ENT Commands

This chapter provides enter (ENT) commands for the Cisco NCS 2002 and Cisco NCS 2006.

14.1 ENT-<MOD1PAYLOAD>

The Enter 10GFC, 10GIGE, 40GIGE, 100GIGE, 1GFC, 1GFICON, 2GFC, 4GFC, 2GFICON, 5GIB, 8GFC, CHGRP, D1VIDEO, DV6000, DVBASI, ESCON, ETRCLO, FSTE, GIGE, HDTV, ILK, ISC1, ISCCOMPAT, ISC3PEER2R, ISC3PEER1G, ISC3PEER2G, OTU1, OTU2, OTU3, OTU4, STM-4, STM-64, STM-1, STM-16, STM-256, 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 29-1 on page 29-1 for supported modifiers by platform.
- NUMOFLANES is the new parameter added for ENT-<MOD1PAYLOAD> command. This parameter is applicable for payload provisioning on CFP-LC card only. The possible values are 1 and 4. Depending on the values mentioned, the card provisions 1 or 4 number of sublanes for CFP ports.
- No payloads can be provisioned in RGN-100G opmode between two 100G-LC-C Cards.

Category

Ports

Security

Provisioning

Input Format

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

Input Example

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

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

ENT-100GIGE::VFAC-5-1-1:1:::NUMOFLANES=4;

Input Parameters

<AID>	Access identifier from the "27.15 FACILITY" section on page 27-23. AR-MXP, AR-XP, and AR-XPE cards use the VFAC AID.
<NUMOFLANES>	Identifies the type of pluggable provisioned on the CFP-LC card based on number of lanes provisioned. The value can be 1 or 4.

14.2 ENT-<MOD_RING>

The Enter MS-SPRing (ENT-<MOD_RING>) command creates either a two-fiber or four-fiber multiplex section-shared protection ring (MS-SPRing).

Usage Guidelines

The following actions will return error messages:

- If RINGID is different from the string presented in the AID format, a RingId Does Not Match With AID (IIAC) error message is returned.
- Sending this command to create a MS-SPRing with an out-of-range node ID or ring ID will return an Invalid NodeId (IIAC) or Invalid RingId (IIAC) error message.
- Sending this command to create a four-fiber MS-SPRing on STM-4 cards, or a two-fiber MS-SPRing on STM-1 cards will return an Input, Invalid work/prot port (IIAC) error message.
- Sending this command to create a MS-SPRing on a network element (NE) that already has five MS-SPRings will return an MSSPR Creation Failed (SRQN) error message because only one NE can support up to five MS-SPRings.
- Sending this command to create a MS-SPRing on a port with 1+1 protection will return an SRQN error message.
- If the system fails while accessing the Information Object Repository (IOR), a Get IOR Failed (SROF) error message is returned.
- If the AID is invalid, an Invalid AID (IIAC) error message is returned.
- If any facility requested in this command is in use, a Facility is Busy (SPLD) error message is returned.
- An invalid creation query will return the SRQN error message.
- Sending this command to provision the mode with an invalid MS-SPRing mode will return an Invalid MSSPR Mode (IIDT) error message.
- Sending this command to modify SRVRTV or SRVTM on the two-fiber MS-SPRing will return an Invalid Data for 2F-MSSPR (IDNV) error message.
- Sending this command to provision the node ID with invalid data will return an IIAC error message.
- Sending this command to provision the ring ID with invalid data will return an IIAC error message.
- Sending this command with an invalid working AID will return an Invalid MSSPR Working Facility (IIDT) error message.

- Sending this command with an invalid protection AID will return an Invalid MSSPR Protect Facility (IIDT) error message.
- Changing the MS-SPRing node ID with a duplicated ID will return a Cannot Set NodeId (SROF) error message.

Note Both <EASTPROT> and <WESTPROT> are optional, but required for four-fiber MS-SPRing creation.

Note The ALL AID is invalid for this command.

Category MS-SPRing

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 MS-SPRing:

ENT-MSSPR:TID:MSSPR-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;

Two-fiber MS-SPRing:

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

Table 14-1 Input Parameter Support

Parameter	Description
<AID>	Access identifier from the "27.3 AidUnionId1" section on page 27-10. Identifies the MS-SPRing of the NE. ALL or MSSPR-ALL AIDs are not allowed for editing MS-SPRing. This command only supports a single MS-SPRing AID.
<RINGID>	(Optional) The MS-SPRing ID of the NE up to six characters. Valid characters are A-Z and 0-9. RINGID is a string. This parameter defaults to the text in the AID that follows "MSSPR".
<NODEID>	(Optional) The MS-SPRing node ID of the NE. NODEID ranges from 0 to 31. NODEID is an integer.
<MODE>	(Optional) Mode with which the command is to be implemented. Identifies the MS-SPRing mode. The parameter type is MSSPR_MODE, which is the MS-SPRing mode.
• 2F	Two-fiber MS-SPRing
• 4F	Four-fiber MS-SPRing

Table 14-1 Input Parameter Support

Parameter	Description
<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	Revertive time is 0.5 to 12.0 minutes.
<SRVRTV>	(Optional) The span revertive mode for four-fiber MS-SPRing 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 MS-SPRing 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>	(Optional) East working facility. AID from the "27.15 FACILITY" section on page 27-23.
<WESTWORK>	(Optional) West working facility. AID from the "27.15 FACILITY" section on page 27-23.
<EASTPROT>	(Optional) East protecting facility. AID from the "27.15 FACILITY" section on page 27-23.
<WESTPROT>	(Optional) West protecting facility. AID from the "27.15 FACILITY" section on page 27-23.

14.3 ENT-ALMTYPE

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 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.

14.4 ENT-AUTO

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, AR-XP, and AR-XPE cards use the VFAC AID.

14.5 ENT-AWCFG

The Enter Alien Wavelength Configuration (ENT-AWCFG) creates alien wavelength configuration.

Usage Guidelines None

Category NCS

Security Provisioning

Input Format ENT-AWCFG:[<TID>]:<SRC>:<CTAG>:::<ALIENID=ALIENID>,[FECMODE=<FECMOD>],[:];

Input Example ENT-AWCFG::PCHAN-1-35-TX:1:::ALIENID=CRS-1 40G-DPSK-ITU-T LC,FECMODE=OFF;

Table 14-2 Parameter Support

Parameter	Description
<AID>	AID from the "27.1 ALL" section on page 27-1.
<ALIENID>	Indicates the operating mode for alien wavelength. ALIENID is a STRING.
<FECMODE>	Specifies the FEC mode for alien wavelength.
• ENH	Enhanced FEC is enabled.
• ENH-I4	Enhanced FEC 1.4 is enabled.
• ENH-I7	Enhanced FEC 1.7 is enabled.
• HG-7	7% High Gain FEC is enabled.
• HG-20	20% High Gain FEC is enabled.
• OFF	FEC is disabled.
• STD	Standard FEC is enabled.

14.6 ENT-BULKROLL-<STM_TYPE>

The Enter Bulkroll for STM-4, STM-64, STM-1, or STM-16 (ENT-BULKROLL-<STM_TYPE>) command enters information about rolling traffic from one endpoint to another without interrupting service. This command supports line-level rolling and bulk rolling and cannot be used for single-path-level rolling. See Table 29-1 on page 29-1 for supported modifiers by platform.

Usage Guidelines None

Category Bridge and Roll

Security Provisioning

Input Format ENT-BULKROLL-<STM_TYPE>:[<TID>]:<FROM>:<CTAG>:::RTOSTART=<RTOSTART>,[RFROMSTART=<RFROMSTART>],[RFROMEND=<RFROMEND>],[RMODE=<RMODE>],[CMDMDE=<CMDMDE>];

Input Example ENT-BULKROLL-STM64:CISCO:FAC-6-1:123:::RTOSTART=VC3-13-1-1-1,RFROMSTART=VC3-6-1-1-1,RFROMEND=VC3-6-1-1-3,RMODE=AUTO,CMDMDE=FRCD;

Table 14-3 Parameter Support

Parameter	Description
<FROM>	One of the endpoints. Access identifier from the "27.15 FACILITY" section on page 27-23for line-level rolling and bulk rolling.
<RTOSTART>	The starting time slot in the destination roll port. For bulk rolling only. The parameter type is PATH, which is the modifier for path commands.
<RFROMSTART>	(Optional) The starting time slot in the source roll port. For bulk rolling only. The AID is from the "27.11 CrossConnectId1" section on page 27-16 (VC or VC11).
<RFROMEND>	(Optional) The ending time slot in the source roll port. For bulk rolling only. The AID is from the "27.11 CrossConnectId1" section on page 27-16 (VC or VC11).
<RMODE>	(Optional) The mode of the rolling operation. The parameter type is RMODE, which is the roll mode.
• AUTO	Automatic. When a valid signal is available, the roll with an AUTO mode will automatically delete the previous endpoint.
• MAN	Manual. Enter the corresponding delete roll/bulkroll command to delete the previous endpoint.
<CMDMDE>	(Optional) Command mode. 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 Unlocked-Enabled or Locked-Disabled, AutomaticInService 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 could make the command fail.

