



Release Notes for Cisco ONS 15310-MA Release 9.0

Revised: October 2008, OL-15506-01

Release notes contain the new features and enhancements for the Cisco ONS 15310-MA. For detailed information regarding features, capabilities, hardware, and software introduced with this release, refer to Release 9.0 of the *Cisco ONS 15310-CL and Cisco ONS 15310-MA Procedure Guide*, *Cisco ONS 15310-CL and Cisco ONS 15310-MA Reference Manual*, and the *Cisco ONS 15310-CL and Cisco ONS 15310-MA Troubleshooting Guide*, and Release 9.0 of the *Cisco ONS SONET TL1 Command Guide*. For the latest version of the Release Notes for Cisco ONS 15310-MA Release 9.0, visit the following URL:

http://www.cisco.com/en/US/products/hw/optical/ps2001/prod_release_notes_list.html

Cisco also provides Bug Toolkit, a web resource for tracking defects. To access Bug Toolkit, visit the following URL:

http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl

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Changes to the Release Notes

This section documents supplemental changes that have been added to the *Release Notes for Cisco ONS 15310-MA Release 9.0* since the production of the Cisco ONS 15310 System Software CD for Release 9.0.



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Using the Bug Toolkit

In Cisco ONS 15310-MA Software Release 9.0 and later, use the Bug Toolkit to view the list of outstanding and resolved bugs in a release. This section explains how to use the Bug Toolkit.

Step 1 Go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl and click **Launch Bug Toolkit**.

You will be prompted to log into Cisco.com.

Step 2 To search for a specific bug, enter the bug ID in the **Search for Bug ID** field and click **Go**.

To search for all the bugs in a specified release, enter the following search criteria:

- Select the Product Category—Select **Optical Networking**.
- Select Products—Select the products from the list. Press and hold the **Ctrl** key to select multiple products.
- Software Version—Select **9.0** to view the list of outstanding and resolved bugs in Cisco ONS 15310-MA Software Release 9.0.
- Advanced Options—You can either perform a search using the default search criteria or define custom criteria for an advanced search. To customize the advanced search, select **Use custom settings for severity, status, and others** and provide the following information:

- Severity—Select the severity level.
- Status—Select **Open**, **Fixed**, or **Terminated**.

Select **Open** to view all the open bugs. To filter the open bugs, clear the Open check box and select the appropriate suboptions that appear below the Open check box. The suboptions are New, Held, More, Open, Waiting, Assigned, Forwarded, Postponed, Submitted, and Information Required. For example, if you want to view only new bugs in Cisco ONS 15310-MA Software Release 9.0, only select **New**.

To view fixed bugs, select **Fixed**. To filter fixed bugs, clear the Fixed check box and select the appropriate suboptions that appear below the fixed check box. The suboptions are **Resolved** or **Verified**.

To view terminated bugs, select **Terminated**. To filter fixed bugs, clear the Terminated check box and select the appropriate suboptions that appear below the terminated check box. The suboptions are **Closed**, **Junked**, and **Unreproducible**. Select select multiple options as required.

- Advanced—Select the **Show only bugs containing bug details** check box to view only those bugs that contain detailed information, such as symptoms and workarounds.
- Modified Date—Select this option if you want filter bugs based on the date on which the bugs were last modified.
- Results Displayed Per Page—Select the appropriate option from the list to restrict the number of results that appear per page.

Step 3 Click **Search**.

The Bug Toolkit displays the list of bugs based on the specified search criteria. You can filter the search results based on severity, status and/or technology.

New Features and Functionality

This section highlights new features and functionality for Release 9.0. For detailed documentation of each of these features, consult the user documentation.

New Software Features and Functionality

The following new software features are added for Release 9.0:

- [Qualification of Pluggables, page 3](#)
- [Dynamic RPR Topology Information, page 3](#)
- [Login Warning Message Window, page 3](#)
- [Counter for Discarded Frames, page 4](#)
- [Counter for PAUSE Frames, page 4](#)
- [IPv6 Native Support, page 4](#)
- [SNMPv3 Support, page 4](#)
- [Overlay Ring Circuits, page 4](#)
- [Bit Error Rate Testing, page 5](#)

Qualification of Pluggables

This enhancement qualifies additional pluggables on already released ONG boards across different platform. This includes support for the following pluggables on CE-MR-6 card on ONS 15310 platform:

- ONS-SI-100-LX
- ONS-SI-100-FX
- ONS-SE-100-BX10U
- ONS-SE-100-BX10D
- ONS-SI-GE-SX
- ONS-SI-GE-LX
- ONS-SI-GE-ZX
- ONS-SE-ZE-EL

Dynamic RPR Topology Information

In Software Release 9.0, the RPR topology view is dynamically updated. In an earlier version, you had to click the Refresh button to view the latest RPR topology information.

Login Warning Message Window

In Software Release 8.5 and earlier, the warning text in the CTC login screen is not displayed automatically. The user has to slide the vertical slider bar to see the warning text. A new warning message window has been added to display the warning message when you log into CTC.

Counter for Discarded Frames

In earlier releases, on enabling Flow Control, the discarded frames were counted by the PM ifInDiscards. However, on disabling Flow Control, the ifInDiscards did not count discarded frames.

This enhancement ensures that the PM ifInDiscards counts discarded frames regardless of whether Flow Control is enabled or disabled.

Counter for PAUSE Frames

This enhancement adds counters for received and transmitted pause frame for CE-MR-10 and CE-MR-6 cards.

IPv6 Native Support

Cisco ONS 15310-MA Software R9.0 and later supports native IPv6. ONS 15310-MA can be managed over IPv6 DCN networks by enabling the IPv6 feature. After you enable IPv6 in addition to IPv4, you can use CTC, TL1, and SNMP over an IPv6 DCN to manage ONS 15310-MA. Each NE can be assigned an IPv6 address in addition to the IPv4 address. You can access the NE by entering the IPv4 address, an IPv6 address or the DNS name of the device. The IPv6 address is assigned only on the LAN interface of the NE. DCC/GCC interfaces use the IPv4 address.

SNMPv3 Support

Cisco ONS 15310-MA Software R9.0 and later supports SNMPv3 in addition to SNMPv1 and SNMPv2c. SNMPv3 is an interoperable standards-based protocol for network management. SNMPv3 provides secure access to devices by a combination of authentication and encryption of packets over the network based on the User Based Security Model(USM) and the View-based Access Control Model (VACM).

- **User Based Security Model**—The User based Security Model (USM) uses the HMAC algorithm for generating keys for authentication and privacy. SNMPv3 authenticates data based on its origin, and ensures that the data is received intact. SNMPv1 and v2 authenticate data based on the plain text community string which is less secure when compared to user based authentication model.
- **View-based Access Control Model**—The view-based access control model controls the access to the managed objects.

You can configure SNMPv3 on a node to allow SNMP get and set access to management information and configure a node to send SNMPv3 traps to trap destinations in a secure way. SNMPv3 can be configured in secure mode, non-secure mode, or disabled mode.

Overlay Ring Circuits

An overlay ring configuration consists of a core ring and subtended rings (Figure 12-36). An Overlay Ring Circuit routes traffic around multiple rings in an overlay ring configuration, passing through one or more nodes more than once. This results in multiple cross-connections on the nodes connecting the core ring to the subtended rings. For example, a customer having a core ring with cross-connects provisioned using TL1 can create cross-connects on subtended rings, due to a business need, without having to hamper the existing cross-connects on the core ring. This circuit can be either protected or unprotected.

Overlay ring supports circuit sizes; STS-1, 3c, 6c, 9c, 12c, 24c, 36c, 48c, and 192cs. Both unidirectional and bidirectional circuits are supported. Overlay ring circuits are contiguous concatenated (CCAT) and not virtual concatenated (VCAT) circuits.

Manual routing is mandatory while provisioning the overlay ring circuit. Overlay ring circuits created using Transaction Language 1 (TL1) are discovered by CTC and the status "DISCOVERED" is displayed. If the overlay ring circuit is deleted, the cross-connects on the core ring and subtended rings get deleted. Cross-connects on a subtended ring can be deleted through TL1 but would reflect as a partial overlay ring circuit in CTC, i.e. core ring will continue having cross-connects.

