



# CHAPTER 23

## SET Commands

This chapter provides set (SET) commands for the Cisco ONS 15454 SDH, Cisco ONS 15454 M2, and Cisco ONS 15454 M6.



### Note

All commands supported on the Cisco ONS 15454 SDH platform are also supported on Cisco ONS 15454 M2 and Cisco ONS 15454 M6 platforms.

### 23.1 SET-ALMTH-<MOD2>

(Cisco ONS 15454 SDH) The Set Alarm Threshold for 10GFC, 10GIGE, 40GIGE, 100GIGE, 1GFC, 1GFICON, 2GFC, 4GFC, 2GFICON, 5GIB, 8GFC, CLNT, D1VIDEO, DV6000, DVBASI, ESCON, ETRCLO, ETH, FSTE, GIGE, HDTV, ISC1, ISCCOMPAT, ISC3PEER2R, ISC3PEER1G, ISC3PEER2G, STM4, STM64, STM1, STM16, OCH, OMS, OTS, OTU3, OTU4, STM1E, OTL, OTU1, OTU2, SDSDI, HDSDI, 3GVIDEO, ISC3STP1G, or ISC3STP2G (SET-ALMTH-<MOD2>) command sets the alarm thresholds on the following cards/ports/channels: MXP\_2.5G\_10G, TXP\_MR\_10G, optical service channel, optical amplifier, dispersion compensation units, multiplex/demultiplex, and OADM.

This command is used to set the alarm thresholds on a facilities, ports, channels, for example. Not all MOD2 types are supported.

#### Usage Guidelines

- This command is used to set the alarm thresholds on a facilities, ports, channels, for example. Not all MOD2 types are supported.
- This command supports the modifier OTU1, SDSDI, HDSDI, 3GVIDEO, ISC3STP1G, ISC3STP2G.
- Tx alarm thresholds is blocked on Rx Video pluggables and vice-versa.
- Tx alarm thresholds is not applicable on ESCON payload.
- The SET-ALMTH-OTL is denied on backplane virtual ports of 100G-LC-C.
- The SET-ALMTH-OTL is denied on sublanes of CFP-LC but sets the alarms thresholds on first sublane of 100G-LC-C card.
- SET-ALMTH-<MOD2> on 100G-LC-C, 10x10G-LC, and CFP-LC cards use MOD2, and the following AID:

- OCH modifier (CHAN AID) for non-OTU payloads on 100G-LC-C and 10x10G-LC fixed trunk ports.
- MOD2 modifier on the OTU payloads of 10x10G-LC card on the VFAC AID.
- OCH modifier (ACHAN AID) on the non-OTU payloads of the 100G-LC-C aggregate port.
- MOD2 modifier (VLINE AID) on the first sublane of the 100G-LC-C card.
- OCH modifier (CHAN AID) on the CFP-LC ports.
- Alarm threshold cannot be set on the sublanes (VLINE) of the CFP-LC cards.

**Category** Fault

**Security** Provisioning

**Input Format** SET-ALMTH-<MOD2>:[<TID>]:<AID>:<CTAG>::<CONDTYPE>,<THLEV>[,,,];

**Input Example** SET-ALMTH-OTL:100G-LC-C:VLINE-3-1-1-2:1::OPT-LOW,-9;

**Table 23-1** Parameter Support

Parameter	Description
<AID>	Access identifier from the “25.1 ALL” section on page 25-1. Must not be null. The AR-MXP, AR-XP, and AR-XPE cards use the VFAC Access Identifier.
<CONDTYPE>	Condition type for an alarm or a reported event. The parameter type is ALM_THR, which is the alarm threshold list for MXP_2.5G_10G, TXP_MR_10G, OSCM, OSC-CSM, OPT-PRE, OPT-BST, 4MD-xx.x, 32MUX, 32DMX, AD-1C-xx.x, AD-2C-xx.x, AD-4C-xx.x, AD-1B-xx.x, and AD-4B-xx.x cards
• ADD-HDEG	ADD Power - High Degrade
• ADD-HFAIL	ADD Power - High Failure
• ADD-LDEG	ADD Power - Low Degrade
• ADD-LFAIL	ADD Power - Low Failure
• BATV-EHIGH	Battery Voltage—Extremely High
• BATV-ELow	Battery Voltage—Extremely Low
• BATV-HIGH	Battery Voltage—High
• BATV-LOW	Battery Voltage—Low
• CD-LOW	Low Threshold value for Chromatic Dispersion. Measured value -70000dBm to +70000dBm.
• CD-HIGH	High Threshold value for Chromatic Dispersion. Measured value -70000dBm to +70000dBm.
• GAIN-HDEG	Gain not reached—High Degrade Threshold
• GAIN-HFAIL	Gain not reached—High Failure Threshold
• GAIN-LDEG	Gain not reached—Low Degrade Threshold
• GAIN-LFAIL	Gain not reached—Low Failure Threshold

Table 23-1 Parameter Support

Parameter	Description
• LBCL-HIGH	Laser Bias current in microA as a tenth of a percent of the High Warning Threshold, Low Warning Threshold. Measured value: 0.0%, 100.0%.
• OPR-HIGH	Receive power in tenths of a microW. Measured value: -40.0 dBm, +30.0 dBm.
• OPR-LOW	Receive power in tenths of a microW. Measured value: -40.0 dBm, +30.0 dBm
• OPT-HIGH	Transmit power in tenths of a microW. Measured value: -40.0 dBm, +30.0 dBm.
• OPT-LOW	Transmit power in tenths of a microW. Measured value: -40.0 dBm,+ 30.0 dBm.
• OPWR-HDEG	Optical Power—High Degrade Threshold
• OPWR-HFAIL	Optical Power—High Failure Threshold
• OPWR-LDEG	Optical Power—Low Degrade Threshold
• OPWR-LFAIL	Optical Power—Low Failure Threshold
• OSNR-LOW	Low Threshold value for Optical Signal to Noise Ratio. Measured value +40dBm to +80dBm.
• OSNR-HIGH	High Threshold value for Optical Signal to Noise Ratio. Measured value +40dBm to +80dBm.
• PMD-LOW	Low Threshold value for Polarization Mode for Dispersion. Measured value +0 to +100dBm.
• PMD-HIGH	High Threshold value for Polarization Mode for Dispersion. Measured value +0 to +100dBm.
• VOA-HDEG	VOA Attenuation—High Degrade Threshold
• VOA-HFAIL	VOA Attenuation—High Failure Threshold
• VOA-LDEG	VOA Attenuation—Low Degrade Threshold
• VOA-LFAIL	VOA Attenuation—Low Failure Threshold
<THLEVEL>	Threshold level. THLEVEL is a float.