14.7 ENT-BULKROLL-<OCN_TYPE>

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 "27.15 FACILITY" section on page 27-23 for line-level rolling and bulk rolling.
<RTOSTART>	The starting time slot in the destination roll port. Access identifier from the "27.15 FACILITY" section on page 27-23 (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 "27.15 FACILITY" section on page 27-23 (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 "27.15 FACILITY" section on page 27-23 (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.

14.8 ENT-BWP-ETH

Enter Bandwidth Profile for ethernet (ENT-BWP-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

Table 14-4 Parameter Support

Parameter	Description
<AID>	This AID is used to access BWP.
• BWP-ALL	All aid for BWP.
• BWP-{1-10000}	Single AID for BWP. The valid identifiers ranges from 1 to 10000.
<NAME>	The BWP name. BWP name is a String.
<CIR>	Ingress committed information rate. This is a value between 0.0 and 100.0. Default value is 100.0.
<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

Table 14-4 Parameter Support

Parameter	Description
• 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 0.0 and 100.0. Default value is 100.0.
<CFMSTATE>	Link Integrity status
• Y	Enabled
• N	Disabled

14.9 ENT-CPS

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.
- If the RESTTYPE is REVERT, it is required to set the REVERTMODE and SOAK parameters.
- If the RESTTYPE is REVERT, it is mandatory to set the REVERTMODE parameter as MANUAL or AUTO.
- SOAK time is mandatory if the REVERTMODE parameter is set to MANUAL or AUTO.

Category

NCS

Security

Provisioning

Input Format

ENT-CPS[:<TID>]:<SRC>:<CTAG>::<DSTADDR>,<DST>,[<WCT>],<CPSTYPE>[:CKTID=<CKTID>],[VALMODE=<VALMODE>],[VALZONE=<VALZONE>],[VALMODESEC=<VALMODESEC>],[VALZONESEC=<VALZONESEC>],[RESTTYPE=<RESTTYPE>],[REVERTMODE=<REVERTMODE>],[SOAK=<HH-MM-SS>],>],[CKTLABEL=<CKTLABEL>],[FREQ=<FREQ>],[WIDTH=<WIDTH>],[CKTPRIORITY=<CKTPRIORITY>],[ALLOWRGN=<ALLOWRGN>],[PATHPOLICY=<PATHPOLICY>],[DSPWROFS=<DSPWROFS>],[USPWROFS=<USPWROFS>[:];

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 "27.1 ALL" section on page 27-1. Listable.
<DSTADDR>	Identifies the destination node IP address.
<DST>	Destination AID from the "27.1 ALL" section on page 27-1.
<WCT>	Identifies the wavelength connection type.
• 1WAY	A unidirectional connection from a source to a destination port. Deafult 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
<RESTTYPE>	Specifies the restoration type on CPS circuit or UNI configuration. Parameter type is RESTTYPE.
• NONE	Restore type is not specified.
• RESTORE	Only restoration is allowed. The circuit is not revertible.
• REVERT	The circuit is revertible, manually or automatically.
<REVERTMODE>	Specifies the revertive mode type. Paraneter type is REVERTMODE.
• AUTO	Circuit is automatically revertible after the soak time expires.
• MANUAL	Manually revert the circuit.
• NONE	Not revertible.
<SOAK>	This is the soak time specified in HH-MM-SS format. After the soak time expires, if the revertive mode is AUTO, the circuit reverts automatically. If revertive mode is MANUAL, the soak time is ignored.
<CKTLABEL>	Circuit label.
<FREQ>	Optical wavelength
<WIDTH>	Width
<CKTPRIORITY>	Circuit priority
<ALLOWRGN>	Allow RGN. It can be ON/OFF.
<PATHPOLICY>	Path selection policy.
• ANY	No path selection policy selected.
• LOGO	Path selection policy restricted to LOGO domain.
<DSPWROFS>	Down stream power offset.
<USPWROFS>	Up stream power offset.

14.10 ENT-CRS-<PATH>

The Enter VC Cross-Connection for VC3, VC44C, VC38C, VC464C, VC48C, VC4, VC416C, VC42C, VC43C, or VC12 (ENT-CRS-<PATH>) command creates an VC cross-connection with a cross-connection type (CCT). See Table 29-1 on page 29-1for supported modifiers by platform.

Usage Guidelines

- When a SNCP 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-VC3::F1&F2,T1:123;) is the preferred path.
- 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 a one-way connection and the new one will be one-way in the other direction.
- This command does not support creating multiple VC cross-connects.
- The subnetwork connection protection (SNCP) cross VC connection can be created by using “&” in the AID fields of this command.
  - Use the following command to create a one-way selector or two-way selector and bridge with:

    from points: F1, F2

    to points: T1

    ENT-CRS-{VC_PATH}:[<TID>]:F1&F2,T1:<CTAG>::[<CCT>];
  - Use the following command to create a one-way bridge or two-way selector and bridge with:

    from point: F1

    to points: T1, T2

    ENT-CRS-{VC_PATH}:[<TID>]:F1,T1&T2:<CTAG>::[<CCT>];
  - Use the following command to create a one-way subtending SNCP connection or two-way subtending SNCP connection with:

    from point: F1, F2

    to points: T1, T2

    ENT-CRS-{VC_PATH}:[<TID>]:F1&F2,T1&T2:<CTAG>::[<CCT>];
  - The following command is used to create a two-way selector and bridge with:

    from point: F1,F2 (F1 is the working side, F2 is the protect side)

    selector points: S1, S2 (S1 is the working side, S2 is the protect side)

    ENT-CRS-{VC_PATH}:[<TID>]:F1&F2,S1&S2:<CTAG>::2WAY;
  - The following command is used to create a SNCP integrated dual-ring interconnect (IDRI) cross-connect:

    ENT-CRS-{VC_PATH}:[<TID>]:A&B,C&D:<CTAG>::2WAYDC;

    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 SNCP IDRI cross-connects.

– The following command is used to create a SNCP dual-ring interconnect (DRI) cross-connect:

ENT-CRS-{VC_PATH}:[<TID>]:A&B,C:<CTAG>::2WAYDC;

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 SNCP DRI cross-connects.

- 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 a four-fiber protection channel, the protection channel access (PCA) connection type (1WAYPCA or 2WAYPCA) is required.
- If you send a PCA cross-connect type on the non-PCA AIDs, the IIAC error message is returned.
- If you send a non-PCA cross-connect 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 MSSPR-DRI feature. DRITYPE is applied only if the CCT is drop-and-continue (1WAYDC or 2WAYDC), and defaults to SNCP for the DRI. DRINODE must be specified only if at least one end of the connection is on the MS-SPRing, and defaults to NA.
- 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.
- VC38c cross-connects are only supported on the FC_MR-4 card and optical cards.
- The DS3i-N-12 card will only allow the creation of VC4 cross-connects. The starting point of the cross-connect can only be VC numbers 1, 4, 7, and 10. This cross-connect will span over three ports of the DS3i-N-12 card.

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-VC4:BODEGA:VC4-5-1-1&VC4-6-1-1,VC4-12-1-1&VC4-13-1-1:116::1WAYDC: DRITYPE=MSSPR,DRINODE=PRI,CKTID=CKTID,CMDMDE=FRCD:UNLOCKED, AUTOMATICINSERVICE;

Table 14-5 Parameter Support

Parameter	Description
<SRC>	Source access identifier from the "27.1 ALL" section on page 27-1. SRC is listable.
<DST>	Destination AID from the "27.1 ALL" section on page 27-1.
<CCT>	Type of connection. Used for specifying one or two-way connections. Default is 2WAY. 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	SNCP multicast drop with one-way continue
• 1WAYEN	SNCP 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 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 SNCP traditional and integrated DRIs
• 2WAYPCA	A bidirectional connection between the two tributaries on the extra protection path/fiber.
• DIAG	Diagnostic cross-connect. Supports BERT (MS-SPRing PCA diagnostic cross-connect)
<DRITYPE>	(Optional) Dual ring interconnect type. Defaults to SNCP. The parameter type is DRITYPE (DRI type).
• MSSPR	MSSPRing DRI type
• SNCP	SNCP DRI type
• SNCP-MSSPR	SNCP-MSSPRing handoff DRI type
<DRINODE>	(Optional) Dual ring interconnect node. Defaults to NA. 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>	(Optional) Cross-connect ID. Defaults to blank or none. CKTID is a string.
<CMDMDE>	(Optional) Command mode. 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 Unlocked-Enabled or Locked-Disabled, AutomaticInService 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>	(Optional) Primary state. The parameter type is PST, which indicates the current overall service condition of an entity.

• NA	The node is not a DRI node.
• PRI	Primary DRI node
• SEC	Secondary DRI node
<CKTID>	(Optional) Cross-connect ID. Defaults to blank or none. CKTID is a string.
<CMDMDE>	(Optional) Command mode. 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 Unlocked-Enabled or Locked-Disabled, AutomaticInService 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>	(Optional) Primary state. The parameter type is PST, which indicates the current overall service condition of an entity.

