



CHAPTER 12

ENT Commands



Note

The terms "Unidirectional Path Switched Ring" and "UPSR" may appear in Cisco literature. These terms do not refer to using Cisco ONS 15xxx products in a unidirectional path switched ring configuration. Rather, these terms, as well as "Path Protected Mesh Network" and "PPMN," refer generally to Cisco's path protection feature, which may be used in any topological network configuration. Cisco does not recommend using its path protection feature in any particular topological network configuration.

This chapter provides enter (ENT) commands for the Cisco ONS 15454, Cisco ONS 15454 M2, and Cisco ONS 15454 M6.



Note

All commands supported on the Cisco ONS 15454 platform are also supported on Cisco ONS 15454 M2 and Cisco ONS 15454 M6 platforms.

12.1 ENT-<MOD1PAYLOAD>

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter 10GFC, 10GIGE, 40GIGE, 1GFC, 1GFICON, 2GFC, 2GFICON, 5GIB, 8GFC, CHGRP, D1VIDEO, DV6000, DVBASI, EC1, ESCON, ETRCLO, FSTE, GIGE, HDTV, ISC1, ISCCOMPAT, ISC3PEER2R, ISC3PEER1G, ISC3PEER2G, OC-12, OC-192, OC-3, OC-48, OC768, OTU3, or T3 (ENT-<MOD1PAYLOAD> command creates a specified port.

Usage Guidelines

- Supports 3GVIDEO, SDSDI , HDSDI, ISC3STP1G, ISC3STP2G modifiers.
- When 1GFICON and 2GFICON payloads are provisioned, distance extension=B2B is the default and only valid setting. Setting distance extension (using ED-1GFICON or ED-2GFICON) to any other setting will be denied with the error message "Provisioning Rules Failed."
- Support is limited to ports with pluggable port modules (PPMs) and any operating mode.
- When creating an operating mode for payloads, the trunk ports are auto provisioned.
- See [Table 1-1 on page 1-1](#) for supported modifiers by platform.

Category

Ports

■ ENT-<MOD_RING>

Security

Provisioning

Input Format

ENT-<MOD1PAYLOAD>:[<TID>]:<AID>:<CTAG>[:::];

Input Example

ENT-GIGE:TID:FAC-5-1:1;

ENT-HDSDI:ROCCIANERA:VFAC-1-3-2-1:1;

Input Parameters

<AID>	Access identifier from the “26.17 FACILITY” section on page 26-41. AR-MXP and AR-XP cards use the VFAC AID.
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12.2 ENT-<MOD_RING>

(Cisco ONS 15454) The Enter Bidirectional Line Switched Ring (ENT-<MOD_RING>) command creates either a two-fiber or four-fiber BLSR.

Usage Guidelines

The command parameters that are used vary depending on whether a two-fiber or four-fiber BLSR is being created.

Here is an example of a command to create a four-fiber BLSR:

```
ENT-BLSR:TID:BLSR-N02ABC:CTAG:::RINGID=N02ABC,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;
```

Here is an example of a command to create a two-fiber BLSR:

```
ENT-BLSR:TID:BLSR-N04EFG:CTAG:::RINGID=N04EFG,NODEID=6,MODE=2F,RVRTV=Y,
RVTM=5.0,EASTWORK=FAC-5-1,WESTWORK=FAC-6-1;
```

The following actions will produce error messages:

- If RINGID is different from the string presented in the AID format, an IIAC (RingId Does Not Match With AID) error message is returned.
- Sending this command to create a BLSR with an out-of-range node ID or ring ID will return an IIAC (Invalid NodeId) or (Invalid RingId) error message.
- Sending this command to create a four-fiber BLSR on OC-12 cards, or a two-fiber BLSR on OC-3 cards will return an IIAC (Input, Invalid Work/Prot Port) error message.
- Sending this command to create a BLSR on a network element (NE) that already has five BLSRs will return a SRQN (BLSR Creation Failed) error message because only one NE can support up to five BLSRs.
- Sending this command to create a BLSR on a port with 1+1 protection will return a SRQN (BLSR Creation Failed) error message.
- If the system fails while accessing the IOR, an SROF (Get IOR Failed) error message is returned.
- If the AID is invalid, an IIAC (Invalid AID) error message is returned.

- If any facility requested in this command is in use, a SPLD (Facility is Busy) error message is returned.
- The SRQN (BLSR Creation Failed) error message is returned for an invalid creation query.
- Sending this command to provision the mode with an invalid BLSR mode will return an IIDT (Invalid BLSR Mode) error message.
- Sending this command to modify SRVRTV or SRVTM on the two-fiber BLSR will return an IDNV (Invalid Data for 2F-BLSR) error message.
- Sending this command to provision the node ID with invalid data will return an IIAC (Invalid NodeId) error message.
- Sending this command to provision the ring ID with invalid data will return an IIAC (Invalid RingId) error message.
- Sending this command with an invalid working AID will return an IIDT (Invalid BLSR Working Facility) error message.
- Sending this command with an invalid protection AID will return an IIDT (Invalid BLSR Protect Facility) error message.
- Changing the BLSR node ID with a duplicated ID will return an SROF (Cannot Set NodeId) error message.

**Note**

Both <EASTPROT> and <WESTPROT> are optional, but required for 4-fiber BLSR creation.

**Note**

The ALL AID is invalid for this command.

Category

BLSR

Security

Provisioning

Input Format

ENT-<MOD_RING>:[<TID>]:<AID>:<CTAG>:::[RINGID=<RINGID>],NODEID=<NODEID>,
MODE=<MODE>,[RVRTV=<RVRTV>],[RVTM=<RVTM>],[SRVRTV=<SRVRTV>],
[SRVTM=<SRVTM>],EASTWORK=<EASTWORK>,WESTWORK=<WESTWORK>,
[EASTPROT=<EASTPROT>],[WESTPROT=<WESTPROT>];

Input Example

Four-fiber BLSR:

ENT-BLSR:PETALUMA:BLSR-2:123:::RINGID=2,NODEID=1,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;

Two-fiber BLSR:

ENT-BLSR:PETALUMA:BLSR-2:123:::RINGID=2,NODEID=1,MODE=2F,RVRTV=Y,
RVTM=5.0,EASTWORK=FAC-5-1,WESTWORK=FAC-6-1;

Input Parameters	<AID>	Access identifier from the “26.3 AidUnionId1” section on page 26-20 . Identifies the BLSR of the NE. ALL or BLSR-ALL AIDs are not allowed for editing the BLSR. This command only supports a single BLSR AID.
	<RINGID>	(Optional) The BLSR ID of the NE up to six characters. Valid characters are A-Z and 0-9. RINGID is a string. The parameter defaults to the text in the AID that follows the “BLSR-”.
	<NODEID>	The BLSR node ID of the NE. NODEID ranges from 0 to 31. NODEID is an integer.
	<MODE>	Mode with which the command is to be implemented. Identifies the BLSR mode. The parameter type is BLSR_MODE (BLSR mode).
	• 2F	Two-fiber BLSR
	• 4F	Four-fiber BLSR
	<RVRTV>	(Optional) Revertive mode. The value Y indicates that protection switching system reverts service to the original line after restoration. The value N indicates that protection switching system does not revert service to the original line after restoration. RVRTV is applicable only for 1+1 protection switching. Null defaults to N. The parameter type is ON_OFF (disable or enable an attribute).
	• N	Does not revert service to original line after restoration.
	• Y	Reverts service to original line after restoration.
	<RVTM>	(Optional) Revertive time. Defaults to 5.0. The parameter type is REVERTIVE_TIME (revertive time).
	• 0.5 to 12.0	(Optional) Revertive time is 0.5 to 12.0 minutes.
	<SRVRTV>	The span revertive mode for four-fiber BLSR only. Defaults to Y. The parameter type is ON_OFF (disable or enable an attribute)
	• N	Disable an attribute.
	• Y	Enable an attribute.
	<SRVTM>	(Optional) The span revertive time for four-fiber BLSR only. Defaults to 5.0. The parameter type is REVERTIVE_TIME (revertive time).
	• 0.5 to 12.0	Revertive time is 0.5 to 12.0 minutes.
	<EASTWORK>	East working facility. AID from the “26.17 FACILITY” section on page 26-41 .
	<WESTWORK>	West working facility. AID from the “26.17 FACILITY” section on page 26-41 .
	<EASTPROT>	(Optional) East protect facility. AID from the “26.17 FACILITY” section on page 26-41 .
	<WESTPROT>	(Optional) West protect facility. AID from the “26.17 FACILITY” section on page 26-41 .

12.3 ENT-ALMTYPE

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Alarm Type (ENT-ALMTYPE) command enters user-defined alarm types on the fly for environmental inputs. In addition to the system-defined alarm types, this command supports up to 50 new user-defined alarm types.

Usage Guidelines	ALMTYPE must not contain blank spaces or special characters other than the hyphen (-). The maximum ALMTYPE length allowed is 20 characters. Entering of duplicate alarm types is not allowed. System-defined alarm types cannot be replicated as user-defined alarm type.	
Category	System	
Security	Provisioning	
Input Format	ENT-ALMTYPE:[<TID>]::<CTAG>::<ALMTYPE>;	
Input Example	ENT-ALMTYPE:::1::USERDEFINEDALARM;	
Input Parameters	<ALMTYPE>	Specifies user-defined alarm types associated with virtual wires in environmental alarm inputs.

12.4 ENT-AUTO

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) This command creates an AUTO port.

Usage Guidelines	Requires ports with PPMs and any operating mode on that port. Supports OC3, OC12, OC48, and 1GE line rates based on incoming traffic when auto sense is enabled. Default line rate is OC48.	
Category	Ports	
Security	Provisioning	
Input Format	ENT-AUTO:[<TID>]:<AID>:<CTAG>;	

Input Example	ENT-AUTO::VFAC-1-3-2-1:1;	
Input Parameters	<AID>	AR-MXP and AR-XP cards use the VFAC AID.

12.5 ENT-BULKROLL-<OCN_TYPE>

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Bulk Roll for OC-12, OC-192, OC-3, OC-48, or OC768 (ENT-BULKROLL-<OCN_TYPE>) command enters information about rolling traffic from one end point to another without interrupting service. This command can be used for line-level rolling and bulk rolling and cannot be used for single-path-level rolling.

Usage Guidelines	None	
Category	Bridge and Roll	
Security	Provisioning	
Input Format	ENT-BULKROLL-<MOD_PATH>:[<TID>]:<FROM>:<CTAG>:::RTOSTART=<RTOSTART>,[RFROMSTART=<RFROMSTART>],[RFROMEND=<RFROMEND>],[RMODE=<RMODE>],[CMDMDE=<CMDMDE>];	
Input Example	ENT-BULKROLL-OC-48:CISCO:FAC-5-1:123:::RTOSTART=STS-6-1-1, RFROMSTART=STS-5-1-1,RFROMEND=STS-5-1-4,RMODE=AUTO,CMDMDE=FRCD;	
Input Parameters	<FROM>	One of the endpoints. Access identifier from the “26.17 FACILITY” section on page 26-41 for line-level rolling and bulk rolling.
	<RTOSTART>	The starting time slot in the destination roll port. Access identifier from the “26.17 FACILITY” section on page 26-41 (synchronous transport signal [STS] or Virtual Tributary [VT]). Note For bulk rolling only
	<RFROMSTART>	The starting time slot in the source roll port. Access identifier from the “26.17 FACILITY” section on page 26-41 (STS or VT). Defaults to STS-<FROMSLOT>-<FROMPORT>-1, where <FROMSLOT> and <FROMPORT> are the slot and port of the <FROM> AID. Note For bulk rolling only

<RFROMEND>	The ending time slot in the source roll port. Access identifier from the “ 26.17 FACILITY ” section on page 26-41 (STS and VT). Defaults to STS-<FROMSLOT>-<FROMPORT>-N, where <FROMSLOT> and <FROMPORT> are the slot and port of the <FROM> AID and N is the value of OCn (for example, with OC-48, n=48).
	Note For bulk rolling only
<RMODE>	Indicates the mode of the rolling operation. The parameter type is RMODE (roll mode).
• AUTO	Automatic. When a valid signal is available, the roll with an AUTO mode will automatically delete the previous end-point.
• MAN	Manual. Enter the corresponding delete roll/bulkroll command to delete the previous end-point.
<CMDMDE>	Command execution mode. Defaults to NORM. The parameter type is CMDMDE, which forces the system to execute a given command regardless of any standing conditions. Normal mode is the default behavior for all commands but you can specify FRCD to force the system to override a state where the command would normally be denied.
• FRCD	Force the system to override a state where the command would normally be denied.
• NORM	Execute the command normally. Do not override any conditions that could make the command fail.

12.6 ENT-BWP-ETH

(Cisco ONS 15454)

Enter Bandwidth Profile for ETH command is used to enter a new Bandwidth Profile entry in BWP DB. The BWP DB is a collection of Bandwidth Profiles used in a Network Element.

Usage Guidelines

Error conditions are:

- If the AID is invalid, an IIAC (Invalid AID) error message is returned
- The “ALL” AID is invalid for this command.
- The BWP having the specified AID should not be present in the node, otherwise the command is denied.

Category

ETHERNET

Security

Provisioning

Input Format

ENT-BWP-ETH:[<TID>]:<AID>:<CTAG>:::[NAME=<NAME>],[CIR=<CIR>],[CBS=<CBS>],[PBS=<PBS>],[PIR=<PIR>],[CFMSTATE=<CFM_STATE>][:];

Input Example

ENT-BWP-ETH:ROCKS:BWP-10000:1:::NAME="MyBWP",CIR=10,CBS=1M,PBS=1M,PIR=20,CFMSTATE=Y;

Input Parameters

<AID>	This AID is used to access BWP.BWP AID Format is: BWP-[bwpid]Values
• BWP-ALL	All aid for BWP.
• BWP-{1-10000}	Single AID for BWP. The valid identifiers ranges from 1 to 10000.
<NAME>	indicates the BWP name. bwp name is a String. - Default value is -
<CIR>	Ingress committed information rate. This is a value between 0 and 100.Default value is - 100.
<CBS>	Ingress committed burst bucket size.
• 4K	4 Kbit bucket size
• 8K	16 Kbit bucket size
• 16K	32 Kbit bucket size
• 32K	64 Kbit bucket size
• 64K	128 Kbit bucket size
• 128K	256 Kbit bucket size
• 256K	512 Kbit bucket size
• 512K	1 Mbit bucket size
• 1M	2 Mbit bucket size
• 2M	4 Mbit bucket size
• 4M	8 Mbit bucket size
• 8M	16 Mbit bucket size
• 16M	16 Kbit bucket size
<PBS>	Ingress peak burst bucket size
• 4K	4 Kbit bucket size
• 8K	8 Kbit bucket size
• 16K	16 Kbit bucket size
• 32K	32 Kbit bucket size
• 64K	64 Kbit bucket size
• 128K	128 Kbit bucket size
• 256K	256 Kbit bucket size
• 512K	512 Kbit bucket size
• 1M	1 Mbit bucket size
• 2M	2 Mbit bucket size
• 4M	4 Mbit bucket size

• 8M	8 Mbit bucket size
• 16M	16 Mbit bucket size
<PIR>	Peak information rate. This is a value between 0 and 100. Default value is - 100.
<CFMSTATE>	Link Integrity status. Default value is -
• Y	Enabled
• N	Disabled

12.7 ENT-CPS

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Control Plane Service (CPS) command creates a control plane service. Specify the source port, destination ports, and the IP address of the destination node.

Usage Guidelines

- If the AID is invalid, an IIAC (invalid AID) error message is returned. The following AIDs are supported:
 - CLIENT cps type support FAC and VFAC AID type.
 - TRUNK cps type support CHAN AID type.
 - ADD cps type support CHAN, PCHAN, and LINEWL AID type.
- The ALL AID is invalid for this command
- No check is performed on destination AIDs. The check is made during the CPS activation by OPR-CPS.
- In case of 1WAY, unidirectional connection, SRC and DST are single AIDs. In case of 2WAY, bidirectional connection, SRC and DST are double AIDs. However, in case of CLIENT or TRUNK cpstype, src and dst are single AID and the connection is of type 2WAY because of bidirectional ports hence this rule is not applicable.

Category

DWDM

Security

Provisioning

Input Format

ENT-CPS:[<TID>]:<SRC>:<CTAG>::<DSTADDR>,<DST>,[<WCT>],<CPSTYPE>:[CKTID=<CKTID>],[VALMODE=<VALMODE>],[VALZONE=<VALZONE>],[VALMODESEC=<VALMODESEC>],[VALZONESEC=<VALZONESEC>][:];

Input Example

ENT-CPS::CHAN-1-15-10-RX&CHAN-1-14-10-TX:8::10.20.30.40,CHAN-10-1-10-TX&CHAN-10-1-10-RX,2WAY,ADD;;

ENT-CPS::FAC-1-5-1:888::10.58.40.33,FAC-1-2-1-1,2WAY,CLIENT:CKTID=OCHCC_Rock,VALMODE=FULL,VALZONE=RED;;

Input Parameters

<SRC>	Source access identifier from the “26.1 ALL” section on page 26-1. Listable.
<DSTADDR>	Identifies the destination node IP address.
<DST>	Destination AID from the “26.1 ALL” section on page 26-1.
<WCT>	Identifies the wavelength connection type.
• 1WAY	A unidirectional connection from a source to a destination port. Default is 1WAY
• 2WAY	A bidirectional connection between the two ports.
<CPSTYPE>	Identifies the type of CPS.
• CLIENT	CPS End Point are client ports
• TRUNK	CPS End Point are trunk ports
• ADD	CPS Source End Point is an ADD port
• DROP	Not applicable
• TNA	Not applicable
<CKTID>	(Optional) Circuit identification parameter contains the Common Language Circuit ID or other alias of the circuit being provisioned. Does not contain blank spaces. CKTID is a string of ASCII characters. The maximum length of CKTID can be 48.
<VALMODE>	Identifies the validation mode.
• NONE	No Optical validation is performed
• FULL	The optical validation is performed as indicated in VALZONE parameter
<VALZONE>	Identifies the validation operate zone.
• UNKNOWN	Not evaluated
• GREEN	Margin > 3 sigma
• YELLOW	1 < margin < 3 sigma
• ORANGE	0 < margin < 1 sigma
• RED	-3 < margin < 0 sigma
• OUT	Margin < -3 sigma
<VALMODESEC>	Identifies the validation mode for secondary circuit
<VALZONESEC>	Identifies the validation operate zone for secondary circuit

12.8 ENT-CRS-<PATH>

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter STS Cross-Connection for STS1, STS12C, STS18C, STS192C, STS24C, STS36C, STS3C, STS48C, STS96C, STS6C, STS9C, VT1, or VT2 (ENT-CRS-<PATH>) command creates a synchronous transport signal (STS) cross-connection with a cross-connection type (CCT). Refer to the *Cisco ONS SDH and Cisco ONS 15600 SONET TL1 Reference Guide* for specific ring provisioning procedures.