## 23.2 SET-ALMTH-EQPT

(Cisco ONS 15454 SDH) The Set Alarm Equipment (SET-ALMTH-EQPT) command sets the alarm thresholds to manage the power level monitoring on an NE.

**Usage Guidelines** None

**Category** Equipment

**Security** Provisioning

**Input Format** SET-ALMTH-EQPT:[<TID>]:[<AID>]:<CTAG>::<CONDTYPE>,<THLEV>[,,,];

**Input Examples** SET-ALMTH-EQPT::SHELF-2:1::BATV-HIGH,-53.5;

SET-ALMTH-EQPT:::1::BATV-HIGH,-53.5;

**Table 23-2** Parameter Support

Parameter	Description
<AID>	The node or shelf access identifier from the “25.25 SHELF” section on page 25-33. If omitted, it addresses the node or first shelf of the node. Must not be null.
<CONDDTYPE>	Alarm threshold type. The parameter type is ALM_THR, which is the alarm threshold list for MXP_2.5G_10G, TXP_MR_10G, OSCM, OSC-CSM, OPT-PRE, OPT-BST, 4MD, 32MUX, 32DMX, AD-1C-xx.x, AD-2C-xx.x, AD-4C-xx.x, AD-1B-xx.x, and AD-4B-xx.x cards.
• BATV-EHIGH	Battery Voltage—Extremely High
• BATV-ELOW	Battery Voltage—Extremely Low
• BATV-HIGH	Battery Voltage—High
• BATV-LOW	Battery Voltage—Low
• CD-LOW	Low Threshold value for Chromatic Dispersion. Measured value -70000dBm to +70000dBm.
• CD-HIGH	High Threshold value for Chromatic Dispersion. Measured value -70000dBm to +70000dBm.
• GAIN-HDEG	Gain not reached—High Degrade Threshold
• GAIN-HFAIL	Gain not reached—High Failure Threshold
• GAIN-LDEG	Gain not reached—Low Degrade Threshold
• GAIN-LFAIL	Gain not reached—Low Failure Threshold
• LBCL-HIGH	Laser Bias current in microA as a tenth of a percent of the High Warning Threshold, Low Warning Threshold. Measured value: 0.0%, 100.0%.
• OPR-HIGH	Receive power in tenths of a microW. Measured value: -40.0 dBm, +30.0 dBm.
• OPR-LOW	Receive power in tenths of a microW. Measured value: -40.0 dBm, +30.0 dBm.
• OPT-HIGH	Transmit power in tenths of a microW. Measured value: -40.0 dBm, +30.0 dBm.
• OPT-LOW	Transmit power in tenths of a microW. Measured value: -40.0 dBm, + 30.0 dBm.
• OPWR-HDEG	Optical Power—High Degrade Threshold
• OPWR-HFAIL	Optical Power—High Failure Threshold
• OPWR-LDEG	Optical Power—Low Degrade Threshold
• OPWR-LFAIL	Optical Power—Low Failure Threshold
• OSNR-LOW	Low Threshold value for Optical Signal to Noise Ratio. Measured value +40dBm to +80dBm.
• OSNR-HIGH	High Threshold value for Optical Signal to Noise Ratio. Measured value +40dBm to +80dBm.
• PMD-LOW	Low Threshold value for Polarization Mode for Dispersion. Measured value +0 to +100dBm.
• PMD-HIGH	High Threshold value for Polarization Mode for Dispersion. Measured value +0 to +100dBm.
• VOA-HDEG	VOA Attenuation—High Degrade Threshold
• VOA-HFAIL	VOA Attenuation—High Failure Threshold
• VOA-LDEG	VOA Attenuation—Low Degrade Threshold
• VOA-LFAIL	VOA Attenuation—Low Failure Threshold
<THLEVEL>	Threshold level. THLEVEL is a float.

## 23.3 SET-ATTR-CONT

(Cisco ONS 15454 SDH) The Set Attribute Control (SET-ATTR-CONT) command sets the attributes associated with an external control. The attributes are used when an external control is operated or released. To send the attributes, use the RTRV-ATTR-CONT command.

### Usage Guidelines

- If the CONTTYPE parameter is not specified, the control specified by AID is unprovisioned.
- A control should be unprovisioned before it is reprovisioned to another type of control.

### Category

Environment

### Security

Provisioning

### Input Format

SET-ATTR-CONT:[<TID>]:<AID>:<CTAG>[:<CONTTYPE>];

### Input Example

SET-ATTR-CONT:CISCO:ENV-OUT-1:123::AIRCOND;

**Table 23-3** Parameter Support

Parameter	Description
<AID>	Access identifier from the <a href="#">“25.12 ENV” section on page 25-20</a> . Identifies the external control for which attributes are being retrieved.
<CONTTYPE>	Environmental control type. A null value is equivalent to ALL. The parameter type is CONTTYPE, which is the environmental control type.
• AIRCOND	Air conditioning
• ENGINE	Engine
• FAN	Fan
• GEN	Generator
• HEAT	Heat
• LIGHT	Light
• MISC	Miscellaneous
• SPKLR	Sprinkler

## 23.4 SET-ATTR-ENV

(Cisco ONS 15454 SDH) The Set Attribute Environment (SET-ATTR-ENV) command sets the attributes associated with an environmental alarm.

