QUICK REFERENCE

Cisco ONS SDH TL1 for Beginners, Releases 9.2.1 and 9.2.2

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Note Release 9.2.2 is supported only on the Cisco ONS 15454 MSTP platform.

1 What is TL1?

Transaction Language 1 (TL1) is a set of ASCII (American Standard Code for Information Interchange)-based instructions, or messages, that an operations support system (OSS) uses to manage a network element (NE) and its resources. TL1 provides a standard set of messages that can be used for communicating between operating systems and NEs, and personnel and NEs.

2 TL1 Message Types and Examples

There are two main types of standard-defined TL1 messages: command/responses and autonomous messages.

1. **Command/Responses**—These are initiated by a user and provide two parts: a request to the NE to set or get information, and a response from the NE containing completion or status codes and requested information. Request, or input messages are used to issue the request portions of command messages to the NE. Command messages are often referred to as command/response messages, where the request portion is an input message (OSS to NE) and the response portion is an output message (NE to OSS). Command/Responses can be further classified as follows:
   a. **Set information**—The simplest type of messages are those that set information or instruct the NE to perform an action and return only a result with no data in the response:

      Example: ENT-CRS-<VC_PATH> to create an VC cross-connection
   b. **Get information**—Some TL1 commands get information or request information be returned from the NE.

      Example: RTRV-ALM-ALL to show the current status of all active alarm conditions

c. **Response message**—The response portion of a command message correlates to a particular request message. If a command is successful, the NE sends a response message containing the COMPLD code.

   Example:
   SV192-DATA-461 2003-08-05 10:35:17

   M 123 COMPLD

   ;

   If a command fails, the NE sends an error response which includes the DENY code and may or may not contain an error message.

   Example:
   sv192-DATA-461 2003-08-05 10:35:17

   M 123 DENY;

   The following list shows standard responses:

   COMPLD—Completed

   DENY—TL1 command failed

   PRTL—Partially successful response. The requested action can be completed for some of the specified AIDs but not for all of them.

   RTRV—The response is successful but is lengthy and is being returned in multiple parts. Each part has a RTRV response code, but the final response has a COMPLD response code.

d. **Response acknowledgment**—Responses may also include intermediate acknowledgment messages. Brief messages that update the user as to the status of a given command are called acknowledgments. When a command has been sent to the NE and the NE takes longer than two seconds to respond, the NE sends an acknowledgment message to be followed later by the full response. This class of responses, however, is yet to be supported by Cisco ONS platforms.

2. **Autonomous events**—These messages are used to report alarms, configuration changes or condition changes. Many of these messages, such as those relating to alarm conditions, are spontaneously triggered by the NE itself without intervention. Other messages, such as those relating to the reporting of periodic condition states or performance data values are scheduled by the NE user through other commands. Autonomous messages are not issued to the NE and hence they do not include input formats or input examples.

   Example: REPT-ALM

For information on specific command and autonomous message syntax, refer to the *Cisco ONS SDH TL1 Command Guide*.

3 Connect to TL1

The first step in using TL1 is to connect to TL1. You only have to connect to TL1 one time per session. A session is a related set of communication transactions between two or more network devices. There are three ways to connect to TL1: via CTC, telnet, or craft interface. Perform one of the following procedures to connect to TL1.

Launch CTC and Open a TL1 Session

Step 1 From the PC connected to the ONS 15454 SDH, ONS 15454 M2, ONS 15454 M6, or ONS 15600 SDH start Netscape Navigator or Internet Explorer.

Step 2 Enter the IP address of the node you want to communicate with in the Netscape or Internet Explorer Web address (URL) field.

Step 3 Log into the CTC. The IP address at the title bar should match the IP address of the node you entered in Step 2.

Step 4 Once logged into the CTC, there are two ways to open a TL1 session:

- Click **Tools > Open TL1 Connection,** or
- Click on the **Open TL1 Connection** button  on the toolbar.

Step 5 From the Select Node dialog box choose the node you want to communicate with.

Step 6 Click **OK**.

A TL1 interface window opens. There are three sub-windows in the TL1 interface window: Request History, Message Log/Summary Log, and TL1 request. Type commands in the TL1 request window. You will see responses in the Message log window. The Request History window allows you to recall previous commands by double-clicking on them.

Step 7 Verify that the Connect button is selected (grayed out).

Step 8 You are ready to log into TL1. Follow the steps in the “Log Into TL1” section on page 7.

Telnet to Open a TL1 Session

To communicate with the ONS network element (NE) using TL1 commands through a Telnet session over a craft interface or a LAN connection, you can choose either of the following two ports:

- Port number 3083 is a Telnet port that uses the Telnet protocol and associated Telnet escape sequences.
- Port number 2361 is supported for backward compatibility with earlier releases and has the same behavior as Port 3083 (Telnet port). Use the following procedure with PCs running Windows operating systems.

Note Port number 3082 is a raw TCP/IP port; it is not an interactive port and is not recommended for use as an alternate telnet port.

Step 1 At the DOS prompt, type **cmd** and press **Enter.** (The same steps can also be done from a Unix prompt).

Step 2 At the DOS command prompt type:

TELNET <NODE IP ADDRESS OR NODE NAME> <PORT NUMBER> and press **Enter.**

The Node IP address or Node Name refers to the IP address or Node Name of the node you want to communicate with. Port number is the port (2361 or 3083) where TL1 commands are understood. If the connection is successful, a screen opens with a prompt.

Step 3 You are ready to log into TL1. Follow the steps in the "Log Into TL1" section on page 7.

Use a Craft Interface to Open a TL1 Session (Cisco ONS 15454 SDH, Cisco ONS 15454 M2, or Cisco ONS 15454 M6)

The TCC2/TCC2P card has two built-in interface ports for accessing the ONS 15454 SDH, ONS 15454 M2, or ONS 15454 M6. With one RJ-45 LAN connection you can access the system using a standard browser interface. In the browser interface, you can perform local and remote Operations, Administration, Maintenance, and Provisioning (OAM&P) functions and open a VT100 emulation window to enter TL1 commands. If a browser is not available, you can access the system using a nine-pin EIA/TIA-232 port. The EIA/TIA-232 port supports VT100 emulation which allows TL1 commands to be entered directly without a browser.

Step 1 Connect the serial cable to the EIA/TIA-232 port on the active TCC2/TCC2P card.

Step 2 Configure the terminal emulation software (Hyperterminal):

a. Terminal emulation = vt100

b. Bits per second = 9600

c. Parity = None

d. Stop BITS = 1

e. Flow control = None

Step 3 Press **Enter**. An angle bracket prompt (>) appears.

Step 4 You are ready to log into TL1. Follow the steps in the "Log Into TL1" section on page 7.

