About TL1 Commands

This chapter describes some reference information about using the TL1 commands supported by the Cisco ONS 15216 EDFA3.

Note TL1 commands that are not entered correctly will not be completed. Each TL1 command terminates with a semicolon (;).

This chapter contains the following information:

6.1 TL1 Command Rules

The following rules apply to all TL1 commands:

- All TL1 commands end with a semicolon (;).
- When you type a TL1 command, the command will return one of two responses:
  - `COMPLD` (The command was completed.)
  - `DENY` (Something was wrong with the command, and it was denied.)
- Ethernet TL1 sessions are available from TCP/IP port 3082 (for raw TL1 with no echo)
- Telnet TL1 sessions are available from TCP/IP port 3083

A list of TL1 errors is contained in the "8.7.1 TL1 Error Format" section on page 8-67.

6.2 Parameter Persistence

The ONS 15216 EDFA3 can save all configurable parameters and the alarm log files in a persistent area (EEPROM or Configuration File in FFS).

The ONS 15216 EDFA3 recovers with all configurable parameters set at values before the event occurrence in the following cases:

- Power failure
- Reset
- Software download

Configurable parameters will be reset to manufacturer's default values only in the following cases:

- When a reset equipment command (STA-LOCL-RST) has been issued by the administrative user
- When the configuration file has been deleted by the administrative user
- When the configuration file has been corrupted. In this case an alarm/trap DATAFLT is emitted to signal the abnormal condition. The alarm is cleared as soon as a correct file has been loaded.

Note A checksum test on the downloaded configuration file is performed to prevent to load wrong or corrupted files from being loaded on the ONS 15216 EDFA3.

The user can restore the configurable parameters even if saved in another ONS 15216 EDFA3.

The configuration file is composed of two sections. The first one (the header) shows the file type, description, software name, node name, and IP address parameters in a readable format, as reported in the following example:

```
FileType=CISCO ONS 15216 EDFA3 Database File
Description=CISCO ONS 15216
ActiveSoftwareName=ONS 15216Edfa3_01.00.00_003L_12.23
Node Name=Monza
IP-Address=10.51.100.95
```

Note that the active software name and IP address contained in the configuration file header might be different from the ones present in the node, if the configuration file has been created in one ONS 15216 EDFA3and then exported to another ONS 15216 EDFA3. These parameters must be updated with the information contained in the second ONS 15216 EDFA3 after the first unit reset. The node name in the header file is aligned with the name parameter contained in the second file section.

The second file section provides the configuration parameters and the information related to the accounts and passwords for TL1 and Simple Network Management Protocol (SNMP) Interfaces in an encrypted format. The configuration parameters are listed below:

- CTRLMODE
- GAINSP
- PWROFFSET
- LINE1TXPWRSP
- LINE1TXPWRTHFL
- LINE1RXPWRTHFL
- LINE2RXPWRTHFL
- TILTSP

- TILTOFFSET
- OSRI
- PWRBUSMODE
- NAME
- LONGITUDE
- LATITUDE
- DESCR
- PWRBUSMIN
- PWRBUSMAX
- MAXCTMP
- MINCTMP

When the configuration file is being backed up or restored, the ONS 15216 EDFA3 prevents any management operation that might change the current setting. In order to prevent this, the ONS 15216 EDFA3 generates an alarm (BACKUPREST) to signal that the backup/restore operation is in progress. When this happens, the ONS 15216 EDFA will complete the following:

1. Refuse any operations that change the configuration.
2. Perform the backup/restore.
3. Clear the BACKUPREST alarm and enable the configuration change.

6.3 Parameter Saving

When the user performs a setting operation using the TL1 or the SNMP interface, the parameters are automatically saved in persistent memory without requiring a further command.

6.4 Alarm Correlation

Typically, only the alarms that correspond to faults at the root level are relevant for system management. The alarm correlation processes try to eliminate all the alarms that are symptomatic effects of the fault root alarm.

An alarm filtering method is implemented in the ONS 15216 EDFA3. When one alarm at the root level causes a symptomatic effect on other alarms, only the root alarm will be notified.

To describe the rules implemented in the ONS 15216 EDFA3, we use a table like the one shown in Table 6-1. In Table 6-1, Alarm N (root), if present, masks Alarm M (symptomatic).