14.11 ENT-CRS-ETH

Enter Cross-Connect Ethernet (ENT-CRS-ETH) command allocates an Ethernet Connection. The user needs 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

NCS

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

Table 14-6 Parameter Support

Parameter	Description
<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.

Table 14-6 Parameter Support

Parameter	Description
• 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"

14.12 ENT-EQPT

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 the following optional parameters for configuring the card in an equipment protection group: RVTM (revertive time), RVRTV (revertive behavior), PROTID (unique protection ID), and PRTYPE (protection type). PRTYPE can be 1:1 or 1:N. These parameters can only be entered for a working AID. The protect card must 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. The value of PROTID is the protecting slot and has the “slot-x” format. The PROTID slot must be provisioned first.

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 E1, E2, E3, DS3i-N-12, and other electrical cards support 1:1 protection. To create 1:1 protection using the ENT-EQPT command, the working card should not be provisioned first.

This command creates a 1:N protection group or adds a new card to an existing 1:N protection group. Multiple working AIDs can be entered in a protection group. 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 1:1 protection cannot be upgraded to 1:N protection.

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 protect AID must be provisioned for either commands because protection group parameters are not supported for the protect AID.

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

Note The STM64/STM64-XFP card must be installed in High Speed Slots (Slots 5 to 6 or Slots 12 to 13) and requires an XC-VXC-10G cross connect card.

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

- AID sent to a nonworking slot; the working cards must be in even slots for 1:1 protection and working cards must be in the same bank for 1:N protection and not in Slot 3 or Slot 15.
- An invalid AID chosen for the protection slot.
- The working AID is already in protection group.
- The AID is a protect AID.
- The protect card has a circuit.
- The equipment type does not match with the allowed AID.
- The slot is already provisioned.
- The protecting slot is not provisioned.
- Multiple working AIDs for 1:1 protection.

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.

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=<FRPSTATE>],[FRPHOLDOFFTIME=<FRPHOLDOFFTIME>],[CFMSTATE=<CFMSTATE>],[CCTIM

ER=<CCTIMER>],[SWITCHWITHCRCALARM=<SWITCHWITHCRCALARM>],[CRCTHR=<CRCTHR>],[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,CRCPOLLINTRVL=4;

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

Input Parameters

Table 14-7 Parameter Support

Parameter	Description
<AID>	Access identifier from the "27.13 EQPT" section on page 27-21.
<AIDTYPE>	(Optional) The type of facility, link or other addressable entity targeted by the message. The parameter type is EQUIPMENT_TYPE (equipment type). The equipment type options are 40E-MXP-C and 40E-TXP-C.
• 100G-LC-C	100G-LC-C card
• 100G-CK-C	100G-CK-C card
• 10X10G-LC	10X10G-LC card
• CFP-LC	CFP-LC card
• AR-MXP	Any rate muxponder
• AR-XP	Any rate xponder
• AR-XPE	Any rate enhanced xponder.
• 16-WXC-FS	16-WXC-FS 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.

Table 14-7 Parameter Support

Parameter	Description
• 32DMX-L	3- channel demultiplexer for L-band
• 32WSS-L	32-channel wavelength switch selector for L-band
• 40-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
• 40-TXP-C	40 Gigabits per second Multirate Transponder
• 80-WXC-C	80-channel wavelength cross-connect spaced at 100 GHz grid
• AD-1B	OADM 1-Band Filter
• AD-1C	OADM 1-Channel Filter
• AD-2C	OADM 2-Channel Filter
• AD-4B	OADM 4-Band Filter
• AD-4C	OADM 4-Channel Filter
• AICI	AIC-I card
• AIP	Alarm Indication Panel
• ALM-PWR	Alarm Power
• ASAP-4	ASAP carrier card with four PIM slots
• BP	The backplane of the NE
• CE-100T-8	8-port 100T card
• CE-1000-4	4-port GIGE mapper card
• CRFT-TMG	Craft Timing
• DCC	Data Communications Channel
• DCU	Dispersion Compensation Unit
• DMX-32	Optical DMX 32 Channels
• DS3i-N-12	DS3i-N-12 card
• E1	E1 card
• E1-42	42-port E1 card
• E1000T-2	2-port interface card supporting 1000BaseT Ethernet facilities
• E100T-12	12-port interface card supporting 100BaseT Ethernet facilities
• E100T-4	Four-port interface card supporting 100BaseT Ethernet facilities
• E1N	E1N card
• E3	E3 card
• EDRA-1-26	EDRA-1-26 amplifier
• EDRA-1-35	EDRA-1-35 amplifier
• EDRA-2-26	EDRA-2-26 amplifier
• EDRA-2-35	EDRA-2-35 amplifier
• FBGDCU-1157	

Table 14-7 Parameter Support

Parameter	Description
• FBGDCU-1322	
• FBGDCU-165	
• FBGDCU-1653	
• FBGDCU-1983	
• FBGDCU-331	
• FBGDCU-496	
• FBGDCU-661	
• FBGDCU-826	
• FBGDCU-992	
• FILLER_CARD	Filler card
• FMEC-155E-1TO1	The equipment type for FMEC STM1E12 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
• FMEC-SMZ-E1	FMEC card corresponding to E1 card
• FMEC-SMZ-E3	FMEC card corresponding to E3 card
• FTA	Fan Tray of the NE
• FTA1	Fan Tray 1 of the NE
• FTA2	Fan Tray 2 of the NE
• G1K-4	G1K-4 card
• MD-4	Optical Multiplexer/Demultiplexer with 4 Channels
• MD-48-CM	
• MD-48-EVEN	
• MD-48-ODD	
• MESH-PP-SMR	The passive unit Patch Panel device used to connect upto four 40-SMR2-C cards
• MF-16AD-CFS	16-channels - 1 direction, colorless, omnidirectional add/drop unit.
• MF-4x4-COFS	4-channels, 4-directions, colorless, omnidirectional add/drop unit.
• MF-AST-EDFA	MF-AST-EDFA unit
• MF-DEG-5	5-degrees mesh patch panel
• MF-MPO-8LC	MPO to 8-LC adapter
• MF-UPG-4	4-degrees upgrade module
• ML100X-8	8-port 100X card with optical interface
• ML-100T-8	8-port 100T card with optical interface
• MMU	Multiring mesh upgrade unit
• MS-ISC-100T	Fast Ethernet switch card used for internal shelf connection
• MUX-32	Optical MUX 32 Channels
• MXP-2.5G-10G	10G (4 * 2.5G) Muxponder card

Table 14-7 Parameter Support

Parameter	Description
• MXP-MR-10DME	10 Gbps datamux with enhanced FEC
• OPT-AMP-L	Optical preamplifier for L-band
• OPT-BST	Optical booster amplifier
• OPT-BST-L	Optical booster 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	Optical Preamplifier
• OPT-RAMP-C	Raman pump amplifier C-band
• OPT-RAMP-CE	An extended version of Raman pump amplifier
• OPT-RAMP-COP	Raman COP card.
• OPT-RAMP-CTP	Raman CTP card.
• OPT-RAMP-E	Raman pump amplifier E-band
• OSC-CSM	Optical Service Channel with Combiner/Separator Module
• OSCM	Optical Service Channel Module
• OTU2-XP	A 4x10G transponder that is capable to operate with multiple bit rates - 10G FC, 10GE, and OC192/STM64
• PIM-4	Pluggable interface module with 4 PPM slots
• 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	Pluggable port module with 1-port SFP module
• PSM	Protection Service Module card
• PTF-4	Fabric card.
• PTM-4	Line card.
• PTSA	CPT 50 panel.
• PTSYS- Fan-Out-Group	PTSYS Fan-Out-Group.
• SHELF	To Provision the node as SSC
• STM4	An interface card that supports one or more STM4 (622 Mbps) optical facilities
• STM4-4	A four port STM4 card
• STM4-IR-1	An interface card that supports one intermediate range STM4 (622 Mbps) optical facilities
• STM4-LR-1	An interface card that supports one long range STM4 (622 Mbps) optical facilities
• STM4-SR-1	An interface card that supports one short range STM4 (622 Mbps) optical facilities
• STM64-4	A four port STM64 card
• STM64-LR-1	An interface card that supports one or more STM64 optical facilities