Use a Craft Interface to Open a TL1 Session (Cisco ONS 15600 SDH)

The TSC card has one RJ-45 port of the faceplate. The RJ-45 port allows you to access the system using a standard web browser. You must use the RJ-45 port on the active TSC. While using the web browser, you can perform local and remote OAM&P functions.

If a browser is not available, you can access the system using one of the two EIA/TIA-232 ports on the CAP. Each EIA/TIA-232 port supports VT100 emulation so that you can enter TL1 commands directly without using a web browser. Each EIA/TIA-232 port supports its own TL1 session.

Because the CAP EIA/TIA-232 port is set up as a data terminal equipment (DTE) interface, you must use a 3-pair swapping null modem adapter so that the TXD/RXC, DSR/DTR, and CTS/RTS pins are swapped when connecting to the serial ports. The null modem adapter connects the CAP EIA/TIA-232 port (male configuration) and the serial cable (female configuration). Table 1 lists the null modem adapter pin assignments.

Table 1 Null Modem Adapter Pin Assignments

TSC Signal	From Pin at TSC (DTE)	To Pin at Second DTE
NC[1]	1	NC
RXD	2	3
TXD	3	2
DTR	4	6
GND	5	5
DSR	6	4
RTS	7	8
CTS	8	7
NC	9	NC

1. NC = not connected

Step 1 Attach a 3-pair swapping null modem adapter to the EIA/TIA-232 port on the CAP.

Step 2 Connect a serial cable to the null modem adapter, and to the serial port on your PC or workstation.

Step 3 Complete one of the following:

- If you are using a PC, configure the terminal emulation software (HyperTerminal):
  - Terminal emulation = **vt100**
  - Bits per second = **9600**
  - Parity = **None**
  - Stop BITS = **1**
  - Flow control = **None**
- If you are using a UNIX workstation, connect from X Windows or the terminal using the tip command:

  tip -9600 /dev/ttyb

Note You might need to use **ttya** instead of **ttyb**, depending on where serial cable is connected.

Step 4 Press **Enter**. A > prompt appears.

Step 5 You are ready to log into TL1. Follow the steps in the "Log Into TL1" section on page 7.

4 Log Into TL1

Once you have connected to TL1, you must log into TL1 in order to issue commands. Logging into TL1 only has to be done once per session.

Step 1 Issue the ACT-USER command:

Input Format:

ACT-USER:[<TID>]:<UID>:<CTAG>[::<PID>];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- UID is your user ID. UID can be up to 10 characters.
- CTAG is any non-blank character series that does not have to be unique.

- PID is your password. PID can be up to 10 characters. PIDs are encrypted and are displayed as asterisks (*).

Input Example:

ACT-USER:PETALUMA:DXT:100::MYPASSWD;

Step 2 Confirm you receive a COMPLD response to indicate the command was completed successfully.

Response Example:

TID-000 1998-06-20 14:30:00
M 001 COMPLD
DXT:2003-01-02 14-04-49,0;

5 Command Actions and Categories

When you have connected and logged into a TL1 session, you are ready to begin issuing TL1 commands and autonomous messages. TL1 commands and autonomous messages can be used to accomplish a variety of actions. Determining the correct command or autonomous message you need begins with identifying what action you want to perform. The first part of every command and autonomous message helps identify the action that command or autonomous message performs as shown in Table 2.

Table 2 TL1 Command and Autonomous Message Actions

Commands or Autonomous Messages That Begin With	Generally Do This	Command Example
ACT-	Activate	ACT-USER
ALW-	Allow	ALW-MSG-ALL
APPLY	Apply	APPLY
CANC (autonomous message)	Report	CANC (reports a cancelled session)
CANC-	Cancel	CANC-USER
CHG-	Change	CHG-ACCMD-<MOD_TACC>
CLR-	Clear	CLR-COND-SECU
CONN-	Connect	CONN-TACC-<MOD_TACC>
COPY-	Copy	COPY-IOSCFG
DISC-	Disconnect	DISC-TACC
DLT-	Delete	DLT-MSSPR
ED-	Edit/Change	ED-BITS
ENT-	Enter/Create	ENT-MSSPR

Table 2 TL1 Command and Autonomous Message Actions (continued)

Commands or Autonomous Messages That Begin With	Generally Do This	Command Example
EX-	Exercise	EX-SW-<OCN_MSSPR>
INH-	Inhibit	INH-MSG-ALL
INIT-	Initialize	INIT-SYS
REPT (autonomous message)	Report	REPT ALM ENV
RLS-	Release	RLS-EXT-CONT
RMV-	Remove	RMV-<MOD2>
RST-	Restore	RST-<MOD2>
RTRV-	Retrieve	RTRV-COND-RING
SCHED-	Schedule	SCHED-PMREPT-<MOD2>
SET-	Set	SET-ATTR-ENV
SW-	Switch	SW-DX-EQPT
TST-	Test	TST-INSERRBITS-<MOD2>

To further determine which command or autonomous message you need, identify what category the action applies to the MS-SPRing and Cross Connections. In the *Cisco ONS SDH TL1 Command Guide*, commands and autonomous messages are categorized based on the area of the NE that they effect. For example, if you want to create, edit, or delete a cross-connection, you will find the available commands in the Cross Connections category.

Table 3 shows some examples of actions, categories, and commands that apply to the Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH. For a complete list of categories, commands and autonomous messages, refer to the, *Cisco ONS SDH TL1 Command Guide*.

Table 3 Some TL1 Category Examples

If You Want to	Look in this Category	Applicable Command or Autonomous Message
Create a 2-fiber or 4-fiber MS-SPRing	MS-SPRing	ENT-<MOD_RING>
Delete a cross-connection on a VC path	Cross Connections	DLT-CRS-<PATH>
Set the attributes of the air conditioner	Environment Alarms and Controls	SET-ATTR-CONT
Delete a card from the NE	Equipment	DLT-EQPT

Table 3 Some TL1 Category Examples (continued)

If You Want to	Look in this Category	Applicable Command or Autonomous Message
Lockout a user from the NE	Security	INH-USER-SECU
See the alarms on a BITS	Synchronization	REPT ALM BITS[1]
Change the date on the NE	System	ED-DAT
Disconnect a test access path/point	Troubleshooting and Test Access	DISC-TACC
Perform an SNCP protection switch on an VC path	Protection	OPR-PROTNSW-<PATH>
Release an SNCP protection switch on an VC path	Protection	RLS-PROTNSW-<PATH>

1. REPT ALM BITS is an autonomous message. Autonomous messages are either spontaneously triggered by the NE or scheduled by the NE user via other commands.

In the "Basic Commands" section on page 10, there are various commands listed in detail to help get you started on using the TL1 commands.

6 Basic Commands

This section lists the basic commands to help you get started. You must be connected and logged into aTL1 session. After you issue a command, confirm you receive a COMPLD response to indicate the command was completed successfully.

