV-ALM-SYNCN RTRV-ATTR-CONT RTRV-ATTR-ENV RTRV-COND-&lt;MOD2ALM&gt; RTRV-COND-ALL RTRV-COND-BITS RTRV-COND-EQPT RTRV-COND-SYNCN RTRV-EXT-CONT SET-ATTR-CONT SET-ATTR-ENV </pre>
Input Format	<pre> RTRV-COND-ENV:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;:[:&lt;NTFCNCDE&gt;], [&lt;ALMTYPE&gt;],,,; </pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier from the “ENV” section on page 4-8 and must not be null</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NOTIFCODE&gt; are shown in the “NOTIF_CODE” section on page 4-32. A null value is equivalent to ALL.</li> <li>• &lt;ALMTYPE&gt; is the alarm type for the environmental condition; valid values for &lt;ALMTYPE&gt; are shown in the “ENV_ALM” section on page 4-21. A null value is equivalent to ALL.</li> </ul>
Output Format	<pre> SID DATE TIME M CTAG COMPLD “&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; is the identifier that has an environmental condition and is from the “ENV” section on page 4-8</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the “NOTIF_CODE” section on page 4-32</li> <li>• &lt;ALMTYPE&gt; is the type of condition to be retrieved; valid values for &lt;ALMTYPE&gt; are shown in the “ENV_ALM” section on page 4-21</li> <li>• &lt;DESC&gt; is a string and is optional</li> </ul>
Example	<pre> Input RTRV-COND-ENV:CISCO:ENV-IN-1:123::NR,OPENDR;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “ENV-IN-1:NR,OPENDR,,,,,\”OPEN DOOR\”” ; </pre>
Errors	This message generates all the default errors

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

This command retrieves the condition equipment.

Section	RTRV-COND-EQPT Description																																						
Category	Equipment																																						
Security	Retrieve, Maintenance, Provisioning, Superuser																																						
Related Messages	<table border="0"> <tr> <td>ALW-SWDX-EQPT</td> <td>RTRV-ALM-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>ALW-SWTOPROTN-EQPT</td> <td>RTRV-ALM-ALL</td> </tr> <tr> <td>ALW-SWTOWKGEQPT</td> <td>RTRV-ALM-BITS</td> </tr> <tr> <td>DLT-EQPT</td> <td>RTRV-ALM-ENV</td> </tr> <tr> <td>ED-EQPT</td> <td>RTRV-ALM-EQPT</td> </tr> <tr> <td>ENT-EQPT</td> <td>RTRV-ALM-SYNCN</td> </tr> <tr> <td>INH-SWDX-EQPT</td> <td>RTRV-ATTR-CONT</td> </tr> <tr> <td>INH-SWTOPROTN-EQPT</td> <td>RTRV-ATTR-ENV</td> </tr> <tr> <td>INH-SWTOWKGEQPT</td> <td>RTRV-COND-&lt;MOD2ALM&gt;</td> </tr> <tr> <td>REPT ALM &lt;MOD2ALM&gt;</td> <td>RTRV-COND-ALL</td> </tr> <tr> <td>REPT ALM BITS</td> <td>RTRV-COND-BITS</td> </tr> <tr> <td>REPT ALM COM</td> <td>RTRV-COND-ENV</td> </tr> <tr> <td>REPT ALM ENV</td> <td>RTRV-COND-SYNCN</td> </tr> <tr> <td>REPT ALM EQPT</td> <td>RTRV-EQPT</td> </tr> <tr> <td>REPT EVT SECU</td> <td>SET-ATTR-CONT</td> </tr> <tr> <td>REPT ALM SYNCN</td> <td>SET-ATTR-ENV</td> </tr> <tr> <td>REPT EVT &lt;MOD2ALM&gt;</td> <td>SW-DX-EQPT</td> </tr> <tr> <td>REPT EVT EQPT</td> <td>SW-TOPROTN-EQPT</td> </tr> <tr> <td>REPT EVT SYNCN</td> <td>SW-TOWKGEQPT</td> </tr> </table>	ALW-SWDX-EQPT	RTRV-ALM-<MOD2ALM>	ALW-SWTOPROTN-EQPT	RTRV-ALM-ALL	ALW-SWTOWKGEQPT	RTRV-ALM-BITS	DLT-EQPT	RTRV-ALM-ENV	ED-EQPT	RTRV-ALM-EQPT	ENT-EQPT	RTRV-ALM-SYNCN	INH-SWDX-EQPT	RTRV-ATTR-CONT	INH-SWTOPROTN-EQPT	RTRV-ATTR-ENV	INH-SWTOWKGEQPT	RTRV-COND-<MOD2ALM>	REPT ALM <MOD2ALM>	RTRV-COND-ALL	REPT ALM BITS	RTRV-COND-BITS	REPT ALM COM	RTRV-COND-ENV	REPT ALM ENV	RTRV-COND-SYNCN	REPT ALM EQPT	RTRV-EQPT	REPT EVT SECU	SET-ATTR-CONT	REPT ALM SYNCN	SET-ATTR-ENV	REPT EVT <MOD2ALM>	SW-DX-EQPT	REPT EVT EQPT	SW-TOPROTN-EQPT	REPT EVT SYNCN	SW-TOWKGEQPT
ALW-SWDX-EQPT	RTRV-ALM-<MOD2ALM>																																						
ALW-SWTOPROTN-EQPT	RTRV-ALM-ALL																																						
ALW-SWTOWKGEQPT	RTRV-ALM-BITS																																						
DLT-EQPT	RTRV-ALM-ENV																																						
ED-EQPT	RTRV-ALM-EQPT																																						
ENT-EQPT	RTRV-ALM-SYNCN																																						
INH-SWDX-EQPT	RTRV-ATTR-CONT																																						
INH-SWTOPROTN-EQPT	RTRV-ATTR-ENV																																						
INH-SWTOWKGEQPT	RTRV-COND-<MOD2ALM>																																						
REPT ALM <MOD2ALM>	RTRV-COND-ALL																																						
REPT ALM BITS	RTRV-COND-BITS																																						
REPT ALM COM	RTRV-COND-ENV																																						
REPT ALM ENV	RTRV-COND-SYNCN																																						
REPT ALM EQPT	RTRV-EQPT																																						
REPT EVT SECU	SET-ATTR-CONT																																						
REPT ALM SYNCN	SET-ATTR-ENV																																						
REPT EVT <MOD2ALM>	SW-DX-EQPT																																						
REPT EVT EQPT	SW-TOPROTN-EQPT																																						
REPT EVT SYNCN	SW-TOWKGEQPT																																						
Input Format	<p>RTRV-COND-EQPT:[&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 an identifier that has an alarm condition; &lt;AID&gt; is from the <a href="#">“EQPT” section on page 4-8</a> 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 <a href="#">“CONDITION” section on page 4-16</a></li> </ul>																																						

Section	RTRV-COND-EQPT 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;CONDDDESCR&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 4-8</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 4-29, &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 4-32, &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 4-16</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 4-38, &lt;SRVEFF&gt; is optional</li> <li>• &lt;CONDDDESCR&gt; is the condition description; &lt;CONDDDESCR&gt; is a string and is optional</li> </ul>
Example	<p>Input RTRV-COND-EQPT:TID:SLOT-1:229::LOS;</p> <p>Output TID-000 98-06-20 14:30:00 M 001 COMPLD “SLOT-1,EQPT:CR,LOS,SA,,,,,\"LOS OF SIGNAL” ;</p>
Errors	This message generates all the default errors

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

This command retrieves the synchronization condition.

Section	RTRV-COND-SYNCN Description
Category	Synchronization
Security	Retrieve, Maintenance, Provisioning, Superuser

Section	RTRV-COND-SYNCN Description (continued)
Related Messages	ED-BITS ED-NE-SYNCN ED-SYNCN OPR-SYNCNSW REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT EVT SECU REPT ALM SYNCN REPT EVT <MOD2ALM> REPT EVT EQPT REPT EVT SYNCN RLS-SYNCNSW 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-ENV RTRV-COND-BITS RTRV-COND-EQPT RTRV-NE-SYNCN RTRV-SYNCN
Input Format	RTRV-COND-SYNCN:[<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 <a href="#">“SYN” section on page 4-10</a> and must not be null</li> <li>• &lt;TYPEREQ&gt; is the type of condition to be retrieved; valid values are shown in the <a href="#">“CONDITION” section on page 4-16</a></li> </ul>
Output Format	SID DATE TIME M CTAG COMPLD “<AID>,[<AIDTYPE>]:[<NTFCNCDE>],<TYPEREQ>,[<SRVEFF>],,,,, [<CONDDESCR>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the identifier that has an alarm condition and is from the <a href="#">“SYN” section on page 4-10</a></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 <a href="#">“MOD2B” section on page 4-29</a>, &lt;AIDTYPE&gt; is optional</li> <li>• &lt;NTFCNCDE&gt; is the notification code; valid values for &lt;NTFCNCDE&gt; are shown in the <a href="#">“NOTIF_CODE” section on page 4-32</a>, &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 <a href="#">“CONDITION” section on page 4-16</a></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 <a href="#">“SERV_EFF” section on page 4-38</a>, &lt;SRVEFF&gt; is optional</li> <li>• &lt;CONDDESCR&gt; is the condition description; &lt;CONDDESCR&gt; is a string and is optional</li> </ul>

Section	RTRV-COND-SYCN Description (continued)
Example	Input RTRV-COND-SYCN:TID:SYNC-NE:229::LOS;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD "SYNC-NE,SYCN:MJ,FRNGSYNC,SA,,,,,\"FREE RUNNING SYNCHRONIZATION MODE\"" ;
Errors	This message generates all the default errors

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

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. This does not include STS for the RTRV-CRS command because “STS” is not a standard designator as defined by GR-833 A-2.

Section	RTRV-CRS-<STS_PATH> Description
Category	Cross Connection
Security	Retrieve, Maintenance, Provisioning, Superuser
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. 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 “STS” <a href="#">section on page 4-9</a> and must not be null</li> </ul>

Section	RTRV-CRS-<STS_PATH> Description (continued)
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 “STS” section on page 4-9</li> <li>• &lt;TO&gt; identifies an entity at the other end of the STS cross connection and is the AID from the “STS” section on page 4-9</li> <li>• &lt;CCT&gt; identifies the cross connection type; valid values for &lt;CCT&gt; are shown in the “CCT” section on page 4-15</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 4-41</li> </ul>
Example	Input RTRV-CRS-STS3C:KENWOOD:STS-6-1:223;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “STS-6-1,STS-12-4:2WAY,STS3C” ;
Errors	This message generates all the default errors



## 3.4.94 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.

Section	RTRV-CRS-VT1 Description
Category	Cross Connection
Security	Retrieve, Maintenance, Provisioning, Superuser
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; is from the <a href="#">“VT1_5” section on page 4-11</a> and must not be null</li> </ul>
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 <a href="#">“VT1_5” section on page 4-11</a></li> <li>&lt;TO&gt; indicates an identifier at the other end of the VT cross connection and is the AID from the <a href="#">“VT1_5” section on page 4-11</a></li> <li>&lt;CCT&gt; identifies the cross connection type; valid values for &lt;CCT&gt; are shown in the <a href="#">“CCT” section on page 4-15</a></li> </ul>
Example	Input RTRV-CRS-VT1:CISCO:VT1-1-1-1-1:1234;  Output TID-000 98-06-20 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

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

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

Section	RTRV-DS1 Description
Category	Ports
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	ED-DS1
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 4-8 and must not be null</li> </ul>
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 4-8</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>
Example	Input RTRV-DS1:CISCO:DS1-2-6-12:1234;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “DS1-2-6-12::TACC=8” ;
Errors	This message generates all the default errors

## 3.4.96 RTRV-EC1: Retrieve EC1

This command retrieves the facility status of an EC1 card.