Bit Error Rate Testing

The bit error rate testing (BERT) feature can be used to test the connectivity, error rate, and error count of the traffic running on an electrical input/output (I/O) card port. The BERT feature is currently supported for ONS 15310-MA DS1-28-DS3-EC1-3 and DS1-84-DS3-EC1-3 electrical cards only. BERT is broadly classified into two components—Test pattern generator (TPG) and test pattern monitor (TPM) and is called test pattern generator and monitor (TPGM) when referring to test pattern generator and monitor.

TPG generates test patterns like PRBS15, PRBS20, PRBS23, QRSS, and ATL1s0s (alternating ones and zeroes). TPM monitors test patterns like PRBS15, PRBS20, PRBS23, QRSS, and ALT1s0s. TPG and TPM inject and monitor errors in the test pattern for both single bit and multirate (1E-3, 1E-4, 1E-5, and 1E-6) errors.

TPGM-L enables test pattern generation and monitoring on the line side. TPGM-B enables test pattern generation and monitoring on the backplane side (see Figure 12-9). You can enable TPGM-B on a port only if the port has a bidirectional circuit.

TL1

TL1 Command Changes

New Commands

The following new TL1 commands are added:

- CHG-ACCMD-STS96C
- CONN-TACC-STS96C
- DLT-BWP-ETH
- DLT-CRS-ETH
- DLT-CRS-STS96C
- DLT-FFP-OCH
- DLT-ROLL-STS96C
- ED-BWP-ETH
- ED-CRS-ETH
- ED-CRS-STS96C
- ED-FFP-OTS
- ED-MCAST

- ED-ROLL-ST96C
- ED-ST96C
- ED-VLAN-ETH
- ENT-BWP-ETH
- ENT-CRS-ETH
- ENT-CRS-ST96C
- ENT-FFP-OCH
- ENT-ROLL-ST96C
- INIT-REG-ST96C
- OPR-LPBK-ST96C
- OPR-PROTNSW-OTS
- OPR-PROTNSW-ST96C
- OPR-RAMAN
- RLS-LPBK-ST96C
- RLS-PROTNSW-OTS
- RLS-PROTNSW-ST96C
- RMV-ST96C
- RST-ST96C
- RTRV-ALM-ST96C
- RTRV-BWP-ETH
- RTRV-COND-ST96C
- RTRV-CRS-ETH
- RTRV-CRS-ST96C
- RTRV-FFP-OTS
- RTRV-MCAST
- RTRV-NE-APC
- RTRV-NE-WDMANS
- RTRV-PATH-OCH
- RTRV-PM-ST96C
- RTRV-PMMODE-ST96C
- RTRV-PMMODE-VC12
- RTRV-PMMODE-VC3
- RTRV-PMSCHED-ST96C
- RTRV-PROTNSW-OTS
- RTRV-PROTNSW-ST96C
- RTRV-PTHTRC-ST96C
- RTRV-RAMAN
- RTRV-ROLL-ST96C

- RTRV-SLV-WDMANS
- RTRV-STS96C
- RTRV-TARPPARAM
- RTRV-TH-STS96C
- RTRV-VLAN-ETH
- SCHED-PMREPT-STS96C
- SET-PMMODE-STS96C
- SET-PMMODE-VC12
- SET-PMMODE-VC3
- SET-TH-STS96C

In Software Release 9.0, the following OSI TL1 commands are not supported:

- DLT-MAT
- DLT-ROUTEROSI
- ED-LAPD
- ED-MAT
- ED-ROUTEROSI
- ED-TARPPARAM
- RTRV-LAPD
- RTRV-MAT
- RTRV-OSIRIB
- RTRV-ROUTEROSI

Changed Commands

The following new TL1 commands are changed:

- ED-NE-GEN
- RTRV-NE-GEN
- RTRV-NE-IPMAP
- RTRV-MAP-NETWORK
- RTRV-TADRMAP
- COPY-IOSCFG
- COPY-RFILE
- ENT-TRAPTABLE
- ED-TRAPTABLE
- DLT-TRAPTABLE
- RTRV-TRAPTABLE
- ENT-FTPSERVER
- ED-FTPSERVER
- DLT-FTPSERVER

- RTRV-FTPSERVER

Changed Commands

The following new TL1 commands are changed:

- ED-NE-GEN
- RTRV-NE-GEN
- RTRV-NE-IPMAP
- RTRV-MAP-NETWORK
- RTRV-TADRMAP
- COPY-IOSCFG
- COPY-RFILE
- ENT-TRAPTABLE
- ED-TRAPTABLE
- DLT-TRAPTABLE
- RTRV-TRAPTABLE
- ENT-FTPSERVER
- ED-FTPSERVER
- DLT-FTPSERVER
- RTRV-FTPSERVER

Command Syntax Changes

The syntax of the following commands have changed:

- **ED-10GFC** syntax changed from:


```
ED-10GFC[:<TID>]:<aid>:<CTAG>[:::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqlch>][:<pst>[,<sst>]]];
```

 To:


```
ED-10GFC[:<TID>]:<aid>:<CTAG>[:::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[FASTSWITCH=<fastswitch>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqlch>][:<pst>[,<sst>]]];
```
- **ED-1GFC** syntax changed:


```
ED-1GFC[:<TID>]:<aid>:<CTAG>[:::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqlch>][:<pst>[,<sst>]]];
```

 To:


```
ED-1GFC[:<TID>]:<aid>:<CTAG>[:::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqlch>][:<pst>[,<sst>]]];
```

- ED-1GFC[:<TID>]:<aid>:<CTAG>[::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[FASTSWITCH=<fastswitch>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqelch>][:<pst>[, <sst>]];
- ED-1GFICON syntax changed:
ED-1GFICON[:<TID>]:<aid>:<CTAG>[::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqelch>][:<pst>[, <sst>]];
 - To:
ED-1GFICON[:<TID>]:<aid>:<CTAG>[::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[FASTSWITCH=<fastswitch>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqelch>][:<pst>[, <sst>]];
 - ED-2GFC syntax changed:
ED-2GFC[:<TID>]:<aid>:<CTAG>[::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqelch>][:<pst>[, <sst>]];
 - To:
ED-2GFC[:<TID>]:<aid>:<CTAG>[::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[FASTSWITCH=<fastswitch>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqelch>][:<pst>[, <sst>]];
 - ED-2GFICON syntax changed:
ED-2GFICON[:<TID>]:<aid>:<CTAG>[::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqelch>][:<pst>[, <sst>]];
 - To:
ED-2GFICON[:<TID>]:<aid>:<CTAG>[::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[FASTSWITCH=<fastswitch>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqelch>][:<pst>[, <sst>]];
 - ED-4GFC syntax changed:
ED-4GFC[:<TID>]:<aid>:<CTAG>[::LINKRCVRY=<linkrcvry>],[DISTEXTN=<distance_extension>],[AUTODETECTION=<auto_detection>],[LINKCREDITS=<credits>],[MFS=<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqelch>][:<pst>[, <sst>]];

To:

```
ED-4GFC[:<TID>]:<aid>:<CTAG>[:::LINKRCVRY=<linkrcvry>],[DISTEXTN=
<distance_extension>],[AUTODETECTION=<auto_detection>],
[LINKCREDITS=<credits>],[FASTSWITCH=<fastswitch>],[MFS=
<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],
[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqlch>][:<pst>[, <sst>]]
```

- ED-4GFICON syntax changed:

```
ED-4GFICON[:<TID>]:<aid>:<CTAG>[:::LINKRCVRY=<linkrcvry>],[DISTEXTN=
<distance_extension>],[AUTODETECTION=<auto_detection>],
[LINKCREDITS=<credits>],[MFS=<maxfrmsize>],[NAME=<name>],
[CMDMDE=<cmdmde>],[SOAK=<soak>],[FREQ=<freq>],[LOSSB=<lossb>],
[SQUELCH=<sqlch>][:<pst>[,<sst>]];
```

To:

```
ED-4GFICON[:<TID>]:<aid>:<CTAG>[:::LINKRCVRY=<linkrcvry>],[DISTEXTN=
<distance_extension>],[AUTODETECTION=<auto_detection>],
[LINKCREDITS=<credits>],[FASTSWITCH=<fastswitch>],[MFS=
<maxfrmsize>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],
[FREQ=<freq>],[LOSSB=<lossb>],[SQUELCH=<sqlch>][:<pst>[, <sst>]];
```