Usage Guidelines

See [Table 1-1 on page 1-1](#) for supported modifiers by platform.

When a path protection 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.

The following guidelines also apply:

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

- The following command is used to create a one-way selector or two-way selector and bridge with F1, F2 as from points and T1 as the to point:

```
ENT-CRS-{STS_PATH}:<TID>:F1&F2,T1:<CTAG>::<CCT>;
```

- The following command is used to create a one-way bridge or two-way selector and bridge with F1 as the from point and T1, T2 as the to points:

```
ENT-CRS-{STS_PATH}:<TID>:F1,T1&T2:<CTAG>::<CCT>;
```

- The following command is used to create a one-way subtending path protection connection or two-way subtending path protection connection with F1, F2 as the from points and T1, T2 as the to points:

```
ENT-CRS-{STS_PATH}:<TID>:F1&F2,T1&T2:<CTAG>::<CCT>;
```

- The following command is used to create a two-way selector and bridge with F1,F2 (F1 is the working side, F2 is the protect side) as the from points and S1, S2 (S1 is the working side, S2 is the protect side) as the selector points:

```
ENT-CRS-{STS_PATH}:<TID>:F1&F2,S1&S2:<CTAG>::2WAY;
```

- The following command is used to create a path protection integrated dual-ring interconnect (IDRI) cross-connection:

```
ENT-CRS-{STS_PATH}:<TID>:A&B,C&D:<CTAG>::2WAYDC;
```

where:

A: Path on Ring X to which traffic from Ring Y is bridged

B: Path on Ring X to which traffic from the same ring is bridged

C: Path on Ring Y to which traffic from Ring X is bridged

D: Path on Ring Y to which traffic from the same ring is bridged

A, B, C, and D have a positional meaning. Connection type 2WAYDC is used for path protection IDRI cross-connections.

- The following command is used to create a path protection dual-ring interconnect (DRI) cross-connection:

```
ENT-CRS-{STS_PATH}:<TID>:A&B,C:<CTAG>::2WAYDC;
```

where:

A: Path on Ring X to which traffic from Ring Y is bridged

B: Path on Ring X to which traffic from the same ring is bridged

C: Traffic to and from Ring Y

A, B, C, and D have a positional meaning. Connection type 2WAYDC is used for path protection DRI cross-connections.

- All A&B AIDs in the TL1 cross-connection command are in the WorkingAID&ProtectAID format.
- To establish a cross-connection on a two-fiber protection path or on a four-fiber protection channel, the protection channel access (PCA) connection type (1WAYPCA or 2WAYPCA) is required.
- If you send a PCA cross-connection type on the non-PCA AIDs, the IIAC error message is returned.
- If you send a non-PCA cross-connection type on the PCA AIDs, the IIAC error message is returned.
- The facility AID is only valid on slots with a G1K-4 card installed.
- The virtual facility AID (VFAC) is only valid on slots holding an ML-Series card.
- Both DRITYPE and DRINODE have been optional fields since Release 5.0 to support the BLSR-DRI feature. DRITYPE is applied only if the CCT is drop-and-continue (1WAYDC or 2WAYDC), and defaults to path protection for the DRI. DRINODE must be specified only if at least one end of the connection is on the BLSR, and defaults to NA.
- The DS3XM-12 card allows portless STS1/VT1.5 cross-connection provisioning on the DS3XM-12 PORTLESS ports (port number > = 12).
- CKTID is a string of ASCII characters. The maximum length of CKTID is 48. If the CKTID is EMPTY or NULL the field will not appear.
- STS18c and STS36c cross-connects are only supported on the FC_MR-4 card and optical cards.
- LO CCAT is not applicable for ML-100T-8 and CE-100T-8 cards.

Category

Cross Connections

Security

Provisioning

Input Format

ENT-CRS-<PATH>:[<TID>]:<SRC>,<DST>:<CTAG>::[<CCT>]:[DRITYPE=<DRITYPE>],
[DRINODE=<DRINODE>],[CKTID=<CKTID>],[CMDMDE=<CMDMDE>]:[<PST>[,<SST>]];

Input Example

ENT-CRS-ST33C:BODEGA:STS-5-1-1&STS-6-1-1,STS-12-1-1&STS-13-1-1:116::1WAYDC:
DRITYPE=BLSR,DRINODE=PRI,CKTID=CKTID,CMDMDE=FRCD:IS,AINS;

Input Parameters

<SRC>	Source access identifier from the “26.1 ALL” section on page 26-1. Listable.
<DST>	Destination AID from the “26.1 ALL” section on page 26-1.
<CCT>	Type of connection. Used for specifying one or two-way connections. Default is 2-way. The parameter type is CCT, which is the type of cross-connect that will be created.
• 1WAY	A unidirectional connection from a source tributary to a destination tributary.

• 1WAYDC	Path Protection multicast drop with one-way continue.
• 1WAYEN	Path Protection multicast end node with one-way continue.
• 1WAYMON	A bidirectional connection between the two tributaries.
Note 1WAYMON is not supported with TL1. However, it is still supported from the Cisco Transport Controller (CTC). Using CTC, you can create 1WAYMON cross-connects that can be retrieved through TL1.	
• 1WAYPCA	A unidirectional connection from a source tributary to a destination tributary on the protection path/fiber.
• 2WAY	A bidirectional connection between the two tributaries.
• 2WAYDC	A bidirectional drop-and-continue connection applicable only to path protection traditional and integrated DRIs.
• 2WAYPCA	A bidirectional connection between the two tributaries on the extra protection path/fiber.
• DIAG	Diagnostic cross-connect. Supports BERT (BLSR PCA diagnostic cross-connect).
<DRITYPE>	DRI connection type. Applied only if the CCT is a drop-and-continue connection type (1WAYDC or 2WAYDC). Defaults to path protection. The parameter type is DRITYPE (DRI type).
• BLSR	BLSR DRI type
• Path Protection	Path Protection DRI type
• Path Protection-BLSR	Path Protection-BLSR type
<DRINODE>	Dual ring interconnect node. The parameter type is DRINODE (DRI node).
• INT	Intermediate DRI node
• NA	The node is not a DRI node.
• PRI	Primary DRI node
• SEC	Secondary DRI node
<CKTID>	Cross-connect ID. Defaults to blank or none. CKTID is a string.
<CMDMDE>	The parameter type is command mode (CMDMDE). Normal (NORM) mode is the default behavior for all commands but you can specify forced (FRCD) mode to force the system to override a state where the command would normally be denied. The FRCD mode of operation is applicable to delete a virtual concatenated (VCAT) member cross-connect in IS-NR or OOS-AU,AINS service states.
• FRCD	Force the system to override a state where the command would normally be denied.
• NORM	Execute the command normally. Do not override any conditions that could make the command fail.
<PST>	Primary state. Defaults to IS. The parameter type is primary state (PST), which indicates the current overall service condition of an entity.
• IS	In service
• OOS	Out of service

<SST>	Secondary state. Defaults to AINS. The parameter type is SST, which provides additional information pertaining to PST and primary state qualifier (PSTQ).
• AINS	Automatic in-service
• DSBLD	Disabled
• LPBK	Loopback
• MEA	Mismatch of equipment and attributes
• MT	Maintenance mode
• OOG	Out of group
• SWDL	Software downloading
• UAS	Unassigned
• UEQ	Unequipped

12.9 ENT-CRS-ETH

(Cisco ONS 15454)

Enter Cross-Connect Ethernet (ENT-CRS-ETH) command allocates an Ethernet Connection. The user need to specify two or more ethernet connection end points inside ethernet facilities in order to allocate the connection inside the node. According to the specified ethernet facilities, the connection allocated can be a pass-through, add or drop or multi-drop.

Usage Guidelines

The ethernet connection end point identifier must be the same for all the ethernet ports inside the connection and must be kept the same for all the ethernet circuit.

The client and trunk facilities involved in cross-connection is set in UNI and NNI network mode respectively.

The ethernet connection can be allocated in 2WAY (bidirectional) mode.

AID rule to be used for different cases:

- only one source AID can be specified
- one or more destination (drops) AID can be specified
- In both cases the AID specifies a valid ethernet facility and a connection end point identifier within the valid range.
- CKTID is a string of ASCII characters. The maximum length of CKTID can be 48. If the CKTID is EMPTY or NULL this field is not displayed.

Category

DWDM

Security

Provisioning

Input Format

ENT-CRS-ETH:[<TID>]:<SRC>,<DST>:<CTAG>::[<ECT>]:[CKTID=<CKTID>][:];

Input Example

```
ENT-CRS-ETH:VA454-22:ETH-1-3-1-1-13,ETH-1-3-21-1-13:116::2WAY:CKTID=ETHCIRCUIT;;
```

Input Parameters

<SRC>	Ethernet connection identifier AID used to access L2 ethernet connection end point.
• ALL	The ALL aid is applicable for RTRV-only commands, basically the RTRV-rr type of commands.
• ETHID[-{1-12}]-{1-5, 12-16}-{1-22}-1-{1-20}	Ethernet connection end point aid for GE-XP card.
• ETHID[-{1-12}]-{1-6, 12-17}-{1-4}-1-{1-20}	Facility aid for 10GE-XP card.
<DST>	Ethernet connection identifier AIDs used to access L2 ethernet connection end point.
• ALL	The ALL aid is applicable for RTRV-only commands, basically the RTRV-rr type of commands.
• ETHID[-{1-12}]-{1-5, 12-16}-{1-22}-1-{1-20}	Ethernet connection end point aid for GE-XP card.
• ETHID[-{1-12}]-{1-6, 12-17}-{1-4}-1-{1-20}	Facility aid for 10GE-XP card.
<ECT>	Defines the type of cross-connect to be created. It is a subset of the CCT. Default value is - 2way default for cross-connection creation.
• 2WAY	A bidirectional connection between the two tributaries.
<CKTID>	(optional) Circuit identification parameter contains the Common Language Circuit ID or other alias of the circuit being provisioned. CKTID is a string of ASCII characters. The maximum length of CKTID can be 48. cktid is a String. Default value is - "NULL"

12.10 ENT-EQPT

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Equipment (ENT-EQPT) 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 and assigns default values to all facility and path attributes. The ENT-EQPT command is also used to preprovision an NE configured in multishelf mode. This command can also be used to create PPM.

Usage Guidelines

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 or 1:N. These parameters can only be entered for a working AID. The protect card must already be provisioned before creating the protection group.

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. 1:1 protection involves the odd slot protecting the even slot. The work-protect pair is 2-1, 4-3, 6-5, 16-17, 14-15, 12-13. The DS1, DS3, DS3XM, DS3N, DS3E, EC1 and other electrical cards support 1:1 protection. The value of PROTID is the protecting slot and has a “Slot-x” format.

The PROTID slot must be provisioned first.

To create 1:1 with the ENT-EQPT command, do not provision a working card first.

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;
```

The ENT-EQPT 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. 1:N protection is always revertive. For 1:N protection, the protect slot can only be Slot 3 or Slot 15. For a 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. 1:1 protection cannot be upgraded to 1:N protection.

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;
```



Note

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

If the provisioning fails for some AIDs, PRTL responses will indicate failed AIDs. If the provisioning fails for all the AIDs, a DENY response occurs. CMPLD and PRTL responses for protection group queries indicate that the protection group has been successfully created for the AID(s) query.

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

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

Both ENT-EQPT and ED-EQPT commands can provision all working AIDs (1-5) together for 1:N by using listed AIDs. The protect AID should already be provisioned for either command because protection group parameters are not supported for the protect AID.

The ENT-EQPT command provisions a card successfully in 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 a 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.

The following is an example of provisioning a 1:1 protection group:

Step 1	ENT-EQPT::SLOT-1:12::DS3;	Provisions the protect card.
Step 2	ENT-EQPT::SLOT-2:12::DS3:PROTID=SLOT-1, RVRTV=Y,RVTM=8.0;	Provisions a card and adds it to the protection group.

The following is an example of provisioning a 1:N protection group:

Step 1	ENT-EQPT::SLOT-3:12::DS3N;	Provisions the protect card.
Step 2	ENT-EQPT::SLOT-1:12::DS3:PROTID=SLOT-3, RVTM=7.5,PRTYPE=1-N;	Provisions a card and adds it to protection group.



Note

- If you send 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.
- If you send this command to provision a DS3N card on Slot 1, 2, 4, 5, 6, 12, 13, 14, 16, or 17, the DS3 card type is presented.
- If you send this command to provision a DS1N card on Slot 1, 2, 4, 5, 6, 12, 13, 14, 16, or 17, the DS1 card type is presented.
- For the MRC-12 card, there are hardware limitations for which Small Form-Factor Pluggable (SFP) ports can be used.
- The OC192-XFP card must be installed in Slots 5 and 6 or 12 and 13 and requires an XC10G or XC-VXC-10G cross-connect card.

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

- AID sent to a non-working slot; the working cards must be in even slots for 1:1 protection, and working cards must be in the same bank and not in Slot 3 or Slot 15 for 1:N protection.
- An invalid AID was chosen for the protection slot.
- The working AID is already in a protection group.
- The AID is a protect AID.
- The protect card has a circuit.
- The equipment type does not match the allowed AID.
- The slot is already provisioned.
- The protect slot is not provisioned.
- Multiple working AIDs were sent for 1:1 protection.
- The CARDMODE provisioning is allowed on the DS3XM-12 and ML-Series cards. Provisioning for the DS3XM-12 is based on the cross-connect type and DS3XM-12 location. The following error conditions apply:
 - The DS3XM-12 card in the lower speed input/output (I/O) slot with the XCVT card only allows the DS3XM-12-STS12 CARDMODE. Other cases allow the CARDMODE to be DS3XM-12-STS48.
 - The NE defaults to the highest available backplane rate/mode for the DS3XM-12 card if you do not specify the CARDMODE in the ENT-EQPT command.

- The ML100T-8 card will be provisioned to MAPPER mode by default.
- The 1:N (1 ≤ N ≤ 7) protection group is allowed on the DS3XM-12 card in an ONS 15454 across two sides (A and B). All the cards in the 1:N protection group must be on the same backplane rate (or CARDMODE). The following error conditions apply:
 - For 1:N protection, the protect card must be allocated on either Slot 3 or Slot 15. For 1:1 protection, the protect card must be allocated on the odd slots.
 - The working DS3XM-12 cards on the opposite side of the shelf from the protection card (either Slot 3 or Slot 15) in a 1:N group can only have portless connections. The other working cards of the 1:N group on the same side of the shelf as the protection card do not have this limitation.

For example, suppose that there is a DS3XM-12 card 1:N group on Slot 2, Slot 3, Slot 4, Slot 12, and Slot 16, where Slot 3 is the protect card. Slot 2, Slot 4, Slot 12, and Slot 16 are the working cards in the 1:N (1:5) protection group. According to the above limitation rule, the Slot 12 and Slot 16 cards need to have the portless provisioning only, while the Slot 2 and Slot 4 cards can be either portless or ported provisioning.

CMDMDE provisioning behaves as follows:

- If the command mode (CMDMDE) is set to NORM during the creation of a 1:1 or 1:N protection group, all cards must be physically plugged in and in the service state (IS). If the cards are not physically plugged in and are not in ready state, the command is denied with an appropriate error message. CMDMDE=FRCD will override the default behavior and allow creation of protection group regardless of the physical presence and ready state of cards.
- If the command mode is set to NORM during the removal of a card in a 1:1 or 1:N protection group, there must be no cross-connects (for example, services) present on the card. CMDMDE=FRCD will override the default behavior and allow deletion of protection group regardless of presence of cross-connects on the card.
- RETIME provisioning is allowed only on the DS1/E1-56 card (ONS 15454).
- The protection group is automatically created when both the working and protect cards are provisioned; therefore, protection groups cannot be created using the ENT-EQPT or ED-EQPT commands. A protection group can be deleted by deleting the protect card (DLT-EQPT). Trying to delete the working card will result in the Equipment In Use (SPLD) error.

