



## ENT Commands

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This chapter provides enter (ENT) commands for the Cisco ONS 15454 SDH and Cisco ONS 15600 SDH.

### 12.1 ENT-<MOD1PAYLOAD>

(Cisco ONS 15454 SDH and ONS 15600 SDH) The Enter 10GFC, 10GIGE, 1GFC, 1GFICON, 2GFC, 2GFICON, D1VIDEO, DV6000, ESCON, ETRCLO, GIGE, HDTV, ILK, ISC1, ISCCOMPAT, ISC3PEER2R, ISC3PEER1G, ISC3PEER2G, STM-4, STM-64, STM-1, STM-16, or T3 (ENT-<MOD1PAYLOAD>) command creates a specified port. See [Table 27-1 on page 27-1](#) for supported modifiers by platform.

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#### Usage Guidelines

- Support is limited to ports with pluggable port modules (PPMs).
- 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 an SROF (Provisioning Rules Failed) error message.

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#### Category

Ports

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#### Security

Provisioning

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#### Input Format

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

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#### Input Example

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

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#### Input Parameters

<AID>                      Access identifier from the [“25.13 FACILITY”](#) section on page 25-16.

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## 12.2 ENT-<MOD\_RING>

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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;
```

Input Parameters	
<AID>	Access identifier from the <a href="#">“25.3 AidUnionId1”</a> section on page 25-7. 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. <ul style="list-style-type: none"> <li>• 2F Two-fiber MS-SPRing</li> <li>• 4F Four-fiber MS-SPRing</li> </ul>
<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). <ul style="list-style-type: none"> <li>• N Does not revert service to original line after restoration.</li> <li>• Y Reverts service to original line after restoration.</li> </ul>
<RVTM>	(Optional) Revertive time. Defaults to 5.0. The parameter type is REVERTIVE_TIME (revertive time). <ul style="list-style-type: none"> <li>• 0.5 to 12.0 Revertive time is 0.5 to 12.0 minutes.</li> </ul>

<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 “25.13 FACILITY” section on page 25-16.
<WESTWORK>	(Optional) West working facility. AID from the “25.13 FACILITY” section on page 25-16.
<EASTPROT>	(Optional) East protecting facility. AID from the “25.13 FACILITY” section on page 25-16.
<WESTPROT>	(Optional) West protecting facility. AID from the “25.13 FACILITY” section on page 25-16.

## 12.3 ENT-BULKROLL-<STM\_TYPE>

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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 27-1 on page 27-1](#) 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;
```

**Input Parameters**

<FROM>	One of the endpoints. Access identifier from the <a href="#">“25.13 FACILITY”</a> section on page 25-16 for 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.
• VC3	Synchronous Transport Signal/Module Level-1 (51 Mbps)
• VC44C	Synchronous Transport Signal/Module Level-12 Concatenated (622 Mbps)
• VC464C	Synchronous Transport Signal/Module Level-192 Concatenated (9952 Mbps)
• VC48C	Synchronous Transport Signal/Module Level-24 Concatenated (1240 Mbps)
• VC4	Synchronous Transport Signal/Module Signal Level-3 Concatenated (155 Mbps)
• VC416C	Synchronous Transport Signal/Module Level-48 Concatenated (2488 Mbps)
• VC42C	Synchronous Transport Signal/Module level-6 (310 Mbps)
• VC43C	Synchronous Transport Signal/Module Level-9 Concatenated (465 Mbps)
• VC11	Virtual Channel 11
• VC12	Virtual Channel 12
<RFROMSTART>	(Optional) The starting time slot in the source roll port. For bulk rolling only. The parameter type is PATH, which is the modifier for path commands.
• VC3	Synchronous Transport Signal/Module Level-1 (51 Mbps)
• VC44C	Synchronous Transport Signal/Module Level-12 Concatenated (622 Mbps)
• VC464C	Synchronous Transport Signal/Module Level-192 Concatenated (9952 Mbps)
• VC48C	Synchronous Transport Signal/Module Level-24 Concatenated (1240 Mbps)
• VC4	Synchronous Transport Signal/Module Signal Level-3 Concatenated (155 Mbps)
• VC416C	Synchronous Transport Signal/Module Level-48 Concatenated (2488 Mbps)
• VC42C	Synchronous Transport Signal/Module level-6 (310 Mbps)
• VC43C	Synchronous Transport Signal/Module Level-9 Concatenated (465 Mbps)
• VC11	Virtual Channel 11
• VC12	Virtual Channel 12
<RFROMEND>	(Optional) The ending time slot in the source roll port. For bulk rolling only. The parameter type is PATH, which is the modifier for path commands.
• VC3	Synchronous Transport Signal/Module Level-1 (51 Mbps)
• VC44C	Synchronous Transport Signal/Module Level-12 Concatenated (622 Mbps)
• VC464C	Synchronous Transport Signal/Module Level-192 Concatenated (9952 Mbps)
• VC48C	Synchronous Transport Signal/Module Level-24 Concatenated (1240 Mbps)
• VC4	Synchronous Transport Signal/Module Signal Level-3 Concatenated (155 Mbps)
• VC416C	Synchronous Transport Signal/Module Level-48 Concatenated (2488 Mbps)
• VC42C	Synchronous Transport Signal/Module level-6 (310 Mbps)
• VC43C	Synchronous Transport Signal/Module Level-9 Concatenated (465 Mbps)
• VC11	Virtual Channel 11
• VC12	Virtual Channel 12
<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.

