Command Reference

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 appendix provides a command reference for those Cisco IOS commands or those aspects of Cisco IOS commands unique to ML-Series cards. For information about the standard Cisco IOS Release 12.2 commands, refer to the Cisco IOS documentation set available at http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/.

[no] bridge *bridge-group-number* protocol {drpri-rstp | ieee | rstp}

To define the protocol employed by a bridge-group, use the **bridge protocol** global configuration command. If no protocol will be employed by the bridge-group, this command is not needed. To remove a protocol from the bridge group, use the no form of this command with the appropriate keywords and arguments.

Syntax Description

Parameter	Description
drpri-rstp	The protocol that enables the Dual RPR Interconnect (DRPRI) feature of the ML-Series cards.
ieee	IEEE 802.1D Spanning Tree Protocol.
rstp	IEEE 802.1W Rapid Spanning Tree Protocol.
bridge-group-number	The identifying number of the bridge group being assigned a protocol.

Defaults

N/A

Command Modes

Global configuration

Usage Guidelines

The protocol DRPRI-RSTP is only employed when configuring ML-Series cards as part of a DRPRI. A bridge group with DRPRI is limited to one protocol, so the bridge group cannot also implement rapid spanning tree protocol (RSTP) or spanning tree protocol (STP).

Examples

The following example assigns the DRPRI protocol to the bridge group with the bridge group number of 100.

```
Router(config)# bridge 100 protocol drpri-rstp
```

[no] clock auto

Use the **clock auto** command to determine whether the system clock parameters are configured automatically from the TCC2/TCC2P card. When enabled, both summertime and timezone are automatically configured, and the system clock is periodically synchronized to the TCC2/TCC2P card. Use the no form of the command to disable this feature.

Syntax Description

This command has no arguments or keywords.

Defaults

The default setting is clock auto.

Command Modes

Global configuration

Usage Guidelines

The no form of the command is required before any manual configuration of summertime, timezone, or clock. The no form of the command is required if Network Time Protocol (NTP) is configured in Cisco IOS. The ONS 15454 SONET/SDH is also configured through Cisco Transport Controller (CTC) to use a NTP or Simple Network Time Protocol (SNTP) server to set the date and time of the node.

Examples

```
Router(config)# no clock auto
```

Related Commands

clock summertime

clock timezone

clock set

interface spr 1

Use this command to create a shared packet ring (spr) interface on an ML-Series card for a resilient packet ring (RPR). If the interface has already been created, this command enters spr interface configuration mode. The only valid spr interface number is 1.

Defaults N/A

Command Modes Global configuration

Usage Guidelines The command allows the user to create a virtual interface for the RPR/SPR. Commands such as **spr wrap** or **spr station-id** can then be applied to the RPR through SPR configuration command mode.

Examples The following example creates the shared packet ring interface:

```
Router(config)# interface spr 1
```

Related Commands spr drpri-id

spr-intf-id

spr station-id

spr wrap

[no] pos pdi holdoff *time*

Use this command to specify the time, in milliseconds, to holdoff sending the path defect indication (PDI) to the far-end when a VCAT member circuit is added to the virtual concatenation group (VCG). Use the no form of the command to use the default value.

Syntax Description

Parameter	Description
time	delay time in milliseconds, 100 to 1000

Defaults

The default value is 100 milliseconds.

Command Modes

Interface configuration mode (POS only)

Usage Guidelines

This value is normally configured to match the setting on the peer PTE. The time granularity for this command is 1 milliseconds.

Examples

```
Gateway(config)# int pos0
Gateway(config-if)# pos pdi holdoff 500
```

Related Commands

pos trigger defects

[no] pos report *alarm*

Use this command to specify which alarms/signals are logged to the console. This command has no effect on whether alarms are reported to the TCC2/TCC2P and CTC. These conditions are soaked and cleared per Telcordia GR-253. Use the no form of the command to disable reporting of a specific alarm/signal.