Note If you receive a DENY response, first check the syntax you entered for accuracy. If you entered the command correctly, refer to the *Cisco ONS 15454 SDH TL1 Command Guide* for more information about that particular command and its components.

- To perform an in-service optical card upgrade or downgrade on a system, see CHG-EQPT, page 11.
- To delete a card from the NE, see DLT-EQPT, page 12.
- To change configuration information on an E1 port, see DLT-EQPT, page 12.
- To enter the card type and attributes for a given slot on an NE, see ENT-EQPT, page 14.
- To initialize the specified card and its associated subsystem(s), seeINIT-SYS, page 15.

- To remove an equipment from the In Serv.ice state and place it into Maintenance, see RMV-EQPT, page 15.
- To provision an equipment into the In Service state from the Maintenance state, see RST-EQPT, page 16.
- To retrieve configuration information about an E1 port, see RTRV-STM4, page 16.
- To retrieve all alarms on a specific E1 port, see RTRV-ALM-STM4, page 19.
- To retrieve all conditions on a specific E1 port, see RTRV-COND-STM4, page 21.
- To retrieve all alarms on a system, see RTRV-ALM-ALL, page 22.
- To retrieve all conditions on a system, see RTRV-COND-ALL, page 24.
- To retrieve all data, state, and shelf parameters on an associated equipment unit, see RTRV-EQPT, page 25.
- To retrieve all general attributes on a system, see RTRV-NE-GEN, page 27.Cisco ONS SDH TL1 for Beginners, Releases 9.2.1 and 9.2.2
- To retrieve actual PM values on an E1 port, see RTRV-PM-STM4, page 29.
- To retrieve the thresholds in place for an E1 port, see RTRV-TH-STM4, page 31.
- To create a loopback, see OPR-LPBK-STM4, page 32.
- To release a loopback, see RLS-LPBK-STM4, page 35.

Note When you are finished using TL1 remember to log out. Follow the steps in the "Log Out of TL1" section on page 33 to log out.

For complete TL1 documentation, refer to the *Cisco ONS SDH TL1 Command Guide* and the *Cisco ONS SDH TL1 Reference Guide*. For a command quick reference guide, refer to the *Cisco ONS SDH TL1 Command Quick Reference Guide*.

CHG-EQPT

Use the Change Equipment (CHG-EQPT) command to perform an in-service optical card upgrade or downgrade.

Input Format:

CHG-EQPT:[<TID>]:<AID>:<CTAG>::<NEW_EQPT_TYPE>:[PPMTYPE=PPMTYPE],[PPMNUM=<PPMNUM>],[PORTNUM=<PORTNUM>],[PORTRATE=<PORTRATE>];

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Input Example:

CHG-EQPT::SLOT-14:1::MRC-2.5G-12:PPMTYPE=PPM-1,PPMNUM=1,PORTNUM=1,PORTRATE=STM16;

DLT-EQPT

Use the Delete Equipment (DLT-EQPT) command to delete a card from the NE. This command removes the card type and attributes that were entered for a particular slot. If any facilities are assigned, they are also deleted.

The DLT-EQPT command also deletes a shelf that is no longer used.

Note A shelf can only be deleted if there is no equipment present or if the equipment and its attributes are not in use and can be deleted as well. Only one REPT DBCHG on SHELF-{1-8} will be reported in the latter case. The node controller shelf (the shelf whose shelf ID is 1) cannot be deleted.

Input Format:

DLT-EQPT:[<TID>]:<AID>:<CTAG>[:::];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.

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Input Example:

DLT-EQPT:SONOMA:SLOT-1:104;

ED-STM4

Use the Edit STM4 (ED-STM4) command to change configuration information on an STM4 port. ED-STM4 is from the Ports category.

Input Format:

ED-STM4:[<TID>]:<AID>:<CTAG>:::[DCC=<DCC>],[AREA=<AREA>],
[SYNCMSG=<SYNCMSG>],[SENDDUS=<SENDDUS>],[PJMON=<PJMON>],[SFBER=<SFBER>],
[SDBER=<SDBER>],[MODE=<MODE>],[SOAK=<SOAK>],[OSPF=<OSPF>],[MSDCC=<MSDCC>],
[NAME=<NAME>],[CMDMDE=<CMDMDE>],[EXPTRC=<EXPTRC>],[TRC=<TRC>],
[TRCMODE=<TRCMODEe>],[TRCFORMAT=<TRCFORMAT>],[ADMSSM=<ADMSSM>],
[SENDDUSFF=<SENDDUSFF>],[AISONLPBK=<AISONLPBK>],
[FOREIGNFEND=<FOREIGNFEND>],[FOREIGNIP=<FOREIGNIPADDRESS>],[FREQ=<FREQ>],
[LOSSB=<LOSSB>],[OPRNOMINAL=<OPRNOMINAL>],[OSISDCC=<OSISDCC>],
[OSILDCC=<OSILDCC>],[OSIROUTER=<OSIROUTER>]:[<PST>[,<SST>]];

Note OSI related parameters are not supported in this release

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.
- TACC is the TAP number in the range of 0, 1–999. When TACC is 0 (zero), the TAP is deleted.
- TAPTYPE is the test access point type. Values are DUAL or SINGLE.
- SFBER identifies port SFBER; valid values are 1E-3, 1E-4 or 1E-5.
- SDBER identifies port SDBER; valid values are 1E-5, 1E-6,...1E-9.
- SOAK - Locked-AutomaticInService to Unlocked transition soak time as measured in 15 minute intervals, so a value of 4 translates to a soak time of 1 hour. The allowable range is 0–192 intervals (maximum of 48 hours).
- NAME defaults to NULL. Maximum length is 32 characters.
- CMDMDE is the command mode. Values are FRCD or NORM. Defaults to NORM.
- SYNCMSG indicates if synchronization status messaging is enabled or disabled on the E1 facility.
- SENDDUS indicates that the facility will send the DUS (Don't use for Synchronization) value as the synchronization status message for that facility.
- RETIME indicates if retiming is needed.
- ADMSSM is the administration synchronization status message.
- SABIT is the value of SABITS for the facility.
- PST is primary state. Values are Unlocked or Locked.
- SST is secondary state. Values are MT or AINS.

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Input Example:

ED-STM4:PENNGROVE:FAC-4-3:114:::DCC=Y,AREA=10.92.63.1,SYNCMSG=N,SENDDUS=N,
PJMON=48,SFBER=1E-4,SDBER=1E-6,MODE=SINGLESHELF,MUX=E2,SOAK=10,OSPF=Y,
MSDCC=N,NAME="STMPORT",CMDMDE=NORM,EXPTRC="AAA",TRC="AAA",
TRCMODE=MAN,TRCFORMAT=16-BYTE,ADMSSM=G811,SENDDUSFF=N,
AISONLPBK=ALL,FREQ=1550,FOREIGNFEND=N,FOREIGNIP="IPADDRESS":UNLOCKED,
AUTOMATICINSERVICE;

ENT-EQPT

Use the Enter Equipment (ENT-EQPT) command to automatically enter all facilities supported by the card and assign default values to all the facility and path attributes. The ENT-EQPT command is used to preprovision an NE configured in mutlishelf mode.