**Usage Guidelines**

- If the NTFCNCDE, ALMTYPE, and ALMMSG parameters are omitted, the environmental alarm specified by AID is unprovisioned.
- An alarm should be unprovisioned and you should wait for any raised alarm to clear before reprovisioning the alarm to another alarm type.
- In NOTIF\_CODE, CL is not valid for provisioning commands. It is only valid for autonomous messages.

**Category**

Environment

**Security**

Provisioning

**Input Format**

SET-ATTR-ENV:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;NTFCNCDE&gt;],[&lt;ALMTYPE&gt;],[&lt;ALMMSG&gt;];

**Input Example**

SET-ATTR-ENV:CISCO:ENV-IN-1:123::MJ,OPENDR,\“OPEN DOOR\”;

**Table 23-4 Parameter Support**

Parameter	Description
<AID>	Access identifier from the <a href="#">“25.12 ENV” section on page 25-20</a> . Must not be null.
<NTFCNCDE>	(Optional) Two-letter notification code. Must not be null. The parameter type is NOTIF_CODE, which is the two-character notification code associated with an autonomous message.
• CL	The condition causing the alarm has cleared.
• CR	A critical alarm.
• MJ	A major alarm.
• MN	A minor alarm.
• NA	The condition is not alarmed.
• NR	The alarm is not reported.
<ALMTYPE>	(Optional) The alarm type for the environmental alarm. Must not be null. The parameter type is ENV_ALM, which is the environmental alarm type.
• AIRCOMPR	Air compressor failure
• AIRCOND	Air conditioning failure
• AIRDRYR	Air dryer failure
• BATDSCHRG	Battery discharging
• BATTERY	Battery failure
• CLFAN	Cooling fan failure
• CPMAJOR	Centralized power major failure
• CPMINOR	Centralized power minor failure
• ENGINE	Engine failure

Table 23-4 Parameter Support

Parameter	Description
• ENGOPRG	Engine operating
• ENGTRANS	Standby engine transfer
• EXPLGS	Explosive gas
• FIRDETR	Fire detector failure
• FIRE	Fire
• FLOOD	Flood
• FUELLEAK	Fuel leak
• FUSE	Fuse failure
• GASALARM	Explosive gas, toxic gas, ventilation fail, or gas monitor fail
• HATCH	Controlled Environment Vault (CEV) hatch fail
• GEN	Generator failure
• HIAIR	High airflow
• HIHUM	High humidity
• HITEMP	High temperature
• HIWTR	High water
• INTRUDER	Intrusion
• LEVELCON	Level converter
• LVDADSL	Secondary asymmetric digital subscriber line (ADSL) low voltage disconnect
• LVDBYPAS	Low voltage disconnected bypass
• LWBATVG	Low battery voltage
• LWFUEL	Low fuel
• LWHUM	Low humidity
• LWPRES	Low cable pressure
• LWTEMP	Low temperature
• LWWTR	Low water
• MISC	Miscellaneous
• OPENDR	Open door
• POWER	Commercial power failure
• PUMP	Pump failure
• PWR-48	48 V power supply failure
• PWR-139	-139 V power converter
• PWR-190	qP190 V power converter
• PWRMJ	Power supply major
• PWRMN	Power supply minor
• RECT	Rectifier failure
• RECTHI	Rectifier high voltage

Table 23-4 Parameter Support

Parameter	Description
• RECTLO	Rectifier low voltage
• RINGGENMJ	Ring generator major
• RINGENMN	Ring generator minor
• RTACADSL	AC or AC/rectifier power fail ADSL equipment
• RTACCRIT	AC or AC/rectifier power fail DCL equipment critical site
• RTACPWR	AC or AC/rectifier power fail DCL equipment
• RTACP-WRENG	Commercial AC fail, site equipped with standby engine
• RTBAYPWR	AC power loss distributed power RT bay
• RTRVENG	Retrieve standby engine, commercial AC restored
• SMOKE	Smoke
• TEMP	High-low temperature
• TOXICGAS	Toxic gas
• TREPEATER	T-repeater shelf
• VENTN	Ventilation system failure
<ALMMSG>	(Optional) Alarm message. ALMMSG is a string. Must not be null.

## 23.5 SET-ATTR-SECUDFLT

(Cisco ONS 15454 SDH) The Set Attribute Security Default (SET-ATTR-SECUDFLT) command sets the system-wide default values associated with several security parameters.

### Usage Guidelines

- The following parameters are set on a system-wide basis for all users and all privilege levels: MXINV, DURAL, UOUT, PFRCD, POLD, PINT, and LOGIN. The PRIVLVL keyword cannot be used to set these parameters for a specific privilege level.
- The following parameters are set on a privilege-level basis: PAGE, PCND, and TMOUT. If none of these values are specified, the PRIVLVL keyword must also be present. If none of these parameters are specified, the PRIVLVL keyword cannot be used.



#### Note

Password aging can only be enabled/disabled for all privilege levels. The PRIVLVL keyword cannot be used with PAGE=0 to disable a specific user privilege level.

- When system-level and privilege-level keywords are combined in the same command, system-level parameters are still set for all privilege levels, regardless of the value specified by PRIVLVL. Privilege-level parameters are only set for the privilege level specified by PRIVLVL.



#### Note

If PAGE and PINT both have values greater than 0, PINT must be less than PAGE.



The order of keywords is not restricted. Commas are only needed to separate keywords. If no keywords are specified, all parameters are left as is.

- When PWDMINLEN parameter value is 2, then it is mandatory to set the value of PWDCHRULE parameter to ANY\_CHAR rule.
- When PWDCHRULE parameter value is set to ANY\_CHAR, then the PWDMINLEN parameter can be set to 2 or 4, or 6 or 8, or 10 or 12.