Category

Equipment

Security

Provisioning

Input Format

```
ENT-EQPT:[<TID>]:<AID>:<CTAG>::<AIDTYPE>:[PROTID=<PROTID>],[PRTYPE=<PRTYPE>],
[RVRTV=<RVRTV>],[RVTM=<RVTM>],[CARDMODE=<CARDMODE>],[PEERID=<PROTID>],[
REGENNAME=<REGENNAME>],[CMDMDE=<CMDMDE>],[TRANSMODE=<TRANSMODE>],[
RETIME=<RETIME>],[SHELFROLE=<SHELFROLE>],[FRPROLE=<FRPROLE>],[FRPSTATE=<FR
PSTATE>],[FRPHOLDOFFTIME=<FRPHOLDOFFTIME>],[CFMSTATE=<CFMSTATE>],[CCTIM
ER=<CCTIMER>],[SWITCHWITHCRCALARM=<SWITCHWITHCRCALARM>],[CRCTHR=<CR
CTHR>],[CRCPOLLINTRVL=<CRCPOLLINTRVL>],[CRCSOAKCNT=<CRCSOAKCNT>],[USB=
<USB>][:];
```

Input Example

```
ENT-EQPT::SLOT-15:a::GE-XP:CARDMODE=GEXP-L2ETH,SWITCHWITHCRCALARM=Y;
```

```
ENT-EQPT::SLOT-15:a::GE-XP:CARDMODE=GEXP-L2ETH,CRC POLLINTRVL=4;
```

```
ENT-EQPT:ROCCIANERA:SLOT-4-1:1::AR-XP;
```

Input Parameters

Parameter	Description
<AID>	Access identifier from the “26.15 EQPT” section on page 26-38. AR-MXP and AR-XP cards use the VFAC AID.
<AIDTYPE>	(Optional) The type of facility, link or other addressable entity targeted by the message. The parameter type is EQUIPMENT_TYPE (equipment type). It is the type of equipment being provisioned.
• AR-MXP	Any rate muxponder card
• AR-XP	Any rate xponder card
• 10GE-XP	(ONS 15454) 2 x 10 Gbps. muxponder/L2 ethernet switch card
• 15216-MD-40-EVEN	Thermal Multiplex/Demultiplex Passive Unit, spaced at 50 GHz on even grid
• 15216-MD-40-ODD	Thermal Multiplex/Demultiplex Passive Unit, spaced at 50 GHz on odd grid
• 15216-MD-ID-50	Thermal Interleaver Passive Unit, spaced at 50 GHz grid
• 15216-FLD4-30-3	Edge 4-Ch Bi-Directional OADM Module 1530.33 to 1532.68
• 15216-FLD4-33-4	Edge 4-Ch Bi-Directional OADM Module 1533.47 to 1535.82
• 15216-FLD4-36-6	Edge 4-Ch Bi-Directional OADM Module 1536.61 to 1538.98
• 15216-FLD4-39-7	Edge 4-Ch Bi-Directional OADM Module 1539.77 to 1542.14
• 15216-FLD4-42-9	Edge 4-Ch Bi-Directional OADM Module 1542.94 to 1545.32
• 15216-FLD4-46-1	Edge 4-Ch Bi-Directional OADM Module 1546.12 to 1548.51
• 15216-FLD4-49-3	Edge 4-Ch Bi-Directional OADM Module 1549.32 to 1551.72
• 15216-FLD4-52-5	Edge 4-Ch Bi-Directional OADM Module 1552.52 to 1554.94
• 15216-FLD4-55-7	Edge 4-Ch Bi-Directional OADM Module 1555.75 to 1558.17
• 15216-FLD4-58-9	Edge 4-Ch Bi-Directional OADM Module 1558.98 to 1561.42
• 32-DMX	(ONS 15454) 32 channel optical demultiplexer
• 32-DMX-L	(ONS 15454) 32 channel optical demultiplexer for L-band

Parameter	Description
• 32-DMX-O	(ONS 15454) 32 channel unidirectional optical demultiplexer This overrides the old equipment type DMX-32 present in the 4.6 and earlier releases.
• 32-MUX-O	(ONS 15454) 32 channel unidirectional optical multiplexer This overrides the old equipment type MUX-32 present in the 4.6 and earlier releases.
• 32-WSS	(ONS 15454) 32 channel optical wavelength selective switch for C Band
• 40-DMX-C	(ONS 15454) 40 channel optical demultiplexer for C Band
• 40-MUX-C	(ONS 15454) 40 channel optical multiplexer for C Band
• 40G-MXP-C	40 Gbit/Sec Multirate Muxponder
• 40-SMR1-C	The single module 40-channel ROADM on C-band
• 40-SMR2-C	The single module 40-channel ROADM with EDFA on C-band
• 40G-TXP-C	40 Gigabits per second Multirate Transponder
• 40-WXC-C	(ONS 15454) 40 channel optical wavelength cross-connect/wavelength router for C Band
• 80-WXC-C	80-channel wavelength cross-connect spaced at 100 GHz grid
• AD-1B	(ONS 15454) Optical add/drop multiplexed (OADM) 1 band filter
• AD-1C	(ONS 15454) Optical add/drop multiplexed (OADM) 1 channel filter
• AD-2C	(ONS 15454) Optical add/drop multiplexed (OADM) 2 channels filter
• AD-4B	(ONS 15454) Optical add/drop multiplexed (OADM) 4 bands filter
• AD-4C	(ONS 15454) Optical add/drop multiplexed (OADM) 4 channels filter
• ADM-10G	(ONS 15454) 16 x OC3/OC12/OC48/GIGE and OC192/Trunk ADM 10 Gbps card
• AIC	(ONS 15454) AIC card
• AICI	(ONS 15454) AICI Card
• CE-1000-4	(ONS 15454) Modena mapper card
• CE-100T-8	(ONS 15454) Exige/Elise mapper card
• CE-MR-10	(ONS 15454, ONS 15454) Lotus20g ce2 card
• DCU	Dispersion Compensation Unit
• DS1-E1-56	(ONS 15454) DS1-E1-56 card
• DS1I	(ONS 15454) DS1I card
• DS3	(ONS 15454) DS3 card
• DS3-EC1-48	(ONS 15454) DS3-EC1-48 card type
• DS3E	(ONS 15454) DS3E card
• DS3I	(ONS 15454) DS3I card

Parameter	Description
• DS3IN	(ONS 15454) DS3IN card
• E1-42	(ONS 15454) 42 port E1 card
• E1000T	(ONS 15454) E1000T card
• E100T	(ONS 15454) E100T card
• E3	(ONS 15454) E3 card
• EC1	(ONS 15454) EC1 card
• FILLER-CARD	(ONS 15454) Blank filler card
• FMEC-155E-1TO3	The equipment type for FMEC STM1E12 card with 1:3 protection
• FMEC-155E-UNPROT	The equipment type for FMEC STM1E12 card without protection
• G1000-4	(ONS 15454) A 4-port G1000 card
• GE-XP	(ONS 15454) 20 x 1 Gbps muxponder/L2 ethernet switch card
• MD-4	(ONS 15454) Four channel optical multiplexer/demultiplexer
• MESH-PP-SMR	The passive unit Patch Panel device used to connect up to four 40-SMR2-C cards.
• ML-100T-8	(ONS 15454) Exige/Elise mapper card
• ML1000-2	(ONS 15454) Daytona 2-port GigE
• ML100T-12	(ONS 15454) Daytona 12-port FSTE
• ML100X-8	(ONS 15454) 8-port 100T card with optical interface
• MRC-12	(ONS 15454) Humvee - 12-port multirate optical card
• MRC-2.5G-4	(ONS 15454) 4-port MRC 2.5G (Hummer 4 15454-ANSI card)
• MRC-2.5G-12	(ONS 15454) 12-port MRC 2.5G (Hummer 12 15454-ETSI card)
• MS-ISC-100T	(ONS 15454) Multishelf Internal Switch Card
• MXP-2.5G-10E	(ONS 15454) Monviso 10G (4 * 2.5G) muxponder card with enhanced FEC
• MXP-2.5G-10G	(ONS 15454) Skane 10G (4 * 2.5G) muxponder card
• MXP-MR-2.5G	(ONS 15454) Bernina multirate 2.5G muxponder unprotected
• MXPP-MR-2.5G	(ONS 15454) Bernina multirate 2.5G muxponder protected
• MXP-MR-10DME	(ONS 15454) Multirate 10Gbps datamux
• OPT-AMP-17-C	(ONS 15454) Optical booster/pre-amplifier for C band 17 dBm
• OPT-AMP-23-C	(ONS 15454) Optical booster/pre-amplifier for C band 23 dBm
• OPT-AMP-L	(ONS 15454) Optical booster/pre-amplifier for L band
• OPT-AMP-C	(ONS 15454) Optical booster/pre-amplifier for C band
• OPT-BST	(ONS 15454) Optical booster amplifier
• OPT-BST-E	(ONS 15454) Optical booster enhanced amplifier for C band

Parameter	Description
• OPT-BST-L	(ONS 15454) Optical booster amplifier for L band
• OPT-EDFA-17	MAL-less EDFA Optical Amplifier - C-band - 17dB Gain
• OPT-EDFA-24	MAL-less EDFA Optical Amplifier - C-band - 24dB Gain
• OPT-PRE	(ONS 15454) Optical pre-amplifier
• OPT-RAMP-C	Raman pump amplifier C-band
• OPT-RAMP-CE	An extended version of Raman pump amplifier
• OPT-RAMP-E	Raman pump amplifier E-band
• OSC-CSM	(ONS 15454) Optical service channel (OSC) with combiner/separator module (SCM)
• OSCM	(ONS 15454) Optical service channel (OSC) module
• OTU2-XP	A 4x10G transponder that is capable to operate with multiple bit rates - 10G FC, 10GE, and OC192/STM64
• PP-4-SMR	Patch-Panel, 4 degrees, for SMR cards
• PP-MESH-4	Patch-Panel, 4 degrees
• PP-MESH-8	Patch-Panel, 8 degrees
• PPM-1	(ONS 15454) Pluggable port module with one SFP port
• PSM	Protection Service Module card
• PTM-4	Line card
• PTF-4	Fabric card
• PTSA	CPT 50 panel
• SHELF	To Provision the 15454 node as SSC
• SHELF-M6	To Provision the M6 node as SSC
• STM1E-12	(ONS 15454 SDH) STM1E-12 card
• TCC	(ONS 15454) TCC card
• TDC-CC	Coarse tunable dispersion compensation unit
• TDC-FC	Fine tunable dispersion compensation unit
• TNC	Transport Node Controller card
• TSC	Transport Shelf Controller card
• TXP-MR-10E	(ONS 15454) Skane 10G multirate transponder card with enhanced FEC
• TXP-MR-10G	(ONS 15454) Skane 10G multirate transponder card
• TXP-MR-2.5G	(ONS 15454) Rockwell multirate 2.5G unprotected
• TXPP-MR-2.5G	(ONS 15454) Rockwell multirate 2.5G protected
• XC	(ONS 15454) XC card
• XC10G	(ONS 15454) XC10G card
• XCVT	(ONS 15454) XCVT card
• XCVXC-10G	(ONS 15454) XCVXC-10G card
• XCVXL-10G	(ONS 15454) XCVXL-10G card
• XCVXL-2.5G	(ONS 15454) XCVXL-2.5G card
<PROTID>	Identifies valid protection slots for the electrical cards.

Parameter	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-2	The No.2 slot of an NE.
• SLOT-3	The No.3 slot of an NE.
• SLOT-5	The No.5 slot of an NE.
• Slot-6	The No.6 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.
<PRTYPE>	Identifies the protection group type values.
• 1-1	1 to 1 protection
• 1-N	1 to N protection
<RVRTV>	(Optional) Revertive mode. The value Y indicates that protection switching system reverts service to the original line after restoration. The value N indicates that protection switching system does not revert service to the original line after restoration. RVRTV is applicable only for 1+1 protection switching. Null defaults to N. Only applies to SNCP. The parameter type is ON_OFF, which disables or enables an attribute.
• N	Does not revert service to original line after restoration.
• Y	Reverts service to original line after restoration.
<RVTM>	(Optional) Revertive time. RVTM is not allowed to be set while RVRTV is N. Only applies to SNCP. The parameter type is REVERTIVE_TIME (revertive time).
• 0.5 to 12.0	Revertive time is 0.5 to 12.0 minutes.
<CMDMDE>	The parameter type is command mode (CMDMDE). Normal (NORM) mode is the default behavior for all commands but you can specify forced (FRCD) mode to force the system to override a state where the command would normally be denied. The FRCD mode of operation is applicable to delete a virtual concatenated (VCAT) member cross-connect in IS-NR or OOS-AU,AINS service states.
<FRCD>	Force the system to override a state where the command would normally be denied.
• NORM	Execute the command normally. Do not override any conditions that might make the command fail.
<RETIME>	(Optional) Indicates the RETIME function for all the facilities on this card. Applies only to the DS1/E1-56 card. The parameter type is ON_OFF (disable or enable an attribute).
• N	Disable an attribute.
• Y	Enable an attribute.
<PEERID>	Indicates the peer trunk facility of the regeneration group on the OTU2-XP card. Accessed using the CHAN AID.

Parameter	Description
<REGENNAME>	Indicates the name of a regeneration group. Applicable only to DWDM flavored cards, which support regeneration group. Regenname is a string. The default value is "NULL".
<TRANSMODE>	Transition Mode.
• AU3	Au3 mode.
• AU4	Au4 mode.
• SONET	Sonnet mode.
<SHELFROLE>	The role of the shelf in the context of the node. When it is omitted it defaults to SC. The parameter is SHELF_ROLE.
<FRPHOLDOFFTIME>	Indicates the hold off timer value. The protection do not start until the hold off expire.
• 100-MSEC	Indicates the hold off timer value as 100 milliseconds.
• 1-MSEC	Indicates the hold off timer value as 1milisecond.
• 200-MSEC	Indicates the hold off timer value as 200 milliseconds.
• 2-MSEC	Indicates the hold off timer value as 2 milliseconds.
• 500-MSEC	Indicates the hold off timer value as 500 milliseconds.
• 50-MSEC	Indicates the hold off timer value as 50 milliseconds.
• 5-MSEC	Indicates the hold off timer value as 50 milliseconds.
• DISABLED	Indicates that the hold off timer is disabled.
<FRPROLE>	Indicates the fast ring protection enable mode for GE-XP/10GE-XP units involved in a protection scheme.
• MASTER	Role is of card master of the ring.
• SLAVE	Role is of card slave of the ring.
<FRPSTATE>	Indicates the fast ring protection enable state.
• DISABLED	Disabled protection
• ENABLED	Enabled protection
• FORCED	Forced protection
<CFMSTATE>	Link Integrity status.
• Y	Enabled
• N	Disabled
<CCTIMER>	Indicates continuity check message timer.
• ONE-MIN	1 minute.
• ONE-SEC	1 second.
• TEN-SEC	10 seconds.
<SWITCHWITHCRCALARM>	Switch the GZ card with CRC Alarms
<CRCTHR>	CRC threshold values beyond which alarms are raised. The available threshold values are 10E-2, 10E-3, and 10E-4.
<CRCPOLLINTRVL>	Interval of time after which the polling starts.
<CRCSOAKCNT>	Number of poll cycles during which defect is integrated. The value ranges from 3 to 10.
<USB>	Identifies the USB Port where a passive unit is connected.

12.11 ENT-FFP-<MOD2DWDMPAYLOAD>

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Facility Protection Group for 10GFC, 10GIGE, 40GIGE, 1GFC, 1GFICON, 2GFC, 2GFICON, 8GFC, D1VIDEO, DV6000, DVBAS1, ETRCLO, FSTE, GIGE, HDTV, ISC1, ISC3, OTU3, PASSTHRU, or OCH

(ENT-FFP-<MOD2DWDMPAYLOAD>) command creates Y-cable protection on client facilities. Refer to the *Cisco ONS SDH and Cisco ONS 15600 SONET TL1 Reference Guide* for specific card provisioning rules.

Usage Guidelines

The command does not support 3GVIDEO, SDSDI, HSDSI, and AUTO payloads on AR-MXP and AR-XP cards.

Category

DWDM

Security

Provisioning

Input Format

ENT-FFP-<MOD2DWDMPAYLOAD>[:<TID>]:<SRC>,<DST>:<CTAG>:::[PROTOTYPE=<PROTOTYPE>],[PROTID=<PROTID>],[RVRTV=<RVRTV>],[RVTM=<RVTM>],[PSDIRN=<PSDIRN>][:];

Input Example

ENT-FFP-HDTV:CISCO:FAC-1-1-1,FAC-2-1-1:100:::PROTOTYPE=Y-CABLE,PROTID=DC-METRO-1,RVRTV=Y,RVTM=1.0,PSDIRN=BI;

Input Parameters

<SRC>	Source access identifier from the “26.17 FACILITY” section on page 26-41 . The working facility uses VFAC AID.
<DST>	Destination access identifier from the “26.17 FACILITY” section on page 26-41 . The protecting facility uses VFAC AID.
<PROTOTYPE>	The type of facility protection. The parameter type is PROTOTYPE (protection type for dense wavelength division multiplexing [DWDM] client facilities).
• Y-CABLE	Y-cable protection for the client ports on TXP_MR_10G, MXP_2.5G_10G, TXP_MR_2.5G, TXPP_MR_2.5G, AR_MXP, and AR_XP cards.
• SPLITTER	Splitter Protection is applicable only on OTU2-XP card.
• ONEPLUSONEL2	1 + 1 L2 Protection for the client ports on 10GE XP and GE XP
<PROTID>	Protection group identifier. Defaults to the protect port AID of the protection group. The identifier is a string that can have a maximum length of 32 characters.

<RVRTV>	Revertive mode. The value Y indicates that protection switching system reverts service to the original line after restoration. The value N indicates that protection switching system does not revert service to the original line after restoration. RVRTV is applicable only for 1+1 protection switching. Null defaults to N. The parameter type is ON_OFF (disable or enable an attribute).
• N	Does not revert service to original line after restoration.
• Y	Reverts service to original line after restoration.
<RVTM>	Revertive time. Defaults to 5.0 minutes. The parameter type is REVERTIVE_TIME (revertive time).
• 0.5 to 12.0	Revertive time is 0.5 to 12.0 minutes.
<PSDIRN>	Protection switch operation. Identifies the switching mode. Defaults to UNI.
	Note TXP_MR_10G and MXP_2.5G_10G cards do not support bidirectional switching.
	Parameter type is UNI_BI (unidirectional and bidirectional switch operations).
• BI	Bidirectional protection switching
• UNI	Unidirectional protection switching

12.12 ENT-FFP-<OCN_TYPE>

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Facility Protection Group for OC-3, OC-12, OC-48, OC-192, or OC768 (ENT-FFP-<OCN_TYPE>) command creates optical 1+1 protection.