Table 6-1 Alarm Correlation Example

	Alarm 1	Alarm M
Alarm 1		
Alarm N		X

Table 6-2 shows the ONS 15216 EDFA3 alarm correlation information. Using Table 6-2, you can see the masking rules. Where an "x" is present, the alarms listed in the rows will mask the alarms listed in the columns. Where a "–" is present, the combination is invalid (for example, the L1TMP alarm cannot mask itself, so a dash is placed in that cell.

Table 6-2 ONS 15216 EDFA3 Alarm Correlation Table

	L1TMP	L2TMP	L1BIASD	L2BIASD	L1BIASF	L2BIASF	LINE1RXPWRFL	LINE2RXPWRFL	LINE1TXPWRFL	LINE1TXPWRDL	LINE1TXPWRDH	FTMP	CTMP	VOADL	VOADH	VOAFH	GAINDL	GAINDH	EQPT	COMFAIL	PWRBUSA	PWRBUSB	MEMLOW	FFSFULL	DATAFLT	SFTWDOWN	BACKUPREST
L1TMP	–																										
L2TMP		–																									
L1BIASD			–																								
L2BIASD				–																							
L1BIASF					–																						
L2BIASF						–																					
LINE1RXPWRFL				x		x	–	x	x							x	x	x									
LINE2RXPWRFL				x		x		–	x							x	x	x									
LINE1TXPWRFL									–							x	x	x									
LINE1TXPWRDL										–																	
LINE1TXPWRDH											–																
FTMP												–															
CTMP													–														
VOADL														–			–										
VOADH															–												
VOAFH																–											
GAINDL																	–										
GAINDH																		–									
EQPT	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	–	x								
COMFAIL																				–							
PWRBUSA																					–						
PWRBUSB																						–					
MEMLOW																							–				
FFSFULL																								–			
DATAFLT																									–		
SFTDOWN																										–	
BACKUPREST																											–

6.5 TL1 Help

After logging in, a TL1 command list can be displayed by typing a question mark, as shown in the following example.

Example 6-1 Displaying TL1 Commands

```
> ?
ACT-USER
ALW-MSG-ALL
APPLY
CANC-USER
COPY-RFILE
CPY-MEM
DLT-RFILE
DLT-USER-SECU
ED-DAT
---Type ? to continue or CTRL-Q to quit---
```

The number of commands displayed in the window depends on the size of the window.

To display the syntax of a command, type that command followed by a question mark. For example, typing `ACT-USER?` returns:

```
> ACT-USER?
ACT-USER:[<TID>]:<uid>:<ctag>::<pid>;
>
```

6.6 Explanation of TL1 Command Parameters

TL1 messages are grouped into autonomous and nonautonomous types.

Autonomous messages are generated as a result of activity on the network elements. This activity includes:

- Alarms
- Thresholds
- Alerts
- Status information

No request is required in order to receive autonomous messages.

Nonautonomous messages consist of a request command from the user and a response from the ONS 15216 EDFA3. Autonomous messages and nonautonomous commands use a common set of parameters. Some of the most common parameters are defined in the following sections.

6.6.1 Source Identifier (sid) and Target Identifier (tid) for TL1

The source identifier (sid) or target identifier (tid) parameters uniquely identify an ONS 15216 EDFA3. Each sid/tid can be up to twenty ASCII characters in length, limited to digits, letters, and hyphens. The tid can remain null (represented by two successive colons [::]).

6.6.2 TL1 Command Code Modifier (ccm)

The command code modifier (ccm) identifies the object of the action being applied by the verb of the TL1 command.

Some command code modifiers for the ONS 15216 EDFA3 are described in the Table 6-3.

Table 6-3 Command Code Modifiers

ccm	Description
DWDM	Optical parameters
EQPT	General parameters of the ONS 15216 EDFA3
INV	Inventory parameters
NE-GEN	IP communications parameters

6.6.3 Access Identifier (aid)

The access identifier (aid) parameter uniquely identifies a specific object within the ONS 15216 EDFA3. For the ONS 15216 EDFA3, there are four specific access identifiers. In addition, there is one nonspecific identifier.

- 1
- PWR-A
- PWR-B
- EQPT
- <IP address>

As well, there is an additional ALL aid, described in the Table 6-4.

All autonomous messages identify their specific aid in the message. For all command inputs that require an aid as a mandatory parameter, the ALL aid is accepted along with any relevant specific aids. If the ALL aid is used in a command, the response contains the appropriate specific aid. For the commands RTRV-ALM-EQPT and RTRV-COND-EQPT, inputting a specific aid filters the response to information relevant to that aid.