## 12.4 ENT-CRS-<PATH>

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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). Refer to the *Cisco ONS SDH and Cisco ONS 15600 SDH TL1 Reference Guide* for ring provisioning procedures. See [Table 27-1 on page 27-1](#) for 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;

<b>Input Parameters</b>	<SRC>	Source access identifier from the “25.1 ALL” section on page 25-1. SRC is listable.
	<DST>	Destination AID from the “25.1 ALL” section on page 25-1.
	<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.
	<ul style="list-style-type: none"> <li>• 1WAY</li> </ul>	A unidirectional connection from a source tributary to a destination tributary
	<ul style="list-style-type: none"> <li>• 1WAYDC</li> </ul>	SNCP multicast drop with one-way continue
	<ul style="list-style-type: none"> <li>• 1WAYEN</li> </ul>	SNCP multicast end node with one-way continue
	<ul style="list-style-type: none"> <li>• 1WAYMON</li> </ul>	A bidirectional connection between the two tributaries <b>Note</b> 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.
	<ul style="list-style-type: none"> <li>• 1WAYPCA</li> </ul>	A unidirectional connection from a source tributary to a destination tributary on the protection path/fiber
	<ul style="list-style-type: none"> <li>• 2WAY</li> </ul>	A bidirectional connection between the two tributaries
	<ul style="list-style-type: none"> <li>• 2WAYDC</li> </ul>	A bidirectional drop-and-continue connection applicable only to SNCP traditional and integrated DRIs
	<ul style="list-style-type: none"> <li>• 2WAYPCA</li> </ul>	A bidirectional connection between the two tributaries on the extra protection path/fiber
	<ul style="list-style-type: none"> <li>• DIAG</li> </ul>	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).
	<ul style="list-style-type: none"> <li>• MSSPR</li> </ul>	MSSPRing DRI type
	<ul style="list-style-type: none"> <li>• SNCP</li> </ul>	SNCP DRI type
	<ul style="list-style-type: none"> <li>• SNCP-MSSPR</li> </ul>	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.
• Unlocked	In service
• 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

## 12.5 ENT-EQPT

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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.

### 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**


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The STM64-XFP card must be installed in Slots 5 to 6 or Slots 12 to 13} and requires an XC-VXC-10G cross connect card.

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**Note**


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RETIME provisioning is only allowed on the DS1-E1-56 card.

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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=<PEERID>],
[REGENNAME=<REGENNAME>],[CMDMDE=<CMDMDE>],[TRANSMODE=<TRANSMODE>],
[RETIME=<RETIME>],[SHELFROLE=<SHELFROLE>][:];
```

**Input Example**