Usage Guidelines

See [Table 1-1 on page 1-1](#) for supported modifiers by platform.



Note

- The protect AID must not be provisioned with traffic.
- The working AID can be provisioned with traffic.
- PROTID is a string and can have a maximum length of 32 characters.
- Optimized 1+1 protection and related attributes are only applicable to the ONS 15454.
- The following parameters are supported in Software Release 6.0 and later: OPOTYPE, VRGRDTM, DTGRDTM, and RCGRDTM.
- The following 1+1 protection group rules apply to the MRC-12 card:
 - A 1+1 protection group can only be created between MRC-12 cards. You cannot create a 1+1 protection group between an MRC-12 card and an OC-48 card, for example.
 - A 1+1 protection group can be created only using the same port number. For example, a protection group cannot be created between Port 1 of Slot 5 and Port 4 of Slot 12 (assuming that Slot 5 and Slot 12 both contain MRC-12 cards).
 - A 1+1 protection group cannot be created between ports on the same card. For example, protection groups cannot be created between Port 1 of Slot 5 and Port 4 of Slot 5 (assuming that Slot 5 contains a MRC-12 card).

- Both the cards in the protection group must be placed in the same type of slot. Both MRC-12 cards must be in drop slots (Slots 1 to 4, 14 to 17) or both cards must be in trunk slots (Slots 5 to 6, 12 to 13). You cannot create a protection group between an MRC-12 card in a drop slot and another MRC-12 card in a trunk slot.
- The following 1+1 protection group rules apply to the OC192-XFP cards:
 - A 1+1 protection group can be created between two OC192-XFP cards in trunk slots (Slots 5 to 6, 12 to 13).
 - A 1+1 protection group can be created between an OC192-XFP card and an OC192LR/STM64LH card in trunk slots (Slots 5 to 6, 12 to 13).
- The PROTOTYPE parameter is only applicable to optical DWDM cards.

Category

Protection

Security

Provisioning

Input Format

```
ENT-FFP-<OCN_TYPE>:[<TID>]:<WORK>,
<PROTECT>:<CTAG>:::[PROTOTYPE=<PROTOTYPE>],[PROTID=<PROTID>],
[RVRTV=<RVRTV>],[RVTM=<RVTM>],[PSDIRN=<PSDIRN>],[OPOTYPE=<OPOTYPE>],
[VRGRDTM=<VRGRDTM>],[DTGRDTM=<DTGRDTM>],[RCGRDTM=<RCGRDTM>][:];
```

Input Example

```
ENT-FFP-OC-3:PETALUMA:OC3-3-1-1,OC3-3-2-1:1::PROTOTYPE=Y-CABLE,
PROTID=PROT_NAME,RVRTV=Y,RVTM=1.0,PSDIRN=BI,OPOTYPE=STANDARD,
VRGRDTM=0.5,DTGRDTM=1.0,RCGRDTM=1.0;
```

Input Parameters

<PROTID>	Protection group identifier. Defaults to the protect port AID of the protection group. If the name has an embedded double quote character, that double quote character has to be escaped with a backslash \". The double quotes are special characters that delimit the protection group name and they must be balanced (paired). PROTID is a string that has a maximum length of 32 characters.
<RVRTV>	Revertive mode. The value Y indicates that protection switching system reverts service to the original line after restoration. The value N indicates that protection switching system does not revert service to the original line after restoration. RVRTV is applicable only for 1+1 protection switching. Null defaults to N. The parameter type is ON_OFF (disable or enable an attribute).
• N	Does not revert service to original line after restoration.
• Y	Reverts service to original line after restoration.
<RVTM>	Revertive time. Defaults to 5.0 minutes. The parameter type is REVERTIVE_TIME (revertive time).
• 0.5 to 12.0	Revertive time is 0.5 to 12.0 minutes.

<PSDIRN>	Protection switch operation. Identifies the switch mode. The parameter type is UNI_BI (unidirectional and bidirectional switch operations)
• BI	Bidirectional protection switching
• UNI	Unidirectional protection switching
<OPOTYPE>	1+1 protection type. Can be either standard or optimized 1+1 protection. The parameter type is ONE_PLUS_ONE (1+1 protection type).
• Optimized	Optimized 1+1. Note Only applicable to the ONS 15454. The port must be in Sonet mode.
• Standard	Standard 1+1
<VRGRDTM>	Verification guard timer. Only applicable to optimized 1+1. The parameter type is VERIFICATION_GUARD_TIMER (optimized 1+1 verification guard timer).
• 0.5	500 ms
• 1.0	1 second
<DTGRDTM>	Detection guard timer. Only applicable to optimized 1+1. The parameter type is DETECTION_GUARD_TIMER (optimized 1+1 detection guard timer).
• 0.0	0 seconds
• 0.05	50 ms
• 0.1	100 ms
• 0.5	500 ms
• 1.0	1 second
• 2.0	2 second
• 3.0	3 seconds
• 4.0	4 seconds
• 5.0	5 seconds
<RCGRDTM>	Recovery guard timer. Only applicable to optimized 1+1. The parameter type is RECOVERY_GUARD_TIMER (optimized 1+1 detection guard timer).
• 0.0	0 seconds
• 0.05	50 ms
• 0.1	100 ms
• 0.5	500 ms
• 1.0	1 second
• 2.0	2 second
• 3.0	3 seconds
• 4.0	4 seconds
• 5.0	5 seconds
• 6.0	6 seconds
• 7.0	7 seconds
• 8.0	8 seconds

• 9.0	9 seconds
• 10.0	10 seconds

12.13 ENT-FOG

(Cisco ONS 15454) The Enter Fan-Out-Group (ENT-FOG) command creates the Fan-Out-Group.

Usage Guidelines

- This command is used to provision the CPT 50 panel and applied on the carrier packet transport (CPT) system.
- The FOG can be created on a PTSYS AID.
- A 10 GIGE interface provisioned on the CPT 50 panel must be attached when you create the FOG.
- Interfaces that are valid for a particular FOG can be attached.
- Interface attached to one of the FOG cannot be attached to any other FOG.

Category

Equipment

Security

Provisioning

Input Format

ENT-FOG:[<TID>]:<AID>:<CTAG>:::FOGID=<FOGID>,ATTACH=<ATTACH>;

Input Examples

ENT-FOG::PTSYS-1:1:::FOGID=37,ATTACH=FAC-3-2-1;

Input Parameters

<AID>	AID of the PTSYS on which the FOG is being created. Access identifier from the “26.15 EQPT” section on page 26-38.
<FOGID>	This is the FOGID. FOG AID is created using the FOGID. The valid range is from 36 to 55.
<ATTACH>	AID of the fabric and line card ports used as the Fan-out members. This is the AID of the interface to be attached to the FOG.

12.14 ENT-FTPSERVER

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter FTP Server (ENT-FTPSERVER) command creates FTP server entries.

Usage Guidelines

- The default value of the TIMER, 0, denotes infinite timeout. The TIMER cannot be set with ENABLE=N.

- The FTP server entries are created on the gateway node only.

Category	ENE										
Security	Superuser										
Input Format	ENT-FTPSERVER:[<TID>]::<CTAG>::IPADDR=<IPADDR>,[IPMASK=<IPMASK>],ENABLE=<ENABLE>,[TIMER=<TIMER>];										
Input Examples	1. ENT-FTPSERVER:::A::IPADDR=10.20.30.40,IPMASK=255.0.0.0,ENABLE=Y,TIMER=30; 2. ENT-FTPSERVER:TID::CTAG::IPADDR="[3ffe:0501:0008:0000:0260:97ff:fe40:efab/64]",ENABLE=Y,TIMER=45;										
Input Parameters	<table> <tr> <td><IPADDR></td><td>Specifies the IP address of the FTP server.</td></tr> <tr> <td><IPMASK></td><td>Specifies the subnet mask of the FTP server.</td></tr> <tr> <td><ENABLE></td><td>Specifies the enable/disable option of the FTP server. The parameter type is ON_OFF (disable or enable an attribute).</td></tr> <tr> <td> • N • Y </td><td> Disable an attribute. Enable an attribute. </td></tr> <tr> <td><TIMER></td><td>(Optional) Specifies the timeout value of the FTP server in minutes. Timer is an integer that can be set between 0 and 60 minutes.</td></tr> </table>	<IPADDR>	Specifies the IP address of the FTP server.	<IPMASK>	Specifies the subnet mask of the FTP server.	<ENABLE>	Specifies the enable/disable option of the FTP server. The parameter type is ON_OFF (disable or enable an attribute).	• N • Y	Disable an attribute. Enable an attribute.	<TIMER>	(Optional) Specifies the timeout value of the FTP server in minutes. Timer is an integer that can be set between 0 and 60 minutes.
<IPADDR>	Specifies the IP address of the FTP server.										
<IPMASK>	Specifies the subnet mask of the FTP server.										
<ENABLE>	Specifies the enable/disable option of the FTP server. The parameter type is ON_OFF (disable or enable an attribute).										
• N • Y	Disable an attribute. Enable an attribute.										
<TIMER>	(Optional) Specifies the timeout value of the FTP server in minutes. Timer is an integer that can be set between 0 and 60 minutes.										

12.15 ENT-LMP-CTRL

(Cisco ONS 15454) The Enter Link Management Protocol Control Channel (ENT-LMP-CTRL) command creates an LMP control channel.

Usage Guidelines	This command is only available on nodes where the LMP is available and has been enabled.
Category	LMP
Security	Provisioning

Input Format

```
ENT-LMP-CTRL:[<TID>]:<SRC>:<CTAG>:::[LOCALPORT=<LOCALPORT>],
[REMOTENE=<REMOTENE>],REMOTEIP=<REMOTEIP>,[HELLO=<HELLO>],
[HELLOMIN=<HELLOMIN>],[HELLOMAX=<HELLOMAX>],[DEAD=<DEAD>],
[DEADMIN=<DEADMIN>],[DEADMAX=<DEADMAX>]:[<PST>][,<SST>];
```

Input Example

```
ENT-LMP-CTRL:PETALUMA:CTRL-123:704:::LOCALPORT=FAC-1-1-1,
REMOTENE=15.15.15.115,REMOTEIP=126.0.0.1,HELLO=500,
HELLOMIN=300,HELLOMAX=5000,DEAD=12000,DEADMIN=2000,
DEADMAX=20000:OOS,DSBLD;
```

Input Parameters

<SRC>	The LMP control channel AID value
- CTRL-ALL - CTRL-{1-4}	Specifies all the control channels Specifies an individual control channel
<LOCALPORT>	LOCALPORT is the pathway that the LMP control channel will use to send and receive messages.
<REMOTENE>	Remote IP address used by the far-end LMP control channel
<REMOTEIP>	Remote IP address with which the LMP control channel sends and receives messages
<HELLO>	The time interval in which the LMP protocol sends HELLO messages
<HELLOMIN>	Minimum hello time within which the LMP control channels can send out HELLO messages to the remote node
<HELLOMAX>	The maximum amount of time that the LMP control channel can wait between HELLO messages
<DEAD>	Time interval an LMP control channel will wait for a HELLO message from the remote side before listing the control channel as down
<DEADMIN>	The minimum amount of time that an LMP control channel can wait before listing the control channel status as down
<DEADMAX>	The maximum amount of time that the LMP control channel can wait before listing the control channel as down
<PST>	Primary state. This parameter indicates the current overall service condition of an entity.
- IS - OOS	In service Out of service
<SST>	Secondary state. This parameter provides additional information pertaining to PST and PSTQ.
- AINS - DSBLD - LPBK - MEA - MT - OOG	Automatic in-service Disabled Loopback Mismatch of equipment and attributes Maintenance mode Out of group

• SWDL	Software downloading
• UAS	Unassigned
• UEQ	Unequipped

12.16 ENT-LMP-DLINK

(Cisco ONS 15454) The Enter Link Management Protocol Data Link (ENT-LMP-DLINK) command creates an LMP data link.

Usage Guidelines	This command can only be used on nodes where the LMP protocol is available and enabled.	
Category	LMP	
Security	Provisioning	
Input Format	ENT-LMP-DLINK:[<TID>]:<SRC>:<CTAG>:::[LINKTYPE=<LINKTYPE>],TELINK=<TELINK>,REMOTEID=<REMOTEID>;	
Input Example	ENT-LMP-DLINK:PETALUMA:FAC-14-1-1:704:::LINKTYPE=PORT,TELINK=TLNK-45,REMOTEID=646631;	
Input Parameters	<SRC>	Access identifier from the “26.17 FACILITY” section on page 26-41 .
	<LINKTYPE>	The type of LMP data link
	• PORT	Port data link
	• COMPONENT	Component data link
	<TELINK>	Maps LMP data links to LMP TE links
	<REMOTEID>	The remote LMP data link ID

12.17 ENT-LMP-TLINK

(Cisco ONS 15454) The Enter Link Management Protocol Traffic Engineering Link (ENT-LMP-TLINK) command creates an LMP Traffic Engineering (TE) link.

Usage Guidelines	This command can only be used on nodes where LMP is available and enabled.
------------------	--

Category LMP

Security Provisioning

Input Format ENT-LMP-TLINK:[<TID>]:<SRC>:<CTAG>:::REMOTEID=<REMOTEID>,
REMOTETE=<REMOTETELINK>, [MUXCAP=<MUXCAP>]:[<PST>[,<SST>]];

Input Example ENT-LMP-TLINK:PETALUMA:TLINK-123:704:::REMOTEID=15.15.15.115,REMOTETE=123,
MUXCAP=LAMBDA:OOS,DSBLD;

Input Parameters	<SRC>	LMP TE link AID values
	- TLINK-ALL - TLINK-{ 1-256 }	- Specifies all the TE links. - Specifies an individual TE link.
	<REMOTEID>	Remote node ID associated with the LMP TE link
	<REMOTETE>	Remote ID used by the far-end LMP TE Link
	<MUXCAP>	The muxponder capability of the LMP TE link
	- PKTSWITCH1 - PKTSWITCH2 - PKTSWITCH3 - PKTSWITCH4 - LAYER2 - TDM - LAMBDA - FIBER	- Packet Switching 1 - Packet Switching 2 - Packet Switching 3 - Packet Switching 4 - Layer 2 switching - Time-division multiplexing (TDM) switching - Lambda switching - Fiber switching
	<PST>	Primary state. This parameter indicates the current overall service condition of an entity.
	- IS - OOS	- In service - Out of service
	<SST>	Secondary state. This parameter provides additional information pertaining to PST and PSTQ.
	- AINS - DSBLD - LPBK - MEA - MT - OOG - SWDL - UAS - UEQ	- Automatic in-service - Disabled - Loopback - Mismatch of equipment and attributes - Maintenance mode - Out of group - Software downloading - Unassigned - Unequipped

12.18 ENT-LNK

(ONS 15454) The Enter Optical Link (ENT-LNK) command creates an optical link between two optical connection points.

The optical links can be established between:

- Two optical transport sections (OTSs)
- Two optical multiplexing sections (OMSs) with the same band
- Two optical channels (OCHs) with the same wavelength

Usage Guidelines

The created optical link must be between points belonging to the same ring direction. An optical link between two OMSs or between two OCHs can be HITLESS if the connection is between two points from one drop point to a consecutive add point in the logical link. When this command is used to create an optical link between two OCH ports, where the first port belongs to an OCH filter and the second port is an OCH trunk, the second port should be tuned to the same wavelength of the OCH filter if it has not been set yet.

Category

DWDM

Security

Provisioning

Input Format

ENT-LNK:[<TID>]:<FROM>,<TO>:<CTAG>:::[<PST>[,<SST>]];

Input Example

ENT-LNK:PENNGROVE:CHAN-6-2,CHAN-13-1-RX:114:::OOS,AINS;
ENT-LNK:PENNGROVE:CHAN-6-3-1,CHAN-13-1-RX:114:::OOS,AINS;
ENT-LNK:PENNGROVE:CHAN-6-19-1,CHAN-13-1-RX:114:::OOS,AINS;
ENT-LNK:PENNGROVE:BAND-6-1-TX,BAND-13-1-RX:114:::OOS,AINS;
ENT-LNK:PENNGROVE:LINE-6-1-TX,LINE-13-1-RX:114:::OOS,AINS;

Input Parameters

<FROM>	Identifier at one end of the optical link from the “26.8 CHANNEL” section on page 26-22, “26.4 BAND” section on page 26-20, or “26.19 LINE” section on page 26-44.
<TO>	Identifier at the other end of the optical link from the “26.8 CHANNEL” section on page 26-22, “26.4 BAND” section on page 26-20, or “26.19 LINE” section on page 26-44.
<PST>	Primary state of the entity. The parameter type is PST (primary state). Indicates the current overall service condition of an entity.
• IS	In Service
• OOS	Out of Service

<SST>	Secondary state of the entity. The parameter type is SST (secondary state). Provides additional information pertaining to PST and PSTQ.
• AINS	Automatic in-service
• DSBLD	Disabled
• LPBK	Loopback
• MEA	Mismatch of equipment and attributes
• MT	Maintenance mode
• OOG	Out of group
• SWDL	Software downloading
• UAS	Unassigned
• UEQ	Unequipped

12.19 ENT-LNKTERM

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The ENT-LNKTERM command creates a provisionable patchcord (PP) termination (virtual link) on a physical interface. A user-provisioned link is needed when the data communications channel/generic communications channel (DCC/GCC) is transparently carried over several physical links, and the physical link cannot be automatically discovered by Open Shortest Path First (OSPF) due to lack of control-channel termination or non-support of SONET by the link.