Table 6-4 Access Identifiers

aid	Description
1	Directly affecting the optical signal.
PWR-A	Affecting Power Bus A (or both A and B).
PWR-B	Affecting Power Bus B.

Table 6-4 Access Identifiers (continued)

aid	Description
EQPT	General parameters of the ONS 15216 EDFA3 (not directly affecting optical signal or power bus).
ALL	Any or all of the preceding (command input only).
<IP address>	Addresses a specific row of an SNMP Trap Destination Table.

6.6.4 TL1 Correlation Tag (ctag)

The correlation tag (ctag) is a unique user-specified tag associated with a command. If the user specifies a ctag while entering a command, the response of that command from the ONS 15216 EDFA3 TL1 agent carries the same ctag value. The ctag consists of no more than six alphanumeric characters. For example, the ctag in the following example is 123, which will be returned in any response to this command to correlate the command to the response.

```
ALW-MSG-ALL:TID:ALL:123::MJ,PWRBUSA,;
```

6.6.5 Automatic Tag (atag)

An automatic tag (atag) is a numeric transaction identifier in the range 0 through 999999. The value of the atag is automatically generated by a TL1 agent and is used as a sequence number for automated messages. When the atag value reaches 999999, the value wraps back to 0. The initial atag value is 0.

6.6.6 Notification Code (ntfcncode)

A notification code (ntfcncode) specifies the type of notification to be generated by the ONS 15216 EDFA3 on the occurrence of an event described by the condition. Notification codes are described in Table 6-5.

Table 6-5 Notification Code Descriptions

Notification Code Value	Description
CL	Cleared alarm—Indicates an alarm that is no longer present.
CR	Critical alarm—Indicates a severe, service-affecting alarm that needs immediate correction.
MJ	Major alarm—Serious alarm, but the failure has less impact on the network than a critical notification.
MN	Minor alarm—No serious affect on service.
NA	Not alarmed—Used to indicate a not alarmed object.
NR	Not reported—This is an alarm retained in the NE. It is recorded internally but is not reported when an event occurs.

6.6.7 Condition Effect (condeff)

A condition effect (condeff) indicates the effect of an event on the condition of the NE. Table 6-6 shows the possible condeff values used by the ONS 15216 EDFA3.

Table 6-6 Condition Effect Descriptions

Condition Effect Value	Description
CL	Standing condition cleared
SC	Standing condition raised
TC	Transient condition

6.6.8 Service Effect (serveff)

A service effect (serveff) indicates the effect of a reported alarm on the operation of the equipment.

Table 6-7 reports the possible values used by the ONS 15216 EDFA3.

Table 6-7 Service Effect Descriptions

Service Effect Value	Description
NSA	Non service affecting condition
SA	Service affecting condition

A service affecting (SA) failure affects a provided service or affects the network's ability to provide a service.

6.6.9 Private Identifier (pid)

A private identifier (pid) is the user password. It must be a string of up to 10 characters, where at least two are nonalphabetic characters and at least one is a special character. Special characters are +, #, %. The minimum length is six, except for the default password which is a null string.

The following security rules are implemented:

- The password identifier (pid) must not be the same as or contain the userid (uid). For example, if the userid is CISCO15, the password cannot be CISCO15#.
- There is no password identifier (pid) toggling. This means that if the current password is CISCO15#, the new password cannot be CISCO15#.
- The password is case sensitive.

6.6.10 User Identifier (uid)

The user identifier (uid) is a string consisting of any combination of up to ten alphanumeric characters. The minimum length of a uid is six.

6.6.11 User Access Privilege (uap)

The user access privilege (uap) is one of three levels of user access privileges:

- R: Read only privileges
- RW: Read and write privileges
- RWA: Read, write, and administrative privileges

6.6.12 Alarm Code (almcode)

An alarm code (almcode) indicates the severity of an automatic message. Table 10 reports the possible values.

Table 6-8 Alarm Code Descriptions

Alarm Code	Description
*C	Critical alarm
**	Major alarm
*^	Minor alarm
A^	Automatic message or no alarm

6.6.13 Date

The date parameter indicates the date of the event. The syntax is yyyy-mm-dd.

6.6.14 Time

The time parameter indicates the time of the event. The syntax is hh-mm-ss.