Syntax Description

Parameter	Description
alarm	The SONET/SDH alarm that is logged to the console. The alarms are as follows: **all**—All link down alarm failures **ber_sd_b3**—PBIP BER in excess of SD threshold failure **ber_sf_b3**—PBIP BER in excess of SD threshold failure **encap**—Path Signal Label Encapsulation Mismatch failure **pais**—Path Alarm Indication Signal failure **plop**—Path Loss of Pointer failure **ppdi**—Path Payload Defect Indication failure **pplm**—Payload label mismatch path **prdi**—Path Remote Defect Indication failure **ptim**—Path Trace Indicator Mismatch failure **puneq**—Path Label Equivalent to Zero failure

Defaults

The default is to report all alarms.

Command Modes

Interface configuration mode (POS only)

Usage Guidelines

This value is normally configured to match the setting on the peer PTE.

Examples

```
Gateway(config)# int pos0
Gateway(config-if)# pos report all
Gateway(config-if)# pos flag c2 1
03:16:51: %SONET-4-ALARM:  POS0: PPLM
Gateway(config-if)# pos flag c2 0x16
03:17:34: %SONET-4-ALARM:  POS0: PPLM  cleared
```

Related Commands

pos trigger defects

[non] pos trigger defects *condition*

Use this command to specify which conditions cause the associated POS link state to change. These conditions are soaked/cleared using the delay specified in the **pos trigger delay** command. Use the no form of the command to disable triggering on a specific condition.

Syntax Description

Parameter	Description
condition	The SONET/SDH condition that causes the link state change. The conditions are as follows: **all**—All link down alarm failures **ber_sd_b3**—PBIP BER in excess of SD threshold failure **ber_sf_b3**—PBIP BER in excess of SD threshold failure (default) **encap**—Path Signal Label Encapsulation Mismatch failure (default) **pais**—Path Alarm Indication Signal failure (default) **plop**—Path Loss of Pointer failure (default) **ppdi**—Path Payload Defect Indication failure (default) **pplm**—Payload label mismatch path (default) **prdi**—Path Remote Defect Indication failure (default) **ptim**—Path Trace Indicator Mismatch failure (default) **puneq**—Path Label Equivalent to Zero failure (default)

Defaults

See list in above description.

Command Modes

Interface configuration mode (POS only)

Usage Guidelines

This value is normally configured to match the setting on the peer PTE.

Examples

```
Gateway(config)# int pos0
Gateway(config-if)# pos trigger defects all
```

Related Commands

pos trigger delay

[no] pos trigger delay *time*

Use this command to specify which conditions cause the associated POS link state to change. The conditions specified in the **pos trigger defects** command are soaked/cleared using this delay. Use the no form of the command to use the default value.

Syntax Description

Parameter	Description
time	delay time in milliseconds, 200 to 2000

Defaults

The default value is 200 milliseconds.

Command Modes

Interface configuration mode (POS only)

Usage Guidelines

This value is normally configured to match the setting on the peer PTE. The time granularity for this command is 50 milliseconds.

Examples

```
Gateway(config)# int pos0
Gateway(config-if)# pos trigger delay 500
```

Related Commands

pos trigger defects

[no] pos scramble-spe

Use this command to enable scrambling.

Syntax Description

This command has no arguments or keywords.

Defaults

The default value depends on the encapsulation.

encap	scrambling
LEX	pos scramble-spe
PPP/HDLC	no pos scramble-spe

Command Modes

Interface configuration mode (POS only)

Usage Guidelines

This value is normally configured to match the setting on the peer PTE. This command might change the pos flag c2 configuration.

Examples

```
Gateway(config)# int pos0
Gateway(config-if)# pos scramble-spe
```

Related Commands

pos flag c2

[no] pos vcat defect {immediate | delayed}

Sets the VCAT defect processing mode to either handle a defects state change the instant it is detected or wait for the time specified by **pos trigger delay.** Use the no form of the command to use the default value.

Syntax Description

Parameter	Description
immediate	Handles a defect state change the instant it is detected.
delayed	Handles the defect after the time specified by the command pos trigger delay. If delay is configured and the circuit is on RPR, then the RPR defect processing will also be delayed by the delay time.

Defaults

The default setting is immediate.

Command Modes

POS interface configuration

Usage Guidelines

Immediate should be used if the VCAT circuit uses unprotected SONET circuits. Delayed should be run if the VCAT circuit uses SONET protected circuits (bidirectional line switch ring [BLSR] or path protection).