Table 14-7 Parameter Support

Parameter	Description
• STM1	An interface card that supports multiple STM1 (155 Mbps) optical facilities
• STM1-IR-4	An interface card that supports four intermediate range STM1 (155 Mbps) optical facilities
• STM1-SR-4	An interface card that supports four short range STM1 (155 Mbps) optical facilities
• STM1ATM-IR-6	An interface card that supports six intermediate range STM1 (155 Mbps) ATM optical fibers
• STM1IR-STM1SH-1310-8	An STM1 card which has 8 ports over the lower speed slot with XC-VXL-10G/XC-VXL-2.5G
• STM1POS-SR-4	An interface card that supports four short range STM1 (155 Mbps) POS optical facilities
• STM16	An interface card that supports one or more STM16 (10 Gbps) optical facilities
• STM16-AS-1	An interface card that supports one short range OC-48 (10 Gbps) optical facilities that can be provisioned in any I/O slot
• STM16-ELR-1	An interface card that supports one short range STM16 (2.5 Gbps) optical facility
• STM16-IR-1	An interface card that supports one intermediate range STM16 (10 Gbps) optical facility
• STM16-LR-1	An interface card that supports one long range STM16 (10 Gbps) optical facility
• STM16-SR-1	An interface card that supports one short range STM16 (10 Gbps) optical facilities
• TCC	Timing, Communications, and Control card
• TDC-CC	Coarse tunable dispersion compensation unit
• TDC-FC	Fine tunable dispersion compensation unit
• TXP-MR-10G	10G Multirate Transponder card
• TXP-MR-2.5G	Multirate 2.5G Unprotected
• TXPP-MR-2.5G	Multirate 2.5G Protected
• UNKNOWN	Unknown equipment type
• UNPROVISIONED	Unprovisioned equipment type
• WSE	Wire Speed Encryption (WSE) card
• XC-VXC-10G	XC-VXC-10G cross-connect card
• XCVXL-10G	XC-VXL-10G cross-connect card
• XCVXL-2.5G	XC-VXL-2.5G cross-connect card
<PROTID>	Identifies valid protection slots for the electrical cards.
• 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.

Table 14-7 Parameter Support

Parameter	Description
• 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.
<REGENNAME>	Indicates the name of a regeneration group. Applicable only to NCS flavored cards, which support regeneration group. Regenname is a string. The default value is "NULL".
<TRANSMODE>	Transition Mode.
• AU3	Au3 mode.

Table 14-7 Parameter Support

Parameter	Description
• 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.
<PROTOPMODE>	PROTOPMODE
<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.

14.13 ENT-FFP-<MOD2NCSPAYLOAD>

The Enter Facility Protection Group for 10GFC, 10GIGE, 40GIGE, 100GIGE, 1GFC, 1GFICON, 2GFC, 4GFC, 2GFICON, 8GFC, D1VIDEO, DV6000, DVBASI, ETRCLO, FSTE, GIGE, HDTV, ISC1, ISC3, ISC3STP1G, ISC3STP2G, OCH, OTU1, OTU2, OTU3, OTU4, or PASSTHRU (ENT-FFP-<MOD2NCSPAYLOAD>) command creates Y-cable protection on client facilities.

Usage Guidelines

- Y-cable with bidirectional protection is applicable only for ISC3STP1G and ISC3STP2G payloads on the AR-MXP, AR-XP, and AR-XPE cards.
- Y-cable with unidirectional protection is applicable only for payloads other than ISC3STP1G and ISC3STP2G on the AR-MXP, AR-XP, and AR-XPE cards.
- In CFP-TXP and CFP-MXP operating modes, Y-cable is provisioned on the CHAN AID of the CFP-LC card and not on the 100G-LC-C virtual ports.
- Y-cable protection is supported on the following operational modes for 10x10G-LC, 100G-LC-C, and CFP-LC cards:
  - MXP-10x10G (using 10x10G-LC and 100G-LC-C cards) operational mode with client payloads as 10GIGE and 8GFC only.
  - TXP-10G (using 10x10G-LC card) operational mode with client payloads as 10GIGE and 8GFC only.
  - CFP-MXP (using CFP-LC and 100G-LC-C cards) operational mode with client payload as 40GIGE.
  - CFP-TXP (using CFP-LC and 100G-LC-C cards) operational mode with client payload as 100GIGE.
- The command does not support 3GVIDEO, SDSDI, HDSDI, and AUTO payloads on AR-MXP, AR-XP, and AR-XPE cards.

Category

NCS

Security

Provisioning

Input Format

ENT-FFP-<MOD2NCSPAYLOAD>:[<TID>]:<SRC>,
<DST>:<CTAG>:::[PROTTYPE=<PROTTYPE>],[PROTID=<PROTID>],[RVRTV=<RVRTV>],
[RVTM=<RVTM>],[PSDIRN=<PSDIRN>][:];

Input Example

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

Table 14-8 Input Parameter Support

Parameter	Description
<SRC>	Source access identifier from the "27.15 FACILITY" section on page 27-23. The working facility uses VFAC AID.
<DST>	Destination access identifier from the "27.15 FACILITY" section on page 27-23. The protecting facility uses VFAC AID.
<PROTTYPE>	(Optional) The type of facility protection. The parameter type is PROTTYPE, which is the protection type for NCS 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>	(Optional) Protection group identifier. Defaults to the protecting port AID of the protection group. The identifier is a string that can have a maximum length of 32 characters.
<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 minutes. The parameter type is REVERTIVE_TIME (revertive time).
• 0.5 to 12.0	Revertive time is 0.5 to 12.0 minutes.
<PSDIRN>	(Optional) Protection switch operation. Identifies the switching mode. Defaults to UNI. The parameter type is UNI_BI, which is unidirectional and bidirectional switch operations. **Note** TXP_MR_10G and MXP_2.5G_10G cards do not support bidirectional switching.
• BI	Bidirectional protection switching
• UNI	Unidirectional protection switching

14.14 ENT-FFP-<STM_TYPE>

The Enter Facility Protection Group for STM-1, STM-4, STM-16, or STM-64 (ENT-FFP-<STM_TYPE>) command creates optical 1+1 protection. See Table 29-1 on page 29-1 for supported modifiers by platform.

Usage Guidelines

- The protect AID must not be provisioned with traffic.
- The work AID can be provisioned with traffic.
- PROTID is a string and can have a maximum length of 32 characters.
- 1+1 protection group rules for the MRC-12 card:
  - A 1+1 protection group can only be created between two MRC-12 cards. You cannot create a 1+1 protection group between an MRC-12 card and any other card.
  - 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. It can only be created, for example, between Port-1 of Slot-5 and Port-1 of Slot-12 (assuming 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, a protection group cannot be created between Port-1 of Slot-5 and Port-4 of Slot-5 (assuming 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 (1 to 4 and 14 to 17) or both cards must be in trunk slots (5 to 6 and 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.
- 1+1 protection group rules for the STM64-XFP cards:
  - 1+1 protection groups can be created between two STM64-XFP cards in trunk slots (5 to 6 and 12 to 13).
  - 1+1 protection groups can be created between an STM64-XFP card and an STM64LR/STM64LH card if both cards are in trunk slots (5 to 6 and 12 to 13).
- The PROTYPE parameter is only applicable for optical NCS cards.

Category

Protection

Security

Provisioning

Input Format

ENT-FFP-<STM_TYPE>:[<TID>]:<WORK>,<PROTECT>:<CTAG>:::[PROTTYPE=<PROTTYPE>],[PROTID=<PROTID>],[RVRTV=<RVRTV>],[RVTM=<RVTM>],[PSDIRN=<PSDIRN>],[OPOTYPE=<OPOTYPE>],[:];

Input Example

ENT-FFP-STM1:PETALUMA:FAC-2-1,FAC-1-1:1:::PROTTYPE=Y-CABLE,PROTID=PROT_NAME,RVRTV=Y,RVTM=1.0,PSDIRN=BI,OPOTYPE=STANDARD;

Table 14-9 Parameter Support

Parameter	Description
<WORK>	Working port from the"27.15 FACILITY" section on page 27-23.
<PROTECT>	Protection port from the"27.15 FACILITY" section on page 27-23.

Table 14-9 Parameter Support

Parameter	Description
<PROTTYPE>	(Optional) Protection type for NCS client facilities. The parameter type is PROTTYPE.
• Y-CABLE	Y-Cable Protection for the client ports on MXP_2.5G_10G, TXP_MR_10G, TXP_MR_2.5G, and TXPP_MR_2.5G cards.
• SPLITTER	Splitter Protection for the trunk ports on the TXPP_MR_2.5G and MXPP_MR_2.5G protected cards.
<PROTID>	(Optional) Protection group identifier. Defaults to the protecting port AID of the protection group. If the name has an embedded double quote character, that double quote character has to 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>	(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 minutes. The parameter type is REVERTIVE_TIME (revertive time).
• 0.5 to 12.0	Revertive time is 0.5 to 12.0 minutes.
<PSDIRN>	(Optional) Protection switch operation. Identifies the switch mode. The parameter type is TRANS_MODE, which is the G1000 transponder mode.
• BI	Bidirectional
• NONE	Not in transponder mode
• UNI	Unidirectional
<OPOTYPE>	(Optional) 1+1 protection type. Can be either standard or optimized 1+1. The parameter type is ONE_PLUS_ONE, which is the 1+1 protection type.
• OPTIMIZED	Optimized 1+1 **Note** The port must be in NCS mode.
• STANDARD	Standard 1+1
• 3.0	3 seconds

14.15 ENT-FFP-<OCN_TYPE>

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 29-1 on page 29-1 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 applicabl.
- The following parameters are supported: 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 PROTTYPE parameter is only applicable to optical DWDM cards.

