



OPR Commands



Note

The terms "Unidirectional Path Switched Ring" and "UPSR" may appear in Cisco literature. These terms do not refer to using Cisco ONS 15xxx products in a unidirectional path switched ring configuration. Rather, these terms, as well as "Path Protected Mesh Network" and "PPMN," refer generally to Cisco's path protection feature, which may be used in any topological network configuration. Cisco does not recommend using its path protection feature in any particular topological network configuration.

This chapter provides OPR (operate) commands for the Cisco ONS 15454, ONS 15327, ONS 15600 and ONS 15310-CL.

16.1 OPR-ACO-ALL

Operate Alarm Cutoff All

Usage Guidelines

Cisco ONS 15454, ONS 15600

This command cuts off the office audible alarm indication without changing the local alarm indications.

This command does not have any effect on future alarms at the network element (NE); it directs the NE to provide conditioning only on those alarms that are currently active.

The ACO retires the Central Office (CO) alarm audible indicators without clearing the indicators that show the trouble still exists. There is no need for a RLS-ACO command.

Category

Environment

Security

Maintenance

Related Commands	OPR-EXT-CONT	RTRV-ALM-ENV	RTRV-EXT-CONT
	REPT ALM ENV	RTRV-ATTR-CONT	SET-ATTR-CONT
	REPT EVT ENV	RTRV-ATTR-ENV	SET-ATTR-ENV
	RLS-EXT-CONT	RTRV-COND-ENV	SET-ATTR-SECUDFLT

Input Format OPR-ACO-ALL:[<TID>]::<CTAG>;

Input Example OPR-ACO-ALL:CISCO::123;

Input Parameters

Table 16-1 OPR-ACO-ALL Input Parameters

Parameter and Values	Description
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16.2 OPR-ALS

Operate Automatic Laser Shutoff

Usage Guidelines Cisco ONS 15454, ONS 15310-CL
This command is used to restart the laser of an OC-N facility and in general for all of the facilities that support the ALS feature.

Category Ports

Security Maintenance

Related Commands		
	DLT-<MOD1PAYLOAD>	RLS-PROTNSW-<MOD2DWDMPAYLOAD>
	DLT-BULKROLL-<OCN_TYPE>	RLS-PROTNSW-<OCN_TYPE>
	DLT-FFP-<MOD2DWDMPAYLOAD>	RMV-<MOD2>
	DLT-FFP-<OCN_TYPE>	RST-<MOD2>
	ED-<GIGE_TYPE>	RTRV-<MOD1FCPAYLOAD>
	ED-<MOD1FCPAYLOAD>	RTRV-<MOD1FICONPAYLOAD>
	ED-<MOD1FICONPAYLOAD>	RTRV-<MOD2DWDMPAYLOAD>
	ED-<MOD2DWDMPAYLOAD>	RTRV-<OCN_TYPE>
	ED-<OCN_TYPE>	RTRV-10GIGE
	ED-ALS	RTRV-ALMTH-<MOD2>
	ED-BULKROLL-<OCN_TYPE>	RTRV-ALS
	ED-DS1	RTRV-BFDLPM-<MOD2>
	ED-DS3I	RTRV-BULKROLL-<OCN_TYPE>
	ED-EC1	RTRV-DS1
	ED-FAC	RTRV-DS3I
	ED-FFP-<MOD2DWDMPAYLOAD>	RTRV-EC1
	ED-FFP-<OCN_TYPE>	RTRV-FAC
	ED-FSTE	RTRV-FFP-<MOD2DWDMPAYLOAD>
	ED-G1000	RTRV-FFP-<OCN_TYPE>
	ED-GFP	RTRV-FSTE
	ED-HDLC	RTRV-G1000
	ED-POS	RTRV-GFP
	ED-T1	RTRV-GIGE
	ED-T3	RTRV-HDLC
	ENT-<MOD1PAYLOAD>	RTRV-PM-<MOD2>
	ENT-BULKROLL-<OCN_TYPE>	RTRV-PMSCHED-<MOD2>
	ENT-FFP-<MOD2DWDMPAYLOAD>	RTRV-POS
	ENT-FFP-<OCN_TYPE>	RTRV-PROTNSW-<MOD2DWDMPAYLOAD>
	INIT-REG-<MOD2>	RTRV-PROTNSW-<OCN_TYPE>
	OPR-LPBK-<MOD2>	RTRV-T1
	OPR-PROTNSW-<MOD2DWDMPAYLOAD>	RTRV-T3
	OPR-PROTNSW-<OCN_TYPE>	RTRV-TH-<MOD2>
	REPT PM <MOD2>	SCHED-PMREPT-<MOD2>
	REPT RMV <MOD2_IO>	SET-ALMTH-<MOD2>
	REPT RST <MOD2_IO>	SET-TH-<MOD2>
	RLS-LPBK-<MOD2>	
Input Format	OPR-ALS:[<TID>]:<AID>:<CTAG>[:];	

Input Example

OPR-ALS:CISCO:FAC-1-1:100;

Input Parameters

Table 16-2 OPR-ALS Input Parameters

Parameter and Values	Description
AID	Access identifier from the “25.1.2 AidUnionId” section on page 25-9

16.3 OPR-APC

Operate Amplification Power Control

Usage Guidelines

Cisco ONS 15454

This command permits the APC application inside the NE to force regulation of the optical power to the entire DWDM ring.