```
ENT-EQPT:PETALUMA:SLOT-12:118::DS3XM-12:PROTID=SLOT-13,PRTYPE=1-1,RVRTV=Y,
RVTM=8.5,CARDMODE=DS3XM12-ST512,PEERID=SLOT-3,REGENNAME="REGEN GROUP",
CMDMDE=FRCD,TRANSMODE=FRCD,RETIME=Y,SHELFROLE=NC;
```

**Input Parameters**

<AID>	Access identifier from the <a href="#">“25.12 EQPT” section on page 25-15</a> .
<AIDTYPE>	(Optional) The type of facility, link or other addressable entity targeted by the message. The parameter type is EQUIPMENT_TYPE (equipment type).
• 10DME-C	MXP_MR_10DME_C card
• 10DME-L	MXP_MR_10DME_L card
• 10GEXP-TXP	10GE-XP behaves as 2 separate Transponders, where client 1 is associated to trunk 3 and client 2 is associated to trunk 4
• 10GEXP-L2ETH	10GE-XP behaves as a L2 Ethernet Switch
• 32DMX	(ONS 15454) 32-channel demultiplexer for C band
• 32DM X-L	(ONS 15454) 32-channel demultiplexer for L band
• 32DMX-O	(ONS 15454) 32-channel unidirectional optical demultiplexer
• 32MUX-O	(ONS 15454) 32-channel unidirectional optical multiplexer
• 32WSS	(ONS 15454) 32-channel optical wavelength selective switch for C band
• 32WSS-L	(ONS 15454) 32-channel wavelength selective switch for L band

• 4MD-xx.x	(ONS 15454) Optical multiplexer/demultiplexer with 4 channels
• AD-1B-xx.x	(ONS 15454) Optical add/drop multiplexer (OADM) 1 band filter
• AD-1C-xx.x	(ONS 15454) OADM 1 channel filter
• AD-2C-xx.x	(ONS 15454) OADM 2 channel filter
• AD-4B-xx.x	(ONS 15454) OADM 4 band filter
• AD-4C-xx.x	(ONS 15454) OADM 4 channel filter
• AIC	(ONS 15454) AIC card
• AIC-I	(ONS 15454) AIC-I card
• ALM-PWR	Alarm Power
• BP	The backplane of the NE
• CRFT-TMG	Craft Timing
• ASAP-4	(ONS 15600 SDH) Any service any port carrier card with 4 PIM slots
• CE-MR-6	(ONS 15310-MA SONET) CE-MR-6 data card
• CE-1000-4	(ONS 15454) CE-1000-4 card
• CXC	(ONS 15600) Cross Connect card
• DS1-E1-56	(ONS 15454) DS1-E1-56 card
• DS1I	(ONS 15454) DS1I card
• E1	(ONS 15454) E1 card
• E1-42	(ONS 15454) 42 Port E1 card
• E1000T	(ONS 15454) E1000T card
• E100T	(ONS 15454) E100T card
• E1000-2	(ONS 15454) E1000-2 card
• E1000-2-G	(ONS 15454) E1000-2-G card
• E1N	(ONS 15454) E1N card
• E3	(ONS 15454) E3 card
• FC-MR-4	(ONS 15454) FC_MR-4 card
• FILLER-CARD	(ONS 15454) Blank Filler card
• FMEC-SMZ-E1	FMEC card corresponding to E1 card
• FMEC-SMZ-E3	FMEC card corresponding to E3 card
• FMEC_DB	FMEC card
• FMEC_DB_DS1I	FMEC card
• FTA	The fan tray of the NE
• FTA1	The fan tray 1 of the NE
• FTA2	The fan tray 2 of the NE
• G1000-4	(ONS 15454) Four port G1000 card
• G1K-4	Four-port G1000 card
• MIC-A/P	MIC-A/P card
• MIC-C/T/P	MIC-C/T/P card

• MD-4	(ONS 15454) Optical Multiplexer/Demultiplexer with 4 channels
• ML1000-2	(ONS 15454) Daytona 2-port GigE
• ML100T-12	(ONS 15454) Daytona 12-port FSTE
• ML100X-8	(ONS 15454) 8-port 100T card with optical interface
• MMU	(ONS 15454) Multiring/mesh upgrade unit
• MRC-12	(ONS 15454) Humvee - 12-port multirate optical card
• MS-ISC-100T	(ONS 15454) Fast Ethernet switch card used for internal shelves connection
• MXP-2.5G-10E	(ONS 15454) Monviso 10G (4 * 2.5G) muxponder card with enhanced FEC
• MXP-2.5G-10G	(ONS 15454) Skane 10G (4 * 2.5G) muxponder card
• MXP-MR-10DME	10 Gbit/Sec. Datamux with enhanced FEC
• MXP-MR-2.5G	(ONS 15454) Bernina multirate 2.5G muxponder unprotected
• MXPP-MR-2.5G	(ONS 15454) Bernina multirate 2.5G muxponder protected
• OPT-AMP-L	(ONS 15454) Optical preamplifier unit for L-Band
• OPT-BST	(ONS 15454) Optical booster amplifier
• OPT-BST-L	(ONS 15454) Optical booster unit for L-Band
• OPT-PRE	(ONS 15454) Optical preamplifier
• OSC-CSM	(ONS 15454) Optical service channel (OSC) with combiner/separator Module (SCM)
• OSCM	(ONS 15454) Optical service channel module
• OC3ATM-IR-6	An interface card that supports six intermediate range OC-3 (155Mbs) ATM optical facilities
• OC3IR-STM1SH-1310-8	An OC3 card which has 8 ports over the lower speed slot of the ons 15454 with XC10G/192
• PIM-1	(ONS 15600) One port pluggable interface module
• PIM-4	(ONS 15600) Four port pluggable interface module
• SHELF	Shelf entity
• STM1	STM1 card
• STM1-8	Eight-port STM1 card
• STM1E-12	STM1E-12
• STM4	STM4 card
• STM4-4	Four-port STM4 card
• STM16	STM16 card
• STM64	STM64 card
• STM64-XFP	One-port STM64 XFP
• TCC	(ONS 15454) TCC card
• TCC2	TCC2 card
• TCC2P	TCC2P card
• TXP-MR-10E	(ONS 15454) 10-Gbps multirate transponder-100-GHz-tunable xx.xx-xx.xx card

• TXP-MR-10E-C	(ONS 15454) 10-Gbps multirate transponder-100-GHz-tunable xx.xx-xx.xx card for C-band
• TXP-MR-10E-L	(ONS 15454) 10-Gbps multirate transponder-100-GHz-tunable xx.xx-xx.xx card for L-band
• TXP-MR-10G	(ONS 15454) 10-Gbps multirate transponder-100-GHz-tunable xx.xx-xx.xx card
• TXP-MR-2.5G	(ONS 15454) 2.5-Gbps multirate transponder-100-GHz-tunable xx.xx-xx.xx card
• TXPP-MR-2.5G	(ONS 15454) 2.5-Gbps multirate transponder-protected-100-GHz-tunable xx.xx-xx.xx card
• UNKNOWN	Unknown equipment type
• UNPROVISIONED	Unprovisioned type
• XC	(ONS 15454) XC card
• XC10G	(ONS 15454) XC10G card
• XCVT	(ONS 15454) XCVT card
• XC-VXC-10G	(ONS 15454) XC-VXC-10G card