Category

Protection

Security

Provisioning

Input Format

ENT-FFP-<OCN_TYPE>:[<TID>]:<WORK>,
<PROTECT>:<CTAG>:::[PROTTYPE=<PROTTYPE>],[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:::PROTTYPE=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.
• 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

14.16 ENT-FOG

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>,QUEUEMODE=<QUEUEMODE>,[PBNAME=<PBNAME>];

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 "27.13 EQPT" section on page 27-21.
<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.
<QUEUEMODE>	QUEUEMODE
• NOPRI	NOPRI
• STRICT	STRICT
<PBNAME>	PBNAME

14.17 ENT-FTPSERVER

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.

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;

Table 14-10 Parameter Support

Parameter	Description
<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	Disable an attribute.
• Y	Enable an attribute.
<TIMER>	(Optional) Specifies the timeout value of the FTP Server in minutes. Timer is an integer that can be set between 0-60 <minutes>.

14.18 ENT-LMP-CTRL

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 LMP is available, and where the LMP protocol 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;

Table 14-11 Parameter Support

Parameter	Description
<SRC>	The LMP control channel AID values
• CTRL-ALL	Specifies all the control channels.

Table 14-11 Parameter Support

Parameter	Description
• CTRL-{1-4}	Specifies an individual control channel.
<LOCALPORT>	(Optional) LOCALPORT is the pathway that the LMP control channel will use to send and receive messages.
<REMOTENE>	(Optional) 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>	(Optional) The time interval in which the LMP protocol sends HELLO messages
<HELLOMIN>	(Optional) Minimum hello time the LMP control channels can send out HELLO messages to the remote node
<HELLOMAX>	(Optional) The maximum amount of time the LMP control channel can wait between HELLO messages
<DEAD>	(Optional) Time interval an LMP control channel will wait for a HELLO message from the remote side before listing the control channel as down
<DEADMIN>	(Optional) The minimum amount of time that an LMP control channel can wait before listing the control channel status as down
<DEADMAX>	(Optional) The maximum amount of time that the LMP control channel can wait before listing the control channel as down
<PST>	(Optional) Primary state of the entity. The parameter type is PST, which indicates the current overall service condition of an entity.
• Unlocked	In Service
• Locked	Out of Service
<SST>	(Optional) Secondary state of the entity. The parameter type is SST, which provides additional information pertaining to PST and PSTQ.
• AutomaticInService	Automatic in service
• Disabled	Disabled
• Loopback	Loopback
• MismatchofEquipmentAlarm	Mismatch of equipment and attributes
• Maintenance	Maintenance mode
• OutOfGroup	Out of group
• SoftwareDownload	Software downloading
• Unassigned	Unassigned
• NotInstalled	Unequipped

14.19 ENT-LMP-DLINK

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

Usage Guidelines This command is only applicable on a node that supports LMP and which has the LMP 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;

Table 14-12 Parameter Support

Parameter	Description
<SRC>	Access identifier from the "27.15 FACILITY" section on page 27-23.
<LINKTYPE>	(Optional) 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

14.20 ENT-LMP-TLINK

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=<REMOTE_ID>, REMOTETE=<REMOTETE>, [MUXCAP=<MUXCAP>]:[<PST>[,<SST>]];

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

Table 14-13 Parameter Support

Parameter	Description
<SRC>	LMP TE link AID values
• TLINK-ALL	Specifies all the TE links.
• TLINK-{1-256}	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	Packet Switching 1
• PKTSWITCH2	Packet Switching 2
• PKTSWITCH3	Packet Switching 3
• PKTSWITCH4	Packet Switching 4
• LAYER2	Layer 2 switching
• TDM	Time-division multiplexing (TDM) switching
• LAMBDA	Lambda switching
• FIBER	Fiber switching
<PST>	(Optional) Primary state of the entity. The parameter type is PST, which indicates the current overall service condition of an entity.
• Unlocked	In Service
• Locked	Out of Service
<SST>	(Optional) Secondary state of the entity. The parameter type is SST, which provides additional information pertaining to PST and PSTQ.
• AutomaticInService	Automatic in service
• Disabled	Disabled
• Loopback	Loopback
• MismatchofEquipmentAlarm	Mismatch of equipment and attributes
• Maintenance	Maintenance mode
• OutOfGroup	Out of group

• Locked	Out of Service
<SST>	(Optional) Secondary state of the entity. The parameter type is SST, which provides additional information pertaining to PST and PSTQ.
• AutomaticInService	Automatic in service
• Disabled	Disabled
• Loopback	Loopback
• MismatchofEquipmentAlarm	Mismatch of equipment and attributes
• Maintenance	Maintenance mode
• OutOfGroup	Out of group

14.21 ENT-LNK

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

NCS

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;
```

Table 14-14 Input Parameter Support

Parameter	Description
<FROM>	Identifier at one end of the optical link from the "27.7 CHANNEL" section on page 27-12, "27.4 BAND" section on page 27-10, or "27.18 LINE" section on page 27-26.
<TO>	Identifier at the other end of the optical link from the "27.7 CHANNEL" section on page 27-12, "27.4 BAND" section on page 27-10, or "27.18 LINE" section on page 27-26.
<PST>	(Optional) Primary state of the entity. The parameter type is PST, which indicates the current overall service condition of an entity.
• Unlocked	In Service
• Locked	Out of Service
<SST>	(Optional) Secondary state of the entity. The parameter type is SST, which provides additional information pertaining to PST and PSTQ.
• AutomaticInService	Automatic in service
• Disabled	Disabled
• Loopback	Loopback
• MismatchofEquipmentAlarm	Mismatch of equipment and attributes
• Maintenance	Maintenance mode
• OutOfGroup	Out of group
• SoftwareDownload	Software downloading
• Unassigned	Unassigned
• NotInstalled	Unequipped

14.22 ENT-LNKTERM

The Enter Provisionable Patchcord Termination (ENT-LINKTERM) command creates a provisionable patchcord (PP) termination (virtual link) on a physical interface. A user-provisioned link is needed when the control channel (DCC) is transparently carried over several physical links, where the physical link cannot be automatically discovered by Open Shortest Path First (OSPF) due to lack of control-channel termination or non-support of NCS by the link.

Usage Guidelines

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

- For an NCS port:
  - It must have RS-DCC/MS-DCC terminations provisioned. If it is the protect facility in a 1+1 protection group, the corresponding working facility must have RS-DCC/MS-DCC terminations provisioned.
  - If it is part of a MS-SPRing, the RS-DCC/MS-DCC must be provisioned on all of the working ports of the MS-SPRing.
- For a TXP/MXP trunk port, either ITU-T G.709 must be enabled or the payload type must be non-SONET/NCS.
- For a TXP/MXP client port, a card must be operating in the transparent termination mode.
- For a NCS OCH port:
  - If the STM 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/TXP 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/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 the 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.
- (R9.6.0) The number of PP terminations and the identifier range is limited to 146.
- (R9.6.0.3) The number of PP terminations 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;

Table 14-15 Input Parameter Support

Parameter	Description
<AID>	Access identifier from the "27.20 LNKTERM" section on page 27-31. Indicates a link (provisionable patchcord) termination on the local node. For R9.6.0, the integer value can be within the range of 1 to 146. For R9.6.0.3, the integer value can be within the range of 1 to 65535.
<PORT>	The local port corresponding to this provisionable patchcord termination from the "27.7 CHANNEL" section on page 27-12.
<REMOTENODE>	(Optional) 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). For R9.6.0, the integer value can be within the range of 1 to 146. For R9.6.0.3, the integer value can be within the range of 1 to 65535. Defaults to existing value.

14.23 ENT-MA-CFM

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;

Table 14-16 ED-MA-CFM Command - Parameter Support

Input Parameters	Description
<AID>	Access identifier from the "27.13 EQPT" section on page 27-21.
<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 Continuos Check messaging
• Y	Enable
• N	Disable

14.24 ENT-MD-CFM

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 "27.13 EQPT" section on page 27-21.
<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.

14.25 ENT-MDMAMAP-CFM

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 "27.13 EQPT" section on page 27-21.
<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.

14.26 ENT-MEP-CFM

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 "27.14 ETH" section on page 27-23.
<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.

14.27 ENT-MIP-CFM

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 "27.14 ETH" section on page 27-23.
<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.

14.28 ENT-NNI-ETH

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 "27.14 ETH" section on page 27-23.
<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.

14.29 ENT-NNI-CHGRP

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.

Category

Channel group

Security

Provisioning

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 "27.8 CHGRP" section on page 27-14.
<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.

14.30 ENT-OCHCC

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.
- ODU0START and ODU0END parameters are applicable only on GIGE and 1GFC payloads on the AR-XPE card only.

Category NCS

Security Provisioning

Input Format ENT-OCHCC[:<TID>]:<AID>:<CTAG>[:::CKTID=<CKTID>],[CMDMDE=<CMDMDE>],[ODU1START=<ODU1START>],[ODU1END=<ODU1END>],[TSSTART=<TSSTART>],[TSEND=<TSEND>],[ODU0START=<ODU0START>],[ODU0END=<ODU0END>][:<PST>][,<SST>];

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

ENT-OCHCC::VFAC-2-1-1:1:::ODU0START=1,ODU0END=1;

Table 14-17 Input Parameter Support

Parameter	Description
<AID>	Access identifier from the "27.15 FACILITY" section on page 27-23. AR-MXP, AR-XP, and AR-XPE cards use the VFAC AID.
<CKTID>	(Optional) 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>	(Optional) Command mode. 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 Unlocked-Enabled or Locked-Disabled, AutomaticInService 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
<ODU0START>	ODU0 Start.
<ODU0END>	ODU0 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>	(Optional) Secondary state. The parameter type is SST, which provides additional information pertaining to PST and PSTQ.
• AINS	Automatic in-service
• DSBLD	Disabled
• LPBK	Loopback

Table 14-17 Input Parameter Support

Parameter	Description
• MEA	Mismatch of equipment and attributes
• MT	Maintenance mode
• OOG	Out of group
• SWDL	Software downloading
• UAS	Unassigned
• UEQ	Unequipped

14.31 ENT-OCHNC

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

Usage Guidelines

- Two CHANWL endpoints must be specified in order to allocate a wavelength channel inside the node. According to the CHANWL specified, the channel allocated can be a pass-through.
- 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

NCS

Security

Provisioning

Input Format

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

(For flex package)

ENT-OCHNC:[<TID>]:<SRC>,<DST>:<CTAG>::[<WCT>]:[CKTID=<CKTID>],[CMDMDE=<CMDMDE>],[WLOPWR=<WLOPWR>],[VOAATTN=<VOAATTN>],FREQ=<FREQ>,[WIDTH=<WIDTH>],[DSPWROFS=<DSPWROFS>],[USPWROFS=<USPWROFS>]:[<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;
```