- ED-APC syntax changed:

```
ED-APC[:<TID>]:<aid>:<CTAG>[:::APCENABLE=<apcenable>][:];
```

To:

```
ED-APC[:<TID>]:<aid>:<CTAG>[::<role>][:APCENABLE=<apcenable>][:];
```

- ED-CRS-ST51 syntax changed:

```
ED-CRS-ST51[:<TID>]:<src>,<dst>:<CTAG>[:::ADD=<add>],[REMOVE=<remove>],[CKTID=
<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

To:

```
ED-CRS-ST51[:<TID>]:<src>,<dst>:<CTAG>[::<cct>][:ADD=<add>],[REMOVE=<remove>],[C
KTID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

- ED-CRS-ST52C syntax changed:

```
ED-CRS-ST52C[:<TID>]:<src>,<dst>:<CTAG>[:::ADD=<add>],[REMOVE=<remove>],[CKTI
D=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

To:

```
ED-CRS-ST52C[:<TID>]:<src>,<dst>:<CTAG>[::<cct>][:ADD=<add>],[REMOVE=<remove>]
,[CKTID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

- ED-CRS-ST58C syntax changed:

```
ED-CRS-ST58C[:<TID>]:<src>,<dst>:<CTAG>[:::ADD=<add>],[REMOVE=<remove>],[CKTI
D=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

To:

```
ED-CRS-ST58C[:<TID>]:<src>,<dst>:<CTAG>[::<cct>][:ADD=<add>],[REMOVE=<remove>]
,[CKTID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

- ED-CRS-ST592C syntax changed:

```
ED-CRS-ST592C[:<TID>]:<src>,<dst>:<CTAG>[:::ADD=<add>],[REMOVE=<remove>],[CKT
ID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

To:

```
ED-CRS-STS192C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>],
[CKTID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

- ED-CRS-STS24C syntax changed:

```
ED-CRS-STS24C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>],[CKTI
D=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

To:

```
ED-CRS-STS24C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>]
,[CKTID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

- ED-CRS-STS36C syntax changed:

```
ED-CRS-STS36C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>],[CKTI
D=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

To:

```
ED-CRS-STS36C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>]
,[CKTID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

- ED-CRS-STS3C syntax changed:

```
ED-CRS-STS3C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>],[CKTID
=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

To:

```
ED-CRS-STS3C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>],[
CKTID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

- ED-CRS-STS48C syntax changed:

```
ED-CRS-STS48C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>],[CKTI
D=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

To

```
ED-CRS-STS48C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>]
,[CKTID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

- ED-CRS-STS6C syntax changed:

```
ED-CRS-STS6C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>],[CKTID
=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

To:

```
ED-CRS-STS6C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>],[
CKTID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

- ED-CRS-STS9C syntax changed:

```
ED-CRS-STS9C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>],[CKTID
=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

To:

```
ED-CRS-STS9C[:<TID>]:<src>,<dst>:<CTAG>[:<cct>]:ADD=<add>],[REMOVE=<remove>],[
CKTID=<ctid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];
```

- ED-CRS-VC3 syntax changed:

```
ED-CRS-VC3[:<TID>]:<src>,<dst>:<CTAG>[:::ADD=<add>],[REMOVE=<remove>],[CKTID=
<ctkid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

To:

```
ED-CRS-VC3[:<TID>]:<src>,<dst>:<CTAG>[:::<cct>][:ADD=<add>],[REMOVE=<remove>],[C
KTID=<ctkid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

- ED-CRS-VT1 syntax changed:

```
ED-CRS-VT1[:<TID>]:<src>,<dst>:<CTAG>[:::ADD=<add>],[REMOVE=<remove>],[CKTID=
<ctkid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

To:

```
ED-CRS-VT1[:<TID>]:<src>,<dst>:<CTAG>[:::<cct>][:ADD=<add>],[REMOVE=<remove>],[C
KTID=<ctkid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

];

- ED-CRS-VT2 syntax changed:

```
ED-CRS-VT2[:<TID>]:<src>,<dst>:<CTAG>[:::ADD=<add>],[REMOVE=<remove>],[CKTID=
<ctkid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

To:

```
ED-CRS-VT2[:<TID>]:<src>,<dst>:<CTAG>[:::<cct>][:ADD=<add>],[REMOVE=<remove>],[C
KTID=<ctkid>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

- ED-E3 syntax changed:

```
ED-E3[:<TID>]:<aid>:<CTAG>[:::TACC=<tacc>],[TAPTYPE=<tatype>],[SFBER=<sfber>],[S
DBER=<sdber>],[SOAK=<soak>],[NAME=<name>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]];
```

To:

```
ED-E3[:<TID>]:<aid>:<CTAG>[:::TACC=<tacc>],[TAPTYPE=<tatype>],[SFBER=<sfber>],[S
DBER=<sdber>],[SOAK=<soak>],[NAME=<name>],[CMDMDE=<cmdmde>],[AISONLPBK=<
aisonlpbk>][:<pst>[,<sst>]];
```

- ED-ETH syntax changed:

```
ED-ETH[:<TID>]:<src>:<CTAG>[:::FLOW=<flow>],[EXPDUPLICATE=<expduplex>],[SELECTIV
EAUTO=<selectiveauto>],[EXPSPEED=<expspeed>],[VLANCOS=<vlancostthreshold>],[IPTOS=
<iptosthreshold>],[NAME=<name>],[CMDMDE=<cmdmde>],[SOAK=<soak>],[LITIMER=<liti
mer>][:<pst>[,<sst>]];
```

To:

```
ED-ETH[:<TID>]:<src>:<CTAG>[:::FLOW=<flow>],[EXPDUPLICATE=<expduplex>],[SELECTIV
EAUTO=<selectiveauto>],[EXPSPEED=<expspeed>],[VLANCOS=<vlancostthreshold>],[IPTOS=
<iptosthreshold>],[NAME=<name>],[CMDMDE=<cmdmde>],[SUPPRESS=<suppress>],[SOAK
=<soak>],[LITIMER=<litimer>][:<pst>[,<sst>]];
```

- ED-L2-ETH syntax changed:

```
ED-L2-ETH[:<TID>]:<aid>:<CTAG>[:::NIMODE=<nimode>],[MACLEARNING=<maclearning
>],[INGRESSCOS=<ingresscos>],[ETHERCETYPE=<ether_ce_type>],[ETHERSTYPE=<ether_
s_type>],[ALWMACADDR=<alw_mac_addr>],[INHMACADDR=<inh_mac_addr>],[BPDU=<bp
du>],[BRIDGESTATE=<bridge_state>],[QNMOMODE=<qnqmode>],[TRNSPSVLAN=<trnsp_svla
n>],[NAME=<name>][:];
```

To:

```
ED-L2-ETH[:<TID>]:<aid>:<CTAG>[::NIMODE=<nimode>],[MACLEARNING=<maclearning>],[INGRESSCOS=<ingresscos>],[ETHERCETYPE=<ether_ce_type>],[ETHERSTYPE=<ether_s_type>],[ALWMACADDR=<alw_mac_addr>],[INHMACADDR=<inh_mac_addr>],[BPDU=<bpdu>],[BRIDGESTATE=<bridge_state>],[QNMOMODE=<qnmomode>],[TRNSPSVLAN=<trnsp_svlan>],[NAME=<name>],[IGMPROUTER=<igmprouter>],[AISACTION=<aisaction>],[PROTECTION=<protection>][:];
```

- ED-NE-GEN syntax changed:

```
ED-NE-GEN[:<TID>]:<CTAG>[::NAME=<name>],[IPADDR=<ipaddr>],[IPMASK=<ipmask>],[DEFRTR=<defrtr>],[IIOPPORT=<iioport>],[NTP=<ntp>],[SUPPRESSIP=<mode>],[MODE=<mode>],[SERIALPORTECHO=<serialportecho>];
```

To:

```
ED-NE-GEN[:<TID>]:<CTAG>[::NAME=<name>],[IPADDR=<ipaddr>],[IPMASK=<ipmask>],[DEFRTR=<defrtr>],[IPV6ADDR=<ipv6addr>],[IPV6PREFLEN=<ipv6preflen>],[IPV6DEFRT R=<ipv6defrtr>],[IPV6ENABLE=<ipv6enable>],[IIOPPORT=<iioport>],[NTP=<ntp>],[SUPP R=<suppressip>],[MODE=<mode>],[SERIALPORTECHO=<serialportecho>],[OSIROUTIN GMODE=<osiroutingmode>],[OSIL1BUFSIZE=<osil1bufsize>],[OSIL2BUFSIZE=<osil2bufsize >];
```

- ED-OC12 syntax changed:

```
ED-OC12[:<TID>]:<aid>:<CTAG>[::DCC=<dcc>],[AREA=<area>],[SYNCSMSG=<syncmsg>],[ SENDDUS=<senddus>],[PJMON=<pjmon>],[SFBER=<sfber>],[SDBER=<sdber>],[MODE=<mo de>],[SOAK=<soak>],[OSPF=<ospf>],[LDCC=<ldcc>],[NAME=<name>],[CMDMDE=<cmdmd e>],[EXPTRC=<exptrc>],[TRC=<trc>],[TRCMODE=<trcmode>],[TRCFORMAT=<trcformat>],[ ADMSSM=<admssm>],[SENDDUSFF=<senddusff>],[AISONLPBK=<aisonlpbk>],[FOREIGNF END=<foreignFarEnd>],[FOREIGNIP=<foreignIpAddress>],[FREQ=<freq>],[LOSSB=<lossb>],[OPRNOMINAL=<oprnominal>][:<pst>[,<sst>]];
```

To:

```
ED-OC12[:<TID>]:<aid>:<CTAG>[::DCC=<dcc>],[AREA=<area>],[SYNCSMSG=<syncmsg>],[ SENDDUS=<senddus>],[PJMON=<pjmon>],[SFBER=<sfber>],[SDBER=<sdber>],[MODE=<mo de>],[SOAK=<soak>],[OSPF=<ospf>],[LDCC=<ldcc>],[NAME=<name>],[CMDMDE=<cmdmd e>],[EXPTRC=<exptrc>],[TRC=<trc>],[TRCMODE=<trcmode>],[TRCFORMAT=<trcformat>],[ ADMSSM=<admssm>],[SENDDUSFF=<senddusff>],[AISONLPBK=<aisonlpbk>],[FOREIGNF END=<foreignFarEnd>],[FOREIGNIP=<foreignIpAddress>],[FREQ=<freq>],[LOSSB=<lossb>],[OPRNOMINAL=<oprnominal>],[OSISDCC=<osisdcc>],[OSILDCC=<osildcc>],[OSIROUTER=<osirouter>][:<pst>[,<sst>]];
```

- ED-OC192 syntax changed:

```
ED-OC192[:<TID>]:<aid>:<CTAG>[::DCC=<dcc>],[AREA=<area>],[SYNCSMSG=<syncmsg>],[ SENDDUS=<senddus>],[PJMON=<pjmon>],[SFBER=<sfber>],[SDBER=<sdber>],[MODE=<cm ode>],[SOAK=<soak>],[OSPF=<ospf>],[LDCC=<ldcc>],[NAME=<name>],[CMDMDE=<cmdm de>],[EXPTRC=<exptrc>],[TRC=<trc>],[TRCMODE=<trcmode>],[TRCFORMAT=<trcformat>],[ ADMSSM=<admssm>],[SENDDUSFF=<senddusff>],[AISONLPBK=<aisonlpbk>],[FOREIGNF END=<foreignFarEnd>],[FOREIGNIP=<foreignIpAddress>],[FREQ=<freq>],[LOSSB=<lossb>],[OPRNOMINAL=<oprnominal>][:<pst>[,<sst>]];
```

To:

```
ED-OC192[:<TID>]:<aid>:<CTAG>[::DCC=<dcc>],[AREA=<area>],[SYNCSMSG=<syncmsg>],[ SENDDUS=<senddus>],[PJMON=<pjmon>],[SFBER=<sfber>],[SDBER=<sdber>],[MODE=<cm ode>],[SOAK=<soak>],[OSPF=<ospf>],[LDCC=<ldcc>],[NAME=<name>],[CMDMDE=<cmdm de>],[EXPTRC=<exptrc>],[TRC=<trc>],[TRCMODE=<trcmode>],[TRCFORMAT=<trcformat>],[ ADMSSM=<admssm>],[SENDDUSFF=<senddusff>],[AISONLPBK=<aisonlpbk>],[FOREIGNF
```

END=<foreignFarEnd>],[FOREIGNIP=<foreignIpAddress>],[FREQ=<freq>],[LOSSB=<lossb>],[OPRNOMINAL=<oprnominal>],[OSISDCC=<osisdcc>],[OSILDCC=<osildcc>],[OSIROUTER=<osirouter>][:<pst>[,<sst>]]];

- ED-OC3 syntax changed:

ED-OC3[:<TID>]:<aid>:<CTAG>[:::DCC=<dcc>],[AREA=<area>],[SYNCMSG=<syncmsg>],[SENDUS=<sendus>],[PJMON=<pjmon>],[SFBER=<sfber>],[SDBER=<sdber>],[MODE=<mode>],[SOAK=<soak>],[OSPF=<ospf>],[LDCC=<ldcc>],[NAME=<name>],[CMDMDE=<cmdmde>],[EXPTRC=<exptrc>],[TRC=<trc>],[TRCMODE=<trcmode>],[TRCFORMAT=<trcformat>],[ADMSSM=<admssm>],[SENDDUSFF=<senddusff>],[AISONLPBK=<aisonlpbk>],[FOREIGNFEND=<foreignFarEnd>],[FOREIGNIP=<foreignIpAddress>],[FREQ=<freq>],[LOSSB=<lossb>],[OPRNOMINAL=<oprnominal>][:<pst>[,<sst>]]];

To:

ED-OC3[:<TID>]:<aid>:<CTAG>[:::DCC=<dcc>],[AREA=<area>],[SYNCMSG=<syncmsg>],[SENDUS=<sendus>],[PJMON=<pjmon>],[SFBER=<sfber>],[SDBER=<sdber>],[MODE=<mode>],[SOAK=<soak>],[OSPF=<ospf>],[LDCC=<ldcc>],[NAME=<name>],[CMDMDE=<cmdmde>],[EXPTRC=<exptrc>],[TRC=<trc>],[TRCMODE=<trcmode>],[TRCFORMAT=<trcformat>],[ADMSSM=<admssm>],[SENDDUSFF=<senddusff>],[AISONLPBK=<aisonlpbk>],[FOREIGNFEND=<foreignFarEnd>],[FOREIGNIP=<foreignIpAddress>],[FREQ=<freq>],[LOSSB=<lossb>],[OPRNOMINAL=<oprnominal>],[OSISDCC=<osisdcc>],[OSILDCC=<osildcc>],[OSIROUTER=<osirouter>][:<pst>[,<sst>]]];

- ED-OC48 syntax changed:

ED-OC48[:<TID>]:<aid>:<CTAG>[:::DCC=<dcc>],[AREA=<area>],[SYNCMSG=<syncmsg>],[SENDUS=<sendus>],[PJMON=<pjmon>],[SFBER=<sfber>],[SDBER=<sdber>],[MODE=<mode>],[SOAK=<soak>],[OSPF=<ospf>],[LDCC=<ldcc>],[NAME=<name>],[CMDMDE=<cmdmde>],[EXPTRC=<exptrc>],[TRC=<trc>],[TRCMODE=<trcmode>],[TRCFORMAT=<trcformat>],[ADMSSM=<admssm>],[SENDDUSFF=<senddusff>],[AISONLPBK=<aisonlpbk>],[FOREIGNFEND=<foreignFarEnd>],[FOREIGNIP=<foreignIpAddress>],[FREQ=<freq>],[LOSSB=<lossb>],[OPRNOMINAL=<oprnominal>][:<pst>[,<sst>]]];

To:

ED-OC48[:<TID>]:<aid>:<CTAG>[:::DCC=<dcc>],[AREA=<area>],[SYNCMSG=<syncmsg>],[SENDUS=<sendus>],[PJMON=<pjmon>],[SFBER=<sfber>],[SDBER=<sdber>],[MODE=<mode>],[SOAK=<soak>],[OSPF=<ospf>],[LDCC=<ldcc>],[NAME=<name>],[CMDMDE=<cmdmde>],[EXPTRC=<exptrc>],[TRC=<trc>],[TRCMODE=<trcmode>],[TRCFORMAT=<trcformat>],[ADMSSM=<admssm>],[SENDDUSFF=<senddusff>],[AISONLPBK=<aisonlpbk>],[FOREIGNFEND=<foreignFarEnd>],[FOREIGNIP=<foreignIpAddress>],[FREQ=<freq>],[LOSSB=<lossb>],[OPRNOMINAL=<oprnominal>],[OSISDCC=<osisdcc>],[OSILDCC=<osildcc>],[OSIROUTER=<osirouter>][:<pst>[,<sst>]]];

- ED-OCH syntax changed:

ED-OCH[:<TID>]:<aid>:<CTAG>[:::EXPWLEN=<expwlen>],[VOAATTN=<voaattn>],[VOAPWR=<voapwr>],[CALOPWR=<calopwr>],[CHPOWER=<chpower>],[NAME=<portname>],[OSDBER=<sdber>],[GCC=<gcc>],[GCCRATE=<gccrate>],[DWRAP=<drwrap>],[FEC=<fec>],[PAYLOADMAP=<payloadmap>],[SOAK=<soak>],[LOSSB=<lossb>],[CMDMDE=<cmdmde>][:<pst>[,<sst>]]];

To:

ED-OCH[:<TID>]:<aid>:<CTAG>[:::EXPWLEN=<expwlen>],[VOAATTN=<voaattn>],[VOAPWR=<voapwr>],[CALOPWR=<calopwr>],[CHPOWER=<chpower>],[NAME=<portname>],[OSDBER=<sdber>],[GCC=<gcc>],[GCCRATE=<gccrate>],[DWRAP=<drwrap>],[FEC=<fec>],[PAYLOAD

- ADMAP=<payloadmap>],[SOAK=<soak>],[LOSSB=<lossb>],[CMDMDE=<cmdmde>],[PEERID=<peerid>],[REGENNAME=<regenname>],[PORTMODE=<portmode>],[ODUTRANSMODE=<odutransmode>][:<pst>[,<sst>]]];
- ED-QNQ-ETH syntax changed:
ED-QNQ-ETH[:<TID>]:<aid>:<CTAG>::<firstcevlanid>,<lastcevlanid>,<s_vlan_id>[:RULE=<rule>][:];
To:
ED-QNQ-ETH[:<TID>]:<aid>:<CTAG>::<firstcevlanid>,<lastcevlanid>,<s_vlan_id>[:RULE=<rule>],[INTERNALVLAN=<internal_vlan_id>],[INGRESSCOS=<ingresscos>][:];
 - ED-SLV-WDMANS syntax changed:
ED-SLV-WDMANS[:<TID>]:<aid>:<CTAG>[:::HIGHSLVEXP=<highslvexp>],[LOWSLVEXP=<lowslvexp>][:];
To:
ED-SLV-WDMANS[:<TID>]:<aid>:<CTAG>[:<role>][:HIGHSLVEXP=<highslvexp>],[LOWSLVEXP=<lowslvexp>][:];
 - ED-T1 syntax changed:
ED-T1[:<TID>]:<aid>:<CTAG>[:::LINECDE=<linecde>],[FMT=<fmt>],[LBO=<lbo>],[TACC=<tacc>],[TAPTYPE=<taptype>],[SOAK=<soak>],[SFBER=<sfber>],[SDBER=<sdber>],[SYNCMSG=<syncmsg>],[SENDDUS=<senddus>],[NAME=<name>],[CMDMDE=<cmdmde>],[AISONLPBK=<aisonlpbk>],[MODE=<mode>],[SYNCMAP=<syncmap>],[ADMSSM=<admssm>],[VTMAP=<vtmap>],[AISVONAIIS=<aisvonais>],[AISONLOF=<aisonlof>],[INHFELPBK=<inhfelpbk>],[BERTMODE=<bertmode>],[BERTPATTERN=<bertpattern>],[BERTERRCOUNT=<berterrcount>][:<pst>[,<sst>]]];
To:
ED-T1[:<TID>]:<aid>:<CTAG>[:::LINECDE=<linecde>],[FMT=<fmt>],[LBO=<lbo>],[TACC=<tacc>],[TAPTYPE=<taptype>],[SOAK=<soak>],[SFBER=<sfber>],[SDBER=<sdber>],[SYNCMSG=<syncmsg>],[SENDDUS=<senddus>],[NAME=<name>],[CMDMDE=<cmdmde>],[AISONLPBK=<aisonlpbk>],[MODE=<mode>],[SYNCMAP=<syncmap>],[ADMSSM=<admssm>],[VTMAP=<vtmap>],[AISVONAIIS=<aisvonais>],[AISONLOF=<aisonlof>],[INHFELPBK=<inhfelpbk>],[INHFEBPLPBK=<inhfebplpbk>],[BERTMODE=<bertmode>],[BERTPATTERN=<bertpattern>],[BERTERRCOUNT=<berterrcount>][:<pst>[,<sst>]]];
 - ED-VLAN syntax changed:
ED-VLAN[:<TID>]:<aid>:<CTAG>[:::NAME=<name>],[PROTN=<protn>][:];
To:
ED-VLAN[:<TID>]:<aid>:<CTAG>[:::NAME=<name>],[PROTN=<protn>],[MACLEARNING=<maclearning>],[IGMPENABLE=<igmpenable>],[IGMPFASTLEAVE=<igmpfastleave>],[IGMP SUPP=<igmpsupp>][:];
 - ED-WDMANS syntax changed:
ED-WDMANS[:<TID>]:<aid>:<CTAG>[:::POWERIN=<powerIn>],[POWEROUT=<powerOut>],[POWEREXP=<powerExp>],[POWEROSC=<powerOSC>],[NTWTYPE=<ringType>],[PPMESH=<ppmesh>],[DITHER=<dither>];
To:
ED-WDMANS[:<TID>]:<aid>:<CTAG>[:<role>][:POWERIN=<powerIn>],[POWEROUT=<powerOut>],[POWEREXP=<powerExp>],[POWEROSC=<powerOSC>],[NTWTYPE=<ringType>],[PPMESH=<ppmesh>],[DITHER=<dither>];

- ENT-FTPSERVER syntax changed:
 ENT-FTPSERVER[:<TID>]::<CTAG>::IPADDR=<IPADDR>,IPMASK=<IPMASK>,ENABLE=
 <ENABLE>,[TIMER=<TIMER>];
 To:
 ENT-FTPSERVER[:<TID>]::<CTAG>::IPADDR=<IPADDR>,[IPMASK=<IPMASK>],ENABLE
 =<ENABLE>,[TIMER=<TIMER>];
- ENT-QNQ-ETH syntax changed:
 ENT-QNQ-ETH[:<TID>]:<aid>:<CTAG>::<firstcevlanid>,<lastcevlanid>,<s_vlan_id>[:RULE=<r
 ule>][:];
 To:
 ENT-QNQ-ETH[:<TID>]:<aid>:<CTAG>::<firstcevlanid>,<lastcevlanid>,<s_vlan_id>[:RULE=<r
 ule>],[INTERNALVLAN=<internal_vlan_id>],[INGRESSCOS=<ingresscos>][:];
- ENT-VLAN syntax changed:
 ENT-VLAN[:<TID>]:<aid>:<CTAG>[:<NAME=<name>],[PROTN=<protn>][:];
 To:
 ENT-VLAN[:<TID>]:<aid>:<CTAG>[:<NAME=<name>],[PROTN=<protn>],[MACLEARNING=<
 maclearning>],[IGMPENABLE=<igmpenable>],[IGMPFASTLE
 AVE=<igmpfastleave>],[IGMPSUPP=<igmpsupp>][:];
- OPR-APC syntax changed:
 OPR-APC[:<TID>]:<aid>:<CTAG>;
 To:
 OPR-APC[:<TID>]:<aid>:<CTAG>[:<role>];
- OPR-SLV-WDMANS syntax changed:
 OPR-SLV-WDMANS[:<TID>]:<aid>:<CTAG>;
 To:
 OPR-SLV-WDMANS[:<TID>]:<aid>:<CTAG>[:<role>];

Command Response Changes

The following TL1 command responses have changed:

- RTRV-ALM-BITS response changes:
 <aid>,<condtype>:<condeff>,,,<locn>,<dirn>,,,
 To:
 <aid>,<aidtype>:<ntfcncde>,<condtype>,<srveff>,<ocrdat>,<ocrtm>,<location>,<directio
 n>[:<desc>],
- RTRV-ALM-UCP response changes:
 <aid>:<ntfcncde>,<condtype>,<srveff>,,,:<desc>],
 To:
 <aid>:<ntfcncde>,<condtype>,<srveff>,<ocrdat>,<ocrtm>,,,:<desc>],
- RTRV-ALS response changes:

```
<slot>,<rslt>]:<diagtype>,<peer>,<aid>,<aidtype>
```

```
To:
```

```
:<TID>:<aid>:<CTAG>[:::]
```

```
> rtrv-apc::all:1
```

- RTRV-APC response changes:

```
<aid>::<apcenable>,<apcstate>:
```

```
To:
```

```
<TID>:<aid>:<CTAG>[:::];
```

- RTRV-BLSR response changes:

```
<UID>:<aid>:<ntfcncde>,<secualmtype>,<time>,<date>,<source>,<userid>,<dbch  
gseq>,<command>,<aid>,,
```

```
To:
```

```
<aid>::<ringid>,<nodeid>,<mode>,<rvrtv>,<rvtm>,<srvrtv>,<srvtm>,<eastwork>,  
<westwork>,<eastprot>,<westprot>
```

- RTRV-E3 response changes:

```
<aid>::<tacc>,<taptype>,<sfber>,<sdber>,<soak>,<soakleft>,<name>:<pst>,<sst>
```

```
To:
```

```
<aid>::<tacc>,<taptype>,<sfber>,<sdber>,<soak>,<soakleft>,<name>,<aisonlpbk>:  
<pst>,<sst>
```

- RTRV-ETH response changes:

```
<aid>::<adminstate>,<linkstate>,<mtu>,<flowctrl>,<optics>,<duplex>,<speed>,<flo  
w>,<expduplex>,<expspeed>,<vlancosthreshold>,<iptosthreshold>,<name>,<soak>,<  
soakleft>,<selectiveauto>,<litimer>:<pst>,<sst>
```

```
To:
```

```
<aid>::<adminstate>,<linkstate>,<mtu>,<flowctrl>,<optics>,<duplex>,<speed>,<flo  
w>,<expduplex>,<expspeed>,<vlancosthreshold>,<iptosthreshold>,<name>,<suppress  
>,<soak>,<soakleft>,<selectiveauto>,<litimer>:<pst>,<sst>
```

- RTRV-GIGE response changes:

```
<aid>:,<role>,<status>:<adminstate>,<linkstate>,<mtu>,<mfs>,<flow>,<flowctrl>,<  
<autoneg>,<hiwmrk>,<lowmrk>,<optics>,<duplex>,<speed>,<name>,<macaddr>,<l  
bcl>,<opt>,<opr>,<freq>,<lossb>,<suppress>,<soak>,<soakleft>,<squelch>,<cir>  
>,<cbs>,<ebs>,<lienable>,<litimer>:<pst>,<sst>
```

```
To:
```

```
<aid>:,<role>,<status>:<adminstate>,<linkstate>,<mtu>,<mfs>,<flow>,<flowctrl>,<  
<autoneg>,<hiwmrk>,<lowmrk>,<optics>,<duplex>,<speed>,<name>,<macaddr>,<l  
bcl>,<opt>,<opr>,<freq>,<lossb>,<suppress>,<soak>,<soakleft>,<squelch>,<cir>  
>,<cbs>,<ebs>,<lienable>,<litimer>,<actflow>,<actduplex>,<actspeed>:<pst>,<sst>
```

- RTRV-L2-ETH response changes:

```
<aid>::<nimode>,<maclearning>,<ingresscos>,<ethercetype>,<etherstype>,<alwmacadd  
r>,<inhmacaddr>,<bpdu>,<bridgestate>,<actbridgestate>,<qnqmode>,<trnspvlan>,<  
name>:
```

```
To:
```

<aid>:,<nimode>,<maclearning>,<ingresscos>,<ethercetype>,<etherstype>,<alwmacaddr>,<inhmacaddr>,<bpdu>,<bridgestate>,<actbridgestate>,<qnqmode>,<trnspsvlan>,<name>,<igmprouter>,<aisaction>,<protection>]:

- RTRV-NE-GEN response changes:

[<ipaddr>,<ipmask>,<defrtr>,<iiopport>,<ntp>,<name>,<swver>,<load>,<protswver>,<protload>,<defdesc>,<platform>,<secumode>,<suppressip>,<mode>,<autopm>,<serialportecho>]

To:

[<ipaddr>,<ipmask>,<defrtr>,<ipv6addr>,<ipv6preflen>,<ipv6defrtr>,<ipv6enable>,<iiopport>,<ntp>,<name>,<swver>,<load>,<protswver>,<protload>,<defdesc>,<platform>,<secumode>,<suppressip>,<mode>,<autopm>,<serialportecho>,<osiroutingmode>,<osil1bufsize>,<osil2bufsize>]

- RTRV-OCH response changes:

<aid>:,<role>,<status>:<opticalPortType>,<power>,<expWlen>,<actWlen>,<iloss>,<voamode>,<voaattn>,<voapwr>,<voarefattn>,<voarefpwr>,<refopwr>,<calopwr>,<chpower>,<chpowerFlg>,<portname>,<gcc>,<gccrate>,<dwrap>,<fec>,<payloadmap>,<lblcurr>,<optcurr>,<oprcurr>,<osfber>,<osdber>,<soak>,<soakleft>,<lossb>:<pst>,<sst>]

To:

<aid>:,<role>,<status>:<opticalPortType>,<power>,<expWlen>,<actWlen>,<iloss>,<voamode>,<voaattn>,<voapwr>,<voarefattn>,<voarefpwr>,<refopwr>,<calopwr>,<chpower>,<chpowerFlg>,<portname>,<gcc>,<gccrate>,<dwrap>,<fec>,<payloadmap>,<lblcurr>,<optcurr>,<oprcurr>,<osfber>,<osdber>,<soak>,<soakleft>,<lossb>,<peerid>,<regenname>,<portmode>,<odutransmode>:<pst>,<sst>]

- RTRV-OTS response changes:

<aid>:<opticalPortType>,<power>,<iloss>,<voamode>,<voaattn>,<voapwr>,<voarefattn>,<voarefpwr>,<osri>,<amplmode>,<amplmodeFlg>,<chpower>,<chpowerFlg>,<gain>,<expgain>,<expgainFlg>,<refopwr>,<offset>,<reftilt>,<reftiltFlg>,<caltilt>,<aseopwr>,<dculoss>,<awgst>,<heatst>,<name>,<soak>,<soakleft>,<wrkchannels>:<pst>,<sst>]

To:

<aid>:,<role>,<status>:<opticalPortType>,<power>,<iloss>,<voamode>,<voaattn>,<voapwr>,<voarefattn>,<voarefpwr>,<osri>,<amplmode>,<amplmodeFlg>,<chpower>,<chpowerFlg>,<gain>,<expgain>,<expgainFlg>,<refopwr>,<offset>,<reftilt>,<reftiltFlg>,<caltilt>,<aseopwr>,<dculoss>,<awgst>,<heatst>,<name>,<soak>,<soakleft>,<wrkchannels>,<ratio>,<raman_status>,<raman_quality>,<time>,<date>,<raman_restore_fc>,<time_fc>,<date_fc>:<pst>,<sst>]

- RTRV-QNQ-ETH response changes:

<aid>:<cevlanid>,<svlanid>:<rule>:

To:

<aid>:<cevlanid>,<svlanid>:<rule>,<internalvlan>,<ingresscos>]:

- RTRV-SLV-WDMANS response changes:

<aid>:<highslvexp>,<lowslvexp>,<slvact>,<resolution>]

<aid>:<role>:<highslvexp>,<lowslvexp>,<slvact>,<resolution>,<type>]:

- RTRV-T1 response changes:

```
<aid>::[<linecde>],[<fmt>],[<lbo>],[<tacc>],[<tatype>],[<soak>],[<soakleft>],[<sfber>],[<sdber>],[<name>],[<syncmsg>],[<senddus>],[<retime>],[<aisonlpbk>],[<aisvonais>],[<aisonlof>],[<m
ode>],[<syncmap>],[<admssm>],[<providesync>],[<vtmap>],[<inhfelpbk>],[<bertmode>],[<bertp
attern>],[<berterrcount>],[<berterrrate>]:<bertsyncstatus>,[<pst>]
```