• XC-VXL-10G	(ONS 15454) XC-VXL-10G card
• XC-VXL-2.5G	(ONS 15454) XC-VXL-2.5G 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-3	The No.3 slot of an NE.
• SLOT-5	The No.5 slot of an NE.
• SLOT-13	The No.13 slot of an NE.
• SLOT-15	The No.15 slot of an NE.
• SLOT-17	The No.17 slot of an NE.
<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.
<CARDMODE>	Defines the card mode.

• AMPL-BST	The optical amplifier is working as an optical booster.
• AMPL-PRE	The optical amplifier is working as an optical preamplifier.
• CEMR-AUTO	Auto allocation of back-end channels for CE-MR-6 (Cisco ONS 15310-MA only) cards.
• CEMR-MANUAL	Manual allocation of back-end channels for CE-MR-6 (Cisco ONS 15310-MA only) cards.
• DS1E1-DS1ONLY	DS1 mode on DS1/E1 card
• DS1E1-E1ONLY	E1 mode on DS1/E1 card
• DWDM-LINE	Line terminating mode
• DWDM-SECTION	Section terminating mode
• DWDM-TRANS-AIS	Transparent mode AIS
• DWDM-TRANS-SQUELCH	Transparent mode SQUELCH
• FCMR-DISTEXTN	FC_MR-4 card with distance extension support
• FCMR-LINERATE	FC_MR-4 card without distance extension support
• GEXP-10x1Gx2-MXP	GE-XP behaves as a double Muxponder having ten 1 Gbps client facilities with one trunk. The first 10 GIGE clients are associated to the first trunk (21), while GIGE facilities from 11 to 20 are associated to trunk 22.
• GEXP-20x1G-MXP	GE-XP behaves as a single Muxponder having ten 1 Gbps client facilities with one trunk. Only the first 10 GIGE clients are associated to the first trunk (21) while the other facilities are unused.
• GEXP-L2ETH	GE-XP behaves as an L2 Ethernet Switch.
• ML-GFP	ML-Series card in DOS FPGA using GFP framing type
• ML-HDLC	ML-Series card in DOS FPGA using HDLC framing type
• ML-IEEE-RPR	ML-Series card in DOS FPGA which supports Resilient Packet Ring (RPR).
• MXPMR10DME-4GFC	4-Gbps Fibre Channel/FICON mode for the Cisco ONS 15454 SDH MXP_MR_10DME_C or MXP_MR_10DME_L card supported on Ports 1 and 5
• MXPMR10DME-4GFC-FCGEISC	4-Gbps Fibre Channel/FICON supported on port one and Fibre Channel, GIGE and ISC modes for the Cisco ONS 15454 SDH MXP_MR_10DME_C or MXP_MR_10DME_L card supported on Ports 5 to 8
• MXPMR10DME-FCGEISC	Fibre Channel, GIGE, and ISC modes for the Cisco ONS 15454 SDH 1MXP_MR_10DME_C or MXP_MR_10DME_L card supported on all eight ports
• MXPMR10DME-FCGEISC-4GFC	Fibre Channel, GIGE, and ISC modes for the Cisco ONS 15454 SDH MXP_MR_10DME_C or MXP_MR_10DME_L card supported on Ports 1 to 4 and 4 Gbps Fibre Channel/FICON supported on Port 5
• MXPMR10G-FCGEISC	Fibre Channel, GIGE, and ISC modes for the Cisco ONS 15454 SDH MXP_MR_10DME_C or MXP_MR_10DME_L card supported on all eight ports

• MXPMR10G-4GFC	4-Gbps Fibre Channel/FICON mode for the Cisco ONS 15454 SDH MXP_MR_10DME_C or MXP_MR_10DME_L card supported on Ports 1 and 5
• MXPMR10G-FCGEISC-4GFC	Fibre Channel, GIGE, and ISC modes for the Cisco ONS 15454 SDH MXP_MR_10DME_C or MXP_MR_10DME_L card supported on Ports 1 to 4 and 4-Gbps Fibre Channel/FICON supported on Port 5
• MXPMR10G-4GFC-FCGEISC	4-Gbps Fibre Channel/FICON supported on Port 1 and Fibre Channel, GIGE and ISC modes for the Cisco ONS 15454 SDH MXP_MR_10DME_C or MXP_MR_10DME_L card supported on Ports 5 to 8
• MXPMR25G-ESCON	ESCON mode for the Cisco ONS 15454 SDH MXP_2.5G_10G card
• MXPMR25G-FCGE	Fibre channel or GIGE mode for the MXP_2.5G_10G card
• MXPMR25G-MIXED	Mixed Fibre Channel, GIGE and ESCON modes for the Cisco ONS 15454 SDH MXP_2.5G_10G card
• UNKNOWN	Unknown equipment type
<PEERID>	Indicates the regeneration peer slot. Applicable only to DWDM-Flavored cards which support regeneration group. User should set PEERID=NULL for removing Regeneration Group. PEERID is the AID EQPT.
<REGENNAME>	Indicates the name of a regeneration group. Applicable only to DWDM-Flavored cards which support regeneration group. regenname is a String. The default value is "NULL".
<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.
<TRANSMODE>	TRANSMODE is of type CMDMDE.
<RETIME>	(Optional) Indicates if retiming is needed. Defaults to N. The parameter type is ON_OFF (disable or enable an attribute).
• N	No
• Y	Yes
<SHELFROLE>	(Optional) SHELFROLE is the role of the shelf in the context of the node. SHELFROLE is of type SHELF_ROLE. When it is omitted it defaults to SC.



## 12.6 ENT-FFP-<MOD2DWDMPAYLOAD>

(Cisco ONS 15454 SDH) The Enter Facility Protection Group for 10GFC, 10GIGE, 1GFC, 1GFICON, 2GFC, 2GFICON, D1VIDEO, DV6000, ETRCLO, GIGE, HDTV, ISC1, ISC3, or PASSTHRU (ENT-FFP-<MOD2DWDMPAYLOAD>) command creates Y-cable protection on client facilities. Refer to the *Cisco ONS SDH and Cisco ONS 15600 SDH TL1 Reference Guide* for specific card provisioning rules.

**Usage Guidelines** None

**Category** DWDM

**Security** Provisioning

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

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

Input Parameters	
<SRC>	Source access identifier from the <a href="#">“25.13 FACILITY” section on page 25-16</a> .