**Category** Security

**Security** Superuser

**Input Format** SET-ATTR-SECUDFLT:[<TID>]::<CTAG>::[PAGE=<PAGE>],[PCND=<PCND>],[MXINV=<MXINV>],[DURAL=<DURAL>],[TMOUT=<TMOUT>],[UOUT=<UOUT>],[PFRCD=<PFRCD>],[POLD=<POLD>],[PINT=<PINT>],[LOGIN=<LOGIN>],[PRIVLVL=<UAP>],[PDIF=<PDIF>],[PWDCHRULE=<PWDCHRULE>],[PWDMINLEN=<PWDMINLEN>],[PWDMAXLEN=<PWDMAXLEN>];

**Input Example** SET-ATTR-SECUDFLT:CISCO::123::PAGE=45,PCND=5,MXINV=5,DURAL=30, TMOUT=0,UOUT=20,PFRCD=NO,POLD=5,PINT=20,LOGIN=MULTIPLE, PRIVLVL=RTRV,PDIF=1;  
SET-ATTR-SECUDFLT:::1::PWDCHRULE=ANY\_CHAR,PWDMINLEN=2,PWDMAXLEN=20;

**Table 23-5 Parameter Support**

Parameter	Description
<PAGE>	(Optional) Password aging interval. It is the number of days before a user is prompted to change his/her password. 0 indicates the policy is turned off and is the default. If PAGE is turned on for all privilege levels and is not specified for each privilege level, it defaults to 45 days. PAGE ranges from 20 to 90 days. PAGE is an integer.
<PCND>	(Optional) Number of days a password can be used before a new one is mandatory (that is, the warning period). Default is 5 days. PCND ranges from 2 to 20 days. PCND is an integer.
<MXINV>	(Optional) Maximum number of consecutive and invalid session setup attempts allowed to occur before an intrusion attempt is suspected (that is, a “Failed Logins Before Lockout” message is received from CTC). 0 indicates the policy is turned off. Default is 5. MXINV ranges from 0 to 10. MXINV is an integer.
<DURAL>	(Optional) Time interval (in seconds) during which a user ID is locked out when an intrusion attempt is suspected (that is, “Lockout Duration”). If the user is locked out until unlocked by a Superuser, DURAL=INFINITE. Default is 30 seconds. DURAL ranges from 0 to 600 seconds. DURAL is a string.
<TMOUT>	(Optional) Interval (in minutes) after which a session is terminated if no messages are exchanged between the user and the NE. 0 indicates that the session will not timeout. TMOUT ranges from 0 minutes to 999 minutes. Defaults are 0 (no timeout) for RTRV users, 60 minutes for MAINT users, 30 minutes for PROV users, and 15 minutes for SUPER users. TMOUT is an integer.

Table 23-5 Parameter Support

Parameter	Description
<UOUT>	(Optional) UID aging interval, expressed in days. If a userid has not been used in UOUT days, the user will be forced to change his/her password (or logout) at the next login. No other command is allowed until the password has been changed. 0 is the default and indicates that the policy is turned off. UOUT is an integer that ranges from 0 to 99 days.
<PFRCD>	(Optional) Indicates a password change is required when a new user establishes a session to the NE for the first time (that is, "Require password change on 1st login"). Default is NO. The parameter type is YES_NO, which indicates 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.
• NO	No
• YES	Yes
<POLD>	(Optional) Number of prior passwords that cannot be reused (that is, "Prevent reusing last X passwords"). Default is 1. POLD ranges from 1 to 10. POLD is an integer.
<PINT>	(Optional) Number of days that must pass before a password can be changed. If PINT is 0, the policy is turned off. Default is off. PINT is an integer that ranges from 20 to 95 days.
<LOGIN>	(Optional) Number of times a user can log into an NE. LOGIN is either SINGLE or MULTIPLE. If LOGIN is SINGLE, a user can only log into an NE one time with any given user ID, regardless of the method of login (that is, CTC, TL1, etc.). The default is MULTIPLE. The parameter type is USER_LOGINS, which is the number of times a user can log into the same NE with the same user ID.
• MULTIPLE	A user can log into the same NE many times.
• SINGLE	A user can log into the NE only one time (includes both CTC and TL1 sessions).
<PRIVLVL>	(Optional) User's access privilege. The parameter type is PRIVILEGE, which is the security level.
• MAINT	Maintenance security level. 60 minutes of idle time.
• PROV	Provision security level. 30 minutes of idle time.
• RTRV	Retrieve security level. Unlimited idle time.
• SUPER	Superuser security level. 15 minutes of idle time.
<PDIF>	(Optional) Indicates how many characters must differ between the old and new password. Default minimum character difference is 1. PDIF ranges from 1 to 5 characters. PDIF is an integer and is rangeable.
<PWDCHRULE>	(Optional) Password Characters Rule. Indicates the password characters rule for the specified minimum length of the password.
• ONE_EACH_OF_LETTER_NUM_TL1SPECIAL	One letter, one number, and one TL1 special character (% , # , +).
• ONE_EACH_OF_LETTER_NUM_SPECIAL	One letter, one number, and one special character.
• TWO_EACH_OF_TWO_OF_UPPER_LOWER_NUM_TL1SPECIAL	Two each of any of the two numbers, upper, lower, or TL1 special characters.

Table 23-5 Parameter Support

Parameter	Description
<ul style="list-style-type: none"> <li>TWO_EACH_OF_TWO_OF_UPPER_LOWER_NUM_SPECIAL</li> </ul>	Two each of any of the two numbers, upper, lower, or special characters.
<ul style="list-style-type: none"> <li>ANY_CHAR</li> </ul>	Any character.
<PWDMINLEN>	(Optional) Password Minimum Length. Indicates the minimum number of characters that can be set for password configuration. The values are 2, 4, 6, 8, 10 and 12.
<PWDMAXLEN>	(Optional) Password Maximum Length. Indicates the maximum number of characters that can be set for password configuration. The values are 20 or 80.

## 23.6 SET-HOP-CPS

(Cisco ONS 15454 SDH, Cisco ONS 15454 M2, Cisco ONS 15454 M6) The Set HOP Control Plane Service (SET-HOP-CPS) command is used to add, remove and modify an HOP route constraint of a Control Plane Service.