Examples

The following example sets an ML-Series card to delayed:

```
Router(config)# interface pos 1
Router(config-if)# pos vcat defect delayed
```

Related Commands

interface spr 1

spr wrap

interface pos 1

pos trigger delay

[no] pos vcat resequence {enable | disable}

Enables or disables the SW-LCAS H4 byte sequence number re-sequence feature. If an ML-Series card running Software Release 4.6.2 or later is interoperating with an ML-Series card running Software Release 4.6.0 or 4.6.1, then the **pos vcat resequence disable** command must be added to the configuration of the ML-Series card running R4.6.2 or later.

Syntax Description

Parameter	Description
Enable	Enables the re-sequencing of the H4 byte sequence numbers when a member is added to the VCAT group or removed from the VCAT group. If both members are up, then member #0 will have sequence number of zero (0) and member #1 will have sequence number one (1). If only one member is up, then the sequence number of that member will be zero (0).
Disables	Disables the re-sequencing of the H4 byte sequence numbers when a member is added to the VCAT group or removed from the VCAT group. Member #0 will always have a sequence number of zero (0) and member #1 will always have a sequence number of one (1).

Defaults

The default setting is Enable.

Command Modes

Per POS port configuration

Usage Guidelines

The no form of the command will set the mode to the default.

Examples

The following example disables the re-sequencing of the H4 byte sequence numbers for POS port 0:

```
Router(config)# int pos 0
Router(config)# pos vcat resequence disable
```

Related Commands

None

show controller pos *interface-number* [details]

Use this command to display the status of the POS controller. Use the details argument to obtain certain additional information.

Syntax Description

Parameter	Description
interface-number	Number of the POS interface (0–1)

Defaults

N/A

Command Modes

Privileged EXEC

Usage Guidelines

This command can be used to help diagnose and isolate POS or SONET problems.

Examples

Continuous Concatenation Circuit (CCAT) Show Controller Output Example

```
Router# show controller pos 0
Interface POS0
Hardware is Packet/Ethernet over Sonet
Concatenation: CCAT
Circuit state: IS
PATH
  PAIS      = 0         PLOP      = 0         PRDI    = 0         PTIM = 0
  PPLM      = 0         PUNEQ     = 0         PPDI    = 0         PTIU = 0
  BER_SF_B3 = 0         BER_SD_B3 = 0         BIP(B3) = 20         REI = 2
  NEWPTR    = 0         PSE       = 0         NSE     = 0

Active Alarms : None
Demoted Alarms: None
Active Defects: None
Alarms reportable to CLI: PAIS PLOP PUNEQ PTIM PPLM PRDI PPDI BER_SF_B3 BER_SD_B3
VCAT_OOU_TPT LOM SQM
Link state change defects: PAIS PLOP PUNEQ PTIM PPLM PRDI PPDI BER_SF_B3
Link state change time   : 200 (msec)

DOS FPGA channel number  : 0
Starting STS (0 based)   : 0
VT ID (if any) (0 based) : 255
Circuit size           : VC4
RDI Mode               : 1 bit
C2 (tx / rx)           : 0x01 / 0x01
Framing                : SDH

Path Trace
 Mode            : off
 Transmit String :
 Expected String :
 Received String :
```

```
 Buffer          : Stable
 Remote hostname :
 Remote interface:
 Remote IP addr  :

B3 BER thresholds:
SFBER = 1e-4,   SDBER = 1e-7


5 total input packets,  73842 post-HDLC bytes
0 input short packets,  73842 pre-HDLC bytes
0  input long packets , 0  input runt packets
67  input CRCerror packets , 0  input drop packets
0 input abort packets
0 input packets dropped by ucode


0  total output packets, 0  output pre-HDLC bytes
0 output post-HDLC bytes

Carrier delay is 200 msec
```