6.6.15 Occurrence Date (ocrdat)

An occurrence date (ocrdat) indicates the date (month-day) of an event occurrence. The format for ocrdat is MOY-DOM, where:

- MOY represents month of year and has a range of 1 to 12.
- DOM represents day of month and has a range of 1 to 31.

6.6.16 Occurrence Time (ocrtm)

An occurrence time (ocrtm) indicates the time (hour-minute-second) of an event occurrence. The format for ocrtm is HOD-MOH-SOM, where:

- HOD represents hour of day and has a range of 0 to 23.
- MOH represents minute of hour and has a range of 0 to 59.

- SOM represents second of minute and has a range of 0 to 59.

6.7 TL1 Notation Symbols

The commands described in this document use the symbols shown in the following table to describe the command format. These symbols are derived from the Telcordia Network Maintenance: Network Element and Transport Surveillance Messages Manual (Generic Requirements, GR-833-CORE).

Table 6-9 TL1 Notation Symbols

Symbol	Meaning	Description
[ ]	Optional expression	Square brackets indicate that the parameters are optional. An optional parameter means that if a user inputs an empty field for an optional parameter, then a default value (or a default action) will be substituted automatically in the transmitted input field. The default value, or null value, is defined in the parameter descriptions of the messages.
< >	Variable expression	Angle brackets enclose one or more variable items in the command line (for example, <date>, <time>, <aid>).
+	More than one time	A plus sign indicates that the preceding symbol or group of symbols (enclosed in parentheses) can occur one or more times.
text	Indent of three spaces	An indented line indicates an entry of three spaces in the command line.

6.8 Summary of TL1 Autonomous Alarms and Messages

Table 6-10 summarizes the ONS 15216 EDFA3 autonomous alarms.

For every alarm, the following fields are provided:

- Condition type (condtype)
- Condition descriptor (conddescr)
- Access identifier (aid)
- Notification code (ntfcncde)
- Service effect (sereff)

See the tables in the "6.6 Explanation of TL1 Command Parameters" section on page 6-5 for descriptions of the column values in Table 6-10.

Table 6-10 TL1 Autonomous Alarms

TL1 Autonomous Message	Condition Type (condtype)	Condition Descriptor (conddescr)	Access Identifier (aid)	Notification Code (ntfcncde)	Service Effect (sereff)
REPT ALM EQPT	PWRBUSA	Power Bus A Alarm	PWR-A	MN	NSA
REPT ALM EQPT	PWRBUSB	Power Bus B Alarm	PWR-B	MN	NSA

Table 6-10 TL1 Autonomous Alarms (continued)

TL1 Autonomous Message	Condition Type (condtype)	Condition Descriptor (conddescr)	Access Identifier (aid)	Notification Code (ntfcncde)	Service Effect (sereff)
REPT ALM EQPT	MEMLOW	Free Memory on System Very Low	EQPT	MN	NSA
REPT ALM EQPT	FFSSLOW	Flash File System Capacity Very Low	EQPT	MN	NSA
REPT ALM EQPT	DATAFLT	Data Integrity Fault	EQPT	MJ	SA
REPT ALM EQPT	BACKUPREST	BackUp/Restore ConfFile In Progress	EQPT	MN	NSA
REPT ALM EQPT	SFTWDOWN	Software Download In Progress	EQPT	MN	NSA
REPT ALM EQPT	EQPT	Equipment Failure	EQPT	CR	SA
REPT ALM EQPT	COMFAIL	Module Communication Failure	EQPT	MN	NSA
REPT ALM EQPT	CTMP	Case Temperature Out Of Range	EQPT	MN	NSA
REPT ALM EQPT	FTMP	Fiber Temperature Out Of Range	EQPT	MN	NSA
REPT ALM EQPT	L1TMP	Excessive Pump 1 Temperature	EQPT	MN	NSA
REPT ALM EQPT	L1BIASD	Laser 1 Bias Degrade	EQPT	MN	NSA
REPT ALM EQPT	L1BIASF	Laser 1 Bias Fail	EQPT	MJ	NSA
REPT ALM EQPT	L2TMP	Excessive Pump 2 Temperature	EQPT	MN	NSA
REPT ALM EQPT	L2BIASD	Laser 2 Bias Degrade	EQPT	MN	NSA
REPT ALM EQPT	L2BIASF	Laser 2 Bias Fail	EQPT	MJ	NSA
REPT ALM DWDM	LINE1RXPWRFL	Power Fail Low LINE1RX Port	1	CR	SA
REPT ALM DWDM	GAINDH	Gain Degrade High	1	MN	NSA
REPT ALM DWDM	GAINDL	Gain Degrade Low	1	MN	NSA
REPT ALM DWDM	LINE1TXPWRFL	Power Fail Low LINE1TX Port	1	CR	SA
REPT ALM DWDM	LINE1TXPWRDH	Power Degrade High LINE1TX Port	1	MN	NSA
REPT ALM DWDM	LINE1TXPWRDL	Power Degrade Low LINE1TX Port	1	MN	NSA
REPT ALM DWDM	LINE2RXPWRFL	Power Fail Low LINE2RX Port	1	CR	SA
REPT ALM DWDM	VOADH	VOA Degrade High	1	MN	NSA
REPT ALM DWDM	VOADL	VOA Degrade Low	1	MN	NSA
REPT ALM DWDM	VOAFH	VOA Fail High	1	CR	SA