### Usage Guidelines

- Specify only the source port to identify the CPS.
- Specify both the source AIDs, if the CPS is of type ADD 2WAY.
- CLIENT cps type support FAC and VFAC AID type.
- TRUNK cps type support CHAN AID type.
- ADD cps type support CHAN, PCHAN, and LINEWL AID type.
- In case of 1WAY, unidirectional connection, SRC and DST are single AIDs. In case of 2WAY, bidirectional connection, SRC and DST are double AIDs. However, in case of CLIENT or TRUNK cpstype, src and dst are single AID and the connection is of type 2WAY because of bidirectional ports hence this rule is not applicable.

### Category

DWDM

### Security

Provisioning

### Input Format

SET-HOP-CPS:[<TID>]:<SRC>:<CTAG>::<CIRCUITTYPE>,<ROUTETYPE>,<HOPACTION>,[<POSITION>],<HOPTYPE>,<HOPNODE>,[<HOPSIDE>][:];

### Input Example

SET-HOP-CPS::VFAC-1-5-2:8::PRIMARY,MAINROUTE,ADD,,LOOSE,10.20.33.44;

Input Parameters		
<SRC>		Source AID from the “ <a href="#">25.11 CrossConnectId1</a> ” section on page 25-16.
<CIRCUITTYPE>		Identifies the target circuit. Allowed values are PRIMARY, SECONDARY.
<ROUTETYPE>		Identifies the target circuit route. Allowed values are MAINROUTE and BRIDGEROUTE.
<HOPACTION>		Identifies the action to perform on the hop item. Allowed values are: <ul style="list-style-type: none"> <li>• ADD</li> <li>• REMOVE</li> <li>• MODIFY</li> <li>• CLEARALL</li> </ul>
<POSITION>		Identifies the position of the hop in the item list. Default value is 0. <ul style="list-style-type: none"> <li>• If action=ADD and position=0 than append at the end;</li> <li>• If action=REMOVE and position=0 than remove all matching items;</li> <li>• If action=REMOVE and position&lt;&gt;0 than hop values are ignored;</li> <li>• If action=MODIFY and position&lt;&gt;0 than replace the item in the position indicated;</li> <li>• If action=CLEARALL than clears the list ignoring position and other parameters;</li> </ul>
<HOPTYPE>		Type of hop constraint. Allowed values are STRICT, LOOSE, EXCLUDE <ul style="list-style-type: none"> <li>• STRICT</li> <li>• LOOSE</li> <li>• EXCLUDE</li> </ul>
	• STRICT	The next hop of the path must be the indicated node and side
	• LOOSE	The path must cross the indicated node and side
	• EXCLUDE	The path must exclude the indicated node
<HOPNODE>		IP address of the target node.
<HOPSIDE>		Hop constraint target WDM side.

## 23.7 SET-OPMOD-PTSYS

(Cisco ONS 15454 SDH) The Set Operation Mode Packet Transport System (SET-OPMOD-PTSYS) sets the operation mode for the CPT 50 panel.

### Usage Guidelines

- Sets the operation mode for the PTSYS.
- OPMODE can be set as NMS or IOS.
- RETAINDB can be set only for IOS.

### Category

Equipment

**Security** Retrieve

**Input Format** SET-OPMOD-PTSYS:[<TID>]:<AID>:<CTAG>:::<OPMODE>,[RETAINDB=<RETAINDB>];

**Input Example** SET-OPMOD-PTSYS::PTSYS-1:1:::IOS,RETAINDB=Y;

<b>Input Parameters</b>	<AID>	AID of the PTSYS.
	<OPMODE>	Operation mode of the PTSYSTEM.
	• NMS	TCP IPC mode.
	• IOS	IPC mode.
	<RETAINDB>	Retain the database.
		Can be updated only for the IOS mode.
	Y	Retains the database.
	N	Does not retain the database.

## 23.8 SET-PMMODE-<VC\_PATH>

(Cisco ONS 15454 SDH) The Set Performance Mode of PM Data Collection for VC3, VC12, VC44C, VC464C, VC48C, VC4, VC416C, VC42C, or VC43C (SET-PMMODE-<VC\_PATH>) command sets the mode and turns the PM data collection mode on or off. The Cisco ONS 15454 SDH is capable of collecting and storing section, line, and path PM data. See [Table 27-1 on page 27-1](#) for supported modifiers by platform.

### Usage Guidelines

- The PM mode and state of an entity are retrieved by using the RTRV-PMMODE command.
- The near-end monitoring of the intermediate-path performance monitoring (IPPM) only supports STM1, STM4, STM16, and STM64 on the VC path.
- The far-end IPPM data collection is supported by the MRC-12, and ADM-10G cards.
- This release of software supports only the path (P) mode PM parameters with this command. This command is not applicable for line (L) and section (S) mode types. The PM monitoring for line and section are supported by the Cisco ONS 15454 SDH and PM data is always stored.

**Category** Performance

**Security** Provisioning

**Input Format** SET-PMMODE-<VC\_PATH>:[<TID>]:<SRC>:<CTAG>::<LOCN>,<MODETYPE>,[<PMSTATE>];

**Input Example** SET-PMMODE-VC4:CISCO:VC4-4-1-1-2:123::NEND,P,ON;

**Table 23-6** Parameter Support

Parameter	Description
<SRC>	Source access identifier from the “25.10 CrossConnectId” section on page 25-15.
<LOCN>	Location associated with a particular command. Identifies the location from which the PM mode is to be retrieved. Only the near-end PM data collection is supported. The parameter type is LOCATION, which is the location where the action is to take place.
• NEND	Action occurs on the near end of the facility.
<MODETYPE>	The type of PM parameters that the entity or the subentity is to store as a result of an attribute change. Only the path (P) PM parameter is supported. The parameter type is PM_MODE, which is the type of PM parameters.
• P	Transport path PM parameters
<PMSTATE>	(Optional) Directs the named PM mode type to turn on or off. A null value defaults to on. The parameter type is PM_STATE, which directs the named PM mode type (path [P] state).
• OFF	Disable the mode.
• ON	Enable the mode.