Category

DWDM

Security

Maintenance

Related Commands

DLT-LNK-<MOD2O>	ED-WLEN	RTRV-FFP-OCH
DLT-LNKTERM	ENT-LNK-<MOD2O>	RTRV-LNK-<MOD2O>
DLT-OSC	ENT-LNKTERM	RTRV-LNKTERM
DLT-WLEN	ENT-OSC	RTRV-NE-APC
ED-APC	ENT-WLEN	RTRV-NE-WDMANS
ED-DWDM	OPR-LASER-OTS	RTRV-OCH
ED-FFP-OCH	OPR-PROTNSW-OCH	RTRV-OMS
ED-LNK-<MOD2O>	OPR-SLV-WDMANS	RTRV-OPM
ED-LNKTERM	OPR-WDMANS	RTRV-OSC
ED-OCH	RLS-LASER-OTS	RTRV-OTS
ED-OMS	RLS-PROTNSW-OCH	RTRV-PROTNSW-OCH
ED-OSC	RTRV-APC	RTRV-SLV-WDMANS
ED-OTS	RTRV-CLNT	RTRV-TRC-OCH
ED-SLV-WDMANS	RTRV-DWDM	RTRV-WDMANS
ED-TRC-OCH	RTRV-ESCON	RTRV-WLEN
ED-WDMANS		

Input Format

OPR-APC:[<TID>]::<CTAG>[::];

Input Example

OPR-APC:VA454-22::116;

Input Parameters

Table 16-3 OPR-APC Input Parameters

Parameter and Values	Description
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16.4 OPR-EXT-CONT

Operate External Control

Usage Guidelines

Cisco ONS 15454, ONS 15327, ONS 15600, ONS 15310-CL

This command operates an external control and closes the external control contact. The control can be operated momentarily or continuously.



Note

- The duration has two values in this release:
MENTRY: Momentary duration
CONTS: Continuous duration
- In an automatic state, the contact could be opened or closed depending on the provisioned trigger.
- RLS-EXT-CONT changes the state to automatic. Therefore, issuing an OPR-EXT-CONT command when the control is manually open and then issuing a RLS-EXT-CONT will not revert the state back to Manual Open.
- A NULL value for the duration parameter defaults to MENTRY in this release.
- RLS-EXT-CONT is not allowed during the MENTRY duration, the command is allowed for the CONTS duration. The length of the MENTRY duration is set to be 2 seconds on the Cisco ONS 15454.
- RLS-EXT-CONT cannot change the state to automatic if the existing state is Manual Open.



Caution

Do not turn on external controls that activate a potential danger, such as, sprinklers or other controls connected to possibly hazardous systems or equipment.

Category

Environment

Security

Maintenance

Related Commands	OPR-ACO-ALL	RTRV-ALM-ENV	RTRV-EXT-CONT
	REPT ALM ENV	RTRV-ATTR-CONT	SET-ATTR-CONT
	REPT EVT ENV	RTRV-ATTR-ENV	SET-ATTR-ENV
	RLS-EXT-CONT	RTRV-COND-ENV	SET-ATTR-SECUDFLT

Input Format OPR-EXT-CONT:[<TID>]:<AID>:<CTAG>::[<CONTTYPE>],[<DURATION>];

Input Example OPR-EXT-CONT:CISCO:ENV-OUT-2:123::AIRCOND,CONTS;

Input Parameters

Table 16-4 OPR-EXTR-CONT Input Parameters

Parameter and Values	Description
AID	Access identifier from the “25.1.12 ENV” section on page 25-26 . Must not be null
CONTTYPE	Environmental control type. A null value is equivalent to ALL Parameter type is CONTTYPE—Environmental control types
• AIRCOND	Air conditioning
• ENGINE	Engine
• FAN	Fan
• GEN	Generator
• HEAT	Heat
• LIGHT	Light
• MISC	Miscellaneous
• SPKLR	Sprinkler
DURATION	Duration. A null value is equivalent to ALL Parameter type is Duration—Duration
• CONTS	Continuous duration

16.5 OPR-LASER-OTS

Operate Laser Optical Transport Section

Usage Guidelines

Cisco ONS 15454

This command instructs a laser to switch on.

Category

DWDM

Security Maintenance

Related Commands	DLT-LNK-<MOD2O>	ED-TRC-OCH	RTRV-FFP-OCH
	DLT-LNKTERM	ED-WDMANS	RTRV-LNK-<MOD2O>
	DLT-OSC	ED-WLEN	RTRV-LNKTERM
	DLT-WLEN	ENT-LNK-<MOD2O>	RTRV-NE-WDMANS
	ED-DWDM	ENT-LNKTERM	RTRV-OCH
	ED-FFP-OCH	ENT-OSC	RTRV-OMS
	ED-LNK-<MOD2O>	ENT-WLEN	RTRV-OSC
	ED-LNKTERM	OPR-PROTNSW-OCH	RTRV-OTS
	ED-OCH	OPR-SLV-WDMANS	RTRV-PROTNSW-OCH
	ED-OMS	OPR-WDMANS	TRV-SLV-WDMANS
	ED-OSC	RLS-LASER-OTS	RTRV-TRC-OCH
	ED-OTS	RLS-PROTNSW-OCH	RTRV-WDMANS
	ED-SLV-WDMANS	RTRV-DWDM	RTRV-WLEN

Input Format OPR-LASER-OTS:[<TID>]:<AID>:<CTAG>;

Input Example OPR-LASER-OTS::LINE-5-2-TX:3;

Input Parameters

Table 16-5 OPR-LASER-OTS Input Parameters

Parameter and Values	Description
AID	Access identifier of an optical facility supporting laser from the “25.1.16 LINE” section on page 25-31

16.6 OPR-LNK

Operate Link

Usage Guidelines

Cisco ONS 15454

This command operates the optical link (OLNK) application inside the NE to calculate all the automatic optical links between end points that can be univocally identified by the NE.