Section	RTRV-EC1 Description
Category	Ports
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	ED-<OCN_TYPE> ED-EC1 ED-T1 RMV RST <MOD_PORT> RTRV-<OCN_TYPE> RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-T1 RTRV-T3
Input Format	RTRV-EC1:[<TID>]:<AID>:<CTAG>[::::]; where: <ul style="list-style-type: none"> <li>&lt;AID&gt; is the access identifier from the <a href="#">“FACILITY” section on page 4-8</a> and must not be null</li> </ul>
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 <a href="#">“FACILITY” section on page 4-8</a></li> <li>&lt;PJMON&gt; is the SONET pointer monitor attribute of an EC1 port and defaults to 0 (zero); &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 <a href="#">“E_LBO” section on page 4-21</a>, &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 <a href="#">“ON_OFF” section on page 4-34</a>, &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 <a href="#">“PST” section on page 4-36</a>, &lt;PST&gt; is optional</li> </ul>

Section	RTRV-EC1 Description (continued)
Example	Input RTRV-EC1:CISCO:FAC-1-1:1234;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD "FAC-1-1::PJMOM=0,LBO=0-225,RXEQUAL=Y:IS" ;
Errors	This message generates all the default errors

### 3.4.97 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, Maintenance, Provisioning, Superuser
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                                SW-DX-EQPT INH-SWDX-EQPT                        SW-TOPROTN-EQPT INH-SWTOPROTN-EQPT                SW-TOWKG-EQPT

Section	RTRV-EQPT Description (continued)
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 4-8 and must not be null.</li> </ul>
Output Format	SID DATE TIME M CTAG COMPLD “<AID>:<AIDTYPE>,<EQUIP>,[<ROLE>],[<STATUS>]: [PROTID=<PROTID>],[PRTYPE=<PRTYPE>],[RVRTV=<RVRTV>], [RVTM=<RVTM>],[CARDNAME=<CARDNAME>]:[<PST>]” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the equipment unit identifier and is from the “EQPT” section on page 4-8</li> <li>• &lt;AIDTYPE&gt; is the type of AID; valid values for &lt;AIDTYPE&gt; are shown in the “EQPT_TYPE” section on page 4-23</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 4-24</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 4-38, &lt;ROLE&gt; is optional</li> <li>• &lt;STATUS&gt; indicates the status; valid values for &lt;STATUS&gt; are shown in the “STATUS” section on page 4-40, &lt;STATUS&gt; is optional</li> <li>• &lt;PROTID&gt; indicates the protecting identifier; &lt;PROTID&gt; is the AID “PRSLLOT” section on page 4-7 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 4-35, &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 4-34, &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 4-37, &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 4-36, &lt;PST&gt; is optional</li> </ul>

Section	RTRV-EQPT Description (continued)
Example	Input RTRV-EQPT:MIRABEL:SLOT-12:230;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “SLOT-12:DS1-14,EQUIP,,ACT:PROTID=SLOT-13,PRTYPE=1-1, RVRTV=Y,RVTM=8.5,CARDNAME=DESCRIPTION:IS” ;
Errors	This message generates all the default errors

### 3.4.98 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, Maintenance, Provisioning, Superuser
Related Messages	OPR-EXT-CONT REPT ALM ENV RLS-EXT-CONT RTRV-ALM-ENV RTRV-ATTR-CONT RTRV-ATTR-ENV RTRV-COND-ENV SET-ATTR-CONT SET-ATTR-ENV
Input Format	RTRV-EXT-CONT:[<TID>]:<AID>:<CTAG>[::<CONTTYPER>]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “ENV” section on page 4-8 and must not be null</li> <li>• &lt;CONTTYPER&gt; is of type CONTTYPER, page 19 and is optional</li> </ul>

Section	RTRV-EXT-CONT Description (continued)
Output Format	<p>SID DATE TIME M CTAG COMPLD “&lt;AID&gt;:[&lt;CONTTYPER&gt;],&lt;DUR&gt;,[&lt;CONTSTATE&gt;]” ;  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 4-8</li> <li>• &lt;CONTTYPER&gt; is the type of control for which control state is being retrieved; valid values for &lt;CONTTYPER&gt; are shown in the “CONTTYPER” section on page 4-19, &lt;CONTTYPER&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 4-21</li> <li>• &lt;CONTSTATE&gt; is the control of the external control; valid values for &lt;CONTSTATE&gt; are shown in the “ENV_CTRL_MODE” section on page 4-22, &lt;CONTSTATE&gt; is optional</li> </ul>
Example	<p>Input RTRV-EXT-CONT:CISCO:ENV-OUT-2:123::AIRCOND;</p> <p>Output TID-000 98-06-20 14:30:00 M 001 COMPLD “ENV-OUT-2:AIRCOND,CONTS,OPEN” ;</p>
Errors	This message generates all the default errors

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

This command retrieves the optical facility protection information.

Section	RTRV-FFP-<OCN_TYPE> Description
Category	SONET Line Protection
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	DLT-FFP-<OCN_TYPE> ED-FFP-<OCN_TYPE> OPR-PROTNSW-<OCN_TYPE> RLS-PROTNSW-<OCN_TYPE> ENT-FFP-<OCN_TYPE>



Section	RTRV-FFP-<OCN_TYPE> Description (continued)
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 <a href="#">“FACILITY” section on page 4-8</a> and must not be null</li> </ul>
Output Format	SID DATE TIME M CTAG COMPLD “<WORK>,<PROTECT>:.[PROTID=<PROTID>],[RVRTV=<RVRTV>], [RVTM=<RVTM>],[PSDIRN=<PSDIRN>]” ; where: <ul style="list-style-type: none"> <li>• &lt;WORK&gt; identifies the working port and is the AID from the <a href="#">“FACILITY” section on page 4-8</a></li> <li>• &lt;PROTECT&gt; identifies the protection port and is the AID from the <a href="#">“FACILITY” section on page 4-8</a></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 <a href="#">“ON_OFF” section on page 4-34</a>, &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 <a href="#">“REVERTIVE_TIME” section on page 4-37</a>, &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 <a href="#">“UNI_BI” section on page 4-45</a>, &lt;PSDIRN&gt; is optional</li> </ul>
Example	Input RTRV-FFP-OC3:PETALUMA:FAC-1-1:1;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “FAC-2-1,FAC-1-1::PROTID=PROT_NAME,RVRTV=Y,RVTM=1.0, PSDIRN=BI” ;
Errors	This message generates all the default errors

### 3.4.100 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, Maintenance, Provisioning, Superuser
Related Messages	ALW-MSG-ALL ED-DAT ED-NE-GEN INH-MSG-ALL INIT-SYS RTRV-INV RTRV-NE-GEN RTRV-NE-IPMAP RTRV-TOD SET-TOD
Input Format	RTRV-HDR:[<TID>]::<CTAG>;
Example	Input RTRV-HDR:SONOMA::232;
Errors	This message generates all the default errors

### 3.4.101 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.


**Note**

The ALL AID can be used to retrieve AIP, BP, FAN, and all slot inventory information on the NE.

Section	RTRV-INV Description
Category	System
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	ALW-MSG-ALL ED-DAT ED-NE-GEN INH-MSG-ALL INIT-SYS RTRV-HDR RTRV-NE-GEN RTRV-NE-IPMAP RTRV-TOD SET-TOD

Section	RTRV-INV Description (continued)
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 4-8 and must not be null</li> </ul>
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 4-8</li> <li>&lt;AIDTYPE&gt; specifies the type of AID; &lt;AIDTYPE&gt; is a string of the actual equipment type.</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>
Example	Input RTRV-INV:OCCIDENTAL:SLOT-15:301;  Output TID-000 98-06-20 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

### 3.4.102 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	REPT DBCHG

Section	RTRV-LOG Description (continued)
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>
Output Format	SID DATE TIME M CTAG COMPLD “<AID>,<ALMNUMBER>:CURRENT=<CURRENT>, [PREVIOUS=<PREVIOUS>],<CONDITION>,<SRVEFF>, [TIME=<OCRTIME>],[DATE=<OCRDAT>]:<ALMDESCR>” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the <a href="#">“ALL” section on page 4-5</a></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 <a href="#">“NOTIF_CODE” section on page 4-32</a></li> <li>• &lt;PREVIOUS&gt; is the previous severity; valid values for &lt;PREVIOUS&gt; are shown in the <a href="#">“COND_EFF” section on page 4-16</a>, &lt;PREVIOUS&gt; is optional</li> <li>• &lt;CONDITION&gt; is the condition; valid values for &lt;CONDITION&gt; are shown in the <a href="#">“CONDITION” section on page 4-16</a></li> <li>• &lt;SRVEFF&gt; is the service effect; valid values for &lt;SRVEFF&gt; are shown in the <a href="#">“SERV_EFF” section on page 4-38</a></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>
Example	Input RTRV-LOG:CISCO::123::ALARM;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “FAC-3-1,18:CURRENT=MJ,PREVIOUS=CL,EOC,NSA,TIME=16-33-04, DATE=1971-02-03:\”SDCC TERMINATION FAILURE\”” ;
Errors	This message generates all the default errors

### 3.4.103 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, Maintenance, Provisioning, Superuser
Related Messages	ALW-MSG-ALL ED-DAT ED-NE-GEN INH-MSG-ALL INIT-SYS RTRV-HDR RTRV-INV RTRV-NE-IPMAP RTRV-TOD SET-TOD
Input Format	RTRV-NE-GEN:[<TID>]::<CTAG>;
Output Format	<p>SID DATE TIME M CTAG COMPLD “[IPADDR=&lt;IPADDR&gt;],[IPMASK=&lt;IPMASK&gt;],[DEFRTR=&lt;DEFRTR&gt;], [NAME=&lt;NAME&gt;],[SWVER=&lt;SWVER&gt;],[LOAD=&lt;LOAD&gt;]” ; where:</p> <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;NAME&gt; is the node name. The maximum name size is 20 characters; &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>
Example	<p>Input RTRV-NE-GEN:CISCO::123;</p> <p>Output TID-000 98-06-20 14:30:00 M 001 COMPLD “IPADDR=192.168.100.52,IPMASK=255.255.255.0, DEFRTR=192.168.100.1,NAME=NODENAME,SWVER=2.01.03, LOAD=02.13-E09A-08.15” ;</p>
Errors	This message generates all the default errors

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

This command is used to retrieve a list of all nodes that are DCC connected.

Section	RTRV-NE-IPMAP Description
Category	System
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	ALW-MSG-ALL ED-DAT ED-NE-GEN INH-MSG-ALL INIT-SYS RTRV-HDR RTRV-INV RTRV-NE-GEN RTRV-TOD 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 <a href="#">“FACILITY” section on page 4-8</a> and a null value defaults to the whole NE</li> </ul>
Output Format	SID DATE TIME M CTAG COMPLD “<AID>:<IPADDR>” ; 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 <a href="#">“FACILITY” section on page 4-8</a></li> <li>&lt;IPADDR&gt; is the IP address and is a string</li> </ul>
Example	Input RTRV-NE-IPMAP:CISCO:FAC-12-1:123;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “FAC-12-1:172.20.208.225” ;
Errors	This message generates all the default errors

### 3.4.105 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, Maintenance, Provisioning, Superuser
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-SYNCN
Input Format	RTRV-NE-SYNCN:[<TID>]::<CTAG>[::::];
Output Format	<pre>SID DATE TIME M CTAG COMPLD “::[TMMD=&lt;TMMD&gt;],[SSMGEN=&lt;SSMGEN&gt;],[QRES=&lt;QRES&gt;], [RVRTV=&lt;RVRTV&gt;],[RVTM=&lt;RVTM&gt;]” ;</pre> <p>where:</p> <ul style="list-style-type: none"> <li>• &lt;TMMD&gt; is the timing mode; valid values for &lt;TMMD&gt; are shown in the <a href="#">“TIMING_MODE”</a> section on page 4-44, &lt;TMMD&gt; is optional</li> <li>• &lt;SSMGEN&gt; is the SSM generator; valid values for &lt;SSMGEN&gt; are shown in the <a href="#">“SYNC_GENERATION”</a> section on page 4-42, &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 <a href="#">“SYNC_QUALITY_LEVEL”</a> section on page 4-42, &lt;QRES&gt; is optional</li> <li>• &lt;RVRTV&gt; is the revertive mode; valid values for &lt;RVRTV&gt; are shown in the <a href="#">“ON_OFF”</a> section on page 4-34, &lt;RVRTV&gt; is optional</li> <li>• &lt;RVTM&gt; is the revertive time; valid values for &lt;RVTM&gt; are shown in the <a href="#">“REVERTIVE_TIME”</a> section on page 4-37, &lt;RVTM&gt; is optional</li> </ul>

Section	RTRV-NE-SYNCN Description (continued)
Example	Input RTRV-NE-SYNCN:CISCO::123;  Output TID-000 98-06-20 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

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

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

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

This command can be used to retrieve present and historical PM values for 1-day retrieving.

This command can be used to retrieve current time and previous (8 hours) history PM values for 15-min retrieving.

Notes:

1. If the <TMPER> is 1-DAY, <MONTM> is not applicable (null). The command will not ignore the <MONTM> if the command input parameter <TMPER> is 1-DAY.
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, Maintenance, Provisioning, Superuser
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;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. 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 4-13</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 from DIRN are shown in the “DIRN” section on page 4-20. A null value for &lt;MONLEV&gt; defaults to 1-UP. &lt;MONLEV&gt; is a string.</li> <li>• &lt;LOCN&gt; indicates the location; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-26</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 4-45</li> <li>• &lt;MONDAT&gt; is the beginning date of the PM or storage register period specified in &lt;TMPER&gt;. The format of MONDAT is MM-DD, where MM (month of year) ranges from 1 to 12 and DD (day of month) ranges from 1 to 31. A null value for MONDAT defaults to the current date (MM-DD). &lt;MONDAT&gt; is a date.</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 MONTM is HH-MM, where HH (hour of day) ranges from 0 to 23 and MM (minute of hour) ranges from 0-59. A null value for MONTM defaults to the current time (HH-MM). &lt;MONTM&gt; is a time.</li> </ul>

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 4-29, &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 4-13</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 4-46, &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 4-26, &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 4-19, &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 4-45, &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 MONDAT is MM-DD, where MM (month of year) ranges from 1 to 12 and DD (day of month) ranges from 1 to 31. A null value for MONDAT defaults to the current date (MM-DD). &lt;MONDAT&gt; is a date.</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 MONTM is HH-MM, where HH (hour of day) ranges from 0 to 23 and MM (minute of hour) ranges from 0-59. A null value for MONTM defaults to the current time (HH-MM). &lt;MONTM&gt; is a time.</li> </ul>
Example	<p>Input</p> <p>RTRV-PM-T1:TID:FAC-2-1:123::CVL,0-UP,NEND,,15-MIN,04-18,12-45;</p> <p>Output</p> <p>TID-000 98-06-20 14:30:00 M 001 COMPLD “FAC-2-1,DS1-14:CVL,21,COMPL,NEND,BTH,15-MIN,04-18,12-45” ;</p>
Errors	This message generates all the default errors

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

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, at this time of preparation of this document.
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, Maintenance, Provisioning, Superuser
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 4-9 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 4-26; &lt;LOCN&gt; must not be null</li> </ul>

Section	RTRV-PMODE-<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 “<a href="#">STS</a>” section on page 4-9</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 “<a href="#">LOCATION</a>” section on page 4-26 and &lt;LOCN&gt; must not be null</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 “<a href="#">PM_MODE</a>” section on page 4-34</li> </ul>
Example	Input RTRV-PMODE-STS1:CISCO:STS-4-2:230::NEND;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “STS-4-2:NEND,P” ;
Errors	This message generates all the default errors