## 23.9 SET-SRVTYPE

(Cisco ONS 15454 M2 and Cisco ONS 15454 M6) The Set Service Type (SET-SRVTYPE) command allows you to set the service type in the TNC card to carry User Data Channel (UDC) or voice over IP (VOIP) traffic.

### Usage Guidelines

- You can configure UDC or VoIP on the two SFP ports present on the TNC card. The TNC card supports the UDC/VoIP configuration only when OSC is provisioned on the SFP ports.
- You can configure UDC or VoIP on only one SFP port at a time per TNC card. If you want to configure UDC or VoIP on the second SFP port, set NONE for the first port and then set UDC or VoIP for the second port.

### Category

Ports

**Security** Provisioning

**Input Format** SET-SRVTYPE:[<TID>]:<AID>:<CTAG>:::<SRVTYPE>;

**Input Example** SET-SRVTYPE::FAC-1-1-1:1::UDC;

**Input Parameters**

<AID>	FAC-<Shelf>-<Slot>-<PPM>-<Port>.
<SRVTYPE>	Indicates the service type set on the TNC port.
• UDC	To set the service type to UDC.
• VOIP	To set the service type to VOIP
• NONE	To set the service type to NONE.

## 23.10 SET-TH-<MOD2>

(Cisco ONS 15454 SDH) The Set Threshold for 10GFC, 10GIGE, 40GIGE, 100GIGE, 1GFC, 1GFICON, 2GFC, 2GFICON, 5GIB, 4GFC, 8GFC, CLNT, D1VIDEO, DS1, DS3I, DV6000, DVBASI, E1, E3, E4, EC1, ESCON, ETRCLO, FSTE, G1000, GFPOS, GIGE, HDTV, ISC1, ISCCOMPAT, ISC3PEER2R, ISC3PEER1G, ISC3PEER2G, STM4, STM64, STM1, STM16, OCH, OMS, OTS, OTL, OTU2, OTU3, POS, STM1E, STS1, STS12C, STS18C, STS192C, STS24C, STS36C, STS3C, STS48C, STS96C, STS6C, STS9C, T1, T3, VC11, VC12, VC3, VT1, VT2, OTU1, OTU4, SDSDI, HSDSI, 3GVIDEO, ISC3STP1G, or ISC3STP2G (SET-TH-<MOD2>) command sets the threshold for PMs and sets the alarm thresholds for the MXP\_2.5G\_10G and TXP\_MR\_10G cards. If this command is used to set the alarm thresholds on, the time period is not applicable. This command sets alarm thresholds on AR-MXP, AR-XP, and AR-XPE cards and ports, and optical add/drop multiplexing (OADM). See [Table 27-1 on page 27-1](#) for supported modifiers by platform.

**Usage Guidelines**

The command supports the modifier OTU1, SDSDI, HSDSI, 3GVIDEO, ISC3STP1G, and ISC3STP2G. The Tx power is blocked on Rx Video pluggables and vice-versa. The Tx power is not applicable on ESCON payload.

The rules are as follows:

- The PM Thresholds have a default of NEND for the location. The Alarm Thresholds do not require or interpret the location.
- The TPER is not applicable to alarm thresholds. The TPER default is 15-MIN.
- The client ports only accept SONET, Laser, and alarm MONTYPES. The trunk ports accept SONET, Laser, alarm, FEC, OTN, and 8B10B MONTYPES.
- The SET-TH-OTL is denied on backplane virtual ports of 100G-LC-C for optical thresholds only.
- The SET-TH-OTL is denied on sublanes of CFP-LC. The command sets the alarms thresholds on first sublane of 100G-LC-C card.
- The SET-TH-<MOD2> on 100G-LC-C, 10x10G-LC, and CFP-LC ports use MOD2 and the following AID:

- OCH (CHAN AID for non-OTU payloads on 100G-LC-C, 10x10G-LC, and CFP-LC fixed trunk ports. ACHAN for non-OTU payloads on the 100G-LC-C card using the CXP pluggable).
- MOD2 (VFAC AID for OTU payloads on 10x10G-LC and CFP-LC ports. ACHAN for OTU payloads on the 100G-LC-C card using the CXP pluggable).
- TCA threshold cannot be set on sublanes (VLINE) of CFP-LC cards.

**Category** Performance

**Security** Provisioning

**Input Format** SET-TH-<MOD2>:[<TID>]:<AID>:<CTAG>::<MONTYPE>,<THLEV>,[<LOCN>],[<TMPER>];

**Input Example** SET-TH-OTU4::VFAC-5-1-1:1::LBCL-MAX,-10;

**Table 23-7** Parameter Support

Parameter	Description
<AID>	Access identifier from the “ <a href="#">25.1 ALL</a> ” section on page 25-1. All the VC, VT1, and Facility AIDs are supported. The AR-MXP, AR-XP, and AR-XPE cards use the VFAC Access Identifier.
<MONTYPE>	Monitored type. The parameter type is ALL_MONTYPE, which is the monitored type list.
• AISSP	Alarm Indication Signal Seconds—Path
• ALL	All possible values
• BBEP	SDH Background Block Errors Path
• BBE-PM	OTN—Background Block Errors—Path Monitor Point
• BBER	SDH Background Block Error Ratio
• BBER-PM	OTN—Background Block Error Ratio—Path Monitor Point expressed in tenths of a percentage
• BBER-SM	OTN—Background Block Error Ratio—Section Monitor Point expressed in tenths of a percentage
• BBE-SM	OTN—Background Block Errors—Section Monitor Point
• BIEC	FEC—Bit Errors Corrected
• BIT-EC	The number of bit errors corrected by the FEC algorithm
• CGV	8B10B—Code Group Violations
• CVCPP	Coding Violations—CP-Bit Path
• CVL	Coding Violations—Line
• CVP	Coding Violations—Path
• CVS	Coding Violations—Section
• CVV	Coding Violations—Section