Input Format:

ENT-EQPT[:<TID>]:<AID>:<CTAG>::<AIDTYPE>[:PROTID=<PROTID>],[PRTYPE=<PRTYPE>],[
RVRTV=<RVRTV>],[RVTM=<RVTM>],[CARDMODE=<CARDMODE>],[PEERID=<PROTID>],[R
EGENNAME=<REGENNAME>],[CMDMDE=<CMDMDE>],[TRANSMODE=<TRANSMODE>],[
RETIME=<RETIME>],[SHELFROLE=<SHELFROLE>],[FRPROLE=<FRPROLE>],[FRPSTATE=<FR
PSTATE>],[FRPHOLDOFFTIME=<FRPHOLDOFFTIME>],[CFMSTATE=<CFMSTATE>],[CCTIME
R=<CCTIMER>],[SWITCHWITHCRCALARM=<SWITCHWITHCRCALARM>],[CRCTHR=<CRC
THR>],[CRCPOLLINTRVL=<CRCPOLLINTRVL>],[CRCSOAKCNT=<CRCSOAKCNT>][:];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.
- AIDTYPE is an access identifier.
- PROTID is the protection group name. PROTID is a string.
- PRTTYPE is the protection type.
- RVRTV is the retrieve mode.
- RVTM is the retrieve time.
- CMDMDE is the card mode.
- PEERID indicates the peer trunk facility of the regeneration group on the OTU2-XP card. Accessed using the CHAN AID.
- REGENNAME indicates the name of a regeneration group. Applicable only to DWDM flavored cards, which support regeneration group. REGENNAME is a string. The default value is "NULL".

- RETIME indicates the RETIME function for all the facilities on this card. Applies only to the DS1/E1-56 card. The parameter type is ON_OFF (disable or enable an attribute).
- FRPROLE indicates the fast ring protection enable mode for GE-XP and 10GE-XP cards units involved in a protection scheme.
- FRPSTATE indicates the fast ring protection enable state.

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Input Example:

ENT-EQPT::SLOT-16:48::STM4;

INIT-SYS

Use the Initialize System (INIT-SYS) command to initialize the specified card and its associated subsystem(s).

Input Format:

INIT-SYS:[<TID>]:<AID>:<CTAG>::<PH>[,<CMDMDE=CMDMDE>];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.
- CMDMDE is the card mode.

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Input Example:

INIT-SYS:HOTWATER:SLOT-8:201::1,CMDMDE=FRCD;

RMV-EQPT

Use the Remove Equipment (RMV-EQPT) command to remove equipment from the In-Service state and place it into the Maintenance state.

Input Format:

RMV-EQPT:[<TID>]:<AID>:<CTAG>[::];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.

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Input Example:

RMV-EQPT:CISCO:SLOT-1:1;

RST-EQPT

Use the Restore Equipment (RST-EQPT) command to provision equipment into the In-Service state from the Maintenance state.

Input Format:

RST-EQPT:[<TID>]:<AID>:<CTAG>[::];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-block character series that does not have to be unique.

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Input Example:

RST-EQPT:CISCO:SLOT-1:1;

RTRV-STM4

Use the Retrive STM4 (RTRV-STM4) command to retrieve configuration information on an STM4 port. RTRV-STM4 is from the Ports category.

Input Format:

RTRV-STM4:[<TID>]:<AID>:<CTAG>[::::];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.

- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.

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Input Example:

RTRV-STM4:TID:FAC-1-1:1234;

Response Format:

SID DATE TIME
M CTAG COMPLD

"<AID>:,,[<ROLE>],[<STATUS>]:[RSDCC=<RSDCC>],[AREA=<AREA>],[TMGREF=<TMGREF>],
[SYNCMSG=<SYNCMSG>],[SENDDUS=<SENDDUS>],[PJMON=<PJMON>],[SFBER=<SFBER>],
[SDBER=<SDBER>],[WVLEN=<WVLEN>],[UNIC=<UNIC>],[CCID=<CCID>],[SOAK=<SOAK>],
[SOAKLEFT=<SOAKLEFT>],[SSMRCV=<SSMRCV>],[OSPF=<OSPF>],[MSDCC=<MSDCC>],
[NAME=<NAME>],[LBCL=<LBCL>],[OPT=<OPT>],[OPR=<OPR>],[EXPTRC=<EXPTRC>],
[TRC=<TRC>],[TRCMODE=<TRCMODE>],[TRCFORMAT=<TRCFORMAT>],[ADMSSM=<AD
MSSM>], [SENDDUSFF=<SENDDUSFF>],[AISONLPBK=<AISONLPBK>],[FREQ=<FREQ>],
[LOSSB=<LOSSB>],[FOREIGNFEND=<FOREIGNFEND>],
[FOREIGNIPADDRESS=<FOREIGNIPADDRESS>],<PSTPSTQ>,[<SSTQ>]"
;

- AID is the access identifier to indicate slot and port.
- ROLE is the STM port role.
- STATUS indicates the status.
- RSDCC indicates whether or not the regenerator section DCC (RS-DCC) is to be used.
- AREA is the area ID. Shows up only if the DCC is enabled.
- TMGREF is the termination to be used, whether primary or secondary. Identifies if an STM port has a timing reference. Defaults to N.
- SYNCMSG is the synchronization status message.
- SENDDUS, the facility will send the Do Not Use for Synchronization (DUS) value in 0x0f bit pattern as the synchronization status message for that facility. Defaults to N.
- PJMON identifies an STM port PJMON. Defaults to 0.
- SFBER is the STM port signal failure threshold. Defaults to 1E-4.