### 3.4.108 RTRV-PTHTRC-<STS\_PATH>: Retrieve Path Trace (STS1, STS3C, STS6C, STS12C, STS48C, STS192C)

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 should be presented.
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, Maintenance, Provisioning, Superuser
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 4-9 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 4-32 and a null value defaults to INCTRC</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 4-26.</li> </ul>
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 ASCII characters in length. The user is allowed to enter up to 62 ASCII 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>

Section	RTRV-PTHTRC-<STS_PATH> Description (continued)
Example	Input RTRV-PTHTRC-ST1:CISCO:STS-2-1:123::EXPTRC:NEND;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD "TRACMSG" ;
Errors	This message generates all the default errors

### 3.4.109 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 following output example is under line timing mode.

Section	RTRV-SYNCN Description
Category	Synchronization
Security	Retrieve, Maintenance, Provisioning, Superuser
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 SYNCN RTRV-NE-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 “<a href="#">SYNC_REF</a>” section on page 4-10, is listable and must not be null</li> </ul>
Output Format	SID DATE TIME M CTAG COMPLD “<AID>:<REF>,<REFVAL>,<QRES>,<STATUS>” ; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the synchronization reference to be modified and is from the “<a href="#">SYNC_REF</a>” section on page 4-10</li> <li>• &lt;REF&gt; is the rank of the synchronization reference and is the AID from the “<a href="#">SYNCNSW</a>” section on page 4-11</li> <li>• &lt;REFVAL&gt; is the value of the synchronization reference and is the AID from the “<a href="#">SYN_SRC</a>” section on page 4-10</li> <li>• &lt;QRES&gt; is the quality of the RES; valid values for &lt;QRES&gt; are shown in the “<a href="#">SYNC_QUALITY_LEVEL</a>” section on page 4-42, &lt;QRES&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 “<a href="#">STATUS</a>” section on page 4-40, &lt;STATUS&gt; is optional</li> </ul>

Section	RTRV-SYNCN Description (continued)
Example	Input RTRV-SYNCN:BOYES:SYNC-NE:234;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “SYNC-NE:PRI,FAC-1-2,ABOVE-PRS,ACT” ;
Errors	This message generates all the default errors

### 3.4.110 RTRV-T1: Retrieve T1 Facility

This command retrieves the DS1 facilities configuration.

Section	RTRV-T1 Description
Category	Ports
Security	Retrieve, Maintenance, Provisioning, Superuser
Related Messages	ED-<OCN_TYPE> ED-EC1 ED-T1 ED-T3 RMV RST <MOD_PORT> RTRV-<OCN_TYPE> RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-EC1 RTRV-T3
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 <a href="#">“FACILITY” section on page 4-8</a> and must not be null</li> </ul>



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 4-8</li> <li>• &lt;LINECDE&gt; is the line code; valid values for &lt;LINECDE&gt; are shown in the “LINE_CODE” section on page 4-26, &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 4-26, &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 4-26, &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 0–999; &lt;TACC&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 4-36, &lt;PST&gt; is optional</li> </ul>
Example	<p>Input RTRV-T1:TID:FAC-2-1:1223;</p> <p>Output TID-000 98-06-20 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

### 3.4.111 RTRV-T3: Retrieve T3

This command retrieves the facility properties of a DS3 and a DS3XM card.

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, Maintenance, Provisioning, Superuser

Section	RTRV-T3 Description (continued)
Related Messages	ED-<OCN_TYPE> ED-EC1 ED-T1 ED-T3 RMV RST <MOD_PORT> RTRV-<OCN_TYPE> RMV-<MOD_PORT> RST-<MOD_PORT> RTRV-EC1 RTRV-T1
Input Format	RTRV-T3:[<TID>]:<AID>:<CTAG>[::::]; where: <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the <a href="#">“FACILITY”</a> section on page 4-8 and must not be null</li> </ul>
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 <a href="#">“FACILITY”</a> section on page 4-8</li> <li>• &lt;FMT&gt; is the frame format; valid values for &lt;FMT&gt; are shown in the <a href="#">“DS_LINE_TYPE”</a> section on page 4-20, &lt;FMT&gt; is optional</li> <li>• &lt;LINECDE&gt; is the line code; valid values for &lt;LINECDE&gt; are shown in the <a href="#">“DS_LINE_CODE”</a> section on page 4-20, &lt;LINECDE&gt; is optional</li> <li>• &lt;LBO&gt; is the line buildout; valid values for &lt;LBO&gt; are shown in the <a href="#">“E_LBO”</a> section on page 4-21, &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 0–999; &lt;TACC&gt; is optional</li> <li>• &lt;PST&gt; is the state; valid values for &lt;PST&gt; are shown in the <a href="#">“PST”</a> section on page 4-36, &lt;PST&gt; is optional</li> </ul>
Example	Input RTRV-T3:CISCO:FAC-1-2:123;  Output TID-000 98-06-20 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

### 3.4.112 RTRV-TH-<MOD2>: Retrieve Threshold (DS1, EC1, OC3, OC12, OC48, OC192, STS1, STS3C, STS6C, STS12C, STS48C, STS192C, T1, T3, VT1)

This command retrieves the threshold level of one or more monitored parameters.

Section	RTRV-TH-<MOD2> Description
Category	Performance
Security	Retrieve, Maintenance, Provisioning, Superuser
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 4-13</li> <li>• &lt;LOCN&gt; is the location; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-26</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 4-45</li> </ul>
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 4-29, &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 4-13</li> <li>• &lt;LOCN&gt; is the location; valid values for &lt;LOCN&gt; are shown in the “LOCATION” section on page 4-26, &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 4-45, &lt;TMPER&gt; is optional</li> </ul>

Section	RTRV-TH-<MOD2> Description (continued)
Example	Input RTRV-TH-T3:CISCO:FAC-1-3:1234::CVL,NEND,15-MIN; Output TID-000 98-06-20 14:30:00 M 00 COMPLD "FAC-1-3,DS3:CVL,NEND,,1,15-MIN" ;
Errors	This message generates all the default errors

### 3.4.113 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, Maintenance, Provisioning, Superuser										
Related Messages	<table border="0"> <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>INH-MSG-ALL</td> <td>RTRV-NE-IPMAP</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	INH-MSG-ALL	RTRV-NE-IPMAP	INIT-SYS	SET-TOD
ALW-MSG-ALL	RTRV-HDR										
ED-DAT	RTRV-INV										
ED-NE-GEN	RTRV-NE-GEN										
INH-MSG-ALL	RTRV-NE-IPMAP										
INIT-SYS	SET-TOD										
Input Format	RTRV-TOD:[<TID>]::<CTAG>;										
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 to 12; &lt;MONTH&gt; is a string</li> <li>• &lt;DAY&gt; is the day of the month and ranges from 01 to 31; &lt;DAY&gt; is a string</li> <li>• &lt;HOUR&gt; is the hour of the day and ranges from 00 to 23; &lt;HOUR&gt; is a string</li> <li>• &lt;MINUTE&gt; is the minute of the hour and ranges from 00 to 59; &lt;MINUTE&gt; is a string</li> <li>• &lt;SECOND&gt; is the second of the minute and ranges from 00 to 59; &lt;SECOND&gt; is a string</li> <li>• &lt;TMTYPE&gt; identifies the time zone and is a string</li> </ul>										

Section	RTRV-TOD Description (continued)
Example	Input RTRV-TOD:CAZADERO::230;  Output TID-000 98-06-20 14:30:00 M 001 COMPLD “1998,05,08,17,01,33,UTC” ;
Errors	This message generates all the default errors

### 3.4.114 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, Maintenance, Provisioning, Superuser
Related Messages	ED-<STS_PATH> ED-VT1 RTRV-PTHTRC-<STS_PATH> RTRV-<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 4-11 and must not be null</li> </ul>

Section	RTRV-VT1 Description (continued)
Output Format	<p>SID DATE TIME M CTAG COMPLD “&lt;AID&gt;::[RVRTV=&lt;RVRTV&gt;],[RVTM=&lt;RVTM&gt;],[TACC=&lt;TACC&gt;]” ; where:</p> <ul style="list-style-type: none"> <li>• &lt;AID&gt; is the access identifier from the “VT1_5” section on page 4-11 and must not be null</li> <li>• &lt;RVRTV&gt; identifies the revertive mode which only applies to UPSR and defaults to N (non-revertive mode); valid values for &lt;RVRTV&gt; are shown in the “ON_OFF” section on page 4-34 and &lt;RVRTV&gt; is optional</li> <li>• &lt;RVTM&gt; identifies the revertive time which only applies to UPSR and defaults to empty because &lt;RVRTV&gt; is N when UPSR VT1 is created. Valid values for &lt;RVTM&gt; are shown in the “REVERTIVE_TIME” section on page 4-37 and &lt;RVTM&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 0–999; &lt;TACC&gt; is optional.</li> </ul>
Example	<p>Input ED-VT1:CISCO:VT1-4-2-1-3:230;</p> <p>Output TID-000 98-06-20 14:30:00 M 001 COMPLD “VT1-4-2-1-3::RVRTV=Y,RVTM=1.0,TACC=8” ;</p>
Errors	This message generates all the default errors

### 3.4.115 SET-ATTR-CONT: Set Attribute Control

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

Section	SET-ATTR-CONT Description
Category	Environmental Alarms and Controls
Security	Provisioning, Superuser

Section	SET-ATTR-CONT Description (continued)
Related Messages	OPR-EXT-CONT REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT EVT SECU REPT ALM SYNCN REPT EVT <MOD2ALM> REPT EVT EQPT REPT EVT SYNCN RLS-EXT-CONT 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-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-BITS RTRV-COND-ENV RTRV-COND-EQPT RTRV-COND-SYNCN RTRV-EXT-CONT SET-ATTR-ENV
Input Format	SET-ATTR-CONT:[<TID>]:<AID>:<CTAG>::[<CONTTYPE>]; 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 <a href="#">“ENV” section on page 4-8</a></li> <li>• &lt;CONTTYPE&gt; is the type of external control for which the attribute is being retrieved; valid values for &lt;CONTTYPE&gt; are shown in the <a href="#">“CONTTYPE” section on page 4-19</a>. A null value of &lt;CONTTYPE&gt; defaults to MISC.</li> </ul>
Example	Input SET-ATTR-CONT:CISCO:ENV-OUT-1:123::AIRCOND;
Errors	This message generates all the default errors

### 3.4.116 SET-ATTR-ENV: Set Attribute Environment

This command sets the attributes associated with an external control.

Section	SET-ATTR-ENV Description
Category	Environmental Alarms and Controls
Security	Provisioning, Superuser

Section	SET-ATTR-ENV Description (continued)
Related Messages	OPR-EXT-CONT REPT ALM <MOD2ALM> REPT ALM BITS REPT ALM COM REPT ALM ENV REPT ALM EQPT REPT EVT SECU REPT ALM SYNCN REPT EVT <MOD2ALM> REPT EVT EQPT REPT EVT SYNCN RLS-EXT-CONT 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-COND-<MOD2ALM> RTRV-COND-ALL RTRV-COND-BITS RTRV-COND-ENV RTRV-COND-EQPT RTRV-COND-SYNCN RTRV-EXT-CONT 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 4-8 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 4-32</li> <li>• &lt;ALMTYPE&gt; is the type for the environmental alarm; valid values for &lt;ALMTYPE&gt; are shown in the “ENV_ALM” section on page 4-21</li> <li>• &lt;ALMMSG&gt; is the alarm message and is a string</li> </ul>
Example	Input SET-ATTR-ENV:CISCO:ENV-IN-1:123::MJ,OPENDR,\"OPEN DOOR\";
Errors	This message generates all the default errors

### 3.4.117 SET-PMMODE-<STS\_PATH>: Set Performance Mode of PM Data Collection (STS1, STS3C, STS6C, STS12C, STS48C, STS192C)

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. This near end monitoring of the intermediate-path PM (IPPM) only supports for 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, at this time of preparation of this document.
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.



Section	RTRV-PMMODE-<STS_PATH> Description
Category	Performance
Security	Provisioning, Superuser
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 4-9 and must not be null</li> <li>• &lt;LOCN&gt; identifies the location from where 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 4-26; &lt;LOCN&gt; must not be null</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 4-34</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 4-35</li> </ul>
Example	Input SET-PMMODE-STS1:CISCO:STS-4-2:230::NEND,P,ON;
Errors	This message generates all the default errors

### 3.4.118 SET-TH-<MOD2>: Set Threshold (DS1, EC1, OC3, OC12,OC48, OC192, STS1, STS3C, STS6C, STS12C, STS48C, STS192C,T1, T3, VT1)

This command sets the threshold of PM parameters.