6.8.1 Equipment Failure Alarms

The unit will generate the EQPT (Equipment Failure) alarm in either of the following cases:

- Retrieving or setting problem related to the setpoints, thresholds, and values.
- An unrecoverable communication problem between the unit and a plug-in interface.

The Unit software generates a Communication Failure alarm in the case of a communication problem between the unit and the plug-in interface. The unit software implements the following behavior:

1. The software tries to recover the communication, sending the command to module.

2. If the command answers fail, the Communication Failure alarm is raised, which resets the plug-in module.
3. If the reset command fails, the Hardware Failure alarm is generated.
4. In case of a Hardware Failure, every TL1/SNMP command relating to the module setting/retrieval, is refused.

The Fiber Temperature Fail High (FTMP) alarm is generated in the case of degrade high or low. The FTMP alarm is mapped on an EQPT alarm.

6.8.2 Other Alarms

The following additional alarms are possible:

- The L1TMP alarm is provided in case of degrade high or low of laser 1.
- The L2TMP alarm is provided in case of degrade high or low of laser 2.
- The L1BIASD alarm is provided in case of Laser Bias degrade high or low of laser 1.
- The L2BIASD alarm is provided in case of Laser Bias degrade high or low of laser 2.
- The L1BIASF is provided in case of Laser Bias Fail of laser 1.
- The L2BIASF is provided in case of Laser BIas Fail of laser 2.
- The CTMP alarm is generated in the case of degrade high or low.
- The GAINDH and GAINDL alarms are sent to the EM only if the EDFA3 control mode is set to Gain Control. If the user changes the EDFA3 control mode to Output Power Control, the alarms are cleared and resent (only if active) after subsequent changes to the EDFA3 control mode.

Note The LINE1TXPWRDH and LINE1TXPWRDL alarms have a similar behavior. They will be generated only if the EDFA3 control mode is set to Power Control.

- The Unit software generates a Communication Failure alarm if a communication problem exists between the unit and the plug-in interface.
- The MEMLOW alarm is generated if the memory usage reaches 90 percent of its capacity. The clear alarm is generated when the problem condition disappears.
- The FFSFULL alarm is generated if the flash file system (FFS) memory usage reach the 90 percent of its capacity.
- The clear alarm is generated when the problem condition disappear.

In the case of a communication failure, the unit software implements the following behavior:

1. The unit attempts to recover the communication, sending the command to the module.
2. If the command fails, the Communication Failure alarm is raised.
3. The module resets.
4. If the reset command fails, the Hardware Failure alarm is generated.
5. If the Hardware Failure alarm is generated, all TL1/SNMP commands related to the module setting/retrieval will be refused.

6.8.3 Autonomous Events

Table 6-11 summarizes the ONS 15216 EDFA3 autonomous events. In the Condition Effect column, TC indicates that this is a transient condition.