<DST>	Destination access identifier from the <a href="#">“25.13 FACILITY” section on page 25-16</a> .
<PROTOTYPE>	(Optional) The type of facility protection. The parameter type is PROTOTYPE, which is the protection type for dense wavelength division multiplexing (DWDM) client facilities.
<ul style="list-style-type: none"> <li>Y-CABLE</li> </ul>	Y-cable protection for the client ports on TXP_MR_10G, MXP_2.5G_10G, TXP_MR_2.5G, and TXPP_MR_2.5G cards.
<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).
<ul style="list-style-type: none"> <li>N</li> <li>Y</li> </ul>	<ul style="list-style-type: none"> <li>Does not revert service to original line after restoration.</li> <li>Reverts service to original line after restoration.</li> </ul>
<RVTM>	(Optional) Revertive time. Defaults to 5.0 minutes. The parameter type is REVERTIVE_TIME (revertive time).
<ul style="list-style-type: none"> <li>0.5 to 12.0</li> </ul>	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.
	<b>Note</b> TXP_MR_10G and MXP_2.5G_10G cards do not support bidirectional switching.
• BI	Bidirectional protection switching
• UNI	Unidirectional protection switching

## 12.7 ENT-FFP-<STM\_TYPE>

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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 27-1 on page 27-1](#) 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.
- The following parameters are supported in Release 6.0 and later: OPOTYPE, VRGRDTM, DTGRDTM, and RCGRDTM.
- 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 PROTOTYPE parameter is only applicable for optical DWDM cards.

### Category

Protection

**Security**

Provisioning

**Input Format**

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

**Input Example**

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

**Input Parameters**

<WORK>	Working port from the <a href="#">“25.13 FACILITY” section on page 25-16.</a>
<PROTECT>	Protection port from the <a href="#">“25.13 FACILITY” section on page 25-16.</a>
<PROTOTYPE>	(Optional) Protection type for DWDM client facilities. The parameter type is PROTOTYPE. <ul style="list-style-type: none"> <li>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.</li> <li>SPLITTER Splitter Protection for the trunk ports on the TXPP_MR_2.5G and MXPP_MR_2.5G protected cards.</li> </ul>
<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 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>	(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). <ul style="list-style-type: none"> <li>N Does not revert service to original line after restoration.</li> <li>Y Reverts service to original line after restoration.</li> </ul>
<RVTM>	(Optional) Revertive time. Defaults to 5.0 minutes. The parameter type is REVERTIVE_TIME (revertive time). <ul style="list-style-type: none"> <li>0.5 to 12.0 Revertive time is 0.5 to 12.0 minutes.</li> </ul>
<PSDIRN>	(Optional) Protection switch operation. Identifies the switch mode. The parameter type is TRANS_MODE, which is the G1000 transponder mode. <ul style="list-style-type: none"> <li>BI Bidirectional</li> <li>NONE Not in transponder mode</li> <li>UNI Unidirectional</li> </ul>
<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. <ul style="list-style-type: none"> <li>OPTIMIZED Optimized 1+1</li> </ul> <p><b>Note</b> The port must be in SDH mode.</p>

• STANDARD	Standard 1+1
<VRGRDTM>	(Optional) Verification guard timer. Only applicable to optimized 1+1. The parameter type is VERIFICATION_GUARD_TIMER, which is the optimized 1+1 verification guard timer.
• 0.5	500 ms
• 1.0	1 second
<DTGRDTM>	(Optional) Detection guard timer. Only applicable to optimized 1+1. The parameter type is DETECTION_GUARD_TIMER, which is the 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>	(Optional) Recovery guard timer. Only applicable to optimized 1+1. The parameter type is RECOVERY_GUARD_TIMER, which is the optimized 1+1 detection guard timer.
• 0.0	0 seconds
• 0.05	50 ms
• 0.1	100 ms
• 0.5	500 ms
• 1.0	1 second
• 2.0	2 second
• 3.0	3 seconds
• 4.0	4 seconds
• 5.0	5 seconds
• 6.0	6 seconds
• 7.0	7 seconds
• 8.0	8 seconds
• 9.0	9 seconds
• 10.0	10 seconds

## 12.8 ENT-LMP-CTRL

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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;

<b>Input Parameters</b>	<SRC>	The LMP control channel AID values
	<ul style="list-style-type: none"> <li>CTRL-ALL</li> <li>CTRL-{1-4}</li> </ul>	<p>Specifies all the control channels.</p> <p>Specifies an individual control channel.</p>
	<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

## 12.9 ENT-LMP-DLINK

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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;

### Input Parameters

<SRC>	Access identifier from the <a href="#">“25.13 FACILITY”</a> section on page 25-16.
<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

## 12.10 ENT-LMP-TLINK

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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,MU
XCAP=LAMBDA:OOS,DSBLD;
```