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

Section	SET-TH-<MOD2> Description (continued)
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 <a href="#">“ALL” section on page 4-5</a></li> <li>• &lt;MONTYPE&gt; is the monitored value; valid values for &lt;MONTYPE&gt; are shown in the <a href="#">“ALL_MONTYPE” section on page 4-13</a></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 <a href="#">“LOCATION” section on page 4-26</a></li> <li>• &lt;TMPER&gt; is the accumulation time period for the PM information; valid values for &lt;TMPER&gt; are shown in the <a href="#">“TMPER” section on page 4-45</a></li> </ul>
Example	Input SET-TH-T3:CISCO:FAC-1-1:123::CVL,12,NEND,,15-MIN;
Errors	This message generates all the default errors

### 3.4.119 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, Superuser
Related Messages	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

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 to 12; &lt;MONTH&gt; is an integer</li> <li>• &lt;DAY&gt; is the day of the month and ranges from 01 to 31; &lt;DAY&gt; is an integer</li> <li>• &lt;HOUR&gt; is the hour of the day and ranges from 00 to 24; &lt;HOUR&gt; is an integer</li> <li>• &lt;MINUTE&gt; is the minute of the hour and ranges from 00 to 60; &lt;MINUTE&gt; is an integer</li> <li>• &lt;SECOND&gt; is the second of the minute and ranges from 00 to 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 <a href="#">“ON_OFF” section on page 4-34</a></li> </ul>
Example	Input SET-TOD:CAZADERO::240::1998,05,08,13,18,55,480:DST=Y;
Errors	This message generates all the default errors

### 3.4.120 SW-DX-EQPT: Switch Duplex Equipment

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, Provisioning, Superuser
Related Messages	ALW-SWDX-EQPT                      REPT ALM EQPT ALW-SWTOPROTN-EQPT                REPT EVT EQPT ALW-SWTOWKG-EQPT                    REPT SW 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 INH-SWTOWKG-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 4-8</li> <li>• &lt;MODE&gt; is the mode in which the command is to be implemented. This parameter will only support the NORM and FRCD values. 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 4-16</li> </ul>
Example	Input SW-DX-EQPT:CISCO:SLOT-1:123::FRCD;
Errors	This message generates all the default errors

### 3.4.121 SW-TOPROTN-EQPT: Switch to Protection Equipment

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 command. 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 should 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 should 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 should be responded.

6. If this command is sent to a missing working card, the SWFA (Status, Working Unit Failed) error message should be responded.
7. If this command is used on a protection card, the IIAC (Input, Invalid Access Identifier) error message should 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 should 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 should 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 should 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 should 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 should be responded.
13. If sending this command to a standby working card, the SNVS (Status, Not in Valid State) error message should be responded.

Section	SW-TOPROTN-EQPT Description	
Category	Equipment	
Security	Maintenance, Provisioning, Superuser	
Related Messages	ALW-SWDX-EQPT	REPT ALM EQPT
	ALW-SWTOPROTN-EQPT	REPT EVT EQPT
	ALW-SWTOWKG-EQPT	REPT SW
	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
	INH-SWTOWKG-EQPT	

Section	SW-TOPROTN-EQPT Description (continued)
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 <a href="#">“EQPT” section on page 4-8</a></li> <li>• &lt;MODE&gt; is the parameter that will only support the NORM and FRCD values. 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 <a href="#">“CMD_MODE” section on page 4-16</a></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 <a href="#">“PR SLOT” section on page 4-7</a></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 <a href="#">“DIRECTION” section on page 4-19</a></li> </ul>
Example	<p>Input</p> <p>SW-TOPROTN-EQPT:CISCO:SLOT-1:123::FRCD,SLOT-3,BTH;</p>
Errors	This message generates all the default errors

### 3.4.122 SW-TOWKG-EQPT: Switch to Working Equipment

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 WKS WPR 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 WKS WBK 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 should be responded.
5. If this command is sent to a missing working card, the SWFA (Status, Working Unit Failed) error message should be responded.
6. If this command is used on a protection card, the IIAC (Input, Invalid Access Identifier) error message should 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 should be responded.
8. If sending the SW-TOWKG command to a working card when the working card has raised INHWWKG, the SWLD (Status, Working Unit Locked) error message should be responded.
9. If sending the SW-TOWKG command to a working card when the protection card has raised INHWWKG, the SPLD (Status, Protection Unit Locked) error message should be responded.
10. If sending the SW-TOWKG command to an active working card, the SNVS (Status, Not in Valid State) error message should be responded.

Section	SW-TOWKG-EQPT Description																		
Category	Equipment																		
Security	Maintenance, Provisioning, Superuser																		
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>REPT SW</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> <tr> <td>INH-SWTOWKG-EQPT</td> <td></td> </tr> </table>	ALW-SWDX-EQPT	REPT ALM EQPT	ALW-SWTOPROTN-EQPT	REPT EVT EQPT	ALW-SWTOWKG-EQPT	REPT SW	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	
ALW-SWDX-EQPT	REPT ALM EQPT																		
ALW-SWTOPROTN-EQPT	REPT EVT EQPT																		
ALW-SWTOWKG-EQPT	REPT SW																		
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																			
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. The AID should be the working unit AID for this command. &lt;AID&gt; is from the <a href="#">“PRSLOT” section on page 4-7</a></li> <li>• &lt;MODE&gt; is the parameter that will only support the NORM and FRCD values. 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 <a href="#">“CMD_MODE” section on page 4-16</a></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 <a href="#">“DIRECTION” section on page 4-19</a></li> </ul>																		
Example	<p>Input</p> <p>SW-TOWKG-EQPT:CISCO:SLOT-2:123::FRCD,BTH;</p>																		
Errors	This message generates all the default errors																		







## TL1 Command Components

---

This chapter describes the components of TL1 commands and autonomous messages for the Cisco ONS 15454, Release 3.1, 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 contype 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**

AID	Patterns
PR SLOT	NULL SLOT-1 SLOT-3 SLOT-5 SLOT-13 SLOT-15 SLOT-17
BITS	BITS-ALL BITS-{1,2}
BLSR	ALL BLSR-{0, 1-9999}
DS1	DS1-{1-6,12-17}-{1-6}-{1-28}
ENV	ENV-{IN,OUT}-{1-4}
EQPT	SLOT-ALL SLOT-{1-17} SLOT-{1-6,12-17}

Table 4-10 ALL (continued)

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} FAC-{5,6,12,13}-{1}
STS	STS-{1-6,12-17}-ALL STS-{1-6,12-17}-{1,13,25,37} 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}-{1-12} 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}
SYN	SYNC-NE
SYN_SRC	FAC-{1-6,12-17}-{1-4} FAC-{1-6,12-17}-{1} FAC-{5,6,12,13}-{1} INTERNAL SYNC-NE {BITS-1,BITS-2}
SYNC_REF	SYNC-ALL SYNC-NE SYNC-{BITS1,BITS2}
SYNCSW	INT PRI SEC THIRD
TAP	{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}-{1-48}-{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}

## 4.2.2 PRSLOT

Valid protection slots for the electrical cards

**Table 4-11 PRSLOT**

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

## 4.2.3 BITS

AID for BITS

**Table 4-12 BITS**

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 BLSR

BLSR AIDs are used to access the specific BLSR of the NE.

**Table 4-13 BLSR**

Pattern	Description
ALL	The whole BLSR of the NE
BLSR-{0-9999}	Individual BLSR of the NE

## 4.2.5 DS1

Used to access the DS-1 frame layer of the DS3XM.

**Table 4-14 DS1**

Pattern	Description
DS1-{1-6,12-17}-{1-6}-{1-28}	DS1 AID for the DX3XM card

## 4.2.6 ENV

The environmental AID for the AIC card

**Table 4-15 ENV**

Pattern	Description
ENV-{IN,OUT}-{1-4}	Environmental alarm AID. "IN" is used for environmental AID, "OUT" is used for control AID.

## 4.2.7 EQPT

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 4-16 EQPT**

Pattern	Description
ALL	The ALL AID is only allowed for the RTRV-INV input command to retrieve AIP, BP, FAN and all the slots inventory information of the NE.
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 FACILITY

Used to access specific ports.

**Table 4-17 FACILITY**

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 OC3 card



**Table 4-17 FACILITY**

FAC-{1-6,12-17}-{1-6}	Facilities for the DS3XM card
FAC-{1-6,12-17}-{1}	Facility AID for the 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 STS

SONET frame-level AID set

**Table 4-18 STS**

AID	Description
STS-{1-6,12-17}-ALL	All the STSs of an STS bandwidth on an I/O unit
STS-{1-6,12-17}-{1,13,25,37}	STS12C AID for an OC48AS card
STS-{1-6,12-17}-{1,4,7,10-46}	STS3C AID for an OC48AS card
STS-{1-6,12-17}-{1,4,7,10}	STS3C AID for OC3 and OC12 cards
STS-{1-6,12-17}-{1,7,13,19-43}	STS6C AID for an OC48AS card
STS-{1-6,12-17}-{1-12}	STS1 AID for OC12, EC1, DS3 and OC3 cards
STS-{1-6,12-17}-{1-48}	STS1 AID for an OC48AS card
STS-{1-6,12-17}-{1-6}	STS1 AID for the DS3XM card
STS-{1-6,12-17}-{1}	STS1 AID for the DS1card STS3C AID for the OC3 card STS12C AID for the OC12 card STS48C AID for an OC48AS card
STS-{5,6,12,13}-{1,13,25,37-81}	STS12C AID for the OC192 card
STS-{5,6,12,13}-{1,13,25,37}	STS12C AID for the OC48 card
STS-{5,6,12,13}-{1,4,7,10-190}	STS3C AID for the OC192 card
STS-{5,6,12,13}-{1,4,7,10-46}	STS3C AID for the OC48 card
STS-{5,6,12,13}-{1,49,97,145}	STS48C AID for an OC48 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 the OC192 card
STS-{5,6,12,13}-{1-48}	STS1 AID for an OC48 card
STS-{5,6,12,13}-{1}	STS48C AID for the OC48 card STS192C AID for the OC192 card

## 4.2.10 SYN

Synchronization AIDs

**Table 4-19 SYN**

Pattern	Description
SYNC-NE	NE sync AID

## 4.2.11 SYN\_SRC

Synchronization source

**Table 4-20 SYN\_SRC**

Pattern	Description
FAC-{1-6,12-17}-{1-4}	Sync source is the optical card (OC3) facility
FAC-{1-6,12-17}-{1}	Sync source is the optical card (OC12) 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 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

## 4.2.12 SYNC\_REF

Synchronization AIDs

**Table 4-21 SYNC\_REF**

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 SYNC SW

New synchronization reference that will be used

**Table 4-22 SYNC SW**

Pattern	Description
INT	Internal clock. The “INT” value of the syncsw is only applied for the SYNC-NE AID on OPR-SYNC-SW command.
PRI	Primary timing reference
SEC	Secondary timing reference
THIRD	Third timing reference

## 4.2.14 TAP

Test access path AID which indicates the TAP number

**Table 4-23 TAP**

Pattern	Description
{0, 1-999}	Indicates individual TAP number of the NE. The zero (0) 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 VT1\_5

Virtual termination AIDs

**Table 4-24 VT1\_5**

Pattern	Description
ALL	All the VT cross connections of the NE. This <ALL> AID is only used for the RTRV-CRS-VT1 command.
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, OC12, OC3 card VT AID set
VT1-{1-6,12-17}-{1-48}-{1-7}-{1-4}	OC48AS 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

## 4.3 Parameter Types

This section provides a description of all message parameter types defined for the TL1 messages used in the ONS 15454. 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 ONS 15454. The ONS 15454 uses 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 ONS 15454 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 4-25 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
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-PDEN:Negative Pointer Justification
PPJC-PDET	PPJC-PDET:Positive Pointer Justification
PPJC-PGEN	PPJC-PDEN:Positive Pointer Justification
PSC	Protection Switching Count
PSD	Protection Switching Duration
SASCPP	Severely Errored Framing/AIS Second - CP-Bit Path
SASP	Severely Errored Framing/AIS Seconds Path
SEFS	Severely Errored Framing Seconds
SESCPP	Severely Errored Seconds - CP-Bit Path
SESL	Severely Errored Seconds - Line
SESP	Severely Errored Seconds - Path
SESS	Severely Errored Seconds - Section
SESV	Severely Errored Seconds - VT Path
UASCPP	Unavailable Seconds - CP-Bit Path
UASL	Unavailable Seconds - Line
UASP	Unavailable Seconds - Path
UASV	Unavailable Seconds - VT Path

## 4.3.6 ALL\_THR

Threshold list

**Table 4-26 ALL\_THR Value**

<b>ALL_THR Values</b>	<b>Description</b>
T-AISSP	Alarm Indication Signal Seconds - Path
T-CVCPP	Coding Violations - CP-Bit Path
T-CVL	Coding Violations - Line
T-CVP	Coding Violations - Path
T-CVS	Coding Violations - Section
T-CVV	Coding Violations - VT Path
T-ESCPP	Errored Seconds - CP-Bit Path
T-ESL	Errored Seconds - Line
T-ESP	Errored Seconds - Path
T-ESS	Errored Seconds - Section
T-ESV	Errored Seconds - VT Path
T-FCL	Failure Count - Line
T-FCP	Failure Count - Path
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-SESCPP	Severely Errored Second - CP-Bit Path
T-SESL	Severely Errored Second - Line
T-SESP	Severely Errored Second - Path
T-SESS	Severely Errored Second - Section
T-SESV	Severely Errored Second - VT Path
T-UASCPP	Unavailable Second - CP-Bit Path
T-UASL	Unavailable Second - Line
T-UASP	Unavailable Second - Path
T-UASV	Unavailable Second - VT Path

## 4.3.7 BLSR\_MODE

BLSR mode

**Table 4-27 BLSR\_MODE Values**

BLSR_MODE Values	Description
2F	Two fiber BLSR
4F	Four fiber BLSR

## 4.3.8 BLSR\_TYPE

BLSR type of an OCN port

**Table 4-28 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

## 4.3.9 CCT

Defines the type of cross-connect to be created

**Table 4-29 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

### 4.3.10 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 4-30** *CMD\_MODE Values*

<b>CMD_MODE Values</b>	<b>Description</b>
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.