Category DWDM

Security

Maintenance

Related Commands

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Input Format

OPR-LNK:[<TID>]::<CTAG>;

Input Example

OPR-LNK:PENNGROVE::114;

Input Parameters**Table 16-6 OPR-LNK Input Parameters**

Parameter and Values	Description
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16.7 OPR-LPBK-<MOD2>

Operate Loopback (10GFC, 10GIGE, 1GFC, 1GFICON, 2GFC, 2GFICON, CLNT, D1VIDEO, DS1, DV6000, E1, E3, E4, EC1, ESCON, ETRCLO, FSTE, G1000, GFPOS, GIGE, HDTV, ISC1, OC12, OC192, OC3, OC48, OCH, OMS, OTS, POS, STS1, STS12C, STS18C, STS192C, STS24C, STS36C, STS3C, STS48C, STS6C, STS9C, T1, T3, VC12, VC3, VT1, VT2)

Usage Guidelines

Cisco ONS 15454, ONS 15327, ONS 15600, ONS 15310-CL

See [Table 27-1 on page 27-1](#) for supported modifiers by platform.

This command operates a signal loopback on a traffic or a cross-connect card.

The optional [<LPBKTYPE>] defaults to FACILITY in this command if it is given to a port entity. It defaults to CRS if given to an STS entity.

**Note**

- The value CRS for the LPBKTYPE parameter is applicable only for the STS modifier. The FACILITY and TERMINAL values are applicable to the ports.
- The TERMINAL loopback type is not supported for the DS1 line of a DS3XM card.
- Loopbacks are only allowed to be set up if the port/interface/STS_PATH is in the OOS-MT or in OOS-AINS state.
- Cross-connect loopbacks cannot be applied to the destination end of any 1WAY cross-connect.
- A cross-connect loopback can be applied only on one STS path of a cross-connect.
- FEAC loopbacks can be applied by using the LINE value for LPBKTYPE parameter and specifying the LOCN as FEND. The FEAC loopbacks are supported only on the DS3(T3) and DS1 interfaces on the DS3XM-12 and DS3XM-6 card.
- FEAC loopbacks can be applied only if the DS3 is in C-bit framing format. FEAC loopbacks will override existing loopbacks at the near end on the entity and vice-versa. This means that if a facility loopback has been applied on a port and if the FEAC loopback is applied, then the facility loopback is first released and the far end loopback is applied.

- The LINE value is supported only with the FEND value of the LOCN parameter. FACILITY, TERMINAL, and CRS values are not compatible with the FEND value for the LOCN parameter.
- A Lockout of the protection command is required before putting the span of either two-fiber or four-fiber BLSR line in loopback.
 - A span lockout of one side (for example, East side) of the two-fiber BLSR is required before operating a Facility (or Terminal) line Loopback on the same side (for example, East side) of the ring.
 - A span lockout of one Protection side (for example, East Protection side) of the four-fiber BLSR is required before operating a Facility (or Terminal) line Loopback on the same side Working line (for example, East Working side) of the ring.
- FEAC loopbacks on the DS1 interface of a DS3XM card can be applied only if a VT connection has been created on it. An attempt to operate/release FEAC loopbacks in the absence of a VT connection will lead to an error message response.
- The FEAC line is supported only with the FEND value of the LOCN parameter on DS1, T3 of the DS3XM-12 card.

Category

Troubleshooting and Test Access

Security

Maintenance

Related Commands	DLT-<MOD1PAYLOAD>	RLS-PROTNSW-<OCN_TYPE>
	DLT-FFP-<MOD2DWDMPAYLOAD>	RMV-<MOD2>
	DLT-FFP-<OCN_TYPE>	RST-<MOD2>
	ED-<GIGE_TYPE>	RTRV-<MOD1FCPAYLOAD>
	ED-<MOD1FCPAYLOAD>	RTRV-<MOD1FICONPAYLOAD>
	ED-<MOD1FICONPAYLOAD>	RTRV-<MOD2DWDMPAYLOAD>
	ED-<MOD2DWDMPAYLOAD>	RTRV-<OCN_TYPE>
	ED-<OCN_TYPE>	RTRV-10GIGE
	ED-ALS	RTRV-ALMTH-<MOD2>
	ED-DS1	RTRV-ALS
	ED-EC1	RTRV-DS1
	ED-FFP-<MOD2DWDMPAYLOAD>	RTRV-EC1RTRV-FAC
	ED-FFP-<OCN_TYPE>	RTRV-FFP-<MOD2DWDMPAYLOAD>
	ED-FSTE	RTRV-FFP-<OCN_TYPE>
	ED-G1000	RTRV-FSTE
	ED-GFP	RTRV-G1000
	ED-HDLC	RTRV-GFP
	ED-POS	RTRV-GIGE
	ED-T1	RTRV-HDLC
	ED-T3	RTRV-PM-<MOD2>
	ED-TRC-<MOD2DWDMPAYLOAD>	RTRV-PMSCHED-<MOD2>
	ED-TRC-<OCN_TYPE>	RTRV-POS
	ENT-<MOD1PAYLOAD>	RTRV-PROTNSW-<MOD2DWDMPAYLOAD>
	ENT-FFP-<MOD2DWDMPAYLOAD>	RTRV-PROTNSW-<OCN_TYPE>
	ENT-FFP-<OCN_TYPE>	RTRV-T1
	INIT-REG-<MOD2>	RTRV-T3
	OPR-ALS	RTRV-TH-<MOD2>
	OPR-PROTNSW-<MOD2DWDMPAYLOAD>	RTRV-TRC-<MOD2DWDMPAYLOAD>
	OPR-PROTNSW-<OCN_TYPE>	RTRV-TRC-<OCN_TYPE>
	REPT PM <MOD2>	SCHED-PMREPT-<MOD2>
	RLS-LPBK-<MOD2>	SET-ALMTH-<MOD2>
	RLS-PROTNSW-<MOD2DWDMPAYLOAD>	SET-TH-<MOD2>
Input Format	OPR-LPBK-<MOD2>:[<TID>]:<AID>:<CTAG>::[<LOCATION>],,,[<LPBKTYPE>];	
Input Example	OPR-LPBK-DS1:PTREYES:DS1-4-1-2-13:203::NEND,,,FACILITY;	

