



TL1 Command Components

This chapter describes the components of TL1 commands and autonomous messages for the Cisco ONS 15540 ESPx including:

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2.1 Generic Parameter Types

This section provides a description of generic parameter types defined for the TL1 messages used in the Cisco ONS 15540 ESPx.

2.1.1 CTAG

The user includes the correlation tag (CTAG) in each command and the NE repeats it in the response to allow the user to associate the command and the response messages.



Note

The valid values for a CTAG are strings of up to 6 characters comprised of identifiers (alphanumeric, beginning with a letter) or decimal numerals (a string of decimal digits with an optional non-trailing “.”).

2.1.2 TID

The TID (target identifier) is the name of the NE where the command is addressed. TID is the Telcordia name for the system.

2.2 Parameters Values and Defaults

This section lists the command parameters, the valid values, and the default values.

2.2.1 Parameter Values

Table 2-1 lists the commands parameters and the valid values.

Table 2-1 Command Components

Component	Values
ASSOCTYPE	PEER SERVER
CDP	N Y
CLKPERIOD	0 TO 4294967295 clock ticks (2^{-32} second)
CMDMODE	FRCD NORMAL
CONTYPE	ESS SEFS-S SESS CVRD CDLHEC
CTYPE	1WAY 2WAY
DSCRVY	CDP MANUAL
ENCAP	ESCON FC-1G FC-2G FDDI FE FICON GIGE OC3 OC12 OC48 STM1 STM4 STM16 SYSPLEX-CLO SYSPLEX-ETR SYSPLEX-ISC-COMP SYSPLEX-ISC-PEER TENGIGE UNKNOWN
ENSWOTM	1 to 120 seconds
ERRTYPE	CDLHEC CVRD CVS
FLC	N Y

Table 2-1 Command Components (continued)

Component	Values
FRCENDHOP	N Y
FROMDEV	BOOFLASH PCMCIA-0 PCMCIA-1 SBY-BOOTFLASH SBY-PCMCIA-0 SBY-PCMCIA-1
HELLOHLDWN	150 to 30000 milliseconds
HELLOINTV	100 to 10000 milliseconds
HOLDTIME	10 to 255 seconds
INACTFCTR	1 to 50
INDEX	1 to 64
LINKDIRN	BOTH RX TX
LPBKTYPE	FACILITY TERMINAL
LSC	N Y
MASTER	N Y
MAXASSOC	0 TO 4294967295 clock ticks(2^{-32} second)
MODE	FRCDD NORMAL
MSGCH	AUTO DCC IP OSC
MSGHOLDCOUNT	2 to 10 messages
MSGHOLDTM	100 to 10000 milliseconds
MSGMAXINTVTM	1 to 120 seconds
MSTRATUM	1 to 16
NTFCNCDE	CR MJ MN
OFC	N Y
PMSTATE	ON OFF
PSDIRN	BI UNI

Table 2-1 Command Components (continued)

Component	Values
RATE	16000 to 2500000 kHz
RVRTM	0 to 720 seconds
SENDVER	1 to 2
THRTYPE	ALMTHR DEGR EVTHR FAIL
TODEV	BOOFLASH PCMCIA-0 PCMCIA-1 SBY-BOOTFLASH SBY-PCMCIA-0 SBY-PCMCIA-1
TRGAPS	N Y
UAP	MAINT PROV RTRV SUPER
UPDATETIME	5 to 254 seconds
UPDCAL	N Y
VALUE	1 to 9
YCABLE	N Y

2.2.2 Default Parameter Values

This section describes the default values for the different categories of autonomous messages.

2.2.2.1 10-GE Interface Configuration

[Table 2-2](#) lists the default values for the autonomous messages in the 10-GE interface configuration category.

Table 2-2 10-GE Interface Configuration Default Values

Parameter	Default
FRCENDHOP	N
FLC	N

2.2.2.2 APS

Table 2-3 lists the default values for the autonomous messages in the APS category.

Table 2-3 APS Default Values

Parameter	Default
PSDIRN	UNI
RVRTV	N
RVRTM	300
YCABLE	N
ENSWOTM	N
MSGCH	AUTO
MSGHOLDTM	5000
MSGMAXINTVTM	15
MSGHOLDCOUNT	2

2.2.2.3 CDP

Table 2-4 lists the default values for the autonomous messages in the CDP category.

Table 2-4 CDP Default Values

Parameter	Default
CDP	Y
UPDATETIME	60

2.2.2.4 Memory Management

Table 2-5 lists the default values for the autonomous messages in the memory management category.

Table 2-5 Memory Management Default Values

Parameter	Default
CMDMODE	NORMAL

2.2.2.5 NTP

Table 2-6 lists the default values for the autonomous messages in the NTP category.