### 4.3.11 COND\_EFF

The affected unit's condition

**Table 4-31** *COND\_EFF Values*

<b>COND_EFF Values</b>	<b>Description</b>
CL	Standing condition cleared
SC	Standing condition raised
TC	Transient condition

### 4.3.12 CONDITION

The condition type of the alarm indication

**Table 4-32** *CONDITION Values*

<b>CONDITION Values</b>	<b>Description</b>
ALM-SUPPRESS	Alarms/Events Suppressed for this Object
AUTOSW-SDBER	Automatic Switch - Signal Degrade Bit Error Rate
AUTOSW-SFBER	Automatic Switch - Signal Failure Bit Error Rate
EQPT-MISS	Replaceable Equipment/Unit is Missing
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
FE-AIS	Far-end DS3 node is reporting an AIS
FE-DS1-MULTLOS	Multiple inputs detect a loss on the far-end



**Table 4-32** *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
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
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 completed
FE-EXERCISING-SPAN	Far End Exercise Span completed
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-SPAN	Far end LockOut Working Channel 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
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
FULLPASSTHR-BI	Bi-direction Full Pass Through is active
INC-ISD	DS3 idle condition
INHSWPR	Inhibit switch to protect request on equipment
INHSWWKG	Inhibit switch to working request on equipment
KB_PASSTHR	K-Byte Pass Through is active
LKOUTPR-S	Lockout of Protection - Span
LOCKOUT-REQ	Lockout switch request on facility/equipment
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
LPBKTERMINAL	Loopback, Terminal

Table 4-32 *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
MAN	Manually caused abnormal condition
MAN-REQ	Manual Switch Request on facility/equipment
MANRESET	Recovery action - Manual system Reset
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
MANSWTOHIRD	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
PDI-P	External failure - Incoming - Signal Label Mismatch Failure - Payload Defect Indication - Path
PROTNA	Protection unit not available
PWRRESTART	Recovery action - Powerfail Restart
RAI	External failure - Incoming - Remote Alarm Indication
RING-SEGMENT	K-Byte Pass Through is active
RING-SW-EAST	Ring switch is active on the East side
RING-SW-WEST	Ring switch is active on the West side
SD-L	BER threshold exceeded for Signal Degrade - Line
SD-P	BER threshold exceeded for Signal Degrade - Path
SF-L	BER threshold exceeded for Signal Failure - Line
SF-P	BER threshold exceeded for Signal Failure - Path
SPAN-SW-EAST	Span switch is active on the East side
SPAN-SW-WEST	Span switch is active on the West side
SQUELCH	Occurs in a BLSR when a node that originates or terminates STS circuits fails or is isolated by multiple fiber cuts
SSM-DUS	Synchronization Status Messaging - Don't use for timing synchronization
SSM-OFF	Synchronization Status Messaging - Off
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

**Table 4-32** *CONDITION Values (continued)*

<b>CONDITION Values</b>	<b>Description</b>
SSM-ST4	Synchronization Status Messaging - Stratum 4
SSM-STU	Synchronization Status Messaging - Sync traceability unknown
SSM-TNC	Synchronization Status Messaging - Transit node clock
SWTOPRI	Recovery action - Synchronization Switch To Primary reference
SWTOSEC	Recovery action - Synchronization Switch To Second refernce
SWTOTHIRD	Recovery action - Synchronization Switch To Third refernce
WKSWPR	Recovery action - Working facility/equipment switched to protection unit
WTR-RING	Recovery action - SONET ring is in Wait To Restore state
WTR-SPAN	Recovery action - SONET span in Wait To Restore state

### 4.3.13 CONTTYPE

The Environmental control types as defined by Telcordia GR-833-CORE, Issue 2, November 1996, Appendix G.

**Table 4-33** *CONTTYPE Values*

<b>CONTTYPE Values</b>	<b>Description</b>
AIRCOND	Air conditioning
ENGINE	Engine
FAN	Fan
GEN	Generator
HEAT	Heat
LIGHT	Light
MISC	Miscellaneous
SPKLR	Sprinkler

### 4.3.14 DIRECTION

Transmit and receive directions

**Table 4-34** *DIRECTION Values*

<b>DIRECTION Values</b>	<b>Description</b>
BTH	Both transmit and receive directions
RCV	Receive direction only
TRMT	Transmit direction only

## 4.3.15 DIRN

Specifies the discriminating level for the requested monitored parameter

**Table 4-35 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

## 4.3.16 DS3\_FMT

Indicates a DS3 digital signal format

**Table 4-36 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

## 4.3.17 DS\_LINE\_CODE

DS123 Line Code

**Table 4-37 DS\_LINE\_CODE Values**

DS_LINE_CODE Values	Description
B3ZS	Bipolar with Three-Zero Substitution

## 4.3.18 DS\_LINE\_TYPE

DS123 Line type

**Table 4-38 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.

## 4.3.19 DURATION

Duration

**Table 4-39 DURATION Values**

DURATION Values	Description
CONTS	Continuous duration

## 4.3.20 E\_LBO

Electrical signal line buildout

**Table 4-40 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

## 4.3.21 ENV\_ALM

Environmental alarm types as defined by Telcordia GR-833-CORE, Issue 2, November 1996, Appendix F.

**Table 4-41 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
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

**Table 4-41 ENV\_ALM Values (continued)**

<b>ENV_ALM Values</b>	<b>Description</b>
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

### 4.3.22 ENV\_CRTL\_MODE

Current state of the environmental control

**Table 4-42 ENV\_CRTL Values**

<b>ENV_CRTL_MODE Values</b>	<b>Description</b>
CLOSE	Environmental control state is closed
OPEN	Environmental control state is opened

## 4.3.23 EQPT\_TYPE

Identifies the type of equipment being provisioned into a slot

**Table 4-43 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 DS3NE 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
E100T-12	A 2 port interface card supporting 1000 Base T ethernet facilities
E1000-2	A 12 port interface card supporting 100 Base T ethernet facilities
E100T-G	A 2 port interface card supporting 1000 Base T ethernet facilities and is compatible with the XC192 card
E1000-2-G	A 12 port interface card supporting 100 Base T ethernet facilities and is compatible with the XC192 card
EC1-12	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
OC12	An interface card that supports one or more OC-12 (622Mbs) optical facilities
OC12-IR-1	An interface card that supports one intermediate range OC-12 (622Mbs) optical facilities
OC12-LR-1	An interface card that supports one long range OC-12 (622Mbs) optical facilities
OC12-SR-1	An interface card that supports one short range OC-12 (622Mbs) optical facilities

**Table 4-43 EQPT\_TYPE Values (continued)**

<b>EQPT_TYPE Values</b>	<b>Description</b>
OC3	An interface card that supports multiple OC-3 (155Mbps) optical facilities
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 extended long range OC-48 (2.5Gbs) optical facility that can only be provisioned in the high-speed I/O slots
OC48-AS-1	An interface card that supports one short range OC-48 (2.5Gbs) optical facility 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 that can be provisioned in any I/O slot
OC48-IR-1	An interface card that supports one intermediate range OC-48 (2.5Gbs) optical facility
OC48-LR-1	An interface card that supports one long range OC-48 (2.5Gbs) optical facility
OC48-SR-1	An interface card that supports one short range OC-48 (10Gbs) optical facilities
OC192-LR-1	An interface card that supports one or more OC-192 optical facilities
TCC+	The Timing Communication and Control+ card
XC	A cross-connect card
XC192	A cross-connect card that cross-connects STS-12, STS-48, and STS-192 signal rates
XCVT	A cross-connect card

## 4.3.24 EQUIP

Indicates the presence of a plug-in unit

**Table 4-44 EQUIP Values**

<b>EQUIP Values</b>	<b>Description</b>
EQUIP	The unit is Equipped - present
UNEQUIP	The unit is Unequipped - absent



## 4.3.25 EQUIPMENT\_TYPE

Equipment type

**Table 4-45** EQUIPMENT\_TYPE Values

EQUIPMENT_TYPE Values	Description
AIC	AIC card
DS1	DS1 card
DS1N	DS1N card
DS3	DS3 card
DS3E	DS3E card
DS3N	DS3N card
DS3NE	DS3NE card
DS3XM	DS3XM card
E100T-12	E100T-12 card
E1000T	E1000T card
E100T	E100T card
EC1	EC1 card
OC3	OC3 card
OC12	OC12 card
OC48	OC48 card
OC192	OC192 card
TCC+	TCC+ card
XC192	XC192 card
XC	XC card
XCVT	XCVT card

## 4.3.26 EXT\_RING

Indicates if the ring supports the extended K1/K2/K3 protocol

**Table 4-46** EXT\_RING Values

EXT_RING Values	Description
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

## 4.3.27 FRAME\_FORMAT

The frame format for a T1 port

*Table 4-47 FRAME\_FORMAT Values*

FRAME_FORMAT Values	Description
D4	Frame format is D4
ESF	Frame format is ESF
UNFRAMED	Frame format is unframed

## 4.3.28 LINE\_BUILDOUT

Line buildout

*Table 4-48 LINE\_BUILDOUT Values*

LINE_BUILDOUT Values	Description
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

## 4.3.29 LINE\_CODE

Line code

*Table 4-49 LINE\_CODE Values*

LINE_CODE Values	Description
AMI	Line code value is AMI
B8ZS	Line code value is B8ZS (Bipolar with Three-Zero Substitution)

## 4.3.30 LOCATION

Identifies the location where the action is to take place

*Table 4-50 LOCATION Values*

LOCATION Values	Description
FEND	Action occurs on the Far End of the facility
NEND	Action occurs on the Near End of the facility

### 4.3.31 LPBK\_TYPE

Indicates the type of loopback that is to be operated or released

**Table 4-51 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

### 4.3.32 MOD2

Line/Path Modifier

**Table 4-52 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
STS12C	STS12C path
STS48C	STS48C path
STS192C	STS192C path
T1	T1/DS1 facility/line
T3	T3/DS3 facility/line
VT1	VT1_5 path

### 4.3.33 MOD2\_IO

Facility/Line Modifier

**Table 4-53 MOD2\_IO Values**

<b>MOD2_IO Values</b>	<b>Description</b>
DS1	DS1 line of a DS3XM card
EC1	EC1 facility
OC3	OC3 facility
OC12	OC12 facility
OC48	OC48 facility
OC192	OC192 facility
T1	T1/DS1 facility
T3	T3/DS3 facility

### 4.3.34 MOD2ALM

Alarm type for certain generic TL1 commands

**Table 4-54 MOD2ALM Values**

<b>MOD2ALM Values</b>	<b>Description</b>
DS1	DS1 alarm
E100	E100 alarm
E1000	E1000 alarm
EC1	EC1 alarm
OC3	OC3 alarm
OC12	OC12 alarm
OC48	OC48 alarm
OC192	OC192 alarm
STS1	STS1 alarm
STS3C	STS3C alarm
STS6C	STS6C alarm
STS12C	STS12C alarm
STS48C	STS48C alarm
STS192C	STS192C alarm
T1	T1 alarm
T3	T3 alarm
VT1	VT1 alarm

## 4.3.35 MOD2B

Alarm type for certain generic TL1 commands

**Table 4-55 MOD2B Values**

<b>MOD2B Values</b>	<b>Description</b>
BITS	BITS alarm
COM	COM alarm
DS1	DS1 alarm
E100	E100 alarm
E1000	E1000 alarm
EC1	EC1 alarm
ENV	ENV alarm
EQPT	EQPT alarm
OC3	OC3 alarm
OC12	OC12 alarm
OC48	OC48 alarm
OC192	OC192 alarm
STS1	STS alarm
STS3C	STS alarm
STS6C	STS alarm
STS12C	STS alarm
STS48C	STS alarm
STS192C	STS Alarm
SYNCN	SYNCN alarm
T1	T1 alarm
T3	T3 alarm
TCC	TCC alarm
VT1	VT alarm

### 4.3.36 MOD\_PATH

STS/VT Path Modifier

**Table 4-56 MOD\_PATH Values**

MOD_PATH Values	Description
STS1	STS1 Path
STS3C	STS3C Path
STS6C	STS6C Path
STS12C	STS12C Path
STS48C	STS48C Path
STS192	STS192C Path
VT1	VT1_5 Path

### 4.3.37 MOD\_PORT

Move from MOD2\_IO without DS1

**Table 4-57 MOD\_PORT Values**

MOD_PORT Values	Description
EC1	EC1 Port
OC3	OC3 Port
OC12	OC12 Port
OC48	OC48 Port
OC192	OC192 Port
T1	T1/DS1 Port
T3	T3/DS3 Port

### 4.3.38 MOD\_TACC

Test Access Modifier

**Table 4-58 MOD\_TACC Values**

MOD_TACC Values	Description
DS1	DS1 line of a DS3XM card
STS1	STS1 path
STS3C	STS3C path
STS6C	STS6C path
STS12C	STS12C path

**Table 4-58 MOD\_TACC Values (continued)**

<b>MOD_TACC Values</b>	<b>Description</b>
STS48C	STS48C path
STS192C	STS192C path
T1	T1/DS1 facility/line
T3	T3/DS3 facility/line
VT1	VT1_5 path

## 4.3.39 MODIFIER

Modifier for certain TL1 commands that are generic in syntax

**Table 4-59 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
STS12C	STS-12C command modifier
STS48C	STS-48C command modifier
SYNCN	Synchronization command modifier
T3	T3/DS3 command modifier

## 4.3.40 MODULE\_OP

Module operation mode

**Table 4-60 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

*Table 4-60 MOD\_OP Values (continued)*

<b>MODULE_OP Values</b>	<b>Description</b>
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

### 4.3.41 MSGTYPE

Type of trace message

*Table 4-61 MSGTYPE Values*

<b>MSGTYPE Values</b>	<b>Description</b>
EXPTRC	Expected incoming Path trace message
INCTRC	Incoming Path trace message
TRC	Outgoing Path trace message

### 4.3.42 NOTIF\_CODE

The 2-character Notification Code associated with an autonomous message

*Table 4-62 NOTIF\_CODE Values*

<b>NOTIF_CODE Values</b>	<b>Description</b>
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



### 4.3.43 OCN\_4F

Modifier used to differentiate the various levels of OC-N in 4F BLSR

**Table 4-63 OCN\_4F Values**

OCN_4F Values	Description
OC48	Optical Carrier level-48 (2.4Gbs)
OC192	Optical Carrier level-192 (10Gbs)

### 4.3.44 OCN\_BLSR

Modifier used to differentiate the various levels of OC-N in BLSR

**Table 4-64 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)

### 4.3.45 OCN\_MONTYPE

OCN monitor type

**Table 4-65 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

## 4.3.46 OCN\_TYPE

Modifier used to differentiate the various levels of OC-N in the ENT/ED/DLT/RTRV commands

**Table 4-66 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)

## 4.3.47 ON\_OFF

Disable or Enable an attribute

**Table 4-67 ON\_OFF Values**

ON_OFF Values	Description
N	Disable the attribute
Y	Enable the attribute

## 4.3.48 OPTICAL\_MODE

The facility optical mode

**Table 4-68 OPTICAL\_MODE Values**

OPTICAL_MODE Values	Description
SDH	The SDH optical mode the European format
SONET	The SONET optical mode the American format

## 4.3.49 PM\_MODE

Identifies the type of PM parameters. Only P type is supported.