Table 6-11 TL1 Autonomous Events

TL1 Autonomous Message	Condition Type (condtype)	Condition Descriptor (conddescr)	Access Identifier (aid)	Condition Effect (condeff)
REPT EVT DWDM	CTRLMODE	Control Mode Changed	1	TC
REPT EVT DWDM	GAINCHGD	Gain Setpoint Changed	1	TC
REPT EVT DWDM	GAINTHDLCHGD	Gain Degrade Low Threshold Changed	1	TC
REPT EVT DWDM	GAINTHDHCHGD	Gain Degrade High Threshold Changed	1	TC
REPT EVT DWDM	OPOFFSET	Output Power Offset Changed	1	TC
REPT EVT DWDM	LINE1TXPWRCHGD	Power Setpoint Changed LINE1TX Port	1	TC
REPT EVT DWDM	LINE1TXPWRTHDLCHGD	Power Degrade Low Threshold Changed LINE1TX Port	1	TC
REPT EVT DWDM	LINE1TXPWRTHDHCHGD	Power Degrade High Threshold Changed LINE1TX Port	1	TC
REPT EVT DWDM	LINE1TXPWRTHFLCHGD	Power Fail Low Threshold Changed LINE1TX Port	1	TC
REPT EVT DWDM	LINE1RXPWRTHFLCHGD	Power Fail Low Threshold Changed LINE1RX Port	1	TC
REPT EVT DWDM	LINE2RXPWRTHFLCHGD	Power Fail Low Threshold Changed LINE2RX Port	1	TC
REPT EVT DWDM	TILTCHGD	Tilt Setpoint Changed	1	TC
REPT EVT DWDM	TILTOFFSETCHGD	Tilt Offset Changed	1	TC
REPT EVT DWDM	LASERCHGD	Laser Status Changed	1	TC
REPT EVT DWDM	OSRICHGD	OSRI Changed	1	TC
REPT EVT EQPT	CUTOVERRESET	Reset After Cutover	EQPT	TC
REPT EVT EQPT	SOFTWARERESET	Software Reset	EQPT	TC
REPT EVT EQPT	PWRBUSMODE	Power Bus Mode Changed	PWR-A/ PWR-B	TC
REPT EVT EQPT	SEVERITYCHGD	Severity Changed	EQPT	TC
REPT EVT EQPT	PWRBUSMAXCHGD	Power Bus Max (voltage) Changed	PWR-A/ PWR-B	TC
REPT EVT EQPT	PWRBUSMINCHGD	Power Bus Min (voltage) Changed	PWR-A/ PWR-B	TC
REPT EVT EQPT	MAXCTMPCHGD	Max Case Temperature Changed	EQPT	TC
REPT EVT EQPT	MINCTMPCHGD	Min Case Temperature Changed	EQPT	TC

6.8.4 File Transfer Events

Table 6-12 summarizes the ONS 15216 EDFA3 file transfer events.

Table 6-12 TL1 Autonomous File Transfer Events

Autonomous TL1 Message	File Transfer Status (fxfr_status)	File Transfer Result (fxfr_rslt)	Access Identifier (aid)
REPT EVT FXFR	START	—	EQPT
REPT EVT FXFR	COMPLD	—	EQPT
		SUCCESS	EQPT
		FAILURE	EQPT

Table 6-13 summarizes the ONS 15216 EDFA3 clear alarms.

Table 6-13 TL1 Autonomous Clear Alarms

TL1 Autonomous Message	Condition Type (condtype)	Condition Descriptor (conddescr)	Access Identifier (aid)	Notification Code (ntfcncde)	Service Effect (srveff)
REPT ALM DWDM	LOS	Loss Of Signal (input power)	1	CL	SA
REPT ALM DWDM	GAIN	Gain Out Of Range	1	CL	SA
REPT ALM DWDM	LPOUT	Loss Of Output Power	1	CL	SA
REPT ALM EQPT	CTMP	Case Temperature Out of Range	EQPT	CL	NSA
REPT ALM EQPT	LCRNT1	Excessive Pump1 Current	EQPT	CL	NSA
REPT ALM EQPT	LCRNT2	Excessive Pump2 Current	EQPT	CL	NSA
REPT ALM EQPT	LTMP1	Excessive Pump1 Temperature	EQPT	CL	NSA
REPT ALM EQPT	LTMP2	Excessive Pump2 Temperature	EQPT	CL	NSA

6.9 Summary of TL1 Command Security Permissions

Table 6-14 summarizes the security permissions (access levels) for each available TL1 command and autonomous message.