Usage Guidelines

The error message “Provisioning Rules Failed” is returned if the provisioning rules are not satisfied. The following rules must be satisfied while creating a provisionable patchcord termination on a physical interface:

- For a SONET port:
 - A Section DCC (SDCC) termination must be provisioned. If it is the protect facility in a 1+1 protection group, the corresponding working facility must have an SDCC termination provisioned.
 - If the port is part of a BLSR, the SDCC must be provisioned on all of the working ports of the BLSR.
- For a TXP/MXP trunk port, either ITU-T G.709 must be enabled or the payload type must be non-SONET/SDH.
- For a TXP/MXP client port, a card must be operating in the transparent termination mode.
- For a DWDM OCH port:
 - If the OC-N interface is part of a 1+1 protection group, a separate PP termination can be provisioned on the other (working/protect) interface also.
 - If the client interface is part of a Y-cable protection group, a separate PP termination can be provisioned on the other (working/protect) interface also.
 - If the MXP/TPX trunk interface is part of a splitter protection group, a separate PP termination can be provisioned on the other (working/protect) interface also.

- If REMOTENODE is specified as an IP address (or a node name that can be resolved by the gateway network element [GNE]) that is different from the local node's IP address/name, this termination is intended to be a part of an internode provisionable patchcord.
 - All endpoints of the provisionable patchcord need to be provisioned correctly (on the local and/or remote node) for it to show as UP in OSPF.
 - Misconfigured or partially configured provisionable patchcords will not cause alarms or events to be generated at either end of the link.
 - No two provisionable patchcord terminations on a node can be configured to have the same remote node PP termination information (for example, the combination of values for REMOTENODE and REMOTELNKTERMAID attributes for a PP termination must be unique on a single node).
 - All provisionable patchcord terminations on one physical interface must have their remote terminations on a single remote node.
 - The command does not accept multiple and ALL style AIDs.
- The number of PP terminations and the identifier range is limited to 146.

Category

Provisionable Patchcords

Security

Provisioning

Input Format

ENT-LNKTERM:[<TID>]:<AID>:<CTAG>:::PORT=<PORT>,
[REMOTENODE=<REMOTENODE>],REMOTELNKTERMID=<REMOTELNKTERMID>;

Input Example

ENT-LNKTERM::LNKTERM-1:CTAG:::PORT=FAC-5-1,REMOTENODE=172.20.208.225,
REMOTELNKTERMID=20;

Input Parameters

<AID>	Access identifier from the “26.21 LNKTERM” section on page 26-52 . Indicates a link (provisionable patchcord) termination on the local node. The integer value can be within the range of 1 to 146.
<PORT>	The local port corresponding to this provisionable patchcord termination from the “26.8 CHANNEL” section on page 26-22 .
<REMOTENODE>	The node where the other end of the provisionable patchcord resides. This can be an IP address or a valid TID. Defaults to the IP address of the local node/existing value. REMOTENODE is a string.
<REMOTELNKTERMID>	The corresponding provisionable patchcord termination on the remote node (as specified by the REMOTENODE parameter). The integer value can be within the range of 1 to 146. Defaults to existing value.

12.20 ENT-MA-CFM

(Cisco ONS 15454) The Enter Maintenance Association Connectivity Fault Management (ENT-MA-CFM) command adds the maintenance association on the card.

Usage Guidelines

- This command is applicable only to GE_XP and 10GE_XP cards.
- The card should be in Layer2 over DMDM mode.
- The ALL AID is invalid for this command.

Category

Equipment

Security

Provision

Input Format

ENT-MA-CFM:[<TID>]:<AID>:<CTAG>::MANAME=<MANAME>,SVLANID=<SVLANID>,[<CCENABLE=CCENABLE>];

Input Example

ENT-MA-CFM:454-156:SLOT-1:1::MANAME=MANAME,SVLANID=4,CCENABLE=Y;

Input Parameters

<AID>	Access identifier from the “26.15 EQPT” section on page 26-38 .
<MANAME>	Maintenance Association Name. It is a string. The MA name length should not exceed more than 43 characters.
<SVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.
<CCENABLE>	Enable or disable Continuous Check messaging
• Y	Enable
• N	Disable

12.21 ENT-MD-CFM

(Cisco ONS 15454) The Enter Maintenance Domain Connectivity Fault Management (ENT-MD-CFM) command adds the maintenance domain on the card.

Usage Guidelines

- The “ALL” AID is invalid for this command.
- This command is applicable only to GE_XP and 10GE_XP cards.

- The card should be in Layer2 over DMDM mode.

Category

Equipment

Security

Provisioning

Input Format

ENT-MD-CFM:[<TID>]:<AID>:<CTAG>::MDNAME=<MANAME>,LEVEL=<LEVEL>;

Input Example

ENT-MD-CFM:454-156:SLOT-1:1::MDNAME=MDNAME,LEVEL=5;

Input Parameters

<AID>	Access identifier from the “26.15 EQPT” section on page 26-38 .
<MDNAME>	Maintenance Domain Name. It is a string. The MD name length should not exceed more than 43 characters.
<LEVEL>	This indicates the level of the maintenance domain. The value ranges from 0 to 7.

12.22 ENT-MDMAMAP-CFM

(Cisco ONS 15454) The Enter Maintenance Domain and Maintenance Association mapping Connectivity Fault Management (ENT-MDMAMAP-CFM) command creates the maintenance domain and maintenance association mapping.

Usage Guidelines

- This command is applicable only to GE_XP and 10GE_XP cards.
- The card should be in Layer2 over DMDM mode.

Category

Equipment

Security

Configuration

Input Format

ENT-MDMAMAP-CFM:[<TID>]:<AID>:<CTAG>::MDNAME=<MANAME>,SVLANID=<SVLAN ID>,MANAME=<MANAME>;

Input Example

ENT-MDMAMAP-CFM::SLOT-17:1::MDNAME=CISCO,SVLANID=6,MANAME=MA_1;

Input Parameters

<AID>	Access identifier from the “26.15 EQPT” section on page 26-38 .
<MDNAME>	Maintenance Domain Name. It is a string. The MD name length should not exceed more than 43 characters.
<MANAME>	Maintenance Association Name. It is a string. The MA name length should not exceed more than 43 characters.
<SVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.

12.23 ENT-MEP-CFM

(Cisco ONS 15454) The Enter Maintenance End Point Connectivity Fault Management (ENT-MEP-CFM) command creates the maintenance end points on the port.

Usage Guidelines

- This command is applicable only to GE_XP and 10GE_XP cards.
- The card should be in Layer2 over DMDM mode.

Category

Ports

Security

Provisioning

Input Format

ENT-MEP-CFM:[<TID>]:<AID>:<CTAG>:::SVLANID=<SVLANID>,MDNAME=<MDNAME>,MPID=<MPID>;

Input Example

ENT-MEP-CFM::ETH-12-3-1:1:::SVLANID=100,MDNAME=MD2,MPID=20;

Input Parameters

<AID>	Access identifier from the “26.16 ETH” section on page 26-41 .
<SVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.
<MDNAME>	Maintenance Domain Name. It is a string. The MD name length should not exceed more than 43 characters.
<MPID>	Maintenance Point Identifier. It is an integer.
<LEVEL>	This indicates the level of the maintenance domain. The value ranges from 0 to 7.

12.24 ENT-MIP-CFM

(Cisco ONS 15454) The Enter Maintenance Intermediate Point Connectivity Fault Management (ENT-MIP-CFM) command creates the maintenance intermediate points on the port.

Usage Guidelines

- This command is applicable only to GE_XP and 10GE_XP cards.
- The card should be in Layer2 over DMDM mode.

Category

Ports

Security Provisioning

Input Format ENT-MIP-CFM:[<TID>]:<AID>:<CTAG>::VLANID=<VLANID>,LEVEL=<LEVEL>;

Input Example ENT-MIP-CFM::ETH-1-1-1:1::VLANID=2,LEVEL=5;

Input Parameters	<AID>	Access identifier from the “26.16 ETH” section on page 26-41 .
	<VLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.
	<LEVEL>	This indicates the level of the maintenance domain. The value ranges from 0 to 7.

12.25 ENT-NNI-ETH

(Cisco ONS 15454) The Enter Network-to-Network Interface Ethernet (ENT-NNI-ETH) command adds a new network-to-network interface service provider VLAN ID to the NNI interface of an L2 Ethernet port.

-
- Usage Guidelines**
- The default values for all optional parameters are NE default values, but these values might not be the current value for a parameter. Use a retrieve command to obtain the current value.
 - If the AID is invalid, an IIAC error message is returned.
 - The ALL AID is invalid for this command.
 - The L2 Ethernet port must be present when this command is executed.
 - The command will be denied if the service provider VLAN ID is present.

Category Ethernet

Security Provisioning

Input Format ENT-NNI-ETH:[<TID>]:<AID>:<CTAG>::<SVLANID>[::];

Input Example ENT-NNI-ETH:PETALUMA:ETH-1-1-1:1::1010;

Input Parameters	<AID>	Ethernet AIDs are used to access the L2 Ethernet ports. Access identifier from the “26.16 ETH” section on page 26-41.
	<SVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.

12.26 ENT-NNI-CHGRP

(Cisco ONS 15454) The Enter Channel Group Network-to-Network Interface (ENT-NNI-CHGRP) command adds the NNI S-VLAN ID for the NNI of a channel group.

Usage Guidelines	- The default values for all optional parameters are NE default values, but these values might not be the current value for a parameter. Use the RTRV-ETH command to obtain the current value. - If the AID is invalid, an IIAC (Invalid AID) error message is returned. - The ALL AID is invalid for this command.
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Category	Channel group
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Security	Provisioning
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Input Format	ENT-NNI-CHGRP:[<TID>]:<AID>:<CTAG>::<SVLANID>[:];
--------------	---

Input Example	ENT-NNI-CHGRP:CISCO:CHGRP-1-1:1::1010;
---------------	--

Input Parameters	<AID>	Access identifier from the “26.9 CHGRP” section on page 26-25.
	<SVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.

12.27 ENT-OCHCC

(Cisco ONS 15454) The Enter Optical Channel Client Connection (ENT-OCHCC) command allocates an OCH client connection. An OCH client connection is the portion of the circuit that connects the end client ports using trail ports to an OCH network connection circuit. This allocates the portion of the circuit between the OCH filter port to the TXP/MXP or ITU-T client port.

Usage Guidelines

- The client port FAC AID must be specified in order to allocate a client channel inside the node.
- The default values for all optional parameters are NE default values. These values might not be the current value for a parameter. Use a retrieve command to obtain the current value.
- On OTU1 and 4GFC ports, time slots are not applicable.

Category

DWDM

Security

Provisioning

Input Format

ENT-OCHCC[:<TID>]:<AID>:<CTAG>[:<CKTID=<CKTID>],[<CMDMDE=<CMDMDE>],[<ODU1START=<ODU1START>],[<ODU1END=<ODU1END>],[<TSSTART=<TSSTART>],[<TSEND=<TSEND>][:<PST>][:<SST>];

Input Example

ENT-OCHCC::VFAC-3-2-1:123:::ODU1START=1,ODU1END=1,TSSTART=1,TSEND=16;

Input Parameters

<AID>	Access identifier from the “26.17 FACILITY” section on page 26-41 . AR-MXP and AR-XP cards use the VFAC AID.
<CKTID>	Cross-connect ID. The default is Blank or None. It is a string of ASCII characters. The maximum length is 48. If CKTID is empty or null the CKTID field will not appear.
<CMDMDE>	The parameter type is command mode (CMDMDE). Normal (NORM) mode is the default behavior for all commands but you can specify forced (FRCD) mode to force the system to override a state where the command would normally be denied. The FRCD mode of operation is applicable to delete a virtual concatenated (VCAT) member cross-connect in IS-NR or OOS-AU,AINS service states.
• 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.
<ODU1START>	ODU1 Start
<ODU1END>	ODU1 End
<TSSTART>	Time Slot Start

<TSEND>	Time Slot End
<PST>	Primary state. The parameter type is PST, which indicates the current overall service condition of an entity. The default is IS.
• IS	In service
• OOS	Out of service
<SST>	Secondary state. The parameter type is SST, which provides additional information pertaining to PST and PSTQ. The default is AINS.
• AINS	Automatic in-service
• DSBLD	Disabled
• LPBK	Loopback
• MEA	Mismatch of equipment and attributes
• MT	Maintenance mode
• OOG	Out of group
• SWDL	Software downloading
• UAS	Unassigned
• UEQ	Unequipped

12.28 ENT-OCHNC

(Cisco ONS 15454) The Enter Optical Channel Network Connection (ENT-OCHNC) command allocates an OCH network connection.

Usage Guidelines

- Two CHANWL end points must be specified in order to allocate a wavelength channel inside the node. According to the CHANWL specified, the channel allocated can be a passthrough.
- The default values for all optional parameters are NE default values. These values might not be the current value for a parameter. Use a retrieve command to obtain the current value.

Category

DWDM

Security

Provisioning

Input Format

ENT-OCHNC:[<TID>]:<SRC>,<DST>:<CTAG>::[<WCT>]:[CKTID=<CKTID>],[CMDMDE=<CMDMDE>],[WLOPWR=<WLOPWR>],[VOAATTN=<VOAATTN>]:[<PST>[,<SST>]];

Input Example

ENT-OCHNC:VA454-22:LINEWL-1-3-TX-1530.33,CHAN-4-1-RX:116::1WAY:
CKTID=CIRCUIT,CMDMDE=FRCD:OOS,DSBLD;

```

ENT-OCHNC:VA454-22:LINEWL-1-3-TX-1530.33&CHAN-4-1-TX,
CHAN-4-1-RX&LINEWL-1-3-RX-1530.33:116::2WAYDCN:
CKTID="DCN CIRCUIT",CMDMDE=FRCD:OOS,DSBLD;

ENT-OCHNC:VA454-22:LINEWL-1-9-TX-1530.33,LINEWL-1-11-RX-1530.33:116::DIAG:
WLOPWR=1.0,VOAATTN=1.0;

```

Input Parameters	<SRC>	Source access identifier from the “ 26.8 CHANNEL ” section on page 26-22. In 2-way wavelength connection sources both directions need to be indicated.
	<DST>	Destination access identifier from the “ 26.20 LINEWL ” section on page 26-48. In 2-way wavelength connection sources both directions need to be indicated.
	<WCT>	Wavelength connection type. The parameter type is WCT. The default is 1WAY.
	• 1WAY	A unidirectional wavelength connection for one specified ring direction.
	• 2WAY	A bidirectional wavelength connection for both the ring directions.
	• DIAG	A unidirectional maintenance wavelength connection inside 40-WXC-C cards.
	• 2WAYDCN	A bidirectional wavelength connection for both the ring directions that is also used to carry the data communication channels.
	<CKTID>	Cross-connect ID. The default is Blank or None. It is a string of ASCII characters. The maximum length is 48. If CKTID is empty or null the CKTID field will not appear.
	<CMDMDE>	The parameter type is command mode (CMDMDE). Normal (NORM) mode is the default behavior for all commands but you can specify forced (FRCD) mode to force the system to override a state where the command would normally be denied. The FRCD mode of operation is applicable to delete a virtual concatenated (VCAT) member cross-connect in IS-NR or OOS-AU,AINS service states.
	• 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.
	<WLOPWR>	The value of calibrated output power that the VOA is going to set as a result of its attenuation. WLOPWR is a float.
	<VOAATTN>	The value of calibrated attenuation for the VOA expressed in dBm. The range is 0.0 to +30.0. VOAATTN is a float.
	<PST>	Primary state. The parameter type is PST, which indicates the current overall service condition of an entity. The default is IS.
	• IS	In service
	• OOS	Out of service
	<SST>	Secondary state. The parameter type is SST, which provides additional information pertaining to PST and PSTQ. The default is AINS.
	• AINS	Automatic in-service
	• DSBLD	Disabled
	• LPBK	Loopback
	• MEA	Mismatch of equipment and attributes

• MT	Maintenance mode
• OOG	Out of group
• SWDL	Software downloading
• UAS	Unassigned
• UEQ	Unequipped

12.29 ENT-OPMODE

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The enter operating mode (ENT-OPMODE) command creates an operating mode on given client and trunk ports with the specified rate.

Usage Guidelines

- Enter the operating mode that is being created.
- Enter the client and trunk port numbers while creating the operating mode.
- Enter the rate on which the operating mode is created.