**Table 4-69 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

*Table 4-69 PM\_MODE Values (continued)*

PM_MODE Values	Description
S	Transport Section PM parameters
SEG	Transport Path Segment PM parameters (e.g., ISDN BRA)

## 4.3.50 PM\_STATE

Directs the named PM mode type - path (P) state

*Table 4-70 PM\_STATE Values*

PM_MODE Values	Description
OFF	Disable the mode
ON	Enable the mode

## 4.3.51 PRIVILEGE

Security level

*Table 4-71 PRIVILEGE Values*

PRIVILEGE Values	Description
MAINT	Maintenance security level
PROV	Provisioning security level
RTRV	Retrieve security level
SUPER	Superuser security level

## 4.3.52 PROTECTION\_GROUP

Protection group type

*Table 4-72 PROTECTION\_GROUP Values*

PROTECTION_GROUP Values	Description
1-1	1 to 1 protection group
1-N	1 to N protection group

### 4.3.53 PST

Primary State. This parameter indicates the current overall service condition of an entity.

**Table 4-73 PST Values**

PST Values	Description
IS	In-service
OOS	Out-of-Service

### 4.3.54 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 4-74 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.

**Table 4-74 PSTQ Values (continued)**

PSTQ Values	Description
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.

### 4.3.55 REVERTIVE\_TIME

Revertive time

**Table 4-75 REVERTIVE\_TIME Values**

REVERTIVE_TIME Values	Description
0.5 – 9.5	Revertive time is 0.5 to 9.5 minutes

### 4.3.56 RNG\_TYPE

Defines the type of ring that is to be deployed for this path

**Table 4-76 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

### 4.3.57 SD\_BER

The threshold for declaring Signal Degrade on a facility or path

**Table 4-77 SD\_BER Values**

SD_BER Values	Description
1E-5 – 1E-9	SDBER is the 1E-5 to 1E-9

## 4.3.58 SDCC\_MODE

Enables or disables the Section Data Communications Channel (SDCC) for the specified facility

*Table 4-78 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

## 4.3.59 SERV\_EFF

Indicates the effect of the alarm on service

*Table 4-79 SERV\_EFF Values*

SERV_EFF Values	Description
NSA	The condition is Non-Service Affecting
SA	The condition is Service Affecting

## 4.3.60 SF\_BER

The threshold for declaring Signal Failure on a facility or path

*Table 4-80 SF\_BER Values*

SF_BER Values	Description
1E-3 - 1E-5	SFBER is the 1E-3 to 1E-5

## 4.3.61 SIDE

The role the unit is playing in the protection group

*Table 4-81 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

## 4.3.62 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 4-82 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
SWDL	Software Downloading
UAS	Unassigned
UEQ	Unequipped
WKR	Working

## 4.3.63 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 15454's Equipment state is mapped (roughly) to the Telcordia State Model.

The optional [<state>] field in the autonomous messages REPT RMV EQPT and REPT RST EQPT can be populated with the values below.

The [<state>] field is populated by the combination of the PST-PSTQ-SST. For the REPT RMV rr and REPT RST rr, the optional [<state>] field will be populated with just PST.

**Table 4-83 STATE Values**

STATE Values	Description
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.

## 4.3.64 STATUS

Indicates whether the unit in the protection pair is Active or Standby

**Table 4-84 STATUS Values**

STATUS Values	Description
ACT	The entity is the Active unit on the shelf
NA	Status is unavailable
STBY	The entity is the standby unit on the shelf

## 4.3.65 STM\_TYPE

The Synchronous Transport Mode of the NE

**Table 4-85 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

## 4.3.66 STS\_MAP

The payload mapping of a terminated STS path

**Table 4-86 STS\_MAP Values**

STS_MAP Values	Description
ASYNCR	The STS path is carrying an Asynchronous DS3 payload
ATM	The STS path is carrying ATM cells
NONE	The STS path is not terminated

## 4.3.67 STS\_MONTYPE

STS Monitor Type

**Table 4-87 STS\_MONTYPE Values**

STS_MONTYPE Values	Description
CVP	Coding Violation - P
ESP	Errored Second - Path
SESP	Severely Errored Second - Path
UASP	Unavailable Second - Path



## 4.3.68 STS\_PATH

Modifier for some of the STS commands

**Table 4-88 STS\_PATH Values**

STS_PATH Values	Description
STS1	Synchronous Transport Signal level-1 (51Mbs)
STS3C	Synchronous Transport Signal level-3 Concatenated (155Mbs)
STS6C	Synchronous Transport Signal level-6 Concatenated (310Mbs)
STS12C	Synchronous Transport Signal level-12 Concatenated (622Mbs)
STS48C	Synchronous Transport Signal level-48 Concatenated (2488Mbs)
STS192C	Synchronous Transport Signal level-192 (9952Mbs)

## 4.3.69 SWITCH

The type of switch to be initiated

**Table 4-89 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

## 4.3.70 SWITCH\_TYPE

BLSR switch type

*Table 4-90 SWITCH\_TYPE Values*

<b>SWITCH_TYPE Values</b>	<b>Description</b>
RING	BLSR ring switch type
SPAN	BLSR span switch type

## 4.3.71 SYNC\_GENERATION

Synchronization status message set generation

*Table 4-91 SYNC\_GENERATION Values*

<b>SYNC_GENERATION Values</b>	<b>Description</b>
GEN1	First generation SSM set
GEN2	Second generation SSM set

## 4.3.72 SYNC\_QUALITY\_LEVEL

Reserved for network synchronization quality level

*Table 4-92 SYNC\_QUALITY\_LEVEL Values*

<b>SYNC_QUALITY_LEVEL Values</b>	<b>Description</b>
ABOVE-PRS	Better than Primary Reference Source
ABOVE-SMC	Between SMC and ST3
ABOVE-ST2	Between ST2 and STU
ABOVE-ST3	Between ST3 and ST2
ABOVE-ST3E	Between ST3E and TNC
ABOVE-ST4	Between ST4 and ST3
ABOVE-STU	Between STU and PRS
ABOVE-TNC	Between TNC and PRS
BELOW-ST4	Below ST4 but still usable
SAME-AS-DUS	Disable the RES message by equating it to DUS

### 4.3.73 T1\_MONTYPE

T1 monitor type

**Table 4-93 T1\_MONTYPE Values**

T1_MONTYPE	Description
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

### 4.3.74 T3\_MONTYPE

T3 monitor type

**Table 4-94 T3\_MONTYPE Values**

T3_MONTYPE Values	Description
CVL	Coding Violation - Line
ESL	Errored Second - Line
SESL	Severely Errored Second - Line

### 4.3.75 TACC\_MODE

Test access mode

**Table 4-95 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.

**Table 4-95 TACC\_MODE Values (continued)**

<b>TACC_MODE Values</b>	<b>Description</b>
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.
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.

## 4.3.76 TIMING\_MODE

Timing mode for the current node

**Table 4-96 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 BITS inputs and SONET lines

### 4.3.77 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 4-97 TMG\_REF Values**

TMG_REF Values	Description
N	This facility or card is not a timing reference
Y	This facility or card is a timing reference

### 4.3.78 TMPER

Performance parameter

**Table 4-98 TMPER Values**

TMPER Values	Description
15-MIN	Performance Parameter Accumulation Interval Length - Every 15 Minutes
1-DAY	Performance Parameter Accumulation Interval Length - Every 24 Hours

### 4.3.79 TRCMODE

Path Trace Mode

**Table 4-99 TRCMODE Values**

TRCMODE Values	Description
AUTO	Use the incoming path trace message as the expected path trace message
MAN	Use the expected path trace message as the expected path trace message
OFF	No path trace processing

### 4.3.80 UNI\_BI

Unidirectional and Bidirectional switch operations

**Table 4-100 UNI\_BI Values**

UNI_BI Values	Description
BI	Bidirectional protection switching
UNI	Unidirectional protection switching

### 4.3.81 USE\_DST

Identifies whether Daylight Saving Time is recognized in the area where this NE is deployed.

*Table 4-101 USE\_DST Values*

USE_DST Values	Description
N	Daylight Saving Time is not recognized
Y	Daylight Saving Time is recognized

### 4.3.82 VALIDITY

Response validity

*Table 4-102 VALIDITY Values*

VALIDITY Values	Description
COMPL	Complete Response
PRTL	Partial Response

### 4.3.83 VT1\_5\_MONTYPE

VT1\_5 Monitor Type

*Table 4-103 VT1\_5\_MONTYPE Values*

VT1_5_MONTYPE Values	Description
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 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

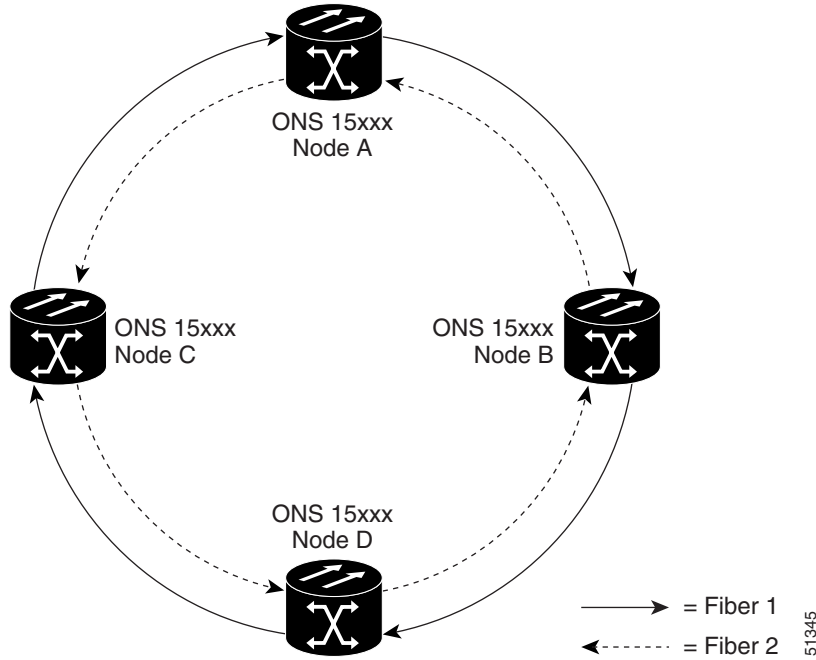
ONS 15xxx networks give you the option to set up path-protected mesh networks (PPMNs). PPMNs extend the protection scheme of a UPSR from the basic ring configuration to the meshed architecture of several interconnected rings. For more information about PPMN refer to “SONET Topologies” in the *Cisco ONS 15454 Installation and Operations Guide*.

## 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



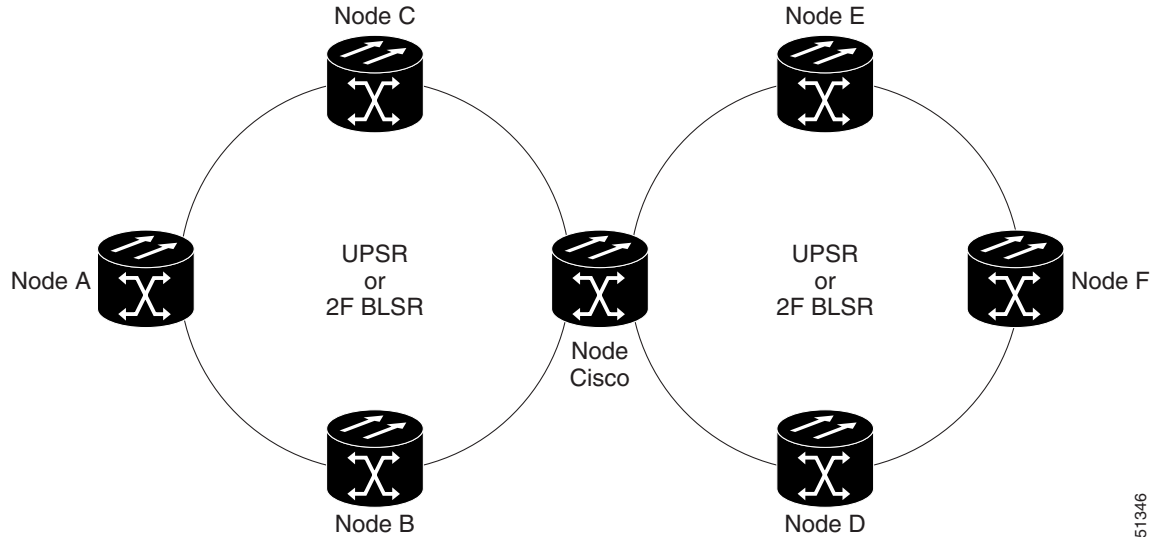
### 5.3 Ring-to-Ring Interconnection

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



51346

### 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.

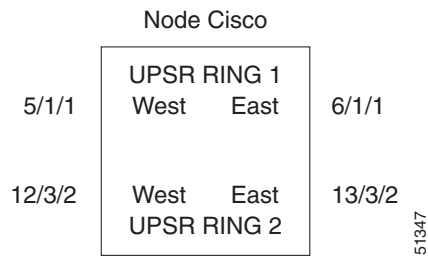


Note

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

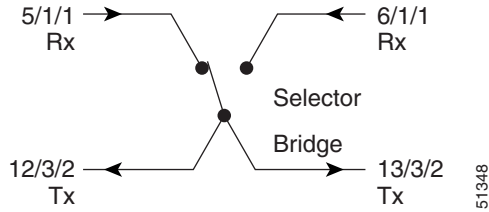


51347

Use the ENT-CRS-STs1:CISCO:STS-5-1&STS-6-1,STS-12-8&STS-13-8:CTAG1::2WAY; input format.