Table 2-6 NTP Default Values

Parameter	Default
MASTER	N
UPDCAL	N

2.2.2.6 OSCP

Table 2-7 lists the default values for the autonomous messages in the OSCP category.

Table 2-7 OSCP Default Values

Parameter	Default
HELLOINTV	100
HELLOHLDWN	3000
INTACTFCTR	5

2.2.2.7 Redundancy

Table 2-8 lists the default values for the autonomous messages in the redundancy category.

Table 2-8 Redundancy Default Values

Parameter	Default
RVRTV	Y
RVTM	5 minutes

2.2.2.8 Security

Table 2-9 lists the default values for the autonomous messages in the security category.

Table 2-9 Security Default Values

Parameter	Default
RVRTV	Y
RVTM	5 minutes
SRVRTV	Y
SRVTM	5 minutes

2.2.2.9 Threshold List Configuration

Table 2-10 lists the default values for the autonomous messages in the threshold list configuration category.

Table 2-10 Threshold List Configuration Default Values

Parameter	Default
TRGAPS	N
INDEX	Lowest available index

2.2.2.10 Topology Neighbor Configuration

[Table 2-11](#) lists the default values for the autonomous messages in the topology neighbor configuration category.

Table 2-11 Topology Neighbor Configuration Default Values

Parameter	Default
LINKDRN	BOTH

2.2.2.11 Transparent Interface Configuration

[Table 2-12](#) lists the default values for the autonomous messages in the transparent interface configuration category.

Table 2-12 Transparent and VOA Interface Configuration Default Values

Parameter	Default
CDP	Y
FLC	N
LASERFREQ	The lower laser frequency for the 2.5-Gbps transponder module
LSC	N
OFC	N

2.2.2.12 VOA Module Interface Configuration

[Table 2-13](#) lists the default values for the autonomous messages in the VOA module interface configuration category.

Table 2-13 Transparent and VOA Interface Configuration Default Values

Parameter	Default
ATTENMODE	AUTO
DESATTEN	-25 dBm
DESPower	-25 dBm

2.3 Access Identifiers

The AID code directs an input command to its intended physical or data entity inside the NE. Equipment modules and facilities are typical examples of entities addressed by the access code. [Table 2-14](#) lists the AIDs for the Cisco ONS 15540 ESPx.

Table 2-14 AIDs for the Cisco ONS 15540 ESPx

AID	Description
Slots	SLOT-[0-11] SLOT-[6-7] SLOT-[2-5, 8-11]-[0-3] SLOT-[0-1]-[0-3]
Interfaces	TRANSPARENT-[2-5, 8-11]-[0-3]-0 WAVE-[2-5, 8-11]-[0-3] WAVE-[0-1] WAVEETHERPHY-[2-5, 8-11]-[0-1] TENGIGETHERPHY-[2-5, 8-11]-[0-1] FILTER-[2-5,8-11]-[0-3]-0 FILTER-[2-5,8-11]-[0-3]-[0-1] FILTER-[0-1]-[0-3]-[0-3] FILTER-[0-1]-[0-3]-[0-7] FILTER-[0-1]-[0-3]-[0-15] FILTER-[0-1]-[0-3]-[0-31] FILTERBAND-[0-1]-[0,2]-[0-1] FILTERGROUP-[0-1]-[0,2]-[0-1] OSCFILTER-[0-5,8-11]-[0-3] THRU-[0-1]-[0-3] THRU-[2-5,8-11]-[0-3] WDM-[0-1]-[0-3] WDM-[2-5,8-11]-[0-3] WDMRELAY-[0-1]-[0-3]-[0-1] WDMSPLIT-[0-1]-[0-3]-[0-1] VOAIN-[2-5,8-11]-[0-3]-[0-3] VOAOUT-[2-5,8-11]-[0-3]-[0-3] ETHERDCC-[2-5,8-11]-[0-1]-[0-1] FE-0 FE-SBY-0 LOOPBACK-[0-255]
Memory	BOOTFLASH SBY-BOOTFLASH DISK-[0-1] SBY-DISK-[0-1] NVRAM SBY-NVRAM PCMCIA-[0-1] SBY-PCMCIA-[0-1] SYSTEM

2.4 Errors

Errors may be generated by any command or command response message. The format of an error message is as follows:


```

SID DATE TIME
M CTAG DENY
<ERRCDE>
/* <ERRMSG> */

```

Table 2-15 lists the error codes and messages.