Category

DWDM

Security

Provisioning

Input Format

ENT-OPMODE:[<TID>]:<AID>:<CTAG>:::OPMODE=<OPMODE>,TRUNKPORTS=<TRUNKPORTS>,CLIENTPORTS=<CLIENTPORTS>,[RATE=<RATE>],[CTMAP=<CTMAP>];"

Input Example

ENT-OPMODE::SLOT-2:1:::OPMODE=TXP-MR,RATE=LOW,CLIENTPORTS=1,TRUNKPORT=2;

Input Parameters

<AID>	Access Identifier—SLOT
<OPMODE>	Operating mode entered
• DIAGS-10X10G	Diagnostic mode between two 10x10G-LC cards.
• MXP-10x10G	Muxponder mode between 10X10G-LC and 100G-LC-C card.
• RGN-100G	Regenerator mode between two 100G-LC-C cards.
• RGN-10G	Ginsu regenerator mode among SFP+ ports on 10X10G-LC card.
• CFP-MXP	Muxponder mode between one CFP-LC and one 100G-LC-C cards.
• CFP-TXP	Transponder mode between one CFP-LC and one or two 100G-LC-C cards.
• TXP-10G	Transponder mode among SFP+ ports on 10X10G-LC card.
• TXP-MR	Unprotected Multi-rate transponder
• TXPP-MR	Protected Muti-rate Transponder
• MXP-DME	Unprotected Data Muxponder

• MXPP-DME	Protected Data Muxponder
• MXP-MR	Unprotected Multi-Rate Muxponder
• MXPP-MR	Protected Multi-Rate Muxponder
• MXP-4x25-10G	OC48/OTU1 Unprotected Muxponder
• MXPP-4x25-10G	OC48/OTU1 Protected Muxponder
• MXP-VDC-10G	Video Muxponder (without Drop & Continue)
• RGN	Regenerator Mode in AR-XP or AR-MXP cards
<TRUNKPORTS>	The trunk port(s) on which operating mode being entered
<PEERSLOTS>	Peer Card slot number.
<CLIENTPORTS>	The client port(s) on which operating mode is being entered
<RATE>	The rate on which the operating mode is created
• HIGH	High rate (>5G)
• LOW	Low rate (<5G)
<CTMAP>	(Optional) The client to trunk ratio that will be used while creating operating mode
• ONE-ONE	1 Client to 1 Trunk used in TXP-MR-LOW, TXP-MR-HIGH, RGN-LOW and RGN-HIGH modes
• ONE-TWO	1 Client to 2 Trunks used in TXPP-MR-LOW mode
• THREE-ONE	3 Clients to 1 Trunk used in Video Muxponder mode
• FOUR-ONE	4 Clients to 1 Trunk used in MXP-4x2.5-10G, MXP-DME-HIGH modes
• FOUR-TWO	4 Clients to 2 Trunks used in MXPP-4x2.5-10G and MXPP-DME-HIGH modes
• EIGHT-ONE	8 Clients to 1 Trunk used in MXP-DME-HIGH mode
• EIGHT-TWO	8 Clients to 2 Trunks used in MXPP-DME-HIGH mode
• N-ONE	N Clients to 1 Trunk where N=2,3,4,5,6,7,8 used in MXP-MR-LOW and MXP-MR-HIGH modes
• N-TWO	N Clients to 2 Trunks where N=2,3,4,5,6,7,8 used in MXPP-MR-LOW or MXPP-MR-HIGH modes

12.30 ENT-QNQ-CHGRP

(Cisco ONS 15454) The Enter Channel Group QinQ (ENT-QNQ-CHGRP) command adds the IEEE 802.1Q tunneling (QinQ) relationship between the CE-VLAN and the S-VLAN for Gigabit Ethernet uniport provisioning associated to a channel group.

Usage Guidelines

- The default values for all optional parameters are NE default values, but these values might not be the current value for a parameter. Use the RTRV-ETH command to obtain the current value.
- If the AID is invalid, an IIAC (Invalid AID) error message is returned.
- The ALL AID is invalid for this command.

Category Channel Group

Security Provisioning

Input Format ENT-QNQ-CHGRP:[<TID>]:<AID>:<CTAG>::<FIRST_CE_VLAN_ID>,<LAST_CE_VLAN_ID>,<S_VLAN_ID>:[RULE=<RULE>],[INTERNALVLAN=<INTERNAL_VLAN_ID>],[INGRESSCOS=<INGRESSCOS>][:];

Input Example ENT-QNQ-CHGRP:CISCO:CHGRP-1-1:1::10,11,100:RULE=ADD;

Input Parameters	<AID>	Access identifier from the “26.9 CHGRP” section on page 26-25 .
	<FIRSTCEVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.
	<LASTCEVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.
	<SVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.
	<RULE>	Used to represent the rules allowed for the VLAN tagging operations. The default value is ADD.
	• ADD	The S-VLAN tag is added to the CE-VLAN tag.
	• XLTE	The S-VLAN tag replaces the CE-VLAN tag (single Q).
	• XLTE-ADD	XLTE and ADD rule applied together. This rule request to supply an internal S-VLAN. First the Internal VLAN substitutes the Customer VLAN, then Service Provider VLAN TAG (S-VLAN) is added
	• DOUBLE-ADD	ADD rule applied two times. This rule request to supply an internal S-VLAN. First the Internal VLAN is added, then Service Provider VLAN TAG (S-VLAN) is added to have a double tag
	<INTERNAL_VLAN_ID>	Internal VLAN ID.
	<INGRESSCOS>	Identifies the COS value set in the S-VLAN tag.
	• 0 to 7	Set a Cos value
	• DSCP	The COS is set according to DSCP to COS mapping table.
	• TRUST	Use the Customer COS
	• VLAN	The COS provisioned on CVLAN basis (QinQ selective mode)

12.31 ENT-QNQ-ETH

(Cisco ONS 15454) The Enter QinQ Ethernet (ENT-QNQ-ETH) command enters a new IEEE 802.1Q tunneling (QinQ) relationship between the CE-VLAN and S-VLAN for Gigabit Ethernet uniport provisioning associated to an L2 Ethernet port.

Usage Guidelines

- The default values for all optional parameters are NE default values, but these values may not be the current value for a parameter. Use a retrieve command to obtain the current value.
- If the AID is invalid, an IIAC error message is returned.
- The ALL AID is invalid for this command.
- The L2 Ethernet port must be defined before executing this command or the command will be denied.
- The command will be denied if the CE-VLAN-ID and S-VLAN-ID relationship is defined before the L2 Ethernet port is defined.

Category

Ethernet

Security

Provisioning

Input Format

ENT-QNQ-ETH:[<TID>]:<AID>:<CTAG>::<FIRSTCEVLANID>,<LASTCEVLANID>,<S_VLAN_ID>[:RULE=<RULE>],[INTERNALVLAN=<INTERNAL_VLAN_ID>],[INGRESSCOS=<INGRESSCOS>][:];

Input Example

ENT-QNQ-ETH:PETALUMA:ETH-1-1-1:1::10,11,100:RULE=ADD;

Input Parameters

<AID>	Ethernet AIDs are used to access the L2 Ethernet ports. Access identifier from the “26.16 ETH” section on page 26-41 .
<FIRSTCEVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.
<LASTCEVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.
<SVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.

<RULE>	Used to represent the rules allowed for the VLAN tagging operations. The default value is ADD.
• ADD	The S-VLAN tag is added to the CE-VLAN tag.
• XLTE	The S-VLAN tag replaces the CE-VLAN tag (single Q).
• XLTE-ADD	XLTE and ADD rule applied together. This rule request to supply an internal S-VLAN. First the Internal VLAN substitutes the Customer VLAN, then Service Provider VLAN TAG (S-VLAN) is added
• DOUBLE-ADD	ADD rule applied two times. This rule request to supply an internal S-VLAN. First the Internal VLAN is added, then Service Provider VLAN TAG (S-VLAN) is added to have a double tag
<INTERNAL_VLAN_ID>	Internal VLAN ID
<INGRESSCOS>	Identifies the COS value set in the S-VLAN tag.
• 0 to 7	Set a Cos value
• TRUST	Use the Customer COS
• VLAN	The COS provisioned on CVLAN basis (QinQ selective mode)

12.32 ENT-REP

(Cisco ONS 15454) The Enter Resilient Ethernet Protocol (ENT-REP) command associates the Resilient Ethernet Protocol (REP) configuration on the ethernet port of GE_XP or 10GE_XP card.

Usage Guidelines

- This command is applicable only if the card is in ETH-L2 card mode.
- This command is applicable only to GE_XP and 10GE_XP cards.
- The PORTROLE parameter can be PRIMARY, NO_NEIGHBOR, or NO_NEIGHBOR_PRIMARY only if the port is an edge port.
- If the Edge is not Enabled, the PORTROLE parameter can only be REGULAR.
- If only the segment ID is specified, by default the edge is disabled and PORTROLE is REGULAR; PREFERRED is disabled.

Category

Ethernet

Security

Provisioning

Input Format

ENT-REP:[TID>]:<AID>:<CTAG>:::<SEGMENTID=<SEGMENTID>],[EDGE=<EDGE>],[PORTROLE=<PORTROLE>],[PREFERRED=<PREFERRED>];

Input Example

```
ENT-REP::ETH-12-1-1:1::SEGMENTID=1,EDGE=Y,PORTROLE=PRIMARY,PREFERRED=N;
```

Input Parameters

<AID>	Ethernet AIDs are used to access L2 Ethernet ports. Access identifier from the “26.16 ETH” section on page 26-41.
<SEGMENTID>	Indicates the segment ID for REP segment. The valid range is from 0 to 1024.
<EDGE>	Configures the port as an edge port.
• Y	To configure the port as an edge port.
• N	Not to configure the port as an edge port.
<PORTROLE>	The parameter type is REP_PORT_ROLE, which indicates the port’s role in a REP Segment for the ethernet ports.
• PRIMARY	Indicates that the port is a primary port.
• NO_NEIGHB OR	Indicates that the port has no neighbor port in the segment.
• NO_NEIGHB OR_PRIMA RY	Indicates that the port is a primary port and has no neighbor port in the segment.
• REGULAR	Indicates that the port is a regular port.
• None	Indicates that the port is an edge port.
<PREFERRED>	Indicates that the port is the preferred alternate port. Or the preferred port for VLAN load balancing.
• Y	Yes
• N	No

12.33 ENT-RMONTH-<MOD2_RMON>

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Remote Monitoring Threshold for 10GFC, 10GIGE, 40GIGE, 1GFC, 1GFICON, 2GFC, 2GFICON, 4FGC, 4GFICON, 8GFC, CHGRP, FSTE, G1000, GFP, GIGE, ETH, GFPOS, GIGE, HDLC, ISCCOMPAT, POS

(ENT-RMONTH-<MOD2_RMON>) command creates an entry in the remote monitoring (RMON) alarm table for the threshold of data statistics (for example, GIGE or FC) managed by the RMON engine. After creating the RMON threshold (RMONTH), a threshold crossing alert (TCA) event will be generated and reported to the TL1 session when the threshold is crossed. More than one threshold can be created with different parameters for each data statistic type.

Usage Guidelines

See [Table 1-1 on page 1-1](#) for supported modifiers by platform.

Category

Performance

Security

Provisioning

Input Format

```
ENT-RMONTH-<MOD2_RMON>:[<TID>]:<SRC>:<CTAG>::<MONTYPE>,,,  
<INTVL>:RISE=<RISE>,FALL=<FALL>,[SAMPLE=<SAMPLE>],[STARTUP=<STARTUP>][:];
```

Input Example

```
ENT-RMONTH-GIGE:CISCO:FAC-2-1:1234::ETHERSTATSOCTETS,,,100:RISE=1000,  
FALL=100,SAMPLE=DELTA,STARTUP=RISING;
```

Input Parameters

<SRC>	Source access identifier from the “26.17 FACILITY” section on page 26-41 . AID for the facility that manages the data statistics. AR-MXP and AR-XP cards use the VFAC AID.
<MONTYPE>	Monitored type. Type of RMON data statistics. The parameter type is ALL_MONTYPE (monitoring type list).
• AISSP	Alarm Indication Signal Seconds—Path
• BBE-PM	OTN—Background Block Errors—Path Monitor Point
• BBE-SM	OTN—Background Block Errors—Section Monitor Point
• BBER-PM	OTN—Background Block Error Ratio—Path Monitor Point expressed as one tenth of a percentage
• BBER-SM	OTN—Background Block Error Ratio—Section Monitor Point expressed as one tenth of a percentage
• BIEC	FEC—Bit Errors Corrected
• CGV	8B10B—Code Group Violations
• CSSP	Controlled Slip Seconds—Path (DSXM-12 FDL/T1.403 PM count)
• CVCPP	Coding Violations—CP-Bit Path
• CVL	Coding Violations—Line
• CVP	Coding Violations—Path
• CVS	Coding Violations—Section
• CVV	Coding Violations—Section
• DCG	8B10B—Data Code Groups
• ESAP	Errored Second Type A-Path (DS3XM-12 DS1 PM count)
• ESBP	Errored Second Type B-Path (DS3XM-12 DS1 PM count)
• ESCPP	Errored Seconds—CP—Bit Path
• ESL	Errored Seconds—Line
• ESNPFE	Errored Second—Network Path (DS3XM-12 DS1 PM count)
• ESP	Errored Seconds—Path
• ES-PM	OTN—Errored Seconds—Path Monitor Point
• ES-SM	OTN—Errored Seconds—Section Monitor Point
• ESR	Errored Second—Ratio
• ESR-PM	Errored Seconds Ratio—Path monitor Point expressed as one tenth of a percentage
• ESR-SM	Errored Seconds Ratio—Section monitor Point expressed as one tenth of a percentage
• ESS	Errored Seconds—Section
• ESV	Errored Seconds—VT Path

• etherStatsBroadcastPkts	The total number of good packets received that were directed to a multicast address
• etherStatsCollisions	Number of transmit packets that are collisions
• etherStatsCRCAlignErrors	The total number of packets received that have a length (excluding framing bits, but including frame check sequence [FCS] octets) of between 64 and 1518 octets
• etherStatsDropEvents	Number of received frames dropped at the port level
• etherStatsFragments	The total number of packets received that were less than 64 octets
• etherStatsJabbers	The total number of packets received that are longer than 1518 octets
• etherStatsOctets	The total number of octets of data
• etherStatsOversizePkts	The total number of packets received that are longer than 1518 octets
• etherStatsPkts	The total number of packets (including bad packets, broadcast packets, and multicast packets) received
• etherStatsUndersizePkts	The total number of packets received that are less than 64 octets
• FCP	Failure Count—Line
• FC-PM	OTN—Failure Count—Path Monitor Point
• FC-SM	OTN—Failure Count—Section Monitor Point
• HP-AR	Availability Ratio
• HP-BBE	High-Order Path Background Block Error
• HP-BBER	High-Order Path Background Block Error Ratio
• HP-EB	High-Order Path Errored Block
• HP-ES	High-Order Path Errored Second
• HP-ESA	High-Order Path Errored Seconds - A
• HP-ESB	High-Order Path Errored Seconds - B
• HP-ESR	High-Order Path Errored Second Ratio
• HP-FC	High-Order Path Failure Count
• HP-NPJC-PDET	High-Order Path Negative Pointer Justification Count - Path Detected
• HP-NPJC-PGEN	High-Order Path Negative Pointer Justification Count - Path Generated
• HP-OI	Outage Intensity
• HP-PJCDIFF	High-Order Path Pointer Justification Count Difference
• HP-PJCS-PDET	High-Order Path Pointer Justification Count Seconds - Path Detected
• HP-PJCS-PGEN	High-Order Path Pointer Justification Count Seconds - Path Generated
• HP-PPJC-PDET	High-Order Path Positive Pointer Justification Count - Path Detected
• HP-PPJC-PGEN	High-Order Path Positive Pointer Justification Count - Path Generated
• HP-SEPI	The number of Severely Errored Period Intensity events in available time

• HP-SES	High-Order Path Severely Errored Seconds
• HP-SESR	High-Order Path Severely Errored Second Ratio
• HP-UAS	High-Order Path Unavailable Seconds
• ifInBroadcastPkts	Number of broadcast packets received since the last counter reset
• ifInDiscards	The number of inbound packets
• ifInErrorBytePktss	Receive Error Byte
• ifInErrors	The number of inbound packets (or transmission units) that contained errors
• ifInFramingErrorPkts	Receive Framing Error
• ifInJunkInterPkts	Receive Interpacket Junk
• ifInMulticastPkts	Number of multicast packets received since the last counter reset
• ifInOctets	Number of bytes transmitted since the last counter reset
• ifInUcastPkts	Number of unicast packets received since the last counter reset
• ifOutBroadcastPkts	Number of broadcast packets transmitted
• ifOutDiscards	The number of outbound packets
• ifOutErrors	The number of outbound packets (or transmission units) that could not be transmitted because of errors
• ifOutMulticastPkts	Number of multicast packets transmitted
• ifOutPayloadCrcErrors	Received payload cyclic redundancy check (CRC) errors
• ifOutUcastPkts	Number of unicast packets transmitted
• IOS	8B10B- Idle Ordered Sets
• IPC	Invalid Packet Count
• LBCL-AVG	Average Laser Bias current in microA
• LBCL-MAX	Maximum Laser Bias current in microA
• LBCL-MIN	Minimum Laser Bias current in microA
• LBCN	Normalized Laser Bias Current for OC3-8
• LBCN-HWT	Laser Bias Current
• LBCN-LWT	Laser Bias Current
• LOSSL	Loss of Signal Seconds—Line
• LP-BBE	Low-Order Path Background Block Error
• LP-BBER	Low-Order Path Background Block Error Ratio
• LP-EB	Low-Order Path Errored Block
• LP-ES	Low-Order Path Errored Second
• LP-ESA	Low-Order Path Errored Seconds-A
• LP-ESB	Low-Order Path Errored Seconds-B
• LP-ESR	Low-Order Path Errored Second Ratio
• LP-FC	Low-Order Path Failure Count
• LP-NPJC-DET	Low-Order Negative Pointer Justification Count, Detected
• LP-NPJC-GEN	Low Order Negative Pointer Justification Count, Generated
• LP-PPJC-DET	Low-Order Positive Pointer Justification Count, Detected
• LP-PPJC-GEN	Low-Order Positive Pointer Justification Count, Generated
• LP-SEP	Low-Order Path Severely Errored Period