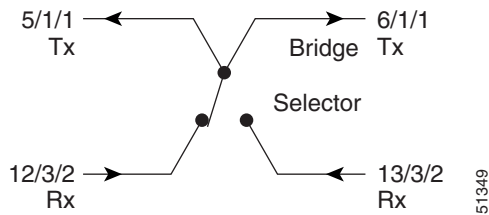
This command creates a selector between 5/1/1 and 6/1/1 which is bridged to Ring 2 (12/3/2 and 13/3/2), as shown in Figure 5-4.

**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**



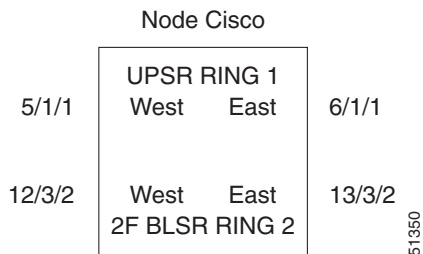
### 5.3.2 Sample UPSR to Two-Fiber BLSR Connection

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 Release 3.1. 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  $26 = (((3-1)*12) + 2)$ .

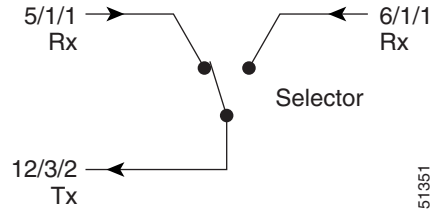
**Figure 5-6 UPSR to two-fiber BLSR**



Use the ENT-CRS-ST51:CISCO:STS-5-1&STS-6-1,STS12-26:CTAG2::2WAY; input format.

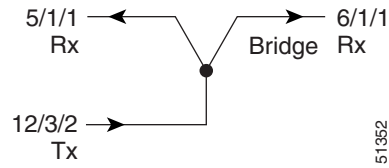
This command creates a selector between 5/1/1 and 6/1/1 which connects to 12/3/2 on Ring 2, as shown in [Figure 5-7](#).

**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.

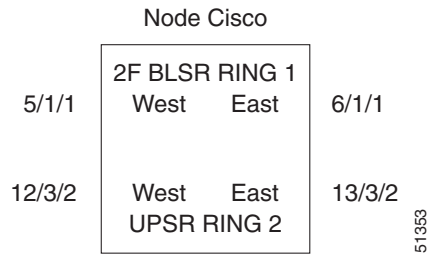
### 5.3.3 Sample Two-Fiber BLSR to UPSR Connection

Ring 1 = Two-fiber BLSR

Ring 2 = UPSR

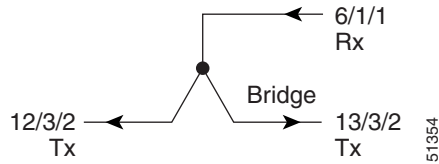
This example, illustrated in [Figure 5-9](#), uses a UPSR end-point with a drop on a two-fiber BLSR and uses the east span of the two-fiber BLSR (Ring 1) for the active path of the circuit. For STS addressing, the UPSR is an OC-3 (e.g. STS-13-8).

**Figure 5-9 Two-fiber BLSR to UPSR**

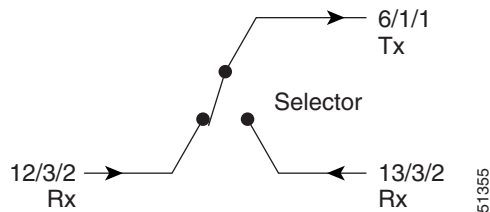


Use the ENT-CRS-ST51:CISCO:STS-6-1,STS-12-8&STS-13-8:CTAG3::2WAY; input format.

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](#).

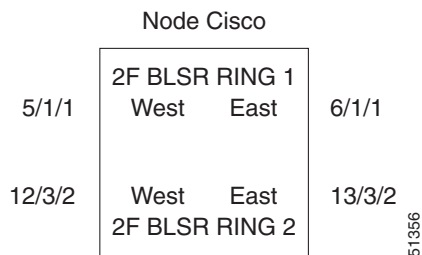
**Figure 5-11 Selector between 12/3/2 and 13/3/2 to Ring 1**

### 5.3.4 Sample Two-Fiber BLSR to Two-Fiber BLSR Connection

Ring 1 = Two-fiber BLSR

Ring 2 = Two-fiber BLSR

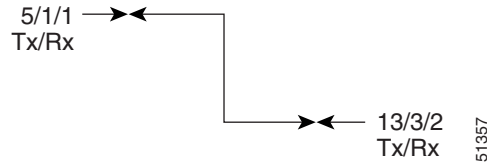
All protection for a two-fiber BLSR interconnecting to a two-fiber BLSR is performed at the line level. You can make the connection with a 2WAY cross-connect from an STS on the working side of the two-fiber BLSR span of Ring 1 to an STS on the working side of a two-fiber BLSR span on Ring 2. The connections 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



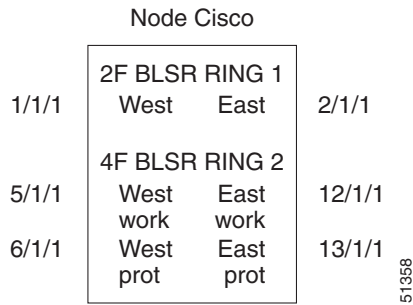
### 5.3.5 Sample Two-Fiber BLSR to Four-Fiber BLSR Connection

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.

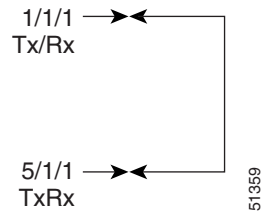
Figure 5-14 Two-fiber BLSR to four-fiber BLSR



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.

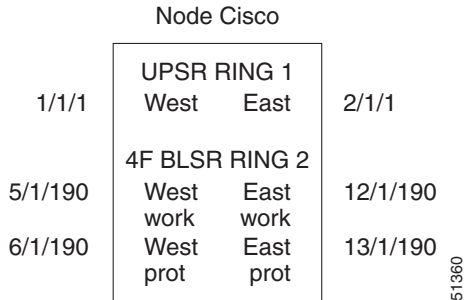
### 5.3.6 Sample UPSR to Four-Fiber BLSR Connection

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](#).

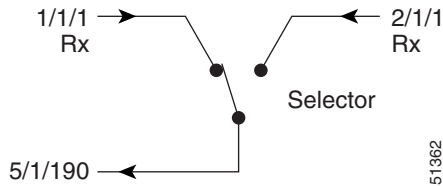
**Figure 5-16 UPSR to four-fiber BLSR**



Use the ENT-CRS-ST51:CISCO:STS-1-1&STS-2-1&STS-5-190:CTAG6::2WAY; input format.

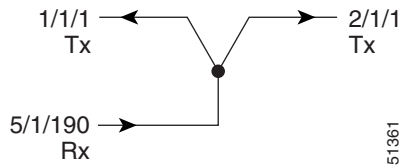
This command creates a selector between 1/1/1 and 2/1/1 to Ring 2 (5/1/190), as shown in [Figure 5-17](#).

**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](#).

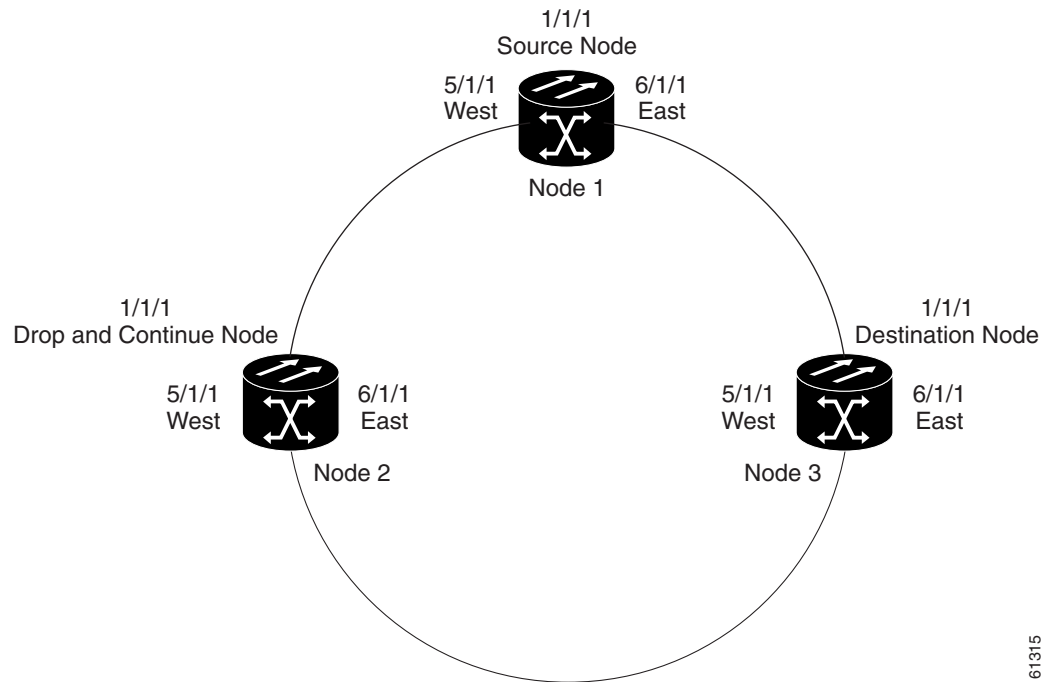
**Figure 5-18 Bridge from 5/1/190 to Ring 1 (1/1/1 and 2/1/1)**



## 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.

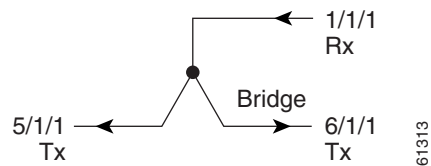
**Figure 5-19 1WAY drop and continue**



### 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.

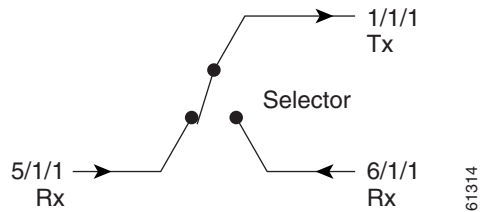
**Figure 5-20 Bridge from 1/1/1 to 5/1/1 and 6/1/1**



## 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.

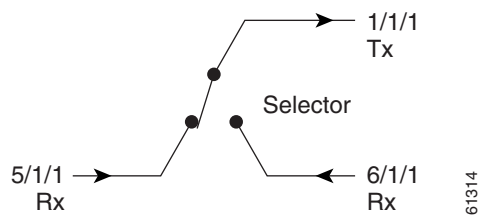
**Figure 5-21** Selector between 5/1/1 and 6/1/1 to 1/1/1



## 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, see Chapter 4 in the *Cisco ONS 15454 Troubleshooting and Maintenance Guide*.

This chapter provides TL1 performance monitoring information, 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
ES-S							X
SES-S							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
FC-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
PSC					X (1+1)	X (1+1, BLSR)	
PSD					X (1+1)	X (1+1, BLSR)	
<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>SONET Path</b>							
STS CV-P		X					

Table 6-5 SONET Path PMs (continued)

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
STS ES-P	X						
STS SES-P	X						
STS UAS-P	X						
<b>Near-End SONET Path</b>							
STS CV-P		X	X	X	X	X	X
STS ES-P		X	X	X	X	X	X
STS FC-P		X	X	X	X	X	X
STS SES-P		X	X	X	X	X	X
STS UAS-P		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						
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						

Table 6-6 DS1 Path PMs (continued)

Parameter	DS1, DS1N	DS3, DS3N	DS3-12E, DS3N-12E	DS3XM	OC3	OC12, OC48, OC192	EC1
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 SESCO-P			X	X			
DS3 UASCP-P			X	X			
<b>Far-End C-bit DS3 Path</b>							
DS3 CVCP-P FE			X	X			
DS3 ESCP-P FE			X	X			
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>VT Path</b>							
CV-V	X						
ES-V	X						
SES-V	X						
UAS-V	X						
<b>Near-End VT Path</b>							
CV-V				X			
ES-V				X			
SES-V				X			
UAS-V				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

---

This chapter provides TL1 alarm and error information supported by the Cisco ONS 15454, Release 3.1, 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.