Input Parameters

Table 16-7 OPR-LPBK-<MOD2> Input Parameters

Parameter and Values	Description
AID	Access identifier from the “25.1.1 ALL” section on page 25-1. The valid values for AID are FACILITY, DS1, and STS
LOCATION	The location where the operation is to be carried out. LOCATION defaults to NEND Parameter type is LOCATION—location where the action is to take place
• FEND	Action occurs on the far end of the facility
• NEND	Action occurs on the near end of the facility
LPBKTYPE	Type of loopback signal Parameter type is LPBK_TYPE—indicates the type of loopback that is to be operated or released
• CRS	Path level loopback that is established at the cross-connect matrix level (the XCVT/XC10G card). An STS-level cross-connect loopback causes an AIS-P to be sent on the outgoing direction of transmission
• FACILITY	Type of loopback that connects the incoming received signal immediately following the optical-to-electrical conversion (after descrambling) to the associated transmitter in the return direction
• LINE	Line level loopback for a far end DS1 path loop back of the DS3XM. The DS3XM cards only support the DS1 path far end FEAC loopback in this release
• TERMINAL	A loopback that connects the signal that is about to be transmitted (after scrambling but before the electrical-to-optical conversion) and is connected to the associated, incoming receiver

16.8 OPR-PROTNSW-<MOD2DWDMPAYLOAD>

Operate Protection Switch (10GFC, 10GIGE, 1GFC, 1GFICON, 2GFC, 2GFICON, D1VIDEO, DV6000, ETRCLO, GIGE, HDTV, ISC1, ISC3, PASSTHRU)

Usage Guidelines

Cisco ONS 15454

See [Table 27-1 on page 27-1](#) for supported modifiers by platform.

This command initiates a Y-cable protection switch request. User switch requests initiated with this command remain active until they are released via the RLS-PROTNSW-<MOD2DWDMPAYLOAD> command or are overridden by a higher priority protection switch request.

The switch commands; MAN (Manual Switch), FRCD (Forced Switch) and LOCKOUT (Lockout) are supported by the ONS 15454, however, you must have provisioning or higher privilege to execute FRCD and LOCKOUT operations.

Manual Switch of Protection Line (to Working Line). If the AID identifies the protection line, then (only in the 1+1 architecture) service will be transferred from the protection line to the working line, unless a request of equal or higher priority is in effect.

Manual Switch of Working Line (to Protection Line). If the AID identifies a working line, service will be switched from the working line to the protection line unless a request of equal or higher priority is in effect.

Force Switch of Protection Line (to Working Line). If the AID identifies the protection line, service will be transferred from the protection line to the working line unless a request of equal or higher priority is in effect.

Force Switch of Working Line (to Protection Line). If the AID identifies a working line, service will be transferred from the working line to the protection line unless a request of equal or higher priority is in effect. A lockout of protection and a signal fail of protection line have higher priority than this switch command.

Lockout of Protection Line. If the AID identifies the protection line, this switch command will prevent the working line from switching to protection line. If the working line is already on protection, then the working line will be switched back to its original working line.

Lockout of Working Line. If the AID identifies the working line, this switch command will prevent the working line from switching to protection line. If the working line is already on protection, then the working line will be switched back from protection line to its original working line.

If the command is used against preprovisioned cards, the SROF (Protection Switching Failed) error is returned.

Category

DWD

Security

Maintenance

Related Commands

DLT-<MOD1PAYLOAD>	RLS-PROTNSW-<OCN_TYPE>
DLT-FFP-<MOD2DWDMPAYLOAD>	RMV-<MOD2>
DLT-FFP-<OCN_TYPE>	RST-<MOD2>
ED-<GIGE_TYPE>	RTRV-<MOD1FCPAYLOAD>
ED-<MOD1FCPAYLOAD>	RTRV-<MOD1FICONPAYLOAD>
ED-<MOD1FICONPAYLOAD>	RTRV-<MOD2DWDMPAYLOAD>
ED-<MOD2DWDMPAYLOAD>	RTRV-<OCN_TYPE>
ED-<OCN_TYPE>	RTRV-10GIGE
ED-ALS	RTRV-ALMTH-<MOD2>
ED-DS1	RTRV-ALS
ED-EC1	RTRV-DS1
ED-FFP-<MOD2DWDMPAYLOAD>	RTRV-EC1RTRV-FAC
ED-FFP-<OCN_TYPE>	RTRV-FFP-<MOD2DWDMPAYLOAD>
ED-FSTE	RTRV-FFP-<OCN_TYPE>
ED-G1000	RTRV-FSTE
ED-GFP	RTRV-G1000
ED-HDLC	RTRV-GFP
ED-POS	RTRV-GIGE
ED-T1	RTRV-HDLC
ED-T3	RTRV-PM-<MOD2>
ED-TRC-<MOD2DWDMPAYLOAD>	RTRV-PMSCHED-<MOD2>
ED-TRC-<OCN_TYPE>	RTRV-POS
ENT-<MOD1PAYLOAD>	RTRV-PROTNSW-<MOD2DWDMPAYLOAD>
ENT-FFP-<MOD2DWDMPAYLOAD>	RTRV-PROTNSW-<OCN_TYPE>
ENT-FFP-<OCN_TYPE>	RTRV-T1
INIT-REG-<MOD2>	RTRV-T3
OPR-ALS	RTRV-TH-<MOD2>
OPR-LPBK-<MOD2>	RTRV-TRC-<MOD2DWDMPAYLOAD>
OPR-PROTNSW-<OCN_TYPE>	RTRV-TRC-<OCN_TYPE>
REPT PM <MOD2>	SCHED-PMREPT-<MOD2>
RLS-LPBK-<MOD2>	SET-ALMTH-<MOD2>
RLS-PROTNSW-<MOD2DWDMPAYLOAD>	SET-TH-<MOD2>