### Input Parameters

<SRC>	LMP TE link AID values
<ul style="list-style-type: none"> <li>TLINK-ALL</li> </ul>	Specifies all the TE links.
<ul style="list-style-type: none"> <li>TLINK-{1-256}</li> </ul>	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
<ul style="list-style-type: none"> <li>PKTSWITCH1</li> <li>PKTSWITCH2</li> <li>PKTSWITCH3</li> <li>PKTSWITCH4</li> <li>LAYER2</li> <li>TDM</li> <li>LAMBDA</li> <li>FIBER</li> </ul>	<ul style="list-style-type: none"> <li>Packet Switching 1</li> <li>Packet Switching 2</li> <li>Packet Switching 3</li> <li>Packet Switching 4</li> <li>Layer 2 switching</li> <li>Time-division multiplexing (TDM) switching</li> <li>Lambda switching</li> <li>Fiber switching</li> </ul>
<PST>	(Optional) Primary state of the entity. The parameter type is PST, which indicates the current overall service condition of an entity.
<ul style="list-style-type: none"> <li>Unlocked</li> </ul>	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

## 12.11 ENT-LNK

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

The optical links can be established between:

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

### Usage Guidelines

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

### Category

DWDM

### Security

Provisioning

### Input Format

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

### Input Example

```
ENT-LNK:PENNGROVE: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;
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;
```

Input Parameters		
<FROM>		Identifier at one end of the optical link from the “25.7 CHANNEL” section on page 25-9.
<TO>		Identifier at the other end of the optical link from the “25.7 CHANNEL” section on page 25-9.
<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

## 12.12 ENT-LNKTERM

(Cisco ONS 15454 SDH) 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 SDH 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 SDH 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/SDH.
- For a TXP/MXP client port, a card must be operating in the transparent termination mode.
- For a DWDM 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.
- 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;
```

**Input Parameters**

<b>&lt;AID&gt;</b>	Access identifier from the <a href="#">“25.17 LNKTERM”</a> section on page 25-20. Indicates a link (provisionable patchcord) termination on the local node.
<b>&lt;PORT&gt;</b>	The local port corresponding to this provisionable patchcord termination from the <a href="#">“25.7 CHANNEL”</a> section on page 25-9.

<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). Integer value within the range of 1 to 65535. Defaults to existing value.

## 12.13 ENT-NNI-ETH

(Cisco ONS 15454 SDH) 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 <a href="#">“25.13 FACILITY” section on page 25-16.</a>
<SVLANID>	VLAN identifier. A VLAN ID is a number between 1 and 4096. The value 0 is reserved for untagged VLANs. This identifier is used for customer VLAN IDs and service provider VLAN IDs.

## 12.14 ENT-OCHCC

(Cisco ONS 15454 SDH) 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.

### Category

DWDM

### Security

Provisioning

### Input Format