Table 2-15 Error Codes and Messages

Error Code	Error Message
EANS	Access not supported
EATN	Invalid for access type
EFON	Feature option not provided
EN2T	Not 2-wire terminate and leave
ENAC	Not equipped with alarm cutoff
ENAD	Not equipped with audit capability
ENAR	Not equipped with automatic reconfiguration
ENAT	Request invalid for access type
ENDG	Not equipped with diagnostic capability
ENDS	Not equipped with duplex switching
ENEA	Not equipped with error analysis capability
ENEQ	Not equipped
ENEX	Not equipped with exercise capability
ENFE	Feature not provided
ENFL	Not equipped for fault locating
ENHN	Not hybrid network
ENMB	Not multipoint bridge
ENMD	Not equipped with memory device
ENPM	Not equipped for performance monitoring
ENPS	Not equipped with protection switching
ENRE	Not recognized equipage
ENRI	Not equipped for retrieving specified information
ENRS	Not equipped for restoration
ENSA	Not equipped for scheduling audit
ENSG	Not software generic
ENSI	Not equipped for setting specified information
ENSS	Not equipped with synchronization switching
ENTL	Not terminate and leave
ERLC	Red-lined circuit
ERNS	RTU does not support command
ESPG	Software program

Table 2-15 Error Codes and Messages (continued)

Error Code	Error Message
ETNS	TSC does not support command
FNCR	NE fail.-circuit restored to last cond.-mon-term ¹
FNDT	No dial tone detected
FNEC	NTE has lost 8-kHz byte clock
FNSC	NTE has lost 64-kHz bit clock
FRCE	RTU component or configuration error
FRDA	RTU does not answer the call
FREC	RTU 8-kHz byte clock lost
FRNR	RTU does not reply
IBEX	Block, extra
IBMS	Block, missing
IBNC	Block, not consistent
ICNV ²	Invalid command
IDMS	Data missing
IDNC	Data not consistent
IDNV	Data invalid
IDRG	Data range error
IEAE	Entity to be created already exists
IENE	Specified object entity does not exist
IAC	Invalid access identifier (AID)
IICM ³	Invalid command
IICT	Invalid correlation tag
IIDT	Invalid data parameter
IIFM	Invalid data format
IIPG	Invalid parameter grouping
IISP	Invalid syntax or punctuation
IITA	Invalid target identifier
INAC	Access number not correct
INUP	Non-null unimplemented parameter
IPEX	Parameter extra
IPMS	Parameter missing
IPNC	Parameter not consistent
IPNV	Parameter invalid
ISCH	Syntax invalid character
ISPC	Syntax punctuation
ITSN	Invalid/inactive test session number

Table 2-15 Error Codes and Messages (continued)

Error Code	Error Message
PICC	Illegal command code
PIMA	Invalid memory address
PIMF	Invalid memory file
PIUC	Stated user privilege code is illegal
PLNA	Login not active
RABY	All taps busy
RALB	All units of requested type are busy
RANB	Access network busy
RCBY	Circuit busy
RCIN	Requested circuit ID does not exist
RNAN	Requested NE access number does not exist
RNAU	Requested NE access number unassigned
RNBY	NE is busy
RRCB	Unit specified by routing code busy
RRNG	Requested change exceeds range
RTBY	Requested tap busy
RTEN	Requested tap does not exist
RTUB	Test unit busy
SAAL	Already allowed
SAAS	Already assigned
SABT	Aborted
SACS	Access unit cannot sync on facility signal
SADC	Already disconnected
SADS	Access unit in diagnostic state
SAIN	Already inhibited
SAIS	Already in-service
SAMS	Already in maintenance state
SAOP	Already operated
SAOS	Already out-of-service
SAPF	Access path continuity check failed
SAPR	Already in protection state
SARB	All resources busy
SATF	Automatic test failed
SCAT	Circuit is already connected to another tap
SCBS	Channel busy
SCIS	Circuit in split condition

Table 2-15 Error Codes and Messages (continued)

Error Code	Error Message
SCNA	Command not able to be aborted
SCNF	Command not found
SCNS	Circuit not in split condition
SCOS	Channel out-of-service
SCSD	Cannot split DS0B circuit
SCSN	Invalid command sequence
SDAS	Diagnosis already started
SDBE	Internal data base error
SDFA	Duplex unit failed
SDLD	Duplex unit locked
SDNA	Duplex unit not available
SDNC	Input data is not consistent with NE data
SDNR	Data not ready
SDNS	Diagnosis not started yet
SEOS	NTE is out-of-service
SFAS	Fault locating already started
SFNS	Fault locating not started yet
SFYA	Facility reports yellow alarm
SLNS	Log not started yet
SLOS	TSC to RTU link out-of-service
SNCC	Not cross-connected
SNCN	NTE unable to execute command
SNDS	NTE is in a diagnostic state
SNIM	NTE access complete, circuit was in monitor state
SNIS	Not in service
SNML	No monitor line established
SNNB	NTE could not sync on DS0B signal
SNNS	NTE could not sync on DS1 signal
SNOS	NTE is out-of-service
SNPR	Not in protection state
SNRM	System not in restoration mode
SNRS	Not reserved
SNSR	No switch request outstanding
SNVS	Not in valid state
SNYA	NTE has detected a yellow alarm
SOSE	Operating system error