Input Format

```
OPR-PROTNSW-<MOD2DWDMPAYLOAD>:[<TID>]:<SRC>:<CTAG>::<SC>[:];
```

Input Example

```
OPR-PROTNSW-HDTV:CISCO:FAC-1-1-1:100::FRCD;
```

Input Parameters

Table 16-8 OPR-PROTNSW-<MOD2DWDMPAYLOAD> Input Parameters

Parameter and Values	Description
SRC	Access identifier from the “25.1.14 FACILITY” section on page 25-28
SC	Switch command that is to be initiated on the paths Parameter type is SW—the type of switch to be initiated
APS-CLEAR	APS-CLEAR switch state. It is a read-only switch state and is not allowed in the OPR-PROTNSW-xxx commands
CLEAR	CLEAR switch state. CLEAR switch state is not allowed in the OPR-PROTNSW-xxx commands
EXERCISE	EXERCISE switch state. EXERCISE switch state is not allowed in the OPR-PROTNSW-xxx commands
FRCD	Forces a switch unless another FRCD or LOCKOUT is in effect
LOCKOUT	Locks the facility out of switching. The system cannot switch to this facility to carry service
MAN	Requests a manual switch of the facility

16.9 OPR-PROTNSW-<OCN_TYPE>

Operate Protection Switch (OC3, OC12, OC48, OC192)

Usage Guidelines

Cisco ONS 15454, ONS 15327, ONS 15600, ONS 15310-CL

See [Table 27-1 on page 27-1](#) for supported modifiers by platform.

This command initiates a SONET line protection switch request. User switch requests initiated with this command remain active until they are released via the RLS-PROTNSW-OCN command or are overridden by a higher priority protection switch request.

The switch commands; MAN (Manual Switch), FRCD (Forced Switch) and LOCKOUT (Lockout) are supported by the ONS 15454.

Manual Switch of Protection Line (to Working Line). If the AID identifies the protection line, then (only in the 1+1 architecture) service will be transferred from the protection line to the working line, unless a request of equal or higher priority is in effect.

Manual Switch of Working Line (to Protection Line). If the AID identifies a working line, then service will be switched from the working line to the protection line unless a request of equal or higher priority is in effect.

Force Switch of Protection Line (to Working Line). If the AID identifies the protection line, then (only in the 1+1 architecture) service will be transferred from the protection line to the working line unless a request of equal or higher priority is in effect.

Force Switch of Working Line (to Protection Line). If the AID identifies a working line, then service will be transferred from the working line to the protection line unless a request of equal or higher priority is in effect. A lockout of protection and a signal fail of protection line have higher priority than this switch command.

Lockout of Protection Line. If the AID identifies the protection line, this switch command will prevent the working line from switching to protection line. If the working line is already on protection, then the working line will be switched back to its original working line.

Lockout of Working Line. If the AID identifies the working line, this switch command will prevent the working line from switching to protection line. If the working line is already on protection, then the working line will be switched back from protection line to its original working line.

The following actions will return error messages:

- This command is not used for the common control (TCC2/TCC2P or XCVT/XC10G) cards. A query on a common control card will generate an IIAC (Input, Invalid Access Identifier) error message. To use this command on the common control card switching commands, use the SW-DX-EQPT and ALW-SWDX-EQPT commands.
- Sending this command to electrical cards will return an IIAC (Input, Invalid Access Identifier) error message. To query an electrical card switching command, use the ALW-SWTOPROTN/SWTOWKG-EQPT and INH-SWTOPROTN/SWTOWKG-EQPT commands.
- Sending this command to query on a card that is not in a protection group will return the SNVS (Status, Not in Valid State) error message.
- Sending this command to a working card that is failed or missing will return the SROF (Protection Switching Failed) error message.
- Sending this command to a protect card that is failed or missing will return the SROF (Protection Switching Failed) error message.
- Protection for preprovisioned cards will not succeed.
- Sending this command to a card that is already in protection with a higher priority will return the SSRD (Status, Switch Request Denied) error message.
- Sending this command to an OCN line with a switching mode that is already in mode will return a SAMS (Already in the Maintenance State) error message.
- Sending this command with EXERCISE or APS_CLEAR switch operation will return an error SROF (Invalid Protection Switch Operation) because these operations are not valid according to GR-833-CORE. The EX-SW-<OCN_BLSR> is the correct command to perform the EXERCISE switch over the BLSR line.
- Protection switch will be denied if SD/SF is already present on the switching path. If SD/SF is generated on the switching path after the switch is performed, the switch will be overwritten by the APS_CLEAR state. This does not apply for lockout of protection and forced switch which have higher priority than SD/SF.

**Note**

- To get the protection switching state (manual, lockout, forced), use the RTRV-COND-ALL or RTRV-ALM-ALL commands.
- If the far end of the same span has a higher protection switching state, for example, the near end is under Manual protection switching state, the far end is in the forced protection switching state, the near end protection switching state will be preemptive and shown as APS_CLEAR switching state over the CTC/TL1 interface. The RTRV-PROTNSW-OCN command is used to retrieve the current switching state of a SONET line.
- Sending the following manual ring switching request:
 - A single TL1 command with both side/span AIDs (in the list AID format) of the same two-fiber or four-fiber ring.
 - The separated (via TL1, or CTC, or TL1 and CTC user interfaces) queries on the both sides/spans of the same two-fiber or four-fiber ring.

on both east and west sides/spans of a two-fiber or four-fiber ring in less than 30-45 seconds will cause the system to execute only one (WEST) side BLSR query and preempt the other (EAST) side query. There will be no event messages coming out for the preempted side whose switching state will be in APS-CLEAR state.