- SDBER is the STM port signal degrade threshold. Defaults 1E-7.
- MODE is the STM port mode.
- WVLEN is STM port wavelength, expressed in nanometers.
- RINGID is the MS-SPRing RINGID with which the port is connected.
- MSSPRTYPE is the MS-SPRing type with which the port is connected.
- MUX is the MS-SPRing extension byte.
- SOAK is Locked-AutomaticInService to Unlocked transition soak time as measured in 15-minute intervals.
- SOAKLEFT is the time remaining for the transition from Locked-AutomaticInService to Unlocked measured in one minute intervals.
- SSMRCV displays the quality of the individual port.
- OSPF is the Open Shortest Path First discovery.
- MS-DCC is the line DCC connection on the port.
- NAME is the port name.
- LBCL displays the current value of the laser current.
- OPT displays the current value of the transmitted optical power.
- OPR is the received optical power.
- EXPTRC is the expected path trace content.
- TRC the path trace message to be transmitted. TRC is a string.
- TRCMODE path trace mode. Applicable only to VC-level Paths in SDH (VCn). Defaults to the OFF mode. The parameter type is TRCMODE (trace mode).
- TRCFORMAT is the trace message size. The parameter type is TRCFORMAT, which is the trace format.
- ADMSSM is the SSM selectable value. Only displayed when SSM is disabled. The parameter type is SYNC_CLOCK_REF_QUALITY_LEVEL, which is the clock source quality level for SDH.
- SENDDUSFF indicates that the facility will send the DUS value in 0xff bits pattern as the synchronization status message for that facility. Defaults to N. The parameter type is ON_OFF (disable or enable an attribute).
- AISONLPBK is the parameter type is AIS_ON_LPBK, which indicates if AIS should be sent on loopback.
- FREQ is the parameter type is OPTICAL_WLEN, which is the optical wavelength.
- LOSSB is the parameter type is REACH, which is the reach value.
- FOREIGNFEND indicates whether the far-end NE on the DCC is a foreign NE. The parameter type is ON_OFF (disable or enabled an attribute).

- FOREIGNIP is the IP address of the far-end NE on the DCC. Used only if FOREIGNFEND is Y. OREIGNIP is a string.
- PSTPSTQ is the administrative state in the PST_PSTQ format. The parameter type is PST_PSTQ, which is the service state of the entity described by the PST and PSTQ.
- SSTQ is the secondary state of the entity. The parameter type is SST, which provides additional information pertaining to PST and PSTQ.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Response Example:

TID-000 1998-06-20 14:30:00
M 001 COMPLD
"FAC-6-1:,,WORK,ACT:RSDCC=Y,AREA=10.92.63.1,TMGREF=N,SYNCMSG=N,SENDDUS=N,
PJMON=48,SFBER=1E-4,SDBER=1E-6,MODE=SINGLESHELF,WVLEN=1310.00,RINGID=43,
MSSPRTYPE=WESTWORK,MUX=E2,UNIC=Y,CCID=8,NBRIX=2,SOAK=52,
SOAKLEFT=12-25,SSMRCV=STU_SDH,OSPF=Y,MSDCC=Y,NAME=\"STM PORT\",
LBCL=10.0,OPT=10.0,OPR=10.0, EXPTRC="AAA",TRC="AAA",TRCMODE=MAN,
TRCFORMAT=16-BYTE,ADMSSM=G811, SENDDUSFF=N,
AISONLPBK=AIS_ON_LPBK_ALL,FREQ=1550,LOSSB=LR-1,FOREIGNFEND=Y,
FOREIGNIPADDRESS=10.92.63.44,UNLOCKED-DISABLED,AUTOMATICINSERVICE";

M 18 COMPLD

"STM4-3-2-1:,,,:DCC=N,TMGREF=N,SYNCMSG=Y,SENDDUS=N,PJMON=0,SFBER=1E-4,
SDBER=1E-6,MODE=SDH,UNIC=N,SOAK=32,SSMRCV=STU,MSDCC=N,LBCL=15.616,
OPT=-11.884,OPR=-12.628,TRCMODE=OFF,TRCFORMAT=16-BYTE,SENDDUSFF=N,
AISONLPBK=ALL,FREQ=1310,LOSSB=S1,OSISDCC=N,OSILDCC=N,:unlocked-enabled,"

RTRV-ALM-STM4

Use the Retrieve Alarm STM4 (RTRV-ALM-STM4) command to retrieve all alarms on a specific STM4 port. The RTRV-ALM-STM4 command is listed as RTRV-ALM-<MOD2ALM> in the

Cisco ONS SDH TL1 Command Guide. STM4 is just one of the options you can enter. RTRV-ALM-STM4 is from the Fault category.

Input Format:

RTRV-ALM-<MOD2ALM>:[<TID>]:<AID>:<CTAG>::[<NTFCNCDE>],[<CONDTYPE>],
[<SRVEFF>][<LOCN>],[<DIRN>];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.

- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.
- NTFCNCDE is the 2-letter notification code. Values are CL (cleared), CR (critical), MJ (major), MN (minor), NA (not alarmed), and NR (not reported).
- CONDTYPE is the alarm condition.
- SRVEFF is the effect on service caused by the alarm condition. Values are NSA (not service affecting) or SA (service affecting).
- LOCN is the location.
- DIRN is the direction of the port. It could be either Farend or Nearend.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Input Example:

RTRV-ALM-STM4:ELDRIDGE:FAC-5-1:225::MN,SD,SA;

Response Format:

SID DATE TIME
M CTAG COMPLD
"<AID>,[<AIDTYPE>]:<NTFCNCDE>,<CONDTYPE>,<SRVEFF>,[<OCRDAT>],[<OCRTM>],
[<LOCN>],[<DIRN>]:[<DESC>]"
;

- AID shows the port in question.
- AIDTYPE shows the type of the port.
- NTFCNCDE is the 2-letter notification code. Values are CL (cleared), CR (critical), MJ (major), MN (minor), NA (not alarmed), and NR (not reported).
- CONDTYPE is the type of alarm condition.
- SRVEFF is the effect on service caused by the alarm condition. Values are NSA (not service affecting) or SA (service affecting).
- OCRDAT is the date when the specific even or violation occurred.
- OCRTM is the time when the specific even or violation occurred.
- LOCN is the location associated with a particular command.
- DIRECTION is the PM count retrieval direction.
- DESC is a condition description.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, and Cisco ONS 15454 M6

Response Example:

```
   TID-000 1998-06-20 14:30:00
M  001 COMPLD
   "FAC-5-1,STM4:MJ,SD,SA,09-05,12-30-20,,:\"BER AT SIGNAL DEGRADE LEVEL\",";
```

RTRV-COND-STM4

Use the Retrieve Condition STM4 (RTRV-COND-STM4) command to retrieve all conditions on a specific STM4 port. The RTRV-COND-STM4 command is listed as RTRV-COND-<MOD2ALM> in the *Cisco ONS SDH TL1 Command Guide*. STM4 is just one of the options you can enter. RTRV-COND-STM4 is from the Fault category.