Table 14-18 Input Parameter Support

Parameter	Description
<SRC>	Source access identifier from the "27.7 CHANNEL" section on page 27-12. In two-way wavelength connection sources, both directions need to be indicated.
<DST>	Destination access identifier from the "27.19 LINEWL" section on page 27-29. In two-way wavelength connection sources, both directions need to be indicated.
<WCT>	(Optional) 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>	(Optional) 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>	(Optional) Command mode. 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 Unlocked-Enabled or Locked-Disabled, AutomaticInService 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.
<FREQ>	Optical wavelength
<WIDTH>	Width
<DSPWROFS>	Down stream power offset.
<USPWROFS>	Up stream power offset.
<PST>	(Optional) Primary state. The parameter type is PST, which indicates the current overall service condition of an entity.
• Unlocked	In service

Table 14-18 Input Parameter Support

Parameter	Description
• Locked	Out of service
<SST>	(Optional) Secondary state. The parameter type is SST, which provides additional information pertaining to PST and PSTQ.
• AutomaticInService	Automatic in service
• Disabled	Disabled
• Loopback	Loopback
• MismatchofEquipmentAlarm	Mismatch of equipment and attributes
• Maintenance	Maintenance mode
• OutOfGroup	Out of group
• SoftwareDownload	Software downloading
• Unassigned	Unassigned
• NotInstalled	Unequipped

14.32 ENT-OPMODE

The Enter Operating Mode (ENT-OPMODE) command creates operating mode on a given client or trunk or peer card.

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.
- PEERSLOTS parameter is applicable only on 100G-LC-C, 10x10G-LC, and CFP-LC cards. PEERSLOTS parameter values should be specified as SLOT-<SLOTNO>.
- RATE parameter is not applicable on 100G-LC-C, 10x10G-LC, and CFP-LC cards.
- In Low-latency and RGN-10G modes, one of the port is represented as Client and the other as Trunk while both are represented as trunks on CTC.
- The OPMODE parameter is a mandatory parameter for all the operating modes on the AR-MXP, AR-XP, AR-XPE, 10x10G-LC, 100G-LC-C, and CFP-LC cards.
- CLIENTPORTS and TRUNKPORTS are the mandatory parameters for all the operating modes on the AR-MXP, AR-XP, and AR-XPE cards.
- CLIENTPORTS and TRUNKPORTS are optional parameters for few operating modes on the 10x10G-LC, 100G-LC-C, and CFP-LC cards. Both these parameters are used in TXP-10G and RGN-10G modes on the 10x10G-LC Card. The CLIENTPORTS parameter is used in CFP-TXP and CFP-MXP operating modes on the CFP-LC card.
- RATE is a mandatory parameter for HIGH rate operating modes on the AR-MXP, AR-XP, and AR-XPE cards.

- CTMAP is a mandatory parameter only in MXP(P)-DME High rate modes on the AR-MXP, AR-XP, and AR-XPEcards.
- PEERSLOTS is a mandatory parameter only in dual card operating modes on the 10x10G-LC, 100G-LC-C, and CFP-LC cards. PEERSLOTS parameter value is of syntax SLOT[-SH]-<SLOTNO>.
- Following are the mandatory parameters for the operating modes on the 10x10G-LC, 100G-LC-C, and CFP-LC cards:
  - OPMODE, CLIENTPORTS, and TRUNKPORTS for TXP-10G, RGN-10G, and LOW-LATENCY operating modes on the 10x10G-LC card.
  - OPMODE parameter for TXP-100G operating mode on the 100G-LC-C card.
  - OPMODE and PEERSLOTS parameters for RGN-100G dual card operating mode on the 100G-LC-C card along with one peer 100G-LC-C and MXP-10X10G dual card operating mode among with two peer cards 10x10G-LC and 100G-LC-C.
  - OPMODE, CLIENTPORTS, and PEERSLOTS parameters for CFP-TXP dual card operating mode between CFP-LC and 100G-LC-C cards.
  - OPMODE and PEERSLOTS parameters for CFP-MXP dual card operating mode between CFP-LC and 100G-LC-C cards.

Category

NCS

Security

Provisioning

Input Format

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

Input Example

ENT-OPMODE::SLOT-5:1:::OPMODE=CFP-TXP,CLIENTPORTS=1,PEERSLOTS=SLOT-7;

Input Parameters

<AID>	Access Identifier—SLOT
<OPMODE>	Specifies the opmode created on the card provisioned. Parameter type is OPMODE.
• 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
• LOW-LATENCY	Low latency opmode is supported only on 10x10G-LC card.
• MXPP-MR-S	Operating mode on AR-MXP, AR-XP, or AR-XPE card.
• MXP-MR-S	Operating mode on AR-MXP, AR-XP, or AR-XPE card.
• MXP-2x40G	Operating mode on AR-MXP, AR-XP, or AR-XPE card.
<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

14.33 ENT-QNQ-CHGRP

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;

Table 14-19 ENT-QNQ-CHGRP Command - Parameter Support

Parameter	Description
<AID>	Access identifier from the "27.8 CHGRP" section on page 27-14.
<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

Table 14-19 ENT-QNQ-CHGRP Command - Parameter Support

Parameter	Description
<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)

14.34 ENT-QNQ-ETH

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;

Table 14-20 Input Parameter Support

Parameter	Description
<AID>	Ethernet AIDs are used to access the L2 Ethernet ports. Access identifier from the "27.14 ETH" section on page 27-23.
<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)

14.35 ENT-REP

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=<PROTROLE>],[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 "27.14 ETH" section on page 27-23.
<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_NEIGHBOR	Indicates that the port has no neighbor port in the segment.
• NO_NEIGHBOR_PRIMARY	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

14.36 ENT-RMONTH-<MOD2_RMON>

The Enter Remote Monitoring Threshold for 10GFC, 10GIGE, 40GIGE, 100GIGE, 1GFC, 1GFICON, 2GFC, 2GFICON, 4FGC, 4GFICON, 8GFC, CHGRP, FSTE, G1000, GFP, GIGE, ETH, GFPOS, GIGE, HDLC, ISCCOMPAT, POS, 3GVIDEO, SDSDI , HDSDI, AUTO, ISC3STP1G, and ISC3STP2G (ENT-RMONTH-<MOD2_RMON>) command creates an entry in the remote monitoring (RMON)

alarm table for the threshold of data statistics (GIGE or FC, for example) 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 None

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;

Table 14-21 Parameter Support

Parameter	Description
<SRC>	Source access identifier from the "27.15 FACILITY" section on page 27-23. AID for the facility that manages the data statistics. AR-MXP, AR-XP, and AR-XPE cards use the VFAC AID.
<MONTYPE>	Monitored type. Type of RMON data statistics. The parameter type is ALL_MONTYPE, which is the monitoring type list.
• AISSP	Alarm Indication Signal Seconds—Path
• BBEP	NCS Background Block Errors Path
• BBE-PM	OTN—Background Block Errors—Path Monitor Point
• BBER	NCS Background Block Error Ratio
• 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.
• BBE-SM	OTN—Background Block Errors—Section Monitor Point
• BIEC	FEC—Bit Errors Corrected
• CGV	8B10B—Code Group Violations
• CVCPP	Coding Violations—CP-Bit Path
• CVL	Coding Violations—Line
• CVP	Coding Violations—Path