Table 6-14 Security Permissions for TL1 Commands

Command or Message	Description	User Access Levels		
		R	RW	RWA
ACT-USER	Activates user session (login). See 8.4.1 ACT-USER, page 8-6.	Yes	Yes	Yes
ALW-MSG-ALL	Allows automatic (REPT) messages. See 8.4.2 ALW-MSG-ALL, page 8-6.	Yes	Yes	Yes

Table 6-14 Security Permissions for TL1 Commands (continued)

Command or Message	Description	User Access Levels		
		R	RW	RWA
APPLY	Applies software cutover. See 8.4.3 APPLY, page 8-7.	No	No	Yes
CANC	Session is cancelled. See 8.5.1 CANC, page 8-54.	Yes	Yes	Yes
CANC-USER	Cancels user session (logoff). See 8.4.4 CANC-USER, page 8-8.	Yes	Yes	Yes
COPY-RFILE	Copies remote or local file to FFS. See 8.4.5 COPY-RFILE, page 8-9.	No	No	Yes
CPY-MEM	Copies log file from RAM to FFS. See 8.4.6 CPY-MEM, page 8-11.	No	Yes	Yes
DLT-RFILE	Deletes file from FFS. See 8.4.7 DLT-RFILE, page 8-12.	No	No	Yes
DLT-TRAPTABLE	Deletes a specific row or all rows in the traptable. See 8.4.8 DLT-TRAPTABLE, page 8-13.	No	No	Yes
DLT-USER-SECU	Deletes a user. See 8.4.9 DLT-USER-SECU, page 8-13.	No	No	Yes
ED-DAT	Edits date and time. See 8.4.10 ED-DAT, page 8-14.	No	Yes	Yes
ED-DWDM	Edits optical parameters. See 8.4.11 ED-DWDM, page 8-15.	No	Yes	Yes
ED-EQPT	Edits equipment parameters. See 8.4.12 ED-EQPT, page 8-16.	No	Yes	Yes
ED-NE-GEN	Edits general IP-related parameters. See 8.4.13 ED-NE-GEN, page 8-17.	No	Yes	Yes
ED-PID	Edits user password. See 8.4.14 ED-PID, page 8-18.	Yes (own UID)	Yes (own UID)	Yes (all UIDs)
ED-TRAPTABLE	Edit the Trap Table values. See 8.4.15 ED-TRAPTABLE, page 8-19.	No	No	Yes
ED-USER-SECU	Edits a user name and parameters. See 8.4.16 ED-USER-SECU, page 8-19.	No	No	Yes
ENT-TRAPTABLE	Add an entry in the SNMP Trap Destination Table. See 8.4.17 ENT-TRAPTABLE, page 8-20.	No	No	Yes
ENT-USER-SECU	Enters new user. See 8.4.18 ENT-USER-SECU, page 8-21.	No	No	Yes
INH-MSG-ALL	Inhibits some automatic messages. See 8.4.19 INH-MSG-ALL, page 8-22.	Yes	Yes	Yes
INIT-SYS	Initializes (reboots) system. See 8.4.20 INIT-SYS, page 8-23.	No	No	Yes
REPT ALM DWDM	Reports optical alarm activation/clearing. See 8.5.2 REPT ALM DWDM, page 8-55.	Yes	Yes	Yes

Table 6-14 Security Permissions for TL1 Commands (continued)