• LP-SEPI	Low-Order Path Severely Errored Period Intensity
• LP-SES	Low-Order Path Severely Errored
• LP-UAS	Low-Order Path Unavailable Seconds
• mediaIndStatsRxFramesBadCrc	rx frames with bad crc
• mediaIndStatsRxLcvErrors	L1 line code violations for lower rate FC. This equates to invalid 8b10b ordered sets.
• mediaIndStatsTxFramesBadCrc	tx frames with bad crc
• mediaIndStatsTxLcvErrors	L1 line code violations for lower rate FC. This equates to invalid 8b10b ordered sets.
• MS-PSC	Protection switch count
• MS-PSD	Protection switch duration
• NIOS	8B10B—Non Idle Ordered Sets
• NPJC-PDET	Negative Pointer Justification Count- Path Detected
• NPJC-PGEN	Negative Pointer Justification Count- Path Generated
• OPR-AVG	Average Receive Power in tenths of a microW
• OPR-MAX	Maximum Receive Power in tenths of a microW
• OPR-MIN	Minimum Receive Power in tenths of a microW
• OPRN	Normalized Optical Receive Power for OC3-8 card
• OPRN-MAX	Maximum value for OPRN
• OPRN-MIN	Minimum value for OPRN
• OPT-AVG	Average Transmit Power in tenths of a microW
• OPT-MAX	Maximum Transmit Power in tenths of a microW
• OPT-MIN	Minimum Transmit Power in tenths of a microW
• OPTN	Normalized value for Optical Power Transmitted for the OC3-8 card
• OPTN-MAX	Maximum value for OPTN
• OPTN-MIN	Minimum value for OPTN
• OPWR-AVG	Optical Power—Average Interval Value in tenths of a dBm
• OPWR-MAX	Optical Power—Maximum Interval Value in tenths of a dBm
• OPWR-MIN	Optical Power—Minimum Interval Value in tenths of a dBm
• PPJC-PDET	Positive Pointer Justification Count - Path Detected
• PPJC-PGEN	Positive Pointer Justification Count - Path Generated
• PSC	Protection Switching Count
• PSC-R	Protection Switching Count—Ring
• PSC-S	Protection Switching Count—Span
• PSC-W	Protection Switching Count—Working
• PSD	Protection Switching Duration
• PSD-R	Protection Switching Duration—Ring
• PSD-S	Protection Switching Duration—Span
• PSD-W	Protection Switching Duration—Working
• SASCPP	Severely Errored Framing/AIS Second—CP-Bit Path

• SASP	Severely Errored Framing/AIS Seconds Path
• SEFS	Severely Errored Framing Seconds
• SEFSP	Severely Errored Framing Seconds—Path (DS3XM-12 DS1 PM count)
• SESCPP	Severely Errored Second—CP-Bit Path
• SESL	Severely Errored Second—Line
• SESNPFE	Severely Errored Second—Network Path (DS3XM-12 DS1 PM count)
• SESP	Severely Errored Second—Path
• SES-PM	OTN—Severely Errored Second—Path
• SESR-PM	OTN—Severely Errored Second Ratio—Path Monitor Point expressed as one tenth of a percentage
• SESR-SM	OTN—Severely Errored Second Ratio—Section Monitor Point expressed as one tenth of a percentage
• SESS	Severely Errored Second—Section
• SES-SM	OTN—Severely Errored Second—Section Monitor Point
• SESV	Severely Errored Second—VT Path
• UASCPP	Unavailable Second—CP-Bit Path
• UASL	Unavailable Second—Line
• UASNPFE	Unavailable Second—Network Path (DS3XM-12 DS1 PM count)
• UASP	Unavailable Second—Path
• UAS-PM	OTN—Unavailable Second—Path Monitor Point
• UAS-SM	OTN—Unavailable Second—Section Monitor Point
• UASV	Unavailable Second—VT Path
• UNC-WORDS	FEC—Uncorrectable Words
• VPC	Valid Packet Count
<INTVL>	The interval in seconds over which the data is sampled and compared with the rising and falling threshold. A valid value is any integer larger than or equal to 10 (seconds).
<RISE>	The rising threshold for the sampled statistic. A valid value is any integer.
<FALL>	The falling threshold. A valid value is any integer smaller than the rising threshold.
<SAMPLE>	The method of calculating the threshold comparison value. The parameter type is SAMPLE_TYPE, which describes how the data will be calculated during the sampling period.
• ABSOLUTE	Comparing directly
• DELTA	Comparing with the current value of the selected variable subtracted by the last sample
<STARTUP>	Dictates whether an event will generate if the first valid sample is greater than or equal to the rising threshold, less than or equal to the falling threshold, or both. The parameter type is STARTUP_TYPE, which indicates whether an event will be generated when the first valid sample is crossing the rising or falling threshold.

• FALLING	Generates the event when the sample is smaller than or equal to the falling threshold.
• RISING	Generates the event when the sample is greater than or equal to the rising threshold.
• RISING-OR-FALLING	Generates the event when the sample is crossing the rising threshold or the falling threshold.

12.34 ENT-ROLL-<MOD_PATH>

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Roll for STS1, STS12C, STS192C, STS24C, STS3C, STS48C, STS96C, STS6C, STS9C, VC12, VC3, VT1, or VT2

(ENT-ROLL-<MOD_PATH>) command enters information about rolling of traffic from one end point to another without interrupting service. This command can be used to roll single paths (STS or VT).



Note

STS18C and STS36C are not supported in this release.

Usage Guidelines

None

Category

Bridge and Roll

Security

Provisioning

Input Format

ENT-ROLL-<MOD_PATH>:[<TID>]:<FROM>,<TO>:<CTAG>:::RFROM=<RFROM>,
RTO=<RTO>,RMODE=<RMODE>,[CMDMDE=<CMDMDE>];

Input Example

ENT-ROLL-STS1:CISCO:STS-1-1-1,STS-2-1-1:1:::RFROM=STS-2-1-1,RTO=STS-3-1-1,
RMODE=MAN,FORCE=Y;

Input Parameters	<FROM>	Source access identifier from the “26.27 STS” section on page 26-54 , which is one of the termination points (legs) of the existing cross-connection. If the existing cross-connection is one-way, then this termination point (leg) should be the FROM-AID termination point. Otherwise, FROM is not significant. FROM and TO should be entered as they are entered in the ENT-CRS command. You can issue the RTRV-CRS command and use the response for FROM and TO parameters.
	<TO>	Destination AID from the “26.27 STS” section on page 26-54 which is one of the termination points (legs) of the existing cross-connection. If the existing cross-connection is one-way, then this termination point (leg) should be the TO-AID termination point. Otherwise, the TO is not significant. FROM and TO should be entered as they are entered in the ENT-CRS command. You can issue the RTRV-CRS command and use the response for FROM and TO parameters.
	<RFROM>	The termination point of the existing cross-connect that is to be rolled. The termination point is an AID from the “26.27 STS” section on page 26-54 .
	<RTO>	The termination point that will become a leg of the new cross-connection. the termination point is an AID from the “26.27 STS” section on page 26-54 .
	<RMODE>	Indicates the mode of the rolling operation. The parameter type is RMODE (roll mode).
	• AUTO	Automatic. When a valid signal is available, the roll that has the AUTO mode will automatically delete the previous end-point.
	• MAN	Manual. Enter the corresponding delete roll/bulkroll command to delete the previous end-point.
	<FORCE>	Forces a valid signal on the path. FORCE can only go from Y to N. The parameter type is ON_OFF (disable or enable an attribute).
	• N	Disable an attribute.
	• Y	Enable an attribute.

12.35 ENT-ROUTE

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Route (ENT-ROUTE) command creates static routes.

Usage Guidelines	There is no Domain Name Server (DNS) service available on the node. Only numeric IP addresses will be accepted.
Category	System
Security	Provisioning

Input Format ENT-ROUTE:[<TID>]::<CTAG>::<DESTIP>,<IPMASK>,<NXTHOP>,<COST>;

Input Example ENT-ROUTE:CISCO::123::10.64.72.57,255.255.255.0,10.64.10.12,200;

Input Parameters	<DESTIP>	Destination tip. DESTIP is a string.
	<IPMASK>	IP mask. IPMASK is a string.
	<NXTHOP>	Next hop. NXTHOP is a string.
	<COST>	Unsigned integer. The valid range is from 1 to 32,797.

12.36 ENT-ROUTE-GRE

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Route Generic Routing Encapsulation (ENT-ROUTE-GRE) command creates a GRE tunnel. This can be used to transport IP over Open Systems Interconnect (OSI) or OSI over IP.

Usage Guidelines None

Category System

Security Provisioning

Input Format ENT-ROUTE-GRE:[<TID>]::<CTAG>::IPADDR=<IPADDR>,IPMASK=<IPMASK>,NSAP=<NSAP>,[COST=<COST>];

Input Example ENT-ROUTE-GRE:CISCO::123::IPADDR=10.64.72.57,IPMASK=255.255.255.0,NSAP="39840F80FFFFFFF0000DDDDAA000010CFB4910200",COST=110;

Input Parameters	<IPADDR>	IP address of the tunnel endpoint. IPADDR is a string.
	<IPMASK>	Subnet mask for the tunnel endpoint. IPMASK is a string.
	<NSAP>	Network service access point (NSAP) address for the tunnel endpoint. NSAP is a string.
	<COST>	Routing cost associated with the tunnel. COST is an integer.

12.37 ENT-TADRMAP

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Target Identifier Address Mapping (ENT-TADRMAP) command instructs a gateway NE (GNE) to create an entry in the TADRMAP table that maps the target identifiers (TIDs) of the subtending NEs to their addresses. The operating systems (OSs) will address the subtending NEs using the TID in TL1 messages and a GNE will address these NEs by mapping the TID to an IP address or NSAP. The TADRMAP table, which resides in the GNE, correlates a TID and an address. The command requires that at least one IPADDR or NSAP be specified. The PORT and ENCODING parameters are only used with IP address mappings.

Usage Guidelines

None

Category

System

Security

Provisioning

Input Format

ENT-TADRMAP:[<TID>]::<CTAG>::[TIDNAME=<TIDNAME>],[IPADDR=<IPADDR>],[PORT=<PORT>],[ENCODING=<ENCODING>],[NSAP=<NSAP>];

Input Example

ENT-TADRMAP:TID::CTAG::TIDNAME=ENENODENAME,IPADDR=192.168.100.52,PORT=3082,ENCODING=LV,NSAP="39840F80FFFFFFF0000DDDDAA01001800";

Input Parameters

<TIDNAME>	TID of the new TID/address mapping. TIDNAME is a string.
<IPADDR>	(Optional) IP address. IPADDR is a string. Note If the NSAP parameter is not used, the IPADDR parameter is required.
<PORT>	Port for the TID/IP address mapping. The port default is 3082. PORT is an integer.
<ENCODING>	TL1 encoding for the TID/IP address mapping. The encoding default is LV. The parameter type is ENCODING (modifies information into the required transmission format).
• LV	Length encoding
• RAW-CISCO	Cannot be specified. Used only for display with backward compatible Optical Networking System (ONS) NEs.
• RAW-STD	Noninteractive encoding
<NSAP>	(Optional) NSAP address. NSAP is a string. Note If the IPADDR parameter is not used, the NSAP parameter is required.

12.38 ENT-TRAPTABLE

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Trap Table (ENT-TRAPTABLE) command provisions a Simple Network Management Protocol (SNMP) trap destination and its associated community, User Datagram Protocol (UDP) port, and SNMP version. The maximum number of trap entries is ten.

Usage Guidelines

None

Category

System

Security

Provisioning

Input Format

ENT-TRAPTABLE:[<TID>]:<AID>:<CTAG>::COMMUNITY=<COMMUNITY>,
[TRAPPORT=<TRAPPORT>],[TRAPVER=<TRAPVER>];

Input Examples

1. ENT-TRAPTABLE::1.2.3.4:1::COMMUNITY="PRIVATE",TRAPPORT=162,TRAPVER=SNMPV1;
2. ENT-TRAPTABLE::"[3ffe:0501:0008:0000:0260:97ff:fe40:efab]":1::COMMUNITY="PRIVATE",TRAPPORT=162,TRAPVER=SNMPV1;

Input Parameters

<AID>	IP address identifying the trap destination. Only a numeric IP address is allowed. Access identifier from the “26.18 IPADDR” section on page 26-44.
<COMMUNITY>	Community associated with the trap destination. Community name is a string with up to 32 characters.
<TRAPPORT>	UDP port number associated with the trap destination. The UDP port number default is 162. TRAPPORT is an integer.
<TRAPVER>	SNMP version number. Defaults to SNMPv1. The parameter type is SNMP_VERSION (SNMP Version).
• SNMPV1	(Default) SNMP Version 1
• SNMPV2	SNMP Version 2

12.39 ENT-TUNNEL-FIREWALL

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Tunnel Firewall (ENT-TUNNEL-FIREWALL) command creates a firewall tunnel.

Usage Guidelines

None

Category

System

Security

Provisioning

Input Format

ENT-TUNNEL-FIREWALL:[<TID>]::<CTAG>:::[SRCADDR=<SRCADDR>],
[SRCMASK=<SRCMASK>],[DESTADDR=<DESTADDR>],[DESTMASK=<DESTMASK>];

Input Example

ENT-TUNNEL-FIREWALL:TID::CTAG:::SRCADDR=192.168.100.52,
SRCMASK=255.255.255.0,DESTADDR=192.168.101.14,DESTMASK=255.255.255.0;

Input Parameters

<SRCADDR>	Source IP address. SRCADDR is a string.
<SRCMASK>	Source mask. SRCMASK is a string.
<DESTADDR>	Destination IP address. DESTADDR is a string.
<DESTMASK>	Destination mask. DESTMASK is a string.

12.40 ENT-TUNNEL-PROXY

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Tunnel Proxy (ENT-TUNNEL-PROXY) command creates a proxy tunnel.

Usage Guidelines

None

Category

System

Security

Provisioning

Input Format

ENT-TUNNEL-PROXY:[<TID>]::<CTAG>:::[SRCADDR=<SRCADDR>],
[SRCMASK=<SRCMASK>],[DESTADDR=<DESTADDR>],[DESTMASK=<DESTMASK>];

Input Example

```
ENT-TUNNEL-PROXY:TID::CTAG::SRCADDR=192.168.100.52,SRCMASK=255.255.255.0,
DESTADDR=192.168.101.14,DESTMASK=255.255.255.0;
```

Input Parameters

<SRCADDR>	Source IP address. SRCADDR is a string.
<SRCMASK>	Source mask. SRCMASK is a string.
<DESTADDR>	Destination IP address. DESTADDR is a string.
<DESTMASK>	Destination mask. DESTMASK is a string.

12.41 ENT-USER-SECU

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter User Security (ENT-USER-SECU) command adds a user account. Only a Superuser can use the ENT-USER-SECU command. Each user created by the Superuser has one of these four privilege levels:

1. Retrieve [RTRV]: Users with this security level can retrieve information from the node, but cannot modify anything. The default idle time for a Retrieve user is unlimited.
2. Maintenance [MAINT]: Users with 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 maintenance. The default idle time for a Maintenance user is 60 minutes.
3. Provisioning [PROV]: Users with this security level can perform all maintenance actions, and all provisioning actions except those restricted to Superusers. The default idle time for a Provisioning user is 30 minutes.
4. Superuser [SUPER]: Users with this security level can perform all provisioning user actions, plus creating and deleting user security profiles, setting basic system parameters such as time, date, node name, and IP address, and doing database backup and restoration. The default idle time for a Superuser is 15 minutes.

Usage Guidelines

- Passwords are masked for the following security commands: ACT-USER, ED-PID, ENT-USER-SECU, and ED-USER-SECU. Access to a TL1 session by any means will have the password masked. The CTC Request History and Message Log will also show the masked commands. When a password-masked command is reissued by double-clicking the command from CTC Request History, the password will still be masked in the CTC Request History and Message Log. The actual password that was previously issued will be sent to the NE. To use a former command as a template only, single-click the command in CTC Request History. The command will be placed in the Command Request text box, where you can edit the appropriate fields prior to reissuing it.
- The user ID can be any combination of up to 10 alphanumeric characters.
- The password ID is a string of up to 10 characters where at least 2 characters are nonalphabetic with at least one special character (+, %, or #).
- Although the CTC allows both a UID and a PID of up to 20 characters, the CTC-entered users (UID and PID) might not be valid TL1 users. For example, if you issue an ACT-USER command using a CTC-entered UID that is greater than 10 characters long, TL1 will respond with DENY (Cannot Login) error message.
- The TL1 password security is enforced as follows:

- The PID cannot be the same as or contain the UID. For example, if the userid is CISCO25 the password cannot be CISCO25#.
- The PID must have one nonalphabetic and one special (+, %, or #) character.
- PID toggling is not permitted; for example, if the current password is CISCO25#, the new password cannot be CISCO25#.

Category Security

Security Superuser

Input Format ENT-USER-SECU:[<TID>]:<UID>:<CTAG>::<PID>,,<UAP>[:];

Input Example ENT-USER-SECU:PETALUMA:CISCO15:123::PSWD11#,,MAINT;

Input Parameters	<UID>	User identifier. The minimum UID size is 6 and the maximum size is 10. UID is a string.
	<PID>	User's password or private identifier. PID is a string.
	<UAP>	User's access privilege. The parameter type is PRIVILEGE (security level).
	• MAINT	Maintenance security level
	• PROV	Provision security level
	• RTRV	Retrieve security level
	• SUPER	Superuser security level

12.42 ENT-VCG

(Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6) The Enter Virtual Concatenated Group (ENT-VCG) command creates a VCG object. VCGs on ML-Series cards support two members. Supported subrates are STS1, STS3C, and STS12C. ML-Series VCG also supports SW-LCAS or NONE. VCG on the FC_MR-4 card supports eight members and the supported subrate is limited to STS3C. The FC_MR-4 card VCG has no link capacity adjustment scheme (LCAS) support (NONE). VCG on the ML-100T-8 card supports up to three members at a subrate of STS1 and 64 members at a subrate of VT1.