Table 14-21 Parameter Support

Parameter	Description
• CVS	Coding Violations—Section
• CVV	Coding Violations—Section
• DCG	8B10B—Data Code Groups
• ESCPP	Errored Seconds—CP—Bit Path
• ESL	Errored Seconds—Line
• ESP	Errored Seconds—Path
• ES-PM	OTN—Errored Seconds—Path Monitor Point
• ESR	Errored Second—Ratio
• ESR-PM	Errored Seconds Ratio—Path monitor Point expressed as a tenth of a percentage
• ESR-SM	Errored Seconds Ratio—Section monitor Point expressed as a tenth of a percentage
• ESS	Errored Seconds—Section
• ES-SM	OTN—Errored Seconds—Section Monitor Point
• ESV	Errored Seconds—VC 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

Table 14-21 Parameter Support

Parameter	Description
• 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 Pointer Justification Count Seconds - 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
• ifInErrorBytePkts s	Receive Error Byte
• ifInErrors	The number of inbound packets (or transmission units) that contained errors
• ifInFramingError Pkts	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

Table 14-21 Parameter Support

Parameter	Description
• 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 STM1-8 card
• 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	A sequence of between 3 to 9 consecutive severely errored seconds (SES)
• LP-SEPI	Low-Order Path Severely Errored Period Intensity
• LP-SES	Low-Order Path Severely Errored Seconds
• LP-UAS	Low-Order Path Unavailable Seconds
• mediaIndStatsRxFramesBadCrc	rx frames with bad crc

Table 14-21 Parameter Support

Parameter	Description
• 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 STM1-8
• 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 STM1-8 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

Table 14-21 Parameter Support

Parameter	Description
• SASCPP	Severely Errored Framing/AIS Second—CP-Bit Path
• SASP	Severely Errored Framing/AIS Seconds Path
• SEFS	Severely Errored Framing Seconds
• SESCPP	Severely Errored Second—CP-Bit Path
• SESL	Severely Errored Second—Line
• SESP	Severely Errored Second—Path
• SES-PM	OTN—Severely Errored Second—Path
• SESR	Severely Errored Second—Ratio
• 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—VC Path
• UASCPP	Unavailable Second—CP-Bit Path
• UASL	Unavailable Second—Line
• UASP	Unavailable Second—Path
• UAS-PM	OTN—Unavailable Second—Path Monitor Point
• UAS-SM	OTN—Unavailable Second—Section Monitor Point
• UASV	Unavailable Second—VC 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>	(Optional) 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

Table 14-21 Parameter Support

Parameter	Description
<STARTUP>	(Optional) 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.

14.37 ENT-ROLL-<MOD_PATH>

The Enter Roll for VC3, VC44C, VC464C, VC48C, VC4, VC416C, VC42C, VC43C, VC11, or VC12 (ENT-ROLL-<MOD_PATH>) command enters information about rolling traffic from one endpoint to another without interrupting service. This command can be used to roll single paths.

Usage Guidelines For a 1-way destination roll, the roll mode must be MANUAL.

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-VC4:CISCO:VC4-1-1-1,VC4-2-1-1:1:::RFROM=VC4-2-1-1, RTO=VC4-3-1-1,RMODE=MAN,CMDMDE=FRCD;

Table 14-22 Parameter Support

Parameter	Description
<FROM>	Source access identifier from the "27.32 VC" section on page 27-35, which is one of the termination points (legs) of the existing cross-connect. If the existing cross-connect is one-way, then this termination point (leg) should be the FROM-AID termination point. Otherwise, FROM is nonsignificant. FROM and TO should be entered as they are entered in the ENT-CRS command. You can issue RTRV-CRS command and use the response for FROM and TO parameters.
<TO>	Destination AID from the "27.32 VC" section on page 27-35, which is one of the termination points (legs) of the existing cross-connect. If the existing cross-connect is one-way, then this termination point (leg) should be the TO-AID termination point. Otherwise, the TO is nonsignificant. FROM and TO should be entered as they are entered in the ENT-CRS command. You can issue 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 "27.32 VC" section on page 27-35.
<RTO>	The termination point that will become a leg of the new cross-connect. The termination point is an AID from the "27.32 VC" section on page 27-35.
<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 endpoint.
• MAN	Manual. Enter the corresponding delete roll/bulkroll command to delete the previous endpoint.
<CMDMDE>	(Optional) Command mode. 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 Unlocked-Enabled or Locked-Disabled, AutomaticInService 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 could make the command fail.

14.38 ENT-ROUTE

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;

Table 14-23 Parameter Support

Parameter	Description
<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.

14.39 ENT-ROUTE-GRE

The Enter Route Generic Routing Encapsulation (ENT-ROUTE-GRE) command creates a GRE tunnel. This can be used to transport IP over an Open Systems Interconnection (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=39840F80FFFFFF0000DDDDAA000010CFB4910200,COST=110;

Table 14-24 Parameter Support

Parameter	Description
<IPADDR>	IP address of the tunnel endpoint. IPADDR is a string.
<IPMASK>	Subnet mask for the tunnel endpoint. IPMASK is a string.
<NSAP>	NSAP address for the tunnel endpoint. NSAP is a string.
<COST>	Routing cost associated with the tunnel. COST is an integer.

14.40 ENT-TADRMAP

The Enter TID Address Mapping (ENT-TADRMAP) command instructs a GNE to create an entry in the TADRMAP table that maps the 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 network services access point (NSAP). The TADRMAP table, which resides in the GNE, correlates a TID and an address.

Usage Guidelines The command requires that at least one IPADDR or NSAP be specified. The PORT and ENCODING parameters are only used with IP address mappings.

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=39840F80FFFFFF0000DDDDAA01001800;

Table 14-25 Parameter Support

Parameter	Description
<TIDNAME>	(Optional) TID of the new TID/address mapping. TIDNAME is a string.
<IPADDR>	(Optional) IP address. IPADDR is a string. If the NSAP parameter is not used, the IPADDR parameter is required.
<PORT>	(Optional) Port for the TID/IP address mapping. The port default is 3082. PORT is an integer.
<ENCODING>	(Optional) 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	Non-interactive encoding
<NSAP>	(Optional) NSAP address. NSAP is a string. **Note** If the IPADDR parameter is not used, the NSAP parameter is required.

14.41 ENT-TRAPTABLE

The Enter Trap Table (ENT-TRAPTABLE) command provisions Simple Network Management Protocol (SNMP) trap destinations and their associated community, UDP port, and SNMP version.

Usage Guidelines The maximum number of trap entries is ten.

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;

Table 14-26 Parameter Support

Parameter	Description
<AID>	Access identifier from the “27.17 IPADDR” section on page 27-26. IP address identifies the trap destination. Only numeric IP addresses are allowed.
<COMMUNITY>	Community associated with the trap destination. Community name is a string with up to 32 characters.
<TRAPPORT>	(Optional) UDP port number associated with the trap destination. The UDP port number default is 162. TRAPPORT is an integer.
<TRAPVER>	(Optional) SNMP version number. Defaults to SNMPv1. The parameter type is SNMP_VERSION, which is the SNMP version.
• SNMPV1	(Default) SNMP Version 1
• SNMPV2	SNMP Version 2

14.42 ENT-TUNNEL-FIREWALL

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;

Table 14-27 Parameter Support

Parameter	Description
<SRCADDR>	(Optional) Source IP address. SRCADDR is a string.
<SRCMASK>	(Optional) Source mask. SRCMASK is a string.
<DESTADDR>	(Optional) Destination IP address. DESTADDR is a string.
<DESTMASK>	(Optional) Destination mask. DESTMASK is a string.

14.43 ENT-TUNNEL-PROXY

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;

Table 14-28 Parameter Support

Parameter	Description
<SRCADDR>	(Optional) Source IP address. SRCADDR is a string.
<SRCMASK>	(Optional) Source mask. SRCMASK is a string.
<DESTADDR>	(Optional) Destination IP address. DESTADDR is a string.
<DESTMASK>	(Optional) Destination mask. DESTMASK is a string.

14.44 ENT-UNICFG

The Enter User Network Interface Configuration (ENT-UNICFG) command creates UNI configuration which informs the circuit that the two ports specified in the command acts as an entry or exit point of an optical circuit.

Usage Guidelines

- Before executing the ENT-UNICFG command, the node should be configured with an optical side and an internal patchcords between a multiplexer, demultiplexer, and a mesh card.
- The source port should be an ADD port and destination port should be a DROP port.
- By default, the VALMODE parameter value is FULL and the VALZONE parameter value is GREEN.
- With the VALMODE parameter value as NONE, the VALZONE parameter is not applicable.
- RESTTYPE as REVERT is not applicable for UNICFG.