```
<aid>::[<linecde>],[<fmt>],[<lbo>],[<tacc>],[<tatype>],[<soak>],[<soakleft>],[<sfber>],[<sdber>],[<name>],[<syncmsg>],[<senddus>],[<retime>],[<aisonlpbk>],[<aisvonais>],[<aisonlof>],[<m
ode>],[<syncmap>],[<admssm>],[<providesync>],[<vtmap>],[<inhfelpbk>],[<inhfebplpbk>],[<be
rtmode>],[<bertpattern>],[<berterrcount>],[<berterrrate>]:<bertsyncstatus>,[<pst>]
```

- RTRV-VLAN response changes:

```
<aid>::[<name>],[<protn>]:
```

```
<aid>::[<name>],[<protn>],[<maclearning>],[<igmpenable>],[<igmpfastleave>],[<igmpsupp>]:
```

- RTRV-WDMANS response changes:

```
<aid>::[<powerIn>],[<powerInFlg>],[<powerOut>],[<powerOutFlg>],[<powerExp>],[<powerExp
Flg>],[<powerOsc>],[<powerOscFlg>],[<ringType>],[<opticalNodeType>],[<nepLaunch>],[<fep
Launch>],[<ppmesh>],[<dither>],[<lastrundat>],[<lastruntm>],[<lastcalcdat>]:[<lastcalctm>]
```

To:

```
<aid>:[<role>]:[<powerIn>],[<powerInFlg>],[<powerOut>],[<powerOutFlg>],[<powerExp>],[<p
owerExpFlg>],[<powerOsc>],[<powerOscFlg>],[<ringType>],[<opticalNodeType>],[<nepLaunch
>],[<fepLaunch>],[<ppmesh>],[<dither>],[<lastrundat>],[<lastruntm>],[<lastcalcdat>]:[<lastcalct
m>]
```

- RTRV-WDMSIDE response changes:

```
<aid>::[<linein>],[<lineout>],[<osc>]:
```

To:

```
<aid>:[<role>]:[<linein>],[<lineout>],[<osc>]:
```

TL1 ENUM Changes

CARDMODE

The following CARDMODE enum items are added:

- CARDMODE_MLMR_AUTO => "MLMR-AUTO"
- CARDMODE_MLMR_MANUAL => "MLMR-MANUAL"

CARDMODE is used in the following commands:

- ED-EQPT
- ED-OCH
- ENT-EQPT
- RTRV-EQPT
- RTRV-OCH

EQPT_TYPE

The following EQPT_TYPE enum items are added:

- EQPT_TYPE_EQPT_ID_FMEC_155E_CARD_1TO1 => "FMEC-155E-1TO1"

- EQPT_TYPE_EQPT_ID_OPT_RAMP_C => "OPT-RAMP-C"
- EQPT_TYPE_EQPT_ID_PSM => "PSM"
- EQPT_TYPE_EQPT_ID_WBE_21 => "E1-21-DS3-E3-3"
- EQPT_TYPE_EQPT_ID_WBE_63 => "E1-63-DS3-E3-3"
- EQPT_TYPE_EQPT_ID_XP_4_10G => "OTU2-XP"

The following EQPT_TYPE is used in the following commands:

- REPT-ALM-EQPT
- REPT-ALM-MOD2ALM
- REPT-ALM-SYNCN
- REPT-EVT-EQPT
- REPT-EVT-MOD2ALM
- REPT-EVT-SYNCN

EQUIPMENT_TYPE

The following EQUIPMENT_TYPE enum items are added:

- EQUIPMENT_TYPE_ET_OPT_RAMP_C => "OPT-RAMP-C"
- EQUIPMENT_TYPE_ET_PSM => "PSM"
- EQUIPMENT_TYPE_ET_WBE_21 => "E1-21-DS3-E3-3"
- EQUIPMENT_TYPE_ET_WBE_63 => "E1-63-DS3-E3-3"
- EQUIPMENT_TYPE_ET_XP_4_10G => "OTU2-XP"

EQUIPMENT_TYPE is used in the following commands:

- CHG-EQPT
- ENT-EQPT

ETH_AISACTION

The following ETH_AISACTION enum items are added:

- ETH_AISACTION_NONE => "AIS-NONE"
- ETH_AISACTION_PROPAGATION => "AIS-PROPAGATION"
- ETH_AISACTION_SQUELCH => "AIS-SQUELCH"

ETH_AISACTION is used in the following commands:

- ED-L2-ETH
- RTRV-L2-ETH

ETH_IGMPROUTER

The following ETH_IGMPROUTER enum items are added:

- ETH_IGMPROUTER_NONE => "NONE"
- ETH_IGMPROUTER_STATIC => "STATIC"

ETH_IGMPROUTER is used in the following commands:

- ED-L2-ETH
- RTRV-L2-ETH

ETH_INGRESSCOS

The following ETH_INGRESSCOS enum items are added:

- ETH_INGRESSCOS_0 => "0"
- ETH_INGRESSCOS_1 => "1"
- ETH_INGRESSCOS_2 => "2"
- ETH_INGRESSCOS_3 => "3"
- ETH_INGRESSCOS_4 => "4"
- ETH_INGRESSCOS_5 => "5"
- ETH_INGRESSCOS_6 => "6"
- ETH_INGRESSCOS_7 => "7"
- ETH_INGRESSCOS_DSCP => "DSCP"
- ETH_INGRESSCOS_TRUST => "TRUST"
- ETH_INGRESSCOS_VLAN => "VLAN"

ETH_INGRESSCOS is used in the following commands:

- ED-L2-ETH
- ED-QNQ-ETH
- ENT-QNQ-ETH
- RTRV-L2-ETH
- RTRV-QNQ-ETH

ETH_PROTECTION

The following ETH_PROTECTION enum items are added:

- ETH_PROTECTION_NONE => "PROT-NONE"
- ETH_PROTECTION_SQUELCH => "PROT-SQUELCH"

ETH_PROTECTION is used in the following commands:

- ED-L2-ETH
- RTRV-L2-ETH

ETH_RULE

The following ETH_RULE enum items are added:

- ETH_RULE_DOUBLE_ADD => "DOUBLE-ADD"
- ETH_RULE_XLTE_ADD => "XLTE-ADD"

ETH_RULE is used in the following commands:

- ED-QNQ-ETH
- ENT-QNQ-ETH

- RTRV-QNQ-ETH

ETH_VLANALM

The following ETH_VLANALM enum items are added:

- ETH_VLANALM_AIS => "VLAN-AIS"
- ETH_VLANALM_NONE => "NONE"

ETH_VLANALM is used in the following commands:

- RTRV-VLAN-ETH

MOD1PAYLOA

The following MOD1PAYLOAD enum items are added:

- MOD1PAYLOAD_E3 => "E3"

MOD2

The following MOD2 enum items are added:

- MOD2_M2_RAMAN => "RAMAN"

MOD2 is used in the following commands:

- RTRV-FFP
- RTRV-NE-APC
- RTRV-NE-WDMANS
- RTRV-PMSCHED-ALL
- RTRV-PMSCHED-MOD2
- RTRV-TRC-MOD2
- RTRV-TRC-OCH

MTU_TYPE

The following MTU_TYPE enum items added:

- MTU_64 => "64"
- MTU_9700 => "9700"

MTU_TYPE is used in the following commands:

- ED-GIGE

ODUTRANSMODE

The following ODUTRANSMODE enum items are added:

- ODUTRANSMODE_CISCOEXT => "CISCO-EXT"
- ODUTRANSMODE_TRANSSTD => "TRANS-STD"

ODUTRANSMODE is used in the following commands:

- ED-OCH
- RTRV-OCH

OPTICAL_PORT_TYPE

The following OPTICAL_PORT_TYPE enum items are added:

- OPTICAL_PORT_TYPE_OPT_PORT_IN_PROT => "IN-PROT"
- OPTICAL_PORT_TYPE_OPT_PORT_IN_RAMAN => "IN-RAMAN"
- OPTICAL_PORT_TYPE_OPT_PORT_IN_WORK => "IN-WORK"
- OPTICAL_PORT_TYPE_OPT_PORT_OUT_PROT => "OUT-PROT"
- OPTICAL_PORT_TYPE_OPT_PORT_OUT_RAMAN => "OUT-RAMAN"
- OPTICAL_PORT_TYPE_OPT_PORT_OUT_WORK => "OUT-WORK"

OPTICAL_PORT_TYPE is used in the following commands:

- RTRV-OCH
- RTRV-OMS
- RTRV-OTS

OPTICS

The following OPTICS enum items added:

- OPTICS_OP_1000_BASE_T => "1000_BASE_T"
- OPTICS_OP_100_BASE_BX_D => "100_BASE_BX_D"
- OPTICS_OP_100_BASE_BX_U => "100_BASE_BX_U"

OPTICS is used in the following commands:

- ED-GIGE
- RTRV-ETH
- RTRV-FSTE
- RTRV-G1000
- RTRV-GIGE

OSIMODE

The following OSIMODE enum items are added:

- AITS => "AITS"
- UITS => "UITS"

OSIMODE is used in the following commands:

- ED-LAPD
- RTRV-LAPD



Note

In Software Release 9.0, OSI TL1 parameters/enum are not supported in commands.

OSIRIB

The following OSIRIB enum items are added:

- ES_IS => "ESIS"

- IS_IS => "ISIS"

OSIRIB is used in the following commands:

- RTRV-OSIRIB



Note In Software Release 9.0, OSI TL1 parameters/enum are not supported in commands.

OSIROLE

The following OSIROLE enum items are added:

- NETWORK => "NW"
- USER => "USR"

OSIROLE is used in the following commands:

- ED-LAPD
- RTRV-LAPD



Note In Software Release 9.0, OSI TL1 parameters/enum are not supported in commands.

OSISUBNET

The following OSISUBNET enum items are added:

- GCC => "GCC"
- INTERNAL => "INT"
- LAN => "LAN"
- LDCC => "LDCC"
- OSC => "OSC"
- SDCC => "SDCC"

OSISUBNET is used in the following commands:

- RTRV-OSIRIB



Note In Software Release 9.0, OSI TL1 parameters/enum are not supported in commands.

OSI_LEVEL

The following OSI_LEVEL enum items are added:

- LEVEL1 => "L1"
- LEVEL2 => "L2"

OSI_LEVEL is used in the following commands:

- DLT-MAT
- ED-MAT
- RTRV-MAT

**Note**

In Software Release 9.0, OSI TL1 parameters/enum are not supported in commands.

OSI_ROUTING_MODE

The following OSI_ROUTING_MODE enum items are added:

- ES => "ES"
- IS1 => "IS1"
- IS2 => "IS2"

OSI_ROUTING_MODE is used in the following commands:

- ED-NE-GEN
- RTRV-NE-GEN

**Note**

In Software Release 9.0, OSI TL1 parameters/enum are not supported in commands.

PAYLOAD_MAPPING

The following PAYLOAD_MAPPING enum items are added:

- PAYLOAD_MAPPING_NOFIXEDSTUFF => "NOOPU2FIXEDSTUFF"

PAYLOAD_MAPPING is used in the following commands:

- ED-OCH
- RTRV-OCH
- ED-OTU2
- RTRV-OTU2

PRODUCT_TYPE

The following PRODUCT_TYPE enum items are added:

- PRODUCT_TYPE_NE_15310_MA_SDH => "ONS15310-MA-SDH"

PRODUCT_TYPE is used in the following commands:

- RTRV-MAP-NETWORK

PROTOTYPE

The following PROTOTYPE enum items are added:

- PROTOTYPE_PRT_ONEPLUSONEL2 => "ONEPLUSONEL2"

PROTOTYPE is used in the following commands:

- ENT-FFP-MOD2
- RTRV-FFP

RAMAN_ACTION

The following RAMAN_ACTION enum items are added:

- ACCEPTPARAMS => "ACCEPT"
- DOCALCPARAMS => "DO-CALCPAR"
- DOMEAS => "DO-MEASURE"
- DORSTSM => "DO-RSTSM"
- DOTEST => "DO-TEST"
- RSTAFTERTEST => "RESTORE"

RAMAN_ACTION is used in the following commands:

- OPR-RAMAN

RAMAN_QUALITY

The following RAMAN_QUALITY enum items are added:

- RAMAN_QUAL_SETUP_FORCED => "SETUP-FORCED"
- RAMAN_QUAL_SETUP_GOOD => "SETUP-GOOD"
- RAMAN_QUAL_SETUP_NEED_ACCEPT => "SETUP-NEED-ACCEPT"
- RAMAN_QUAL_SETUP_UNACCEPT => "SETUP-UNACCEPT"

RAMAN_QUALITY is used in the following commands:

- RTRV-OTS

RAMAN_RESTORE_FC

The following RAMAN_RESTORE_FC enum items added:

- RAMAN_RESTORE_FC_FAILED => "FAILED"
- RAMAN_RESTORE_FC_NOT_EXECUTED => "NOTEXEC"
- RAMAN_RESTORE_FC_OK => "OK"
- RAMAN_RESTORE_FC_PENDING => "PENDING"

RAMAN_RESTORE_FC is used in the following commands:

- RTRV-OTS

RAMAN_SETUP

The following RAMAN_SETUP enum items are added:

- BYPASS_NODE => "BYPASS"
- MEASURE_NODE => "MEASURE"
- START_NODE_BOOSTER => "ST-BOOSTER"
- START_NODE_MUX => "ST-MUX"

RAMAN_SETUP is used in the following commands:

- OPR-RAMAN

RAMAN_STATUS

The following RAMAN_STATUS enum items are added:

- RAMAN_STATUS_ACCEPTED_TUNED => "ACCEPTED-TUNED"
- RAMAN_STATUS_FORCE_TUNED => "FORCE-TUNED"
- RAMAN_STATUS_NOT_TUNED => "NOT-TUNED"
- RAMAN_STATUS_TUNED => "TUNED"
- RAMAN_STATUS_TUNED_VERIFIED => "TUNED-VERIFIED"
- RAMAN_STATUS_TUNING => "TUNING"

RAMAN_STATUS is used in the following commands:

- RTRV-OTS

SLV_TYPE

The following SLV_TYPE enum items added:

- SLV_TYPE_ACTIVE_CHANNEL => "ACTIVE-CHANNEL"
- SLV_TYPE_OSC => "OSC"

SLV_TYPE is used in the following commands:

- RTRV-SLV-WDMANS

STM1E_MODE

The following STM1E_MODE enum items are added:

- PAYLOAD_PT_E3 => "E3"
- PAYLOAD_PT_OC12 => "OC12"
- PAYLOAD_PT_OC3 => "OC3"
- PAYLOAD_PT_OC48 => "OC48"

STM1E_MODE is used in the following commands:

- ED-FAC

Related Documentation

Release-Specific Documents

- Release Notes for the Cisco ONS 15454 SDH, Release 9.0
- Release Notes for the Cisco ONS 15310-CL, Release 9.0
- Release Notes for the Cisco ONS 15310-MA, Release 9.0
- Release Notes for the Cisco ONS 15310-MA SDH, Release 9.0
- Release Notes for the Cisco ONS 15600, Release 9.0
- Release Notes for the Cisco ONS 15600 SDH, Release 9.0
- Cisco ONS 15310-MA Software Upgrade Guide, Release 9.0

Platform-Specific Documents

- *Cisco ONS 15310-CL and Cisco ONS 15310-MA Procedure Guide*
Provides installation, turn up, test, and maintenance procedures
- *Cisco ONS 15310-CL and Cisco ONS 15310-MA Reference Manual*
Provides technical reference information for cards, nodes, and networks
- *Cisco ONS 15310-CL and Cisco ONS 15310-MA Troubleshooting Guide*
Provides a list of SONET alarms and troubleshooting procedures, general troubleshooting information, transient conditions, and error messages
- *Cisco ONS SONET TLI Command Guide*
Provides a comprehensive list of TL1 commands
- *Cisco ONS SONET TLI Reference Guide*
Provides general information, procedures, and errors for TL1
- *Cisco ONS 15310-CL and Cisco ONS 15310-MA Ethernet Card Software Feature and Configuration Guide*
Provides software feature and operation information for Ethernet cards

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