Input Format:

RTRV-COND-<MOD2ALM>:[<TID>]:<AID>:<CTAG>::[<TYPEREQ>],[<LOCN>],[<DIRN>];

- TID is the name of the node you want to access. If you only want to query the node you connected to leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.
- TYPEREQ is the type of condition to be retrieved. A null value is equivalent to ALL.
- LOCN is the location associated with a particular command.
- DIRECTION is the PM count retrieval direction.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Input Example:

RTRV-COND-STM4:TID:FAC-2-1:229::LOS;

Response Format:

```
   SID DATE TIME
M    CTAG COMPLD
```

"<AID>,[<AIDTYPE>]:[<NTFCNCDE>],<TYPEREP>,[<SRVEFF>],[<OCRDAT>],[<OCRTM>],<LOCN>,<DIRECTION>,[<DESC>]";

- AID shows the port in question.
- AIDTYPE shows the type of the port.
- NTFCNCDE is the 2-letter notification code. Values are CL (cleared), CR (critical), MJ (major), MN (minor), NA (not alarmed), and NR (not reported).

- TYPEREP is the condition itself.
- SRVEFF is the effect on service caused by the alarm condition. Values are NSA (not service affecting) or SA (service affecting).
- OCRDAT is a date and is optional.
- OCRTM is a time and is optional.
- LOCN is the location associated with a particular command.
- DIRECTION is the PM count retrieval direction.
- DESC is a condition description.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Response Example:

```
   TID-000 1998-06-20 14:30:00
M  001 COMPLD
   “STM4-3-2-1,STM4:MN,LOS,SA,10-25,03-07-26,NEND,RCV,\"Loss Of Signal\"”
;
```

RTRV-ALM-ALL

Use the RTRV-ALM-ALL command to retrieve all of the alarms on the system. RTRV-ALM-ALL is from the Fault category.

Input Format:

RTRV-ALM-ALL:[<TID>]:[<AID>]:<CTAG>::[<NTFCNCDE>],[<CONDITION>],[<SRVEFF>],[<LOCN>],[<DIRN>],[,];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID is the access identifier.
- CTAG is any non-blank character series that does not have to be unique.
- NTFCNCDE is the 2-letter notification code. Values are CL (cleared), CR (critical), MJ (major), MN (minor), NA (not alarmed), and NR (not reported).
- CONDITION is the type of alarm condition.
- SRVEFF is the effect on service caused by the alarm condition. Values are NSA (not service affecting) or SA (service affecting).
- LOCN is the associated with a particular command. Identifies the location from which the PM mode is to be retrieved. The parameter type is LOCATION, which is the location where the action is to take place.

- DIRN is the PM count retrieval direction. The parameter type is DIRECTION, which is the transmit and receive directions.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Input Example:

RTRV-ALM-ALL:COTATI:ALL:229::MN,PWRRESTART,NSA,NEND,RCV;

Response Format:

SID DATE TIME
M CTAG COMPLD
"[<AID>],[<AIDTYPE>]:<NTFCNCDE>,<CONDTYPE>,<SRVEFF>,<OCRDAT>,
<OCRTM>,,:[<DESC>],[<AIDDET>]";

- AID shows the port in question.
- AIDTYPE shows the type of the port.
- NTFCNCDE is the 2-letter notification code. Values are CL (cleared) CR (critical), MJ (major), MN (minor), NA (not alarmed), and NR (not reported).
- CONDTYPE is the type of alarm condition.
- SRVEFF is the effect on service caused by the alarm condition. Values are NSA (not service affecting) or SA (service affecting).
- OCRDAT is a date and is optional.
- OCRTM is a time and is optional.
- DESC is a condition description.
- AIDDET is the supplementary equipment identification.

CCisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Response Example:

TID-000 1998-06-20 14:30:00
M 001 COMPLD
"SLOT-2,EQPT:MN,PWRRESTART,NSA,08-01,14-25-59,,:\"POWER FAIL
RESTART\",E1-N-14";

RTRV-COND-ALL

Use the Retrieve Condition All (RTRV-COND-ALL) command to retrieve all of the conditions on the system. RTRV-COND-ALL is from the Fault category.

Input Format:

RTRV-COND-ALL:[<TID>]:[<AID>]:<CTAG>::[<TYPEREQ>],[<LOCN>],[<DIRN>];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID is the access identifier.
- CTAG is any non-blank character series that does not have to be unique.
- TYPEREQ is the type of condition to be retrieved. A null value is equivalent to ALL.
- LOCN indicates the location.
- DIRECTION is the direction of PM relative to the entity identified by the AID.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Input Example:

RTRV-COND-ALL:TID::229::LOS;

Response Format:

SID DATE TIME
M CTAG COMPLD
"<AID>,[<AIDTYPE>]:[<NTFCNCDE>],<TYPEREP>,[<SRVEFF>],[<OCRDAT>],[<OCRTM>],
[<LOCN>],[<DIRN>],[<DESC>]";

- AID shows the port in question.
- AIDTYPE shows the type of the port.
- NTFCNCDE is the 2-letter notification code. Values are CL (cleared), CR (critical), MJ (major), MN (minor), NA (not alarmed), and NR (not reported).
- TYPEREP is the condition itself.
- SRVEFF is the effect on service caused by the alarm condition. Values are NSA (not service affecting) or SA (service affecting).
- OCRDAT is a date and is optional.
- OCRTM is a time and is optional.
- LOCN indicates the location.

- DIRECTION is the direction of PM relative to the entity identified by the AID.
- DESC is a condition description.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Response Example:

```
   TID-000 1998-06-20 14:30:00
M   001 COMPLD
   “FAC-2-1,STM1:CR,LOS,SA,01-01,16-02-15,,,\“LOS OF SIGNAL\””
;
```

RTRV-EQPT

Use the Retrieve Equipment (RTRV-EQPT) command to retrieve the data, state, and shelf parameters associated with an equipment unit.

Input Format:

RTRV-EQPT:[<TID>]:<AID>:<CTAG>[::::];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Input Example:

RTRV-EQPT:MIRABEL:SLOT-12:230;

Response Format:

```
   SID DATE TIME
M  CTAG COMPLD
```

“<AID>:<AIDTYPE>,<EQUIP>,[<ROLE>],[<STATUS>]:[<PROTID>],[<PRTYPE>],[<RVRTV>],[<RVTM>],[<CARDNAME>],[<IOSCFG>],[<CARDMODE>],[<PEERID>],[<REGENNAME>],[<PEERNAME>],[<TRANSMODE>],[<RETIME>],[<SHELFROLE>],[<FRPROLE>],[<FRPSTATE>],[<FRP

HOLDOFFTIME>],[<ADMINCVLAN>],[<ADMINSVLAN>],[<CFMSTATE>],[<CCTIMER>],>],[<SWITCHWITHCRCALARM>],[<CRCTHR>],[<CRCPOLLINTRVL>],[<CRCSOAKCOUNT>]:<PST>,[<SST>]";