- DIRN is an optional parameter. A NULL value defaults to BTH for a BLSR protection, BTH for 1+1 BI directional protection group, and RCV for 1+1 UNI directional protection group.
DIRN follows these rules: TRMT will always fail for any kind of protection groups. For two-fiber and four-fiber BLSR protection groups both the RCV and TRMT directions will fail.
- DIRN is applicable for both 1+1 and BLSR protection groups. For example, OPR-PROTNSW can be performed on a BLSR span/ring as follows:
OPR-PROTNSW-OC48::FAC-5-1:A::LOCKOUT,SPAN:BTH;
- A lockout of the protection command is required before putting the span of either two-fiber or four-fiber BLSR line in loopback. (a) A span lockout of one side (for example, East side) of the two-fiber BLSR is required before operating a Facility (or Terminal) line Loopback on the same side (for example, East side) of the ring. (b) A span lockout of one Protection side (for example, East Protection side) of the four-fiber BLSR is required before operating a Facility (or Terminal) line Loopback on the same side Working line (for example, East Working side) of the ring.
- A span lockout on the working unit is not supported in ONS 15454, ONS 15327 and ONS 15600.

Category

Protection

Security

Maintenance

Related Commands	DLT-<MOD1PAYLOAD>	RLS-PROTNSW-<OCN_TYPE>
	DLT-FFP-<MOD2DWDMPAYLOAD>	RMV-<MOD2>
	DLT-FFP-<OCN_TYPE>	RST-<MOD2>
	ED-<GIGE_TYPE>	RTRV-<MOD1FCPAYLOAD>
	ED-<MOD1FCPAYLOAD>	RTRV-<MOD1FICONPAYLOAD>
	ED-<MOD1FICONPAYLOAD>	RTRV-<MOD2DWDMPAYLOAD>
	ED-<MOD2DWDMPAYLOAD>	RTRV-<OCN_TYPE>
	ED-<OCN_TYPE>	RTRV-10GIGE
	ED-ALS	RTRV-ALMTH-<MOD2>
	ED-DS1	RTRV-ALS
	ED-EC1	RTRV-DS1
	ED-FFP-<MOD2DWDMPAYLOAD>	RTRV-EC1RTRV-FAC
	ED-FFP-<OCN_TYPE>	RTRV-FFP-<MOD2DWDMPAYLOAD>
	ED-FSTE	RTRV-FFP-<OCN_TYPE>
	ED-G1000	RTRV-FSTE
	ED-GFP	RTRV-G1000
	ED-HDLC	RTRV-GFP
	ED-POS	RTRV-GIGE
	ED-T1	RTRV-HDLC
	ED-T3	RTRV-PM-<MOD2>
	ED-TRC-<MOD2DWDMPAYLOAD>	RTRV-PMSCHED-<MOD2>
	ED-TRC-<OCN_TYPE>	RTRV-POS
	ENT-<MOD1PAYLOAD>	RTRV-PROTNSW-<MOD2DWDMPAYLOAD>
	ENT-FFP-<MOD2DWDMPAYLOAD>	RTRV-PROTNSW-<OCN_TYPE>
	ENT-FFP-<OCN_TYPE>	RTRV-T1
	INIT-REG-<MOD2>	RTRV-T3
	OPR-ALS	RTRV-TH-<MOD2>
	OPR-LPBK-<MOD2>	RTRV-TRC-<MOD2DWDMPAYLOAD>
	OPR-PROTNSW-<MOD2DWDMPAYLOAD>	RTRV-TRC-<OCN_TYPE>
	REPT PM <MOD2>	SCHED-PMREPT-<MOD2>
	RLS-LPBK-<MOD2>	SET-ALMTH-<MOD2>
	RLS-PROTNSW-<MOD2DWDMPAYLOAD>	SET-TH-<MOD2>
Input Format	OPR-PROTNSW-<OCN_TYPE>:[<TID>]:<AID>:<CTAG>::<SC>,[<SWITCHTYPE>][:<DIRN>];	
Input Example	OPR-PROTNSW-OC48:CHICKALUMA:FAC-6-1:204::LOCKOUT,SPAN:BTH;	

Input Parameters

Table 16-9 OPR-PROTNSW-<OCN_TYPE> Input Parameters

Parameter and Values	Description
AID	Access identifier from the “ 25.1.14 FACILITY ” section on page 25-28 . Identifies the facility in the NE to which the switch request is directed
SC	Switch command that is to be initiated on the paths Parameter type is SW—the type of switch to be initiated
• APS-CLEAR	APS-CLEAR switch state. It is a read-only switch state and is not allowed in the OPR-PROTNSW-xxx commands
• CLEAR	CLEAR switch state. CLEAR switch state is not allowed in the OPR-PROTNSW-xxx commands
• EXERCISE	EXERCISE switch state. EXERCISE switch state is not allowed in the OPR-PROTNSW-xxx commands
• FRCD	Forces a switch unless another FRCD or LOCKOUT is in effect
• LOCKOUT	Locks the facility out of switching. The system cannot switch to this facility to carry service
• MAN	Requests a manual switch of the facility
SWITCHTYPE	BLSR switch type Parameter type is SWITCH_TYPE—switch type
• RING	BLSR ring switch type
• SPAN	BLSR span switch type
DIRN	The direction relative to the entity defined in the AID field. The direction of the switching. DIRN defaults to RCV Parameter type is DIRECTION—transmit and receive directions
• BTH	Both transmit and receive directions
• RCV	Receive direction only
• TRMT	Transmit direction only

16.10 OPR-PROTNSW-<PATH>

Operate Protection Switch (STS1, STS12C, STS18C, STS192C, STS24C, STS36C, STS3C, STS48C, STS6C, STS9C, VT1, VT2)

Usage Guidelines

Cisco ONS 15454, ONS 15327, ONS 15600, ONS 15310-CL

See [Table 27-1 on page 27-1](#) for supported modifiers by platform.