```
ENT-OCHCC:[<TID>]:<AID>:<CTAG>:::[CKTID=<CKTID>],
[CMDMDE=<CMDMDE>]:[<PST>][,<SST>];
```

### Input Example

```
ENT-OCHCC:VA454-22:FAC-2-1-1:116:::CKTID="OCHCC-1",
CMDMDE=FRCD:LOCKED,DISABLED;
```

### Input Parameters

<AID>	Access identifier from the <a href="#">“25.13 FACILITY”</a> section on page 25-16.
<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.
<ul style="list-style-type: none"> <li>• FRCD</li> </ul>	Force the system to override a state in which the command would normally be denied.
<ul style="list-style-type: none"> <li>• NORM</li> </ul>	Execute the command normally. Do not override any conditions that may make the command fail.
<PST>	(Optional) Primary state. The parameter type is PST, which indicates the current overall service condition of an entity.
<ul style="list-style-type: none"> <li>• Unlocked</li> </ul>	In service
<ul style="list-style-type: none"> <li>• Locked</li> </ul>	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

## 12.15 ENT-OCHNC

(Cisco ONS 15454 SDH) 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

DWDM

### Security

Provisioning

### Input Format

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

### Input Example

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

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

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

## Input Parameters

<SRC>	Source access identifier from the “ <a href="#">25.7 CHANNEL</a> ” section on page 25-9. In two-way wavelength connection sources, both directions need to be indicated.
<DST>	Destination access identifier from the “ <a href="#">25.16 LINEWL</a> ” section on page 25-19. 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.
<PST>	(Optional) Primary state. 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. 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

## 12.16 ENT-QNQ-ETH

(Cisco ONS 15454 SDH) 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 unipoint 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>,<SVLANID>:[RULE=<RULE>][:];

### Input Example

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

### Input Parameters

<AID>	Ethernet AIDs are used to access the L2 Ethernet ports. Access identifier from the <a href="#">“25.13 FACILITY” section on page 25-16.</a>
<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).

## 12.17 ENT-RMONTH-<MOD2\_RMON>

(Cisco ONS 15454 SDH) The Enter Remote Monitoring Threshold for 10GFC, 10GIGE, 1GFC, 1GFICON, 2GFC, 2GFICON, 4FGC, 4GFICON, FSTE, G1000, GIGE, ETH, GFPOS, GIGE, ISCCOMPAT, POS (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. See [Table 27-1 on page 27-1](#) for supported modifiers by platform.

### 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;
```

### Input Parameters

<SRC>	Source access identifier from the <a href="#">“25.13 FACILITY”</a> section on <a href="#">page 25-16</a> . AID for the facility that manages the data statistics.
<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	SDH Background Block Errors Path
• BBE-PM	OTN—Background Block Errors—Path Monitor Point
• BBER	SDH 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
• 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
• etherStatsCRCAAlignErrors	The total number of packets received that have a length (excluding framing bits, but including frame check sequence [FCS] octets) of between 64 and 1518 octets
• etherStatsDropEvents	Number of received frames dropped at the port level
• etherStatsFragments	The total number of packets received that were less than 64 octets
• etherStatsJabbers	The total number of packets received that are longer than 1518 octets
• etherStatsOctets	The total number of octets of data
• etherStatsOversizePkts	The total number of packets received that are longer than 1518 octets
• etherStatsPkts	The total number of packets (including bad packets, broadcast packets, and multicast packets) received
• etherStatsUndersizePkts	The total number of packets received that are less than 64 octets
• FCP	Failure Count—Line
• FC-PM	OTN—Failure Count—Path Monitor Point
• FC-SM	OTN—Failure Count—Section Monitor Point
• HP-AR	Availability Ratio

• HP-BBE	High-Order Path Background Block Error
• HP-BBER	High-Order Path Background Block Error Ratio
• HP-EB	High-Order Path Errored Block
• HP-ES	High-Order Path Errored Second
• HP-ESA	High-Order Path Errored Seconds–A
• HP-ESB	High-Order Path Errored Seconds–B
• HP-ESR	High-Order Path Errored Second Ratio
• HP-FC	High-Order Path Failure Count
• HP-NPJC-PDET	High-Order Path Negative Pointer Justification Count- Path Detected
• HP-NPJC-PGEN	High-Order Path 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
• ifInErrorBytePktss	Receive Error Byte
• ifInErrors	The number of inbound packets (or transmission units) that contained errors
• ifInFramingErrorPkts	Receive Framing Error
• ifInJunkInterPkts	Receive Interpacket Junk
• ifInMulticastPkts	Number of multicast packets received since the last counter reset
• ifInOctets	Number of bytes transmitted since the last counter reset
• ifInUcastPkts	Number of unicast packets received since the last counter reset
• ifOutBroadcastPkts	Number of broadcast packets transmitted
• ifOutDiscards	The number of outbound packets
• ifOutErrors	The number of outbound packets (or transmission units) that could not be transmitted because of errors
• ifOutMulticastPkts	Number of multicast packets transmitted
• ifOutPayloadCrcErrors	Received payload cyclic redundancy check (CRC) errors
• ifOutUcastPkts	Number of unicast packets transmitted
• IOS	8B10B–Idle Ordered Sets
• IPC	Invalid Packet Count

• LBCL-AVG	Average Laser Bias current in microA
• LBCL-MAX	Maximum Laser Bias current in microA
• LBCL-MIN	Minimum Laser Bias current in microA
• LBCN	Normalized Laser Bias Current for 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
• mediaIndStatsRxFramesBad Crc	rx frames with bad crc
• mediaIndStatsRxCvErrors	L1 line code violations for lower rate FC. This equates to invalid 8b10b ordered sets.
• mediaIndStatsTxFramesBad Crc	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
• 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
<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.