Table 23-7 Parameter Support

Parameter	Description
• DCG	8B10B—Data Code Groups
• ESCPP	Errored Seconds—CP—Bit Path
• ESL	Errored Seconds—Line
• ESP	Errored Seconds—Path
• ES-PM	OTN—Errored Seconds—Path Monitor Point
• ESR	Errored Second—Ratio
• ESR-PM	Errored Seconds Ratio—Path monitor point expressed in tenths of a percentage
• ESR-SM	Errored Seconds Ratio—Section monitor point expressed in tenths of a percentage
• ESS	Errored Seconds—Section
• ES-SM	OTN—Errored Seconds—Section Monitor Point
• ESV	Errored Seconds—VC Path
• etherStatsBroadcastPkts	The total number of good packets received that were directed to a multicast address
• etherStatsCollisions	Number of transmit packets that are collisions
• etherStatsCRCAlignErrors	The total number of packets received that have a length (excluding framing bits, but including frame check sequence [FCS] octets) of between 64 and 1518 octets
• etherStatsDropEvents	Number of received frames dropped at the port level
• etherStatsFragments	The total number of packets received that were less than 64 octets
• etherStatsJabbers	The total number of packets received that are longer than 1518 octets
• etherStatsOctets	The total number of octets of data
• etherStatsOversizePkts	The total number of packets received that are longer than 1518 octets
• etherStatsPkts	The total number of packets (including bad packets, broadcast packets, and multicast packets) received
• etherStatsUndersizePkts	The total number of packets received that are less than 64 octets
• FCP	Failure Count—Line
• FC-PM	OTN—Failure Count—Path Monitor Point
• FC-SM	OTN—Failure Count—Section Monitor Point
• HP-AR	Availability Ratio
• HP-BBE	High-Order Path Background Block Error
• HP-BBER	High-Order Path Background Block Error Ratio
• HP-EB	High-Order Path Errored Block
• HP-ES	High-Order Path Errored Second
• HP-ESA	High-Order Path Errored Seconds—A
• HP-ESB	High-Order Path Errored Seconds—B
• HP-ESR	High-Order Path Errored Second Ratio
• HP-FC	High-Order Path Failure Count
• HP-NPJC-PDET	High Order Path Negative Pointer Justification Count-Path Detected
• HP-NPJC-PGEN	High Order Path Pointer Justification Count Seconds-Path Generated

Table 23-7 Parameter Support

Parameter	Description
• HP-OI	Outage Intensity
• HP-PJCDIFF	High Order Path Pointer Justification Count Difference
• HP-PJCS-PDET	High Order Path Pointer Justification Count Seconds-Path Detected
• HP-PPJC-PDET	High Order Path Positive Pointer Justification Count-Path Detected
• HP-PPJC-PGEN	High Order Path Positive Pointer Justification Count-Path Generated
• HP-SEPI	The number of High-Order Path Severely Errored Period Intensity events in available time
• HP-SES	High-Order Path Severely Errored Seconds
• HP-SESR	High-Order Path Severely Errored Second Ratio
• HP-UAS	High-Order Path Unavailable Seconds
• ifInBroadcastPkts	Number of broadcast packets received since the last counter reset
• ifInDiscards	The number of inbound packets
• ifInErrorBytePktss	Receive Error Byte
• ifInErrors	The number of inbound packets (or transmission units) that contained errors
• ifInFramingErrorPkts	Receive Framing Error
• ifInJunkInterPkts	Receive Interpacket Junk
• ifInMulticastPkts	Number of multicast packets received since the last counter reset
• ifInOctets	Number of bytes transmitted since the last counter reset
• ifInUcastPkts	Number of unicast packets received since the last counter reset
• ifOutBroadcastPkts	Number of broadcast packets transmitted
• ifOutDiscards	The number of outbound packets
• ifOutErrors	The number of outbound packets (or transmission units) that could not be transmitted because of errors
• ifOutMulticastPkts	Number of multicast packets transmitted
• ifOutPayloadCrcErrors	Received payload cyclic redundancy check (CRC) errors
• ifOutUcastPkts	Number of unicast packets transmitted
• IOS	8B10—Idle Ordered Sets
• IPC	Invalid Packet Count
• LBCL-AVG	Average Laser Bias current in microA
• LBCL-MAX	Maximum Laser Bias current in microA
• LBCL-MIN	Minimum Laser Bias current in microA
• LBCN	Normalized Laser Bias current for STM1-8
• LBCN-HWT	Laser bias current
• LBCN-LWT	Laser bias current
• LOSSL	Loss of Signal Seconds—Line
• LP-BBE	Low-Order Path Background Block Error
• LP-BBER	Low-Order Path Background Block Error Ratio

Table 23-7 Parameter Support

Parameter	Description
• LP-EB	Low-Order Path Errored Block
• LP-ES	Low-Order Path Errored Second
• LP-ESA	Low-Order Path Errored Seconds—A
• LP-ESB	Low-Order Path Errored Seconds—B
• LP-ESR	Low-Order Path Errored Second Ratio
• LP-FC	Low-Order Path Failure Count
• LP-NPJC-DET	Low Order Negative Pointer Justification Count, Detected
• LP-NPJC-GEN	Low Order Negative Pointer Justification Count, Generated
• LP-PPJC-DET	Low Order Positive Pointer Justification Count, Detected
• LP-PPJC-GEN	Low Order Positive Pointer Justification Count, Generated
• LP-SEP	A sequence of between 3 to 9 consecutive SES
• LP-SEPI	Low-Order Path Severely Errored Period Intensity
• LP-SES	Low-Order Path Severely Errored Seconds
• LP-UAS	Low-Order Path Unavailable Seconds
• MS-PSC	Protection Switch Count
• MS-PSD	Protection Switch Duration
• NIOS	8B10B—Non Idle Ordered Sets
• NPJC-PDET	PPJC-PDET:Negative Pointer Justification
• NPJC-PGEN	PPJC-PGEN:Negative Pointer Justification
• OPR-AVG	Average Receive Power in tenths of a microW
• OPR-MAX	Maximum Receive Power in tenths of a microW
• OPR-MIN	Minimum Receive Power in tenths of a microW
• OPRN	Normalized Optical Receive Power for STM1-8
• OPRN-MAX	Maximum value for OPRN
• OPRN-MIN	Minimum value for OPRN
• OPT-AVG	Average Transmit Power in tenths of a microW
• OPT-MAX	Maximum Transmit Power in tenths of a microW
• OPT-MIN	Minimum Transmit Power in tenths of a microW
• OPTN	Normalized value for Optical Power Transmitted for STM1-8 card
• OPTN-MAX	Maximum value for OPTN
• OPTN-MIN	Minimum value for OPTN
• OPWR-AVG	Optical Power—Average Interval Value in tenths of a dBm
• OPWR-MAX	Optical Power—Maximum Interval Value in tenths of a dBm
• OPWR-MIN	Optical Power—Minimum Interval Value in tenths of a dBm
• PPJC-PDET	Positive Pointer Justification Count—Path Detected
• PPJC-PGEN	Positive Pointer Justification Count—Path Generated