- AID shows the port in question.
- AIDTYPE shows the type of the port.
- EQUIP indicates if the equipment is physically present.
- ROLE Identifies the port role in a Y-cable protection scheme. The parameter type is SIDE, which is the role the unit is playing in the protection group.
- STATUS indicates a status. SDH card status is shown on its card level.
- PROTID indicates the protection group name. PROTID is a string.
- PRTYPE identifies the protection group type values.
- RVTM indicates the 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).
- CARDNAME the manufacturing name of the card when it is different from the EQUIPMENT_TYPE.
- IOSCFG displays the information about startup IOS config file for the ML series card.
- CARDMODE indicates card mode. card mode is applicable to cards that have multiple capabilities, for example, the ML-Series card can operate in two distinct modes: Linear Mapper mode and L2/L3 mode.
- PEERID indicates the peer trunk facility of the regeneration group on the OTU2-XP card.
- REGENNAME indicates the name of a regeneration group. Applicable only to DWDM flavored cards, which support regeneration group.
- PEERNAME is the name of the peer group.
- TRANSMODE indicates the transition mode.
- RETIME indicates the RETIME function for all the facilities on this card.
- SHELFROLE is the role of the shelf in the context of the node.
- FRPROLE indicates the fast ring protection enable mode for GE-XP/10GE-XP units involved in a protection scheme.
- FRPSTATE indicates the fast ring protection enable state.
- FRPHOLDOFFTIME indicates the hold off timer value. The protection do not start until the hold off expire.
- ADMINCVLAN is a Customer VLAN identifier for REP.
- ADMINSVLAN is a Service provider VLAN identifier for REP.
- CFMSTATE shows the link integrity status.

- CCTIMER is a continuity check message timer.
- PSTPSTQ is the administrative state in the PST_PSTQ format.
- SSTQ is the secondary state of the entity.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Response Example:

```
   TID-000 1998-06-20 14:30:00
M   001 COMPLD

“SLOT-12:E1-42,EQUIP,,ACT:PROTID=SLOT-13,PRTYPE=1-1,RVRTV=Y,RVTM=8.5,CARDNAM
E=DESCRIPTION,IOSCFG=“IOS CONFIG INFO FOR ML SERIES
CARD”,CARDMODE=DWDM-LINE,PEERID=SLOT-1,REGENNAME=“THIS
GROUP”,TRANSMODE=SDH,RETIME=Y,SHELFROLE=NC:UNLOCKED-DISABLED,AUTOMA
TICINSERVICE&UEQ”
;
```

RTRV-NE-GEN

Use the Retrieve Network Element General (RTRV-NE-GEN) command to retrieve the general NE attributes.

Input Format:

RTRV-NE-GEN:[<TID>]::<CTAG>;

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Input Example:

RTRV-NE-GEN:CISCO::123;

Response Format:

```
   SID DATE TIME
M  CTAG COMPLD
“[IPADDR=<IPADDR>],[IPMASK=<IPMASK>],[DEFRTR=<DEFRTR>],>],
```

[IPV6ADDR=<IPV6ADDR>],[IPV6PREFLEN=<IPV6PREFLEN>],
[IPV6DEFRTR=<IPV6DEFRTR>],[IPV6ENABLE=<IPV6ENABLE>],[IIOPPORT=<IIOPPORT>],
[NTP=<NTP>],[ETHIPADDR=<ETHIPADDR>],[ETHIPMASK=<ETHIPMASK>],
[NAME=<NAME>],[SWVER=<SWVER>],[LOAD=<LOAD>],[PROTSWVER=<PROTSWVER>],
[PROTLOAD=<PROTLOAD>],[DEFDESC=<DEFDESC>],[PLATFORM=<PLATFORM>],
[SECUMODE=<SECUMODE>],[SUPPRESSIP=<SUPPRESSIP>]"
;

- IPADDR is the node IP address. IPADDR is a string.
- IPMASK is the node IP mask. IPMASK is a string.
- DEFRTR is the node default router. DEFRTR is a string.
- IIOPPORT is the node IIOP port. IIPOOPRT is an integer.
- IPV6 is the IPv6 address
- NTP is the node Network Timing Protocol (NTP) timing source address. NTP is a string.
- NAME is the facility name. NAME is a string.
- SWVER is the software version. SWVER is a string.
- LOAD is the load. LOAD is a string.
- PROTSWVER is the protect software version. PROTSWVER is a string.
- PROTLOAD is the protect load. PROTLOAD is a string.
- DEFDESC provides a default description for the NE. DEFDESC is a string.
- PLATFORM is the platform. PLATFORM is a string.
- SECUMODE is the security mode of the NE. The parameter type is NE_SECURE_MODE, which is the security mode of the NE.
- SUPPRESSIP, the parameter type is YES_NO, which is whether the user's password is about to expire, the user is logged into the NE, or the user is locked out of the NE.
- PROXYSRV indicates if the proxy server is enabled or disabled.
- FIREWALL indicates if the firewall is enabled or disabled.
- AUTOPM is a flag to indicate if autonomous PM reporting to TL1 clients is enabled or disabled.
- SERIALPORTECHO indicates if the echo is turned on for TL1 serial port sessions.

CCisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Response Example:

TID-000 1998-06-20 14:30:00

M 001 COMPLD

IPADDR=192.168.100.52,IPMASK=255.255.255.0,DEFRTR=192.168.100.1,
IPV6ADDR="[3ffe:0501:0008:0000:0260:97ff:fe40:efab]",IPV6PREFLEN=64,IPV6DEFRTR="[3ffe:0501:0008:0000:0260:97ff:fe40:e000]",IPV6ENABLE=NOIIOPPORT=57970,NTP=192.168.100.52,NAME="NODENAME",SWVER=2.01.03,LOAD=02.13-E09A-08.15,PROTSWVER=2.01.02,

PROTLOAD=02.12-E09A-09.25,DEFDESC=\"NE DEFAULTS FEATURE\",PLATFORM=15454-ANSI,SECUMODE=NORMAL,SUPPRESSIP=YES,PROXYSRV=N,FIREWALL=N,AUTOPM=NO,SERIALPORTECHO=Y,OSIROUTINGMODE=ES,OSIL1BUFSIZE=512,OSIL2BUFSIZE=512";

RTRV-PM-STM4

Use the Retrieve Performance Monitoring STM4 (RTRV-PM-STM4) command to retrieve actual performance monitoring values on an STM4 port. The RTRV-PM-STM4 command is listed as RTRV-PM-<MOD2> in the *Cisco ONS SDH TL1 Command Guide*. STM4 is just one of the options you can enter. RTRV-PM-STM4 is from the Performance category.