## 12.18 ENT-ROLL-<MOD\_PATH>

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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-VC3:CISCO:VC4-1-1-1,VC4-2-1-1:1:::RFROM=VC4-2-1-1,
RTO=VC4-3-1-1,RMODE=MAN,CMDMDE=FRCD;
```

**Input Parameters**

<FROM>	Source access identifier from the “25.29 VC” section on page 25-25, 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 “25.29 VC” section on page 25-25, 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 “25.29 VC” section on page 25-25.
<RTO>	The termination point that will become a leg of the new cross-connect. The termination point is an AID from the “25.29 VC” section on page 25-25.
<RMODE>	Indicates the mode of the rolling operation. The parameter type is RMODE (roll mode).
<ul style="list-style-type: none"> <li>AUTO</li> </ul>	Automatic. When a valid signal is available, the roll that has the AUTO mode will automatically delete the previous endpoint.
<ul style="list-style-type: none"> <li>MAN</li> </ul>	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.
<ul style="list-style-type: none"> <li>FRCD</li> </ul>	Force the system to override a state in which the command would normally be denied.
<ul style="list-style-type: none"> <li>NORM</li> </ul>	Execute the command normally. Do not override any conditions that could make the command fail.

## 12.19 ENT-ROUTE

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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;

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

## 12.20 ENT-ROUTE-GRE

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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;

<b>Input Parameters</b>	<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.

## 12.21 ENT-TADRMAP

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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=39840F80FFFFFFFF0000DDDDAA01001800;
```

### Input Parameters

<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.
<b>Note</b>	If the IPADDR parameter is not used, the NSAP parameter is required.



## 12.22 ENT-TRAPTABLE

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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 Example** ENT-TRAPTABLE::1.2.3.4:1::COMMUNITY="PRIVATE",TRAPPORT=162,TRAPVER=SNMPV1;

<b>Input Parameters</b>	<AID>	Access identifier from the <a href="#">“25.14 IPADDR” section on page 25-17</a> . 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

## 12.23 ENT-TUNNEL-FIREWALL

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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;

---

<b>Input Parameters</b>	<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.

---

## 12.24 ENT-TUNNEL-PROXY

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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;

---

<b>Input Parameters</b>	<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.

---

## 12.25 ENT-USER-SECU

(Cisco ONS 15454 SDH and ONS 15600 SDH) 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 MS-SPRing maintenance. The default idle time for Maintenance 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.
- Although CTC allows both <UID> and <PID> of up to 20 characters, the CTC-entered users (<UID> and <PID>) might not be valid TL1 users (for example, if issuing an ACT-USER command and using the CTC-entered <UID> that is greater than 10 characters long, TL1 will respond with DENY (Cannot Login ) error message).

### Category

Security

### Security

Superuser

### Input Format

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

### Input Example

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

<b>Input Parameters</b>	<UID>	User identifier. Any combination of up to 10 alphanumeric characters. The minimum UID size is 6. UID is a string.
	<PID>	User's password or private identifier. PID is a string of up to 10 characters where at least 2 characters are nonalphabetic with at least one special character (+, %, or #).
	<b>Note</b>	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#.
	<b>Note</b>	PID must have one nonalphabetic and one special (+, %, or #) character.
	<b>Note</b>	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

## 12.26 ENT-VCG

(Cisco ONS 15454 SDH) 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";
```

## Input Parameters

<SRC>	Source access identifier from the “25.13 FACILITY” section on page 25-16. 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  <b>Note</b> 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
• 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 and ML100T-12 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.

## 12.27 ENT-VLAN

(Cisco ONS 15454 SDH) 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>];

### Input Example

ENT-VLAN:ROCKS:VLAN-4096:1:::NAME=MYVLAN,PROTN=N;

### Input Parameters

<AID>	The AID is used to access the VLAN.
• VLAN-ALL	All AIDs for the VLAN.
• VLAN-{0-4096}	Single AID for the VLAN. VLAN ID 0 is reserved for untagged VLAN.
<NAME>	(Optional) Indicates the name of the VLAN.
<PROTN>	Indicates the VLAN protection feature. This is an optional parameter indicating if the VLAN being created/modified is protected.
• N	Not protected (Default)
• Y	Protected

## 12.28 ENT-WDMSIDE

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

### Usage Guidelines

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

### Category

DWDM

### Security

Maintenance

### Input Format

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

### Input Example

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

### Input Parameters

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