Command or Message	Description	User Access Levels		
		R	RW	RWA
REPT ALM EQPT	Reports general alarm activation/clearing. See 8.5.3 REPT ALM EQPT, page 8-56.	Yes	Yes	Yes
REPT EVT DWDM	Reports when a dense wavelength division multiplexing (DWDM) alarm is generated or cleared. See 8.5.4 REPT EVT DWDM, page 8-57.	Yes	Yes	Yes
REPT EVT EQPT	Reports changes related to equipment threshold settings. See 8.5.5 REPT EVT EQPT, page 8-57.	Yes	Yes	Yes
REPT EVT FXFR	Reports FTP file transfer. See 8.5.6 REPT EVT FXFR, page 8-58.	Yes	Yes	Yes
RTRV-ALM-ALL	Retrieves all current alarms. See 8.4.21 RTRV-ALM-ALL, page 8-24.	Yes	Yes	Yes
RTRV-ALM-DWDM	Retrieves current optical alarms. See 8.4.22 RTRV-ALM-DWDM, page 8-25.	Yes	Yes	Yes
RTRV-ALM-EQPT	Retrieves current general alarms. See 8.4.23 RTRV-ALM-EQPT, page 8-26.	Yes	Yes	Yes
RTRV-ATTR-ALL	Retrieves alarm severity. See 8.4.24 RTRV-ATTR-ALL, page 8-27.	Yes	Yes	Yes
RTRV-ATTR-DWDM	Retrieves the severity associated with an optical alarm. See 8.4.25 RTRV-ATTR-DWDM, page 8-28.	Yes	Yes	Yes
RTRV-ATTR-EQPT	Retrieves the severity associated with an equipment alarm. See 8.4.26 RTRV-ATTR-EQPT, page 8-30.	Yes	Yes	Yes
RTRV-AO	Retrieves most-recent autonomous output (REPT) messages. See 8.4.27 RTRV-AO, page 8-31.	Yes	Yes	Yes
RTRV-COND-ALL	Retrieves condition (state) of all current alarms. See 8.4.28 RTRV-COND-ALL, page 8-32.	Yes	Yes	Yes
RTRV-COND-DWDM	Retrieves condition (state) of current optical alarms. See 8.4.29 RTRV-COND-DWDM, page 8-33.	Yes	Yes	Yes
RTRV-COND-EQPT	Retrieves condition (state) of current general alarms. See 8.4.30 RTRV-COND-EQPT, page 8-34.	Yes	Yes	Yes
RTRV-DFLT-SECU	Retrieves timeouts for access levels. See 8.4.31 RTRV-DFLT-SECU, page 8-35.	No	No	Yes
RTRV-DWDM	Retrieves optical parameters. See 8.4.32 RTRV-DWDM, page 8-36.	Yes	Yes	Yes
RTRV-EQPT	Retrieves the Power Bus mode. See 8.4.33 RTRV-EQPT, page 8-37.	Yes	Yes	Yes
RTRV-HDR	Retrieves header (pings NE). See 8.4.34 RTRV-HDR, page 8-38.	Yes	Yes	Yes
RTRV-INV	Retrieves inventory parameters. See 8.4.35 RTRV-INV, page 8-39.	Yes	Yes	Yes
RTRV-NE-GEN	Retrieves general IP-related parameters. See 8.4.36 RTRV-NE-GEN, page 8-40.	Yes	Yes	Yes

Table 6-14 Security Permissions for TL1 Commands (continued)

Command or Message	Description	User Access Levels		
		R	RW	RWA
RTRV-RFILE	Retrieves files on FFS. See 8.4.37 RTRV-RFILE, page 8-42.	Yes	Yes	Yes
RTRV-STATUS	Retrieves the user logged on status. See 8.4.38 RTRV-STATUS, page 8-43.	Yes	Yes	Yes
RTRV-TH-DWDM	Retrieves optical thresholds. See 8.4.39 RTRV-TH-DWDM, page 8-43.	Yes	Yes	Yes
RTRV-TH-EQPT	Retrieves general thresholds. See 8.4.40 RTRV-TH-EQPT, page 8-45.	Yes	Yes	Yes
RTRV-TOD	Retrieves date and time. See 8.4.41 RTRV-TOD, page 8-46.	Yes	Yes	Yes
RTRV-TRAPTABLE	Provides information about the trap table. See 8.4.42 RTRV-TRAPTABLE, page 8-47.	Yes	Yes	Yes
RTRV-USER-SECU	Retrieves access level of user(s). See 8.4.43 RTRV-USER-SECU, page 8-48.	Yes (own UID)	Yes (own UID)	Yes (all UIDs)
SET-ATTR-DWDM	Permits changes to the severity associated with an optical alarm. See 8.4.44 SET-ATTR-DWDM, page 8-49.	No	Yes	Yes
SET-ATTR-EQPT	Permits changes to the severity associated with an equipment alarm. See 8.4.45 SET-ATTR-EQPT, page 8-50.	No	Yes	Yes
SET-ATTR-SECUDFLT	Sets timeout values for access levels. See 8.4.46 SET-ATTR-SECUDFLT, page 8-51.	No	No	Yes
SET-TH-DWDM	Sets optical thresholds. See 8.4.47 SET-TH-DWDM, page 8-52.	No	Yes	Yes
SET-TH-EQPT	Sets general threshold values. See 8.4.48 SET-TH-EQPT, page 8-53.	No	Yes	Yes
STA-LOCL-RST	Resets all parameters to manufacturer default values. See 8.4.49 STA-LOCL-RST, page 8-54.	No	No	Yes