Input Format:

RTRV-PM-<MOD2>:[<TID>]:<AID>:<CTAG>::[<MONTYPE>],[<MONLEV>],[<lSTM>],[<DIRECTION>],[<TMPER>],[<DATE>],[<TIME>];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.
- MONTYPE is a monitored type. A null value is equivalent to ALL.
- MONLEV specifies the discriminating level for the requested monitored parameter. MONLEV is in the format of LEVEL-DIRN where LEVEL is the measured value of the monitored parameter (MONVAL) and DIRN is the type of DIRN. A null value defaults to 1-UP which means it only shows values 1 and higher.
- lSTM is the location associated with a particular command in reference to the entity identified by the AID. Values are FEND and NEND. A null value defaults to NEND.
- DIRECTION is the direction of PM relative to the entity identified by the AID. DIRN defaults to ALL which means that the command retrieves all the registers irrespective of the PM direction. Values are BTH (both), RCV (receive), and TRMT (transmit).
- TMPER is the accumulation time period for the PM information. A null value defaults to 15-MIN.
- DATE is the beginning date of the PM or storage register period specified in TMPER. DATE is MM-DD where MM (month of year) ranges from 1 to 12 and DD (day of month) ranges from 1 to 31. A null value defaults to the current date.

- TIME is the beginning time of day of the PM or storage register period specified in TMPER. TIME is HH-MM where HH (hour of day) ranges from 0 to 23 and MM (minute of hour) ranges from 0 to 59. A null value defaults to the current time (HH-MM).

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Input Example:

RTRV-PM-STM4:TID:FAC-2-1:123::CVL,10-UP,NEND,RCV,15-MIN,04-11,12-45;

Response Format:

SID DATE TIME
M CTAG COMPLD
"<AID>,[<AIDTYPE>]:<MONTYPE>,<MONVAL>,[<VLDTY>],[<lSTM>],
[<DIRECTION>],[<TMPER>],[<MONDAT>],[<MONTM>]"
;

- AID shows the port in question.
- AIDTYPE shows the type of the port.
- MONTYPE shows the threshold type.
- MONVAL shows the value.
- VLDTY indicates if a full and complete PM value was returned.
- lSTM is the location associated with a particular command.
- DIRECTION is the direction.
- TMPER is the accumulation time period.
- MONDAT is the date.
- MONTM is the time.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Response Example:

TID-000 1998-06-20 14:30:00
M 001 COMPLD
"FAC-2-1,STM4-N-14:CVL,21,COMPL,NEND,RCV,15-MIN,04-11,12-45";

RTRV-TH-STM4

Use the Retrieve Threshold STM4 (RTRV-TH-STM4) command to retrieve the thresholds in place for an STM4 port. The RTRV-TH-STM4 command is listed as RTRV-TH-<MOD2> in the *Cisco ONS SDH TL1 Command Guide*. STM4 is just one of the options you can enter. RTRV-TH-STM4 is from the Performance category.

Input Format:

RTRV-TH-<MOD2>:[<TID>]:<AID>:<CTAG>::[<MONTYPE>],[<lSTM>],<TMPER>[::];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.
- MONTYPE is a monitored type. A null value is equivalent to ALL.
- lSTM is the location associated with a particular command.
- TMPER indicates the accumulation time period. A null value defaults to 15-MIN.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Input Example:

RTRV-TH-STM4:CISCO:FAC-1-3:1234::CVL,NEND,15-MIN;

Response Format:

```
   SID DATE TIME
M  CTAG COMPLD
   "<AID>,[<AIDTYPE>]:<MONTYPE>,[<lSTM>],,<THLEV>,[<TMPER>]"
;
```

- AID is the access identifier ALL.
- AIDTYPE specifies the type of AID.
- MONTYPE indicates the monitored type.
- lSTM is the location associated with a particular command.
- THLEV is the threshold value.
- TMPER is the accumulation time period for the PM information.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Response Example:

TID-0001998-06-20 14:30:00
M 001 COMPLD
"FAC-1-3,STM4:CVL,NEND,,1,15-MIN"
;

OPR-LPBK-STM4

Use the Operate Link (OPR-LPBK-STM4) command to establish a loopback. The OPR-LPBK-STM4 command is listed as OPR-LPBK-<MOD2> in the *Cisco ONS SDH TL1 Command Guide*. STM4 is just one of the options you can enter. OPR-LPBK-E1 is from the Troubleshooting and Test Access category.

Input Format:

OPR-LPBK-STM4:PTREYES:FAC-4-1:203::NEND,,,FACILITY;

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- AID indicates slot and port.
- CTAG is any non-blank character series that does not have to be unique.
- LOCATION is the location where the operation is to be carried out.
- LPBKTYPE is a loopback type and is optional. LPBKTYPE can be CRS, FACILITY, TERMINAL, LINE, PAYLOAD, or FE-CMD-ESF-PAYLOAD.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Input Example:

OPR-LPBK-STM4:PTREYES:STM4-4-1-2-13:203::NEND,,,FACILITY;

RLS-LPBK-STM4

Use the Release Loopback (RLS-LPBK-STM4) command to release a loopback. The RLS-LPBK-STM4 command is listed as RLS-LPBK-<MOD2> in the *Cisco ONS SDH TL1 Command Guide*. STM4 is just one of the options you can enter. RLS-LPBK-STM4 is from the Troubleshooting and Test Access category.

Input Format:

RLS-LPBK-<MOD2>:[<TID>]:<SRC>:<CTAG>::[<LOCATION>],,,[<LPBKTYPE>];

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.

- SRC is an access identifier ALL.
- CTAG is any non-blank character series that does not have to be unique.
- LOCATION is where the operation is to be carried out.
- LPBKTYPE is a loopback type and is optional. LPBKTYPE can be FACILITY or TERMINAL.

Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6, and Cisco ONS 15600 SDH

Input Example:

RLS-LPBK-STM4:PTREYES:FAC-4-1-3:203::NEND,,,FACILITY;

7 Log Out of TL1

When you have finished using TL1, you must log out of the session. Logging out of TL1 only has to be done once per session.

Step 1 If you logged into TL1 via Cisco Transport Controller (CTC), you must log out by pressing the **Disconnect** button or by issuing the CANC-USER command as shown in the following steps.

If you logged into TL1 via Telnet or craft interface, you must log out by issuing the CANC-USER command.

Input Format:

CANC-USER:[<TID>]:<USERID>:<CTAG>;

- TID is the name of the node you want to access. If you only want to query the node you connected to, leave the TID blank.
- USERID is the user ID. Maximum 10 alphanumeric characters.
- CTAG is any non-blank character series that does not have to be unique.

Input Example:

CANC-USER:PETALUMA:DXT:100;

Step 2 Confirm you receive a COMPLD response to indicate the command was completed successfully.

Response Example:

TID001 03-07-22 02:45:12

8 Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation,* which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

9 Cisco ONS Documentation Roadmap for Releases 9.2.1 and 9.2.2

To quickly access publications of Cisco ONS Releases 9.2.1 and 9.2.2, see the Cisco ONS Documentation Roadmap for Releases 9.2.1 and 9.2.2.

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