### 7.1 Alarms

Refer to “Alarm Troubleshooting” in the *Cisco ONS 15454 Troubleshooting and Maintenance Guide* for complete alarm definitions, trouble notifications, and fault recovery procedures. For a list of conditions, refer to “TL1 Command Components” in this book. The alarms are listed alphabetically by alarmable object:

- AIP
- BPLANE
- BITS
- DS1
- DS3
- E100T
- E1000F
- EC1-12
- ENVALRM
- EQPT
- EXT-SREF
- FAN
- NE
- NE-SREF
- OCN
- PS-ST5
- PS-VT
- RING
- STSMON
- STSTERM
- VT-MON
- VT-TERM

For a sample of each TL1 alarm that can be generated by the ONS 15454, refer to the file 15454\_r31\_tl1\_alarms.txt on the Cisco ONS 15454 Software CD in the subdirectory VTL1. This file can be used to test an operations support system’s ability to receive alarms which the ONS 15454 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 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 cannot access the data on the erasable programmable read-only memory (EPROM).

## 7.1.2 BPLANE

The backplane

**Table 7-2 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 cannot access the data on the erasable programmable read-only memory (EPROM).

## 7.1.3 BITS

Building integration timing supply (BITS) incoming references (BITS-1, BITS-2)

**Table 7-3 BITS**

<b>BITS Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
LOF	MA/SA	A port on the TCC+ BITS input detects a loss of frame (LOF) on the incoming BITS timing reference signal.
LOS	MA/SA	The TCC+ card has a loss of signal (LOS) condition from the BITS timing source.
SSM-FAIL	MI/NSA	Synchronization status messaging failed.



## 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 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 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 E100T

An Ethernet line on an E100

**Table 7-6 E100T**

<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.

## 7.1.7 E1000F

An Ethernet line on an E1000

*Table 7-7 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.

## 7.1.8 EC1-12

An EC1 line on an EC1 card

*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

*Table 7-9 ENVALRM*

<b>ENVALRM Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
EXT	MI/NSA	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 17 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+ 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+ card in Slot 7 has lost communication with the coprocessor on the second TCC+ card in Slot 11.
CONTBUS-A-X	MA/NSA	The TCC+ card in Slot 7 has lost communication with the card in Slot X
CONTBUS-B-18	MA/NSA	The main processor on the TCC+ card in Slot 11 has lost communication with the coprocessor on the TCC+ card in Slot 7.
CONTBUS-B-X	MA/NSA	The TCC+ card in Slot 11 has lost communication with the card in Slot X.
CTNEQPT-PBWORK	CR/SA	Interconnection Equipment Failure - Working XC Payload Bus
CTNEQPT-PBPROT	CR/SA	Interconnection Equipment Failure - Protect XC Payload Bus
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.
FAILTOSW	MA/SA	A working DS-N card cannot switch to the protect card in a 1:N protection group, because another working DS-N card, with a higher-priority alarm, is switched over and monopolizing the lone protect card.
HITEMP	MI/NSA	The temperature of the ONS 15454 is above 50 degrees Celsius.
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+ card.
MEM-LOW	MI/NSA	Data generated by software operations is close to exceeding the memory capacity of the TCC+ card.
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	MI/NSA	There is a software download in progress.

## 7.1.11 EXT-SREF

BITS outgoing references (SYNC-BITS1, SYNC-BITS2)

**Table 7-11 EXT-SREF**

EXT-SREF Alarm	Severity (Active)	Description
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**

FAN Alarm	Severity (Active)	Description
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.
FAN	One fan failure: MA/NSA  Two or more: CR/SA	A problem with the fan-tray assembly.
MFGMEM	CR/SA	The manufacturing data memory failure alarm means that the ONS 15454 cannot access the data on the erasable programmable read-only memory (EPROM).

## 7.1.13 NE

The entire network element (SYSTEM)

**Table 7-13 NE**

NE Alarm	Severity (Active)	Description
HITEMP	CR/SA	The temperature of the ONS 15454 is above 50 degrees Celsius.
SYSBOOT	MA/SA	New software is booting on the TCC+ card.
DATAFLT	MI/NSA	The database has exceeded the capacity of the flash memory on the TCC+.
PRC-DUPID	MA/NSA	Two identical node IDs in the same ring.

## 7.1.14 NE-SREF

Represents the timing status of the NE

**Table 7-14 NE-SREF**

NE-SREF Alarm	Severity (Active)	Description
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).
HLDOVRSYNC	MA/SA	A loss of primary/secondary timing reference.
FRNGSYNC	MA/SA	The reporting ONS 15454 is in free run synchronization mode.
FSTSYNC	MI/NSA	A fast start synchronization. The ONS 15454 is choosing a new timing reference.

## 7.1.15 OCN

An OCN line on an OCN card

**Table 7-15 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.
APSCM	MA/SA	The ONS 15454 expects a working channel but receives a protection channel.
APSCMM	MI/NSA	There is a mismatch of the protection switching schemes at the two ends of the span.
APSCNMIS	MA/SA	The node ID contained in the K byte of the APS channel being received does not match the node ID expected by the receiving node in a BLSR.
AUTOLSROFF	CR/SA	The OC-192 card temperature exceeds 95 degrees Celsius. The internal equipment automatically shuts down the OC-192 laser when the card temperature rises to prevent the card from self-destructing.
EOC	MA/NSA	The ONS 15454 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.
FAILTOSWR	MA/SA	An automatic protection switching ring switch failure.
FAILTOSWS	MA/SA	An automatic protection switching span switch failure.

**Table 7-15 OCN (continued)**

<b>OCN Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
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 failed

## 7.1.16 PS-STC

Alarms are raised to show STS protection switch cause

**Table 7-16 PS-STC**

<b>PS-STC Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
AUTOSW-LOP	MI/SA	An automatic UPSR protection switching took place because of a LOP alarm.
AUTOSW-PDI	MI/SA	An automatic UPSR protection switching took place because of a PDI alarm.
AUTOSW-UNEQ	MI/SA	An automatic UPSR protection switching took place because of a UNEQ alarm.
FAILTOSW-PATH	MA/SA	Failure to switch from the working path to the protection path on a UPSR.

## 7.1.17 PS-VT

Alarms are raised to show VT protection switch cause

**Table 7-17 PS-VT**

<b>PS-VT Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
AUTOSW-LOP	MI/SA	An automatic UPSR protection switching took place because of a LOP alarm.
AUTOSW-PDI	MI/SA	An automatic UPSR protection switching took place because of a PDI alarm.
AUTOSW-UNEQ	MI/SA	An automatic UPSR protection switching took place because of a UNEQ alarm.
FAILTOSW-PATH	MA/SA	Failure to switch from the working path to the protection path on a UPSR.

## 7.1.18 RING

BLSR ring number (STSRNG)

**Table 7-18 RING**

<b>RING Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
BLSROSYNC	MA/SA	The mapping table needs updating.
PRC-DUPID	MA/SA	Two identical node IDs in the same ring.
RING-MISMATCH	MA/SA	The Ring ID of the ONS 15454 reporting the alarm does not match the Ring ID of another ONS node in the BLSR.

## 7.1.19 STSMON

STS alarm detection at the monitor point (upstream of cross-connect)

**Table 7-19 STSMON**

<b>STSMON Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
LOP-P	CR/SA	A loss of pointer (LOP) condition at the path level.
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.
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.

## 7.1.20 STSTERM

STS alarm detection at termination (downstream of cross-connect)

**Table 7-20 STSTERM**

<b>STSTERM Alarm</b>	<b>Severity (Active)</b>	<b>Description</b>
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.

## 7.1.21 VT-MON

VT1 alarm detection at the monitor point (upstream of cross-connect)

**Table 7-21 VT-MON**

VT-MON Alarm	Severity (Active)	Description
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.

## 7.1.22 VT-TERM

VT1 alarm detection at termination (downstream of cross-connect)

**Table 7-22 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 7-23 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



Table 7-23 Error Codes (continued)

Error Code (ERRCDE)	Error Type	Error Message (ERRMSG)
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
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

**Table 7-23 Error Codes (continued)**

<b>Error Code (ERRCDE)</b>	<b>Error Type</b>	<b>Error Message (ERRMSG)</b>
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
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

Table 7-23 Error Codes (continued)

Error Code (ERRCDE)	Error Type	Error Message (ERRMSG)
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
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

Table 7-23 Error Codes (continued)

Error Code (ERRCDE)	Error Type	Error Message (ERRMSG)
SDFA	STATUS	Duplex Unit Failed
SDLD	STATUS	Duplex Unit Locked
SDNA	STATUS	Dumple 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
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

**Table 7-23 Error Codes (continued)**

<b>Error Code (ERRCDE)</b>	<b>Error Type</b>	<b>Error Message (ERRMSG)</b>
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 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.





---

## A

access identifiers *see* AID

AID [4-5](#)

alarm codes [1-5](#)

critical [1-5](#)

major [1-5](#)

minor [1-5](#)

non-alarm [1-5](#)

alarms, TL1 [7-1](#)

AIP [7-2](#)

BITS [7-2](#)

BPLANE [7-2](#)

DS1 [7-3](#)

DS3 [7-3](#)

E1000F [7-4](#)

E100T [7-3](#)

EC1-12 [7-4](#)

ENVALRM [7-4](#)

EQPT [7-5](#)

EXT-SREF [7-6](#)

FAN [7-6](#)

NE [7-6](#)

NE-SREF [7-7](#)

OCN [7-7](#)

PS-STTS [7-8](#)

PS-VT [7-8](#)

RING [7-9](#)

STSMON [7-9](#)

STSTERM [7-9](#)

VT-MON [7-10](#)

VT-TERM [7-10](#)

ATAG [1-5, 4-12](#)

autonomous message tag *see* ATAG

---

## C

command completion behavior [1-7](#)

CMPLD [1-7](#)

DENY [1-7](#)

PRTL [1-7](#)

command syntax [1-4](#)

AID [1-4](#)

CTAG [1-4](#)

TID [1-4](#)

conditions [4-16](#)

correlation tag *see* CTAG

CTAG [4-12](#)

CTC, TL1 [1-7](#)

autoprovision [1-7](#)

DS3-E card [1-7](#)

unframed [1-7](#)

---

## D

default values [4-1](#)

---

## E

echo [7-15](#)

end-point network element *see* TL1 gateway, ENE

errors [7-10](#)

---

## G

gateway network element *see* TL1 gateway, GNE

gateway *see* TL1 gateway

---

## I

intermediate network element *see* TL1 gateway, INE

International Telecommunications Union *see* ITU

ITU [1-1](#)

---

## M

maintenance *see* security levels

Man-Machine Language *see* MML

MML [1-1](#)

---

## P

parameter types [4-12 to 4-46](#)

password identification *see* PID

performance monitoring *see* PM

PID [3-20, 3-21, 3-26, 3-33, 3-47](#)

PM [6-1](#)

parameters by line type [6-6](#)

provisioning *see* security levels

---

## R

retrieve *see* security levels

ring provisioning [5-1](#)

BLSR [5-1](#)

bridge [5-4](#)

selector [5-3](#)

two-fiber BLSR to four-fiber BLSR connection [5-7](#)

two-fiber BLSR to two-fiber BLSR connection [5-6](#)

two-fiber BLSR to UPSR connection [5-5](#)

UPSR [5-1](#)

UPSR to four-fiber BLSR connection [5-8](#)

UPSR to two-fiber BLSR connection [5-4](#)

UPSR to UPSR connection [5-3](#)

---

## S

security, user [1-6, 3-51](#)

security idle times [1-6](#)

security levels [1-6](#)

maintenance [1-6](#)

provisioning [1-6](#)

retrieve [1-6](#)

superuser [1-6](#)

sessions [1-1](#)

craft interface [1-3](#)

CTC [1-2](#)

telnet [1-2](#)

special characters [3-21](#)

superuser *see* security levels

---

## T

TACC [1-9, 3-27, 3-29, 3-36, 3-49, 3-50](#)

loop E and F modes [1-14](#)

modes [1-11](#)

split A and B access modes [1-15](#)

split E and F access modes [1-12](#)

TAP [1-9](#)

target identifier *see* TID

test access path *see* TAP

test access *see* TACC

test access tab in CTC [1-9](#)

timing, mixed mode [1-7, 3-45](#)

TL1 [1-1](#)

TL1 commands

descriptions [3-20 to 3-167](#)

listed by card [3-4](#)

AIC [3-14](#)

DS1 [3-5](#)

DS1N [3-5](#)

DS3 [3-6](#)

DS3E [3-7](#)

DS3N [3-6](#)



DS3NE [3-7](#)  
 DS3XM [3-8](#)  
 E1000 [3-12](#)  
 E100T [3-12](#)  
 EC1 [3-4](#)  
 OC12 [3-10](#)  
 OC192 [3-12](#)  
 OC3 [3-9](#)  
 OC48 [3-11](#)  
 TCC+ [3-13](#)  
 XC [3-13](#)  
 XC10G [3-14](#)  
 XCVT [3-13](#)

listed by category [3-1](#)

BLSR [3-1](#)  
 cross connections [3-1](#)  
 environmental alarms and controls [3-1](#)  
 equipment [3-2](#)  
 fault [3-2](#)  
 log [3-2](#)  
 performance [3-2](#)  
 ports [3-2](#)  
 security [3-3](#)  
 SONET line protection [3-3](#)  
 STS and STS paths [3-3](#)  
 synchronization [3-3](#)  
 system [3-3](#)  
 test access [3-4](#)  
 testing [3-4](#)  
 UPSR switching [3-4](#)

TL1 gateway [2-1](#)

concurrent communication sessions [2-2](#)

DCC TCP/IP [2-1](#)

ENE [2-1](#)

GNE [2-1](#)

INE [2-1](#)

resource pool [2-2](#)

transaction language 1 *see* TL1

---

## U

UID [3-20](#), [3-21](#), [3-26](#), [3-33](#), [3-47](#)

user identification *see* UID