Usage Guidelines None

Category VCAT

Security

Provisioning

Input Format

ENT-VCG:[<TID>]:<SRC>:<CTAG>:::TYPE=<TYPE>,TXCOUNT=<TXCOUNT>,[CCT=<CCT>],
[LCAS=<LCAS>],[BUFFERS=<BUFFERS>],[NAME=<NAME>];

Input Example

ENT-VCG:NODE1:FAC-1-1:1234:::TYPE=STS3C,TXCOUNT=8,CCT=2WAY,LCAS=LCAS,
BUFFERS=DEFAULT,NAME="VCG1";

Input Parameters

<SRC>	Source access identifier from the “26.17 FACILITY” section on page 26-41. ML1000-2 and ML100T-12 cards use the VFAC AID. The FC_MR-4 card uses the FAC AID.
<TYPE>	The type of entity or member cross-connect being provisioned. Null indicates not applicable. TYPE can be a Common Language Equipment Identification (CLEI) code or another value. ML1000-2 and ML100T-12 cards support STS1, STS3c, and STS12c. The FC_MR-4 card supports STS3c only. The parameter type is MOD_PATH (STS/VT path modifier).
• STS1	STS1 path
• STS12C	STS12C path
• STS18C	STS18C path
• STS192	STS192C path
• STS24C	STS24C path
• STS36C	STS36C path
• STS3C	STS3C path
• STS48C	STS48C path
• STS6C	STS6C path
• STS9C	STS9C path
• VT1	VT1 path
• VT2	VT2 path
<TXCOUNT>	Number of members in the transmit (Tx) direction. For ML1000-2 and ML100T-12 cards, the only valid value is 2. For the FC_MR-4 card the only valid value is 8. TXCOUNT is an integer.
<CCT>	Type of connection (one-way or two-way). CCT is the cross-connect type for the VCG member cross-connects. It must be the same for all the member cross-connects of a VCG. The parameter type is CCT, which is the type of cross-connect to be created.
• 1WAY	A unidirectional connection from a source tributary to a destination tributary
• 1WAYDC	Path Protection multicast drop with one-way continue
• 1WAYEN	Path Protection multicast end node with one-way continue

• 1WAYMON	A bidirectional connection between the two tributaries
Note 1WAYMON is not supported with TL1. However, it is still supported from CTC. Using CTC, you can create 1WAYMON cross-connects that can be retrieved through TL1.	
• 1WAYPCA	A unidirectional connection from a source tributary to a destination tributary on the protection path/fiber
• 2WAY	A bidirectional connection between the two tributaries
• 2WAYDC	A bidirectional drop-and-continue connection applicable only to traditional path protection configurations and integrated DRIs
• 2WAYPCA	A bidirectional connection between the two tributaries on the extra protection path/fiber
• DIAG	Diagnostic cross-connect. Supports BERT (BLSR PCA diagnostic cross-connect).
<LCAS>	Link capacity adjustment scheme.
Note If SW-LCAS is selected, then the far-end VCG must also be configured as SW-LCAS.	
The parameter type is LCAS, which is the link capacity adjustment scheme mode for the VCG created.	
• LCAS	LCAS is enabled.
• NONE	No LCAS is created
• SW-LCAS	Supports the temporary removal of a VCG member during member failure. Only supported by the ML1000-2 and ML100T-12 cards.
<BUFFERS>	Buffer type. The default value is DEFAULT. The FC_MR-4 and CE1000 cards support DEFAULT and EXPANDED buffers. Other data cards support DEFAULT buffers only. The parameter type is BUFFER_TYPE, which is the buffer type used in the VCAT circuit.
• DEFAULT	Default buffer value
• EXPANDED	Expanded buffer value
<NAME>	Name of the VCAT group. The name defaults to null. Its maximum length is 32 characters. NAME is a string.

12.43 ENT-VLAN

(Cisco ONS 15454) The Enter Virtual VLAN (ENT-VLAN) command adds a new VLAN entry to the VLAN database. The VLAN database is a collection of VLANs used in an NE.

Usage Guidelines

- If the AID is invalid, an IIAC error message is returned.
- The ALL AID is invalid for this command.
- The VLAN with the specified AID must be present in the node or the command will be denied.

Category

Ethernet

Security

Provisioning

Input Format

ENT-VLAN:[<TID>]:<AID>:<CTAG>::NAME=<NAME>,[PROTN=<PROTN>],[MACLEARNING=<MACLEARNING>],[IGMPENABLE=<IGMPENABLE>],[IGMPFASTLEAVE=<IGMPFASTLEAVE>],[IGMPSUPP=<IGMPSUPP>][:];

Input Example

ENT-VLAN:ROCKS:VLAN-4096:1::NAME=MYVLAN,PROTN=N,MACLEARNING=Y,IGMPENABLE=Y,IGMPFASTLEAVE=Y,IGMPSUPP=Y;

Input Parameters

<AID>	The AID is used to access the VLAN.
• VLAN-ALL	All AIDs for the VLAN.
• VLAN-{0-4096}	Single AID for the VLAN. VLAN ID 0 is reserved for untagged VLAN.
<NAME>	(Optional) Indicates the name of the VLAN.
<PROTN>	Indicates the VLAN protection feature. This is an optional parameter indicating if the VLAN being created/modified is protected.
• N	Not protected (Default)
• Y	Protected
<MACLEARNING>	MAC Address Learning Mode. This activates the MAC address learning on interface to avoid packet broadcasting. Default value is - "N"
• Y	Activate the MAC learning.
• N	Disable MAC learning.
<IGMPENABLE>	Internet Group Management Protocol status.
• Y	Enabled
• N	Disabled
<IGMPFASTLEAVE>	Internet Group Management Protocol FastLeave status. When enabled, decreases the delay between receiving a Leave Group packet and disabling forwarding of multicast
• Y	Enabled
• N	Disabled
<IGMPSUPP>	IGMP Report suppression. Indicates multicast registered client hiding. When enabled (default) it prevents duplicate reports from being sent to the multicast devices.
• Y	Enabled
• N	Disabled

12.44 ENT-WDMANS

(Cisco ONS 15454) The Enter Wavelength Division Multiplexing Automatic Node Setup (ENT-WDMANS) command adds the automatic optical node setup application attributes.

Usage Guidelines

- If the AID is invalid, an IIAC (Invalid AID) error message is returned.
- The ALL AID is invalid for this command.

Category

DWDM

Security

Maintenance

Input Format

ENT-WDMANS:[<TID>]:<AID>:<CTAG>::[<WLEN>]:[VOAATTN=<VOAATTN>],[POWEROSC=<POWEROSC>],[NTWTYPE=<NTWTYPE>],[CHLOSS=<CHLOSS>],[GAIN=<GAIN>],[TILT=<TILT>],[CHPWR=<CHPWR>],[AMPLMODE=<AMPLMODE>],[RATIO=<RATIO>],[OSCLOSE=<OSCLOSE>],[DITHER=<DITHER>],[TOTALPWR=<TOTALPWR>],[HIGHSLVEXP=<HIGHSLVEXP>],[LOWSLVEXP=<LOWSLVEXP>];

Input Example

ENT-WDMANS:PENNGROVE:WDMNODE:114::1530.33:VOAATTN=2.5,POWEROSC=5.0,NTWTYPE=METRO-CORE,CHPWR=2.0,DITHER=10,TOTALPWR=150;

Input Parameters

<AID>	The AID is used to access the WDM node or a single port of the DWDM node.
• WDMNODE	Indicates the WDM node of an MSTP and accesses the NTWTYPE and DITHER WDMANS node parameters.
• LINE	The optical transport section port.
• BAND	The optical multiplex section port.
• CHAN	The optical channel port.
<WLEN>	(Optional) The parameter type is OPTICAL_WLEN, which indicates the optical wavelength.
• 1310	Wavelength 1310
• 1470	Wavelength 1470
• 1490	Wavelength 1490
• 1510	Wavelength 1510
• 1528.77	Wavelength 1528.77
• 1529.55	Wavelength 1529.55
• 1529.94	Wavelength 1529.94
• 1530	Wavelength 1530
• 1530.33	Wavelength 1530.33
• 1530.73	Wavelength 1530.73
• 1531.12	Wavelength 1531.12
• 1531.51	Wavelength 1531.51
• 1531.90	Wavelength 1531.90
• 1532.29	Wavelength 1532.29

• 1532.68	Wavelength 1532.68
• 1533.07	Wavelength 1533.07
• 1533.47	Wavelength 1533.47
• 1533.86	Wavelength 1533.86
• 1534.25	Wavelength 1534.25
• 1534.64	Wavelength 1534.64
• 1535.04	Wavelength 1535.04
• 1535.43	Wavelength 1535.43
• 1535.82	Wavelength 1535.82
• 1536.22	Wavelength 1536.22
• 1536.61	Wavelength 1536.61
• 1537	Wavelength 1537
• 1537.40	Wavelength 1537.40
• 1537.79	Wavelength 1537.79
• 1538.19	Wavelength 1538.19
• 1538.58	Wavelength 1538.58
• 1538.98	Wavelength 1538.98
• 1539.37	Wavelength 1539.37
• 1539.77	Wavelength 1539.77
• 1540.16	Wavelength 1540.16
• 1540.56	Wavelength 1540.56
• 1540.95	Wavelength 1540.95
• 1541.35	Wavelength 1541.35
• 1541.75	Wavelength 1541.75
• 1542.14	Wavelength 1542.14
• 1542.35	Wavelength 1542.35
• 1542.54	Wavelength 1542.54
• 1542.94	Wavelength 1542.94
• 1543.33	Wavelength 1543.33
• 1543.73	Wavelength 1543.73
• 1544.13	Wavelength 1544.13
• 1544.53	Wavelength 1544.53
• 1544.92	Wavelength 1544.92
• 1545.32	Wavelength 1545.32
• 1545.72	Wavelength 1545.72
• 1546.12	Wavelength 1546.12
• 1546.52	Wavelength 1546.52
• 1546.92	Wavelength 1546.92
• 1547.32	Wavelength 1547.32
• 1547.72	Wavelength 1547.72
• 1548.12	Wavelength 1548.12

• 1548.51	Wavelength 1548.51
• 1548.92	Wavelength 1548.92
• 1549.32	Wavelength 1549.32
• 1549.71	Wavelength 1549.71
• 1550	Wavelength 1500
• 1550.12	Wavelength 1550.12
• 1550.52	Wavelength 1550.52
• 1550.92	Wavelength 1550.92
• 1551.32	Wavelength 1551.32
• 1551.72	Wavelength 1551.72
• 1552.12	Wavelength 1552.12
• 1552.52	Wavelength 1552.52
• 1552.93	Wavelength 1552.93
• 1553.33	Wavelength 1553.33
• 1553.73	Wavelength 1553.73
• 1554.13	Wavelength 1554.13
• 1554.13	Wavelength 1554.13
• 1554.94	Wavelength 1554.94
• 1555.34	Wavelength 1555.34
• 1555.75	Wavelength 1555.75
• 1556.15	Wavelength 1556.15
• 1556.55	Wavelength 1556.55
• 1556.96	Wavelength 1556.96
• 1557.36	Wavelength 1557.36
• 1557.77	Wavelength 1557.77
• 1558.17	Wavelength 1558.17
• 1558.58	Wavelength 1558.58
• 1558.98	Wavelength 1558.98
• 1559.39	Wavelength 1559.39
• 1559.79	Wavelength 1559.79
• 1560.20	Wavelength 1560.20
• 1560.61	Wavelength 1560.61
• 1561.01	Wavelength 1561.01
• 1561.42	Wavelength 1561.42
• 1561.83	Wavelength 1561.83
• 1570	Wavelength 1570
• 1570.83	Wavelength 1570.83
• 1571.24	Wavelength 1571.24
• 1571.65	Wavelength 1571.65
• 1572.06	Wavelength 1572.06
• 1572.48	Wavelength 1572.48

• 1572.89	Wavelength 1572.89
• 1573.30	Wavelength 1573.30
• 1573.71	Wavelength 1573.71
• 1574.13	Wavelength 1574.13
• 1574.54	Wavelength 1574.54
• 1574.95	Wavelength 1574.95
• 1575.37	Wavelength 1575.37
• 1575.78	Wavelength 1575.78
• 1576.20	Wavelength 1576.20
• 1576.61	Wavelength 1576.61
• 1577.03	Wavelength 1577.03
• 1577.44	Wavelength 1577.44
• 1577.86	Wavelength 1577.86
• 1578.27	Wavelength 1578.27
• 1578.69	Wavelength 1578.69
• 1579.10	Wavelength 1579.10
• 1579.52	Wavelength 1579.52
• 1579.93	Wavelength 1579.93
• 1580.35	Wavelength 1580.35
• 1580.77	Wavelength 1580.77
• 1581.18	Wavelength 1581.18
• 1581.60	Wavelength 1581.60
• 1582.02	Wavelength 1582.02
• 1582.44	Wavelength 1582.44
• 1582.85	Wavelength 1582.85
• 1583.27	Wavelength 1583.27
• 1583.69	Wavelength 1583.69
• 1584.11	Wavelength 1584.11
• 1584.53	Wavelength 1584.53
• 1584.95	Wavelength 1584.95
• 1585.36	Wavelength 1585.36
• 1585.78	Wavelength 1585.78
• 1586.20	Wavelength 1586.20
• 1586.62	Wavelength 1586.62
• 1587.04	Wavelength 1587.04
• 1587.46	Wavelength 1587.46
• 1587.88	Wavelength 1587.88
• 1588.30	Wavelength 1588.30
• 1588.73	Wavelength 1588.73
• 1589.15	Wavelength 1589.15
• 1589.57	Wavelength 1589.57

• 1589.99	Wavelength 1589.99
• 1590	Wavelength 1590
• 1590.41	Wavelength 1590.41
• 1590.83	Wavelength 1590.83
• 1591.26	Wavelength 1591.26
• 1591.68	Wavelength 1591.68
• 1592.10	Wavelength 1592.10
• 1592.52	Wavelength 1592.52
• 1592.95	Wavelength 1592.95
• 1593.37	Wavelength 1593.37
• 1593.79	Wavelength 1593.79
• 1594.22	Wavelength 1594.22
• 1594.64	Wavelength 1594.64
• 1595.06	Wavelength 1595.06
• 1595.49	Wavelength 1595.49
• 1596.34	Wavelength 1596.34
• 1596.76	Wavelength 1596.76
• 1597.19	Wavelength 1597.19
• 1597.62	Wavelength 1597.62
• 1598.04	Wavelength 1598.04
• 1598.47	Wavelength 1598.47
• 1598.89	Wavelength 1598.89
• 1599.32	Wavelength 1599.32
• 1599.75	Wavelength 1599.75
• 1600.06	Wavelength 1600.06
• 1601.03	Wavelength 1601.03
• 1601.46	Wavelength 1601.46
• 1601.88	Wavelength 1601.88
• 1602.31	Wavelength 1602.31
• 1602.74	Wavelength 1602.74
• 1603.17	Wavelength 1603.17
• 1603.60	Wavelength 1603.60
• 1604.03	Wavelength 1604.03
• 1610	Wavelength 1610
<VOAATTN>	The value of calibrated attenuation for the VOA expressed in dBm. The range is 0.0 to +30.0. VOAATTN is a float.
<POWEROSC>	WDM-ANS OSC power parameter.
<NTWTYPE>	WDM-ANS network type parameter.
<CHLOSS>	WDM-ANS channel loss parameter.
<GAIN>	WDM-ANS amplifier gain parameter.
<TILT>	WDM-ANS amplifier tilt parameter.
<CHPWR>	WDM-ANS channel power parameter.

<AMPLMODE	WDM-ANS amplifier mode parameter.
<RATIO>	WDM-ANS Raman amplifier pump ratio parameter.
<OSCLOSS>	WDM-ANS OSC channel loss parameter.
<DITHER>	WDM-ANS WXC dithering parameter.
<TOTALPWR>	WDM-ANS Raman amplifier total power in mW.
<HIGHSLVEXP>	Span loss verification—high value.
<LOWSLVEXP>	Span loss verification—low value.

12.45 ENT-WDMSIDE

(Cisco ONS 15454) The Enter Wavelength Division Multiplexing Side (ENT-WDMSIDE) command adds a new WDM Node Side and defines its attributes.

Usage Guidelines

- The LINEIN and LINEOUT attributes are mandatory and they specify the input and output lines of the node.
- If the AID is invalid, an IIAC error message is returned.
- The ALL AID is invalid for this command.

Category

DWDM

Security

Maintenance

Input Format

ENT-WDMSIDE:[<TID>]:<AID>:<CTAG>:::LINEIN=<LINEIN>,LINEOUT=<LINEOUT>[:];

Input Example

ENT-WDMSIDE:TEXAS:WDMSIDE-A:114:::LINEIN=LINE-1-3-RX,LINEOUT=LINE-1-3-TX;

Input Parameters

<AID>	The AID is used to access the WDM side of a DWDM node.
• WDMSIDE-{A,B,C,D,E,F,G,H}	DWDM side identifier
<LINEIN>	Used to access the Optical Transport Section (OTS) layer of the ONS cards.
• LINE[-{1-8}]-{1-6,12-17}-{1-3}-ALL	All the lines (COM=1, OSC=2, LINE=3) in OPT-BST, OPT-BST-E, OPT-BST-L, and OPT-AMP-17-C cards where the format is LINE-[SHELF]-[SLOT]-[PORT]-ALL.
• LINE[-{1-8}]-{1-6,12-17}-{1-3}-{RX,TX}	The receive/transmit lines (COM=1, OSC=2, LINE=3) in OPT-BST, OPT-BST-E, OPT-BST-L, and OPT-AMP-17-C cards where the format is LINE-[SHELF]-[SLOT]-[PORT]-[DIRN].

<LINEOUT>	Used to access Optical Transport Section (OTS) layer of Optical Network units.
LINE[-{1-8}]-{1-6,12-17}-{1-3}-ALL	All the lines (COM=1, OSC=2, LINE=3) in OPT-BST, OPT-BST-E, OPT-BST-L, and OPT-AMP-17-C cards where the format is LINE-[SHELF]-[SLOT]-[PORT]-ALL.
LINE[-{1-8}]-{1-6,12-17}-{1-3}-{RX,TX}	The receive/transmit lines (COM=1, OSC=2, LINE=3) in OPT-BST, OPT-BST-E, OPT-BST-L, and OPT-AMP-17-C cards where the format is LINE-[SHELF]-[SLOT]-[PORT]-[DIRN].