Table 23-7 Parameter Support

Parameter	Description
• PSC	Protection Switching Count
• PSC-R	Protection Switching Count—Ring
• PSC-S	Protection Switching Count—Span
• PSC-W	Protection Switching Count—Working
• PSD	Protection Switching Duration
• PSD-R	Protection Switching Duration—Ring
• PSD-S	Protection Switching Duration—Span
• PSD-W	Protection Switching Duration—Working
• SASCPP	Severely Errored Framing/AIS Second—CP-Bit Path
• SASP	Severely Errored Framing/AIS Seconds Path
• SEFS	Severely Errored Framing Seconds
• SESCPP	Severely Errored Second—CP-Bit Path
• SESL	Severely Errored Second—Line
• SESP	Severely Errored Second—Path
• SES-PM	OTN—Severely Errored Second—Path
• SESR	Severely Errored Second—Ratio
• SESR-PM	OTN—Severely Errored Second Ratio—Path Monitor Point expressed in tenths of a percentage
• SESR-SM	OTN—Severely Errored Second Ratio—Section Monitor Point expressed in tenths of a percentage
• SESS	Severely Errored Second—Section
• SES-SM	OTN—Severely Errored Second—Section Monitor Point
• SESV	Severely Errored Second—VC Path
• UASCPP	Unavailable Second—CP-Bit Path
• UASL	Unavailable Second—Line
• UASP	Unavailable Second—Path
• UAS-PM	OTN—Unavailable Second—Path Monitor Point
• UAS-SM	OTN—Unavailable Second—Section Monitor Point
• UASV	Unavailable Second—VC Path
• UNC-WORDS	FEC—Uncorrectable Words
• VPC	Valid Packet Count
• OSNR-MIN	Minimum Optical Signal To Noise Ratio.
• OSNR-MAX	Maximum Optical Signal To Noise Ratio.
• PMD-MIN	Minimum Polarization Mode Dispersion.
• PMD-MAX	Maximum Polarization Mode Dispersion.
<THELV>	Threshold level. THLEV is a float.

Table 23-7 Parameter Support

Parameter	Description
<LOCN>	(Optional) Location associated with a particular command. The parameter type is LOCATION, which is the location where the action is to take place.
<ul style="list-style-type: none"> <li>FEND</li> </ul>	Action occurs on the far end of the facility.
<ul style="list-style-type: none"> <li>NEND</li> </ul>	Action occurs on the near end of the facility.
<TMPER>	(Optional) Accumulation time period for performance counters. The parameter type is TMPER, which is the accumulation time period for the performance management center.
<ul style="list-style-type: none"> <li>1-DAY</li> </ul>	Performance parameter accumulation interval length is every 24 hours. For SDH PM data, only one day of history data is available. For RMON managed PM data, seven days of history data are available.
<ul style="list-style-type: none"> <li>1-HR</li> </ul>	Performance parameter accumulation interval length is every 1 hour. This is only applicable to RMON managed PM data. There are 24 hours of history data available.
<ul style="list-style-type: none"> <li>1-MIN</li> </ul>	Performance parameter accumulation interval length is every 1 minute. This is only applicable to RMON managed PM data. There are 60 minutes of history available.
<ul style="list-style-type: none"> <li>15-MIN</li> </ul>	Performance parameter accumulation interval length is every 15 minutes. There are 32 15-MIN buckets of history data available for this accumulation interval length.
<ul style="list-style-type: none"> <li>RAW-DATA</li> </ul>	Performance parameter accumulation interval length starts from the last time the counters were cleared. This is only applicable to RMON managed PMs.

## 23.11 SET-TOD

(Cisco ONS 15454 SDH) The Set Time of Day (SET-TOD) command sets the system date and time for the NE. The year should be entered using four digits while the hour should be entered using a 24-hour time period (that is, military time).

**Usage Guidelines** None

**Category** System

**Security** Provisioning

**Input Format** SET-TOD:[<TID>]::<CTAG>::<YEAR>,<MONTH>,<DAY>,<HOUR>,<MINUTE>,<SECOND>,<DIFFERENCE>][:DST=<DST>];

**Input Example** SET-TOD:CAZADERO::240::1998,05,08,13,18,55,480:DST=Y;

**Table 23-8** Parameter Support

Parameter	Description
<YEAR>	The current calendar year. YEAR is an integer.
<MONTH>	The month of the year. Ranges from 01 to 12. MONTH is an integer.
<DAY>	The day of the month. Ranges from 01 to 31. DAY is an integer.
<HOUR>	The hour of the day. Ranges from 00 to 23. HOUR is an integer.
<MINUTE>	The minute of the hour. Ranges from 00 to 59. MINUTE is an integer.
<SECOND>	The second of the minute. Ranges from 00 to 59. SECOND is an integer.
<DIFFERENCE>	(Optional) The number of minutes off UTC. DIFFERENCE is an integer.
<DST>	(Optional) Daylight savings time. The parameter type is ON_OFF (disable or enable an attribute).
• N	Disable an attribute.
• Y	Enable an attribute.