Category

NCS

Security

Provisioning

Input Format

ENT-UNICFG:[<TID>]:<SRC>:<CTAG>::<RVRSAID>,<RSYSIP>,<RIFCIP>,<MSTPIP>,<COMMIP>:[VALMODE=<OPTVAL>],[VALZONE=<OPRZONE>],[ADMINSTATE=<ADMINSTATE>],[RESTTYPE=<RESTTYPE>],[CKTPRIORITY=<CKTPRIORITY>],[DSPWROFS=<DSPWROFS>],[USPWROFS=<USPWROFS>][:];

Input Example

ENT-UNICFG::LINE-1-6-4-RX:1::LINE-1-6-4-TX,10.11.12.13,14.15.16.17,18.19.20.21,22.23.24.25:VALMODE=FULL,VALZONE=GREEN,DSPWROFS=2;

Table 14-29 Parameter Support

Parameter	Description
<SRC>	Source AID from the "27.1 ALL" section on page 27-1.
<RVRSAID>	Destination AID from the "27.1 ALL" section on page 27-1.

Table 14-29 Parameter Support

Parameter	Description
<RSYSIP>	Remote system IP.
<RIFCIP>	Remote interface IP.
<MSTPIP>	MSTP interface IP.
<COMMIP>	Communication IP.
<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.
<ADMINSTATE>	Identifies the adminstate is UP or DOWN.
• UP	Indicates Adminstate is UP and UNI Services can be activated.
• DOWN	Indicates Adminstate is DOWN and UNI Services cannot be activated.
<RESTTYPE>	Indentifies the restoration type on UNI configuration.
• NONE	None restoration type for UNICFG.
• RESTORE	Restore restoration type for UNICFG.
<CKTLABEL>	Circuit label.
<CKTPRIORITY>	Circuit Priority.
<DSPWROFS>	Down stream power offset.
<USPWROFS>	Up stream power offset.

14.45 ENT-USER-SECU

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 Retrieve 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 Provisioning is 30 minutes.
4. Superuser [SUPER]: Users with this security level can perform all PROV user actions, plus creating/deleting user security profiles, setting basic system parameters such as time/date, node name, IP address, and doing database backup and restore. The default idle time for 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.
- In CTC, TL1 accepts the UID length of 2 to 20 characters. The minimum length for PID and the password character rule can be configured using the command SET-ATTR-SECUDFLT. If minimum length for PID is selected as 2, it is mandatory to select ANY_CHAR as the password character rule, but if the password character rule is selected as ANY_CHAR, minimum length for PID can be selected as 2 or 4 or 6 or 8 or 10 or 12.
- Prior execution of SET-ATTR-SECUDFLT command is mandatory to set the minimum password length (PWDMINLEN) and password character rule (PWDCHRULE) for the PID to be entered in ENT-USER-SECU command, else default minimum length and password character rule is applied.

Category Security

Security Superuser

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

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

Table 14-30 Parameter Support

Parameter	Description
<UID>	User Identifier. Any combination of up to 20 alphanumeric characters. The minimum UID size is 2. UID is a string.
<PID>	User's password or Private Identifier. Minimum length of the PID depends on the PWDMINLEN, the type of characters to be entered depends on the PWDCHRULE, and maximum length depends on PWDMAXLEN set by SET-ATTR-SECUDFLT command. **Note** PID cannot be the same as or contain the user ID (UID), for example, if the user ID is CSNL25 the password cannot be CSNL25#. **Note** PID must have one nonalphabetic and one special (+,%, or #) character. **Note** PID toggling is not permitted; for example, if the current password is CSNL25#, the new password cannot be CSNL25#.
<UAP>	User's access privilege. The parameter type is PRIVILEGE, which is the security level.
• MAINT	Maintenance security level
• PROV	Provision security level
• RTRV	Retrieve security level
• SUPER	Superuser security level
• ROOT_USER	Root user.
• SEC_SUPER	Security super user.
• SEC_USER	Security user.

14.46 ENT-VCG

The Enter Virtual Concatenated Group (ENT-VCG) command creates a VCG object.

Usage Guidelines

- VCG on ML-Series cards supports two members and supported subrates are: VC3, VC4, or VC44C. 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 VC4. The FC_MR-4 card VCG has no link capacity adjustment scheme (LCAS) support (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=VC3,TXCOUNT=8,CCT=2WAY,LCAS=LCAS, BUFFERS=DEFAULT,NAME="VCG1";

Table 14-31 Parameter Support

Parameter	Description
<SRC>	Source access identifier from the "27.15 FACILITY" section on page 27-23. ML1000-2 and ML100T-12 cards use the VFAC AID. The FC_MR-4 card uses the FAC AID.
<TYPE>	The type of the entity being provisioned. Null indicates not applicable. TYPE can be a common language equipment identifier (CLEI) code or another value. The type of member cross-connect. ML1000-2 and ML100T-12 cards support VC3, VC4 and VC44C. The FC_MR-4 card supports VC4 only. The parameter type is MOD_PATH, which is the VC path modifier.
• VC3	VC3 Path
• VC44C	VC44C Path
• VC38C	VC38C Path
• VC464C	VC464C Path
• VC48C	VC48C Path
• VC4	VC4 Path
• VC416C	VC416C Path
• VC42C	VC42C Path
• VC43C	VC43C Path
• VC12	VC12 Path
<TXCOUNT>	Number of members in the transmit 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>	(Optional) 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	SNCP multicast drop with 1-way continue
• 1WAYEN	SNCP multicast end node with 1-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 and 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 SNCP traditional and integrated DRIs
• 2WAYPCA	A bidirectional connection between the two tributaries on the extra protection path/fiber
• DIAG	Diagnostics cross-connect. Supports BERT (MS-SPRing PCA diagnostics cross-connect)
<LCAS>	(Optional) Link capacity adjustment scheme. The parameter type is LCAS, which is the link capacity adjustment scheme mode for the VCG created.
• LCAS	LCAS is enabled

Table 14-31 Parameter Support

Parameter	Description
• NONE	No LCAS is created
• SW-LCAS	Supports the temporary removal of a VCG member during the member failure. Only supported by the ML1000-2, ML100T-12, ML-MR-10, CE-MR-10, CE-MR-6, and CE-1000-2 cards.
<BUFFERS>	(Optional) 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 VCAT.
• DEFAULT	Default buffer value
• EXPANDED	Expanded buffer value
<NAME>	(Optional) Name of the VCAT group. The name defaults to null. Its maximum length is 32 characters. NAME is a string.

14.47 ENT-VLAN

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;

Table 14-32 Parameter Support

Parameter	Description
<AID>	The AID is used to access the VLAN.
• VLAN-ALL	All AIDs for the VLAN.

Table 14-32 Parameter Support

Parameter	Description
• 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

14.48 ENT-WDMANS

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 NCS

Security Maintenance

Input Format (For legacy package)

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

(For flex package)

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

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;

Table 14-33 Parameter Support

Parameter	Description
<AID>	The AID is used to access the WDM node or a single port of the NCS 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
• 1529.16	Wavelength 1529.16
• 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

Table 14-33 Parameter Support

Parameter	Description
• 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

Table 14-33 Parameter Support

Parameter	Description
• 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

Table 14-33 Parameter Support

Parameter	Description
• 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
• 1562.23	Wavelength 1562.23
• 1562.64	Wavelength 1562.64
• 1563.05	Wavelength 1563.05
• 1563.45	Wavelength 1563.45
• 1563.86	Wavelength 1563.86
• 1564.27	Wavelength 1564.27
• 1564.68	Wavelength 1564.68
• 1565.09	Wavelength 1565.09
• 1565.50	Wavelength 1565.50
• 1565.90	Wavelength 1565.90
• 1566.31	Wavelength 1566.31
• 1566.72	Wavelength 1566.72
• 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

Table 14-33 Parameter Support

Parameter	Description
• 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

Table 14-33 Parameter Support

Parameter	Description
• 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>	(Optional) The optical amplification control mode. The parameter type is AMPL_MODE, which defines amplifier control mode.
• GAIN	The amplifier always maintain a fixed gain.

Table 14-33 Parameter Support

Parameter	Description
• POWER	The amplifier maintains the output power to a fixed value.
<OSCLOSS>	WDM-ANS OSC channel loss parameter.
<DITHER>	WDM-ANS WXC dithering parameter.
<TOTALPWR>	WDM-ANS Raman amplifier total power in mW.
<TOTALPWRMILLIW>	Optical power setting in mW.
<HIGHSLVEXP>	Span loss verification—high value.
<LOWSLVEXP>	Span loss verification—low value.
<TOTALPWRDBM>	Optical power setting in dBm.
<ENABLELOGO>	Enable logo.

14.49 ENT-WDMSIDE

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 NCS

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;

Table 14-34 Parameter Support

Parameter	Description
<AID>	The AID is used to access the WDM side of an NCS node.
• WDMSIDE-{A,B,C,D,E,F,G,H}	NCS side identifier

Table 14-34 Parameter Support

Parameter	Description
<LINEIN>	Used to access the Optical Transport Section (OTS) layer of 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].