This command initiates a SONET path protection (Path Protection) switch request. User switch requests initiated with this command (forced switch, lockout, and manual switch) remain active until they are released through the RLS-PROTNSW-<PATH> command or overridden by a higher priority protection switch request.

**Note**

- This command applies to path protection configurations only.
- The VTAID should be working or protect AID only.
- If you send this command on the Drop AID, a DENY (Invalid AID, should use working/protect AID) message will be returned.
- To get the protection switching state (manual, lockout, forced), use the RTRV-COND-ALL or RTRV-ALM-ALL commands.
- The GR-1400 does not allow the LOCKOUT_OF_WORKING on the path protection WORKING path/AID. When sending this command on the path protection WORKING path, a SROF (Invalid Protection Switch Operation) is returned.
- If sending this command with EXERCISE or APS_CLEAR switch operation, an error SROF (Invalid Protection Switch Operation) will be returned because these operations are not valid according to GR-833-CORE.
- A protection switch will be denied if SD/SF is already present on the switching path. If SD/SF is generated on the switching path after the switch is performed, the switch will be overwritten by the APS_CLEAR state. This does not apply for lockout of protection and forced switch which have higher priority than SD/SF. This rule does not apply for Lockout of Protection and Forced Switch, which have a higher priority than SD/SF.

Category

Protection

Security

Maintenance

Related Commands

DLT-CRS-<PATH>	ENT-CRS-<PATH>	RTRV-NE-PATH
DLT-ROLL-<MOD_PATH>	ENT-ROLL-<MOD_PATH>	RTRV-PROTNSW-<PATH>
ED-<MOD_PATH>	RLS-PROTNSW-<PATH>	RTRV-PTHTRC-<PATH>
ED-CRS-<PATH>	RTRV-<PATH>	RTRV-ROLL-<MOD_PATH>
ED-NE-PATH	RTRV-CRS-<PATH>	

Input Format

OPR-PROTNSW-<PATH>[:<TID>]:<SRC>:<CTAG>[:<SC>[:];

Input Example

OPR-PROTNSW-ST1:CISCO:STS-2-1-1:123::MAN;

Input Parameters**Table 16-10 OPR-PROTNSW-*<PATH>* Input Parameters**

Parameter and Values	Description
SRC	Source access identifier from the “ 25.1.9 CrossConnectId ” section on page 25-15
SC	The switch command that is to be initiated on the paths Parameter type is SW—the type of switch to be initiated
APS-CLEAR	APS-CLEAR switch state. It is a read-only switch state and is not allowed in the OPR-PROTNSW-xxx commands
CLEAR	CLEAR switch state. CLEAR switch state is not allowed in the OPR-PROTNSW-xxx commands
EXERCISE	EXERCISE switch state. EXERCISE switch state is not allowed in the OPR-PROTNSW-xxx commands
FRCD	Forces a switch unless another FRCD or LOCKOUT is in effect
LOCKOUT	Locks the facility out of switching. The system cannot switch to this facility to carry service
MAN	Requests a manual switch of the facility

16.11 OPR-PROTNSW-OCH

Operate Protection Switch Optical Channel

Usage Guidelines

Cisco ONS 15454

This command performs a protection switch on the trunk port of a card that has splitter protection.

Category

DWDM

Security

Maintenance

Related Commands

DLT-LNK-<MOD2O>	ED-TRC-OCH	RTRV-FFP-OCH
DLT-LNKTERM	ED-WDMANS	RTRV-LNK-<MOD2O>
DLT-OSC	ED-WLEN	RTRV-LNKTERM
DLT-WLEN	ENT-LNK-<MOD2O>	RTRV-NE-WDMANS
ED-DWDM	ENT-LNKTERM	RTRV-OCH
ED-FFP-OCH	ENT-OSC	RTRV-OMS
ED-LNK-<MOD2O>	ENT-WLEN	RTRV-OSC
ED-LNKTERM	OPR-LASER-OTS	RTRV-OTS
ED-OCH	OPR-SLV-WDMANS	RTRV-PROTNSW-OCH
ED-OMS	OPR-WDMANS	RTRV-SLV-WDMANS
ED-OSC	RLS-LASER-OTS	RTRV-TRC-OCH
ED-OTS	RLS-PROTNSW-OCH	RTRV-WDMANS
ED-SLV-WDMANS	RTRV-DWDM	RTRV-WLEN

Input Format

OPR-PROTNSW-OCH:[<TID>]:<AID>:<CTAG>::<SW>;

Input Example

OPR-PROTNSW-OCH:VA454-22:CHAN-2-2:100::FRCD;

Input Parameters

Table 16-11 OPR-PROTNSW-OCH Input Parameters

Parameter and Values	Description
AID	Access identifier from the “25.1.7 CHANNEL” section on page 25-14 . Indicates the trunk port
SW	Switch operation Parameter type is SW—the type of switch to be initiated
• APS-CLEAR	APS-CLEAR switch state. It is a read-only switch state and is not allowed in the OPR-PROTNSW-xxx commands
• CLEAR	CLEAR switch state. CLEAR switch state is not allowed in the OPR-PROTNSW-xxx commands
• EXERCISE	EXERCISE switch state. EXERCISE switch state is not allowed in the OPR-PROTNSW-xxx commands
• FRCD	Forces a switch unless another FRCD or LOCKOUT is in effect
• LOCKOUT	Locks the facility out of switching. The system cannot switch to this facility to carry service
• MAN	Requests a manual switch of the facility

16.12 OPR-SLV-WDMANS

Operate Span Loss Verification Wavelength Division Multiplexing Automatic Node Set Up

Usage Guidelines

Cisco ONS 15454

This command performs the calculation of the expected span loss verification.