Table 2-15 Error Codes and Messages (continued)

Error Code	Error Message
SOST	Out-of-service, testing
SPFA	Protection unit failed
SPLD	Protection unit locked
SPNA	Process not able to be aborted
SPNF	Process not found
SRAC	Requested access configuration is invalid
SRAN	Unable to release access system
SRCI	Requested command(s) inhibited
SRCN	Requested condition already exists
SROF	Requested operation failed
SROS	Required RTU out-of-service
SRQN	Invalid request
SRTN	Unable to release tap
SRTO	Reply timeout occurred
SSCE	Systemic (snider) communications error
SSNG	Subrate selected is incorrect
SSNP	Test signal not pseudo-random
SSNQ	Test signal not QRS
SSPN	Speed selected is incorrect
SSRD	Switch request denied
SSRE	System resources exceeded
SSTP	Execution stopped due to hardware or software problem
STAB	Test aborted
STLC	Tap unable to locate channel
STNO	TSC/RTU to TAU link out of service
STOS	Test access unit out of service
STTI	Tap idle
SWFA	Working unit failed
SWLD	Working unit locked

1. Network element failure. The circuit is restored to the last condition, monitor, or terminate and leave.
2. For historical reasons, ICNV and IICM have been left in as valid error codes even though from inspection they are not unique (descriptions for both say Invalid Command). ICNV and IICM are not the preferred error codes for invalid, that is, unsupported commands by a test system controller (TSC) or NE. Where possible, specific DENY messages associated with a particular command should be used. However, when used, the ICNV is appropriate for responses originating from a TSC, and IICM is the choice for an NE.
3. An identical error code found in GR-833-CORE (SNOS STATUS, NOT CURRENTLY OUT OF SERVICE) is omitted here and will be removed from the list of valid error codes in a subsequent issue of GR-833-CORE.

2.5 Commands by Category

Table 2-16 lists the TL1 commands for the Cisco ONS 15540 ESPx by category.

Table 2-16 TL1 Commands by Category

Category	Command or Autonomous Message
10-GE interface configuration	ED-GBE10 RTRV-GBE10 RTRV-PM-GBE10 INIT-REG-GBE10 OPR-LPBK-GBE10 RLS-LPBK-GBE10
Alarms and faults	ALW-MSG-ALL INH-MSG-ALL RTRV-ALM-ALL RTRV-ALM-ENV RTRV-COND-ALL RTRV-LOG
APS	ENT-FFP-OCH ED-FFP-OCH RTRV-FFP-OCH DLT-FFP-OCH OPR-PROTNSW-OCH RLS-PROTNSW-OCH
CDP	ED-NE-CDP RST-NE-CDP RTRV-NE-CDP RTRV-CDPNBR-OCH
Generic NE configuration	ED-NE-GEN RTRV-NE-GEN INIT-SYS SET-SID RTRV-HDR ED-DAT RTRV-TOD
IP configuration	ENT-IP ED-IP DLT-IP RTRV-IP ENT-IPROUTE-STATIC DLT-IPROUTE-STATIC RTRV-IPROUTE INIT-REG-ETH

Table 2-16 TL1 Commands by Category (continued)

Category	Command or Autonomous Message
Memory management	CPY-MEM DLT-MEM RST-MEM SQUEEZE-MEM FORMAT-MEM RTRV-MEM RTRV-FILE
NTP	SET-NTP ENT-NTPASSOC DLT-NTPASSOC RTRV-NTPASSOC RTRV-NTP
Optical parameter monitoring	RTRV-PM-rr SET-TH-rr SET-ATTR-rr RTRV-TH-rr RTRV-ATTR-rr
OSCP	ED-NE-OSCP RTRV-NE-OSCP
Patch configuration	ENT-PATCH DLT-PATCH RTRV-PATCH
Redundancy	SW-DX-EQPT ALW-SWDX-EQPT INH-SWDX-EQPT RTRV-EQPT RTRV-PM-EQPT
Security	ENT-USER-SECU ED-USER-SECU DLT-USER-SECU RTRV-USER-SECU ACT-USER CANC-USER ED-PID
Threshold list configuration	ENT-THR-OCH ED-THR-OCH DLT-THR-OCH RTRV-THR-OCH
Topology neighbor commands	ENT-NBR DLT-NBR RTRV-NBR

Table 2-16 TL1 Commands by Category (continued)

Category	Command or Autonomous Message
Transparent interface configuration	ED-OCH RTRV-OCH SET-PMODE-OCH RTRV-PMODE-OCH INIT-REG-OCH OPR-LPBK-OCH RLS-LPBK-OCH RTRV-PM-ENCAP
VOA module interface configuration	SET-VOA RTRV-VOA