Category

DWDM

Security

Maintenance

Related Commands

DLT-LNK-<MOD2O>	ED-TRC-OCH	RTRV-FFP-OCH
DLT-LNKTERM	ED-WDMANS	RTRV-LNK-<MOD2O>
DLT-OSC	ED-WLEN	RTRV-LNKTERM
DLT-WLEN	ENT-LNK-<MOD2O>	RTRV-NE-WDMANS
ED-DWDM	ENT-LNKTERM	RTRV-OCH
ED-FFP-OCH	ENT-OSC	RTRV-OMS
ED-LNK-<MOD2O>	ENT-WLEN	RTRV-OSC
ED-LNKTERM	OPR-LASER-OTS	RTRV-OTS
ED-OCH	OPR-PROTNSW-OCH	RTRV-PROTNSW-OCH
ED-OMS	OPR-WDMANS	RTRV-SLV-WDMANS
ED-OSC	RLS-LASER-OTS	RTRV-TRC-OCH
ED-OTS	RLS-PROTNSW-OCH	RTRV-WDMANS
ED-SLV-WDMANS	RTRV-DWDM	RTRV-WLEN

Input Format

OPR-SLV-WDMANS:[<TID>]:<AID>:<CTAG>;

Input Example

OPR-SLV-WDMANS:VA454-22:WDMANS-E:116;

Input Parameters**Table 16-12 OPR-SLV-WDMANS Input Parameters**

Parameter and Values	Description
AID	Access identifier from the “25.1.29 WDMANS” section on page 25-42

16.13 OPR-SYNCNSW

Operate Synchronization Switch

Usage Guidelines

Cisco ONS 15454, ONS 15327, ONS 15600, ONS 15310-CL

This command initiates a switch to the reference specified by the synchronization reference number if the reference supplied is valid and of the same quality.

For manual types of switches, the reference to which you want to switch should be of the same quality as the active reference source, otherwise the command will fail.

If you want to switch to a reference of lower quality, use the forced switch option.

The Operate Synchronization Switches are released by the RLS-SYNCNSW command or are overridden by a synchronization reference failure.

Once the switch is effective, a minor alarm “MANSWTOPRI” (Manual Switch to Primary or Secondary Reference...) will be raised.

Category Synchronization

Security Maintenance

Related Commands	ED-BITS	REPT EVT BITS	RTRV-BITS
	ED-NE-SYCN	REPT EVT SYCN	RTRV-COND-BITS
	ED-SYCN	RLS-SYNCNSW	RTRV-COND-SYCN
	REPT ALM BITS	RTRV-ALM-BITS	RTRV-NE-SYCN
	REPT ALM SYCN	RTRV-ALM-SYCN	RTRV-SYCN

Input Format OPR-SYNCNSW:[<TID>]:[<AID>]:<CTAG>::<SWITCHTO>,[<SC>];

Input Example OPR-SYNCNSW:CISCO:SYNC-NE:3::PRI,MAN;

Input Parameters

Table 16-13 OPR-SYNCNSW Input Parameters

Parameter and Values	Description
AID	Access identifier from the “ 25.1.25 SYNC_REF ” section on page 25-40 . Defaults to SYNC-NE
SWITCHTO	Access identifier from the “ 25.1.26 SYNCNSW ” section on page 25-40 . Identifies the new synchronization reference that will be used
SC	Switch command to be initiated on the paths. Only MAN and FRCD switches are allowed for this command Parameter type is SW—the type of switch to be initiated
• FRCD	Forces a switch unless another FRCD or LOCKOUT is in effect
• MAN	Requests a manual switch of the facility

16.14 OPR-WDMANS

Operate Wavelength Division Multiplexing Automatic Node Set Up

Usage Guidelines

Cisco ONS 15454

This command initiates the Automatic Optical Node Set Up (AONS) application inside the NE to force a recompute of the value to be assigned to all VOAs representing the optical path inside the node.

Category

DWDM

Security

Maintenance

Related Commands

DLT-LNK-<MOD2O>	ED-TRC-OCH	RTRV-FFP-OCH
DLT-LNKTERM	ED-WDMANS	RTRV-LNK-<MOD2O>
DLT-OSC	ED-WLEN	RTRV-LNKTERM
DLT-WLEN	ENT-LNK-<MOD2O>	RTRV-NE-WDMANS
ED-DWDM	ENT-LNKTERM	RTRV-OCH
ED-FFP-OCH	ENT-OSC	RTRV-OMS
ED-LNK-<MOD2O>	ENT-WLEN	RTRV-OSC
ED-LNKTERM	OPR-LASER-OTS	RTRV-OTS
ED-OCH	OPR-PROTNSW-OCH	RTRV-PROTNSW-OCH
ED-OMS	OPR-SLV-WDMANS	RTRV-SLV-WDMANS
ED-OSC	RLS-LASER-OTS	RTRV-TRC-OCH
ED-OTS	RLS-PROTNSW-OCH	RTRV-WDMANS
ED-SLV-WDMANS	RTRV-DWDM	RTRV-WLEN

Input Format

OPR-WDMANS:[<TID>]::<CTAG>;

Input Example

OPR-WDMANS:PENNGROVE::114;

Input Parameters

Table 16-14 OPR-WDMANS Input Parameters

Parameter and Values	Description
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