VCAT Show Controller Output Example

```
Router# show controller POS 1
Interface POS1
Hardware is Packet/Ethernet over Sonet
Concatenation: VCAT
VCG State: VCG_NORMAL
LCAS Type:NO LCAS
Defect Processing Mode: IMMEDIATE
PDI Holdoff Time: 100 (msec)
Active Alarms : None
Demoted Alarms: None

***************  Member 1  ***************
ESM State: IS
VCG Member State: VCG_MEMBER_NORMAL
  PAIS      = 0         PLOP      = 0         PRDI    = 0         PTIM = 0
  PPLM      = 0         PUNEQ     = 0         PPDI    = 0         PTIU = 0
  BER_SF_B3 = 0         BER_SD_B3 = 0         BIP(B3) = 16         REI = 17
  NEWPTR    = 0         PSE       = 0         NSE     = 0

Active Alarms : None
Demoted Alarms: None
Active Defects: None
Alarms reportable to CLI: PAIS PLOP PUNEQ PTIM PPLM PRDI PPDI BER_SF_B3 BER_SD_B3
VCAT_OOU_TPT LOM SQM
Link state change defects: PAIS PLOP PUNEQ PTIM PPLM PRDI PPDI BER_SF_B3
Link state change time   : 200 (msec)

DOS FPGA channel number  : 2
Starting STS (0 based)   : 3
VT ID (if any) (0 based) : 255
Circuit size           : VC4
RDI Mode               : 1 bit
C2 (tx / rx)           : 0x01 / 0x01
Framing                : SDH

Path Trace
 Mode            : off
```

```
 Transmit String :
 Expected String :
 Received String :
 Buffer          : Stable
 Remote hostname :
 Remote interface:
 Remote IP addr  :

B3 BER thresholds:
SFBER = 1e-4,   SDBER = 1e-7

***************  Member 2  ***************
ESM State: IS
VCG Member State: VCG_MEMBER_NORMAL
  PAIS      = 0         PLOP      = 0         PRDI    = 0         PTIM = 0
  PPLM      = 0         PUNEQ     = 0         PPDI    = 0         PTIU = 0
  BER_SF_B3 = 0         BER_SD_B3 = 0         BIP(B3) = 15         REI = 35
  NEWPTR    = 0         PSE       = 0         NSE     = 0

Active Alarms : None
Demoted Alarms: None
Active Defects: None
Alarms reportable to CLI: PAIS PLOP PUNEQ PTIM PPLM PRDI PPDI BER_SF_B3 BER_SD_B3
VCAT_OOU_TPT LOM SQM
Link state change defects: PAIS PLOP PUNEQ PTIM PPLM PRDI PPDI BER_SF_B3
Link state change time   : 200 (msec)

DOS FPGA channel number  : 3
Starting STS (0 based)   : 24
VT ID (if any) (0 based) : 255
Circuit size           : VC4
RDI Mode               : 1 bit
C2 (tx / rx)           : 0x01 / 0x01
Framing                : SDH

Path Trace
 Mode            : off
 Transmit String :
 Expected String :
 Received String :
 Buffer          : Stable
 Remote hostname :
 Remote interface:
 Remote IP addr  :

B3 BER thresholds:
SFBER = 1e-4,   SDBER = 1e-7



13 total input packets,  5031 post-HDLC bytes
0 input short packets,  5031 pre-HDLC bytes
0  input long packets , 0  input runt packets
0  input CRCerror packets , 0  input drop packets
0 input abort packets
0 input packets dropped by ucode


13  total output packets, 5031  output pre-HDLC bytes
5031 output post-HDLC bytes

Carrier delay is 200 msec
```

Related Commands show interface pos
clear counters

show interface pos *interface-number*

Use this command to display the status of the POS.

Syntax Description

Parameter	Description
interface-number	Number of the POS interface (0–1)

Defaults

N/A

Command Modes

Privileged EXEC

Usage Guidelines

This command can be used to help diagnose and isolate POS or SONET/SDH problems.

Examples

```
Gateway# show interfaces pos0
POS0 is up, line protocol is up
  Hardware is Packet/Ethernet over Sonet
  Description: foo bar
  MTU 4470 bytes, BW 155520 Kbit, DLY 100 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, crc 32, loopback not set
  Keepalive set (10 sec)
  Scramble enabled
  Last input 00:00:09, output never, output hang never
  Last clearing of "show interface" counters 05:17:30
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec

     2215 total input packets,  223743 post-HDLC bytes
     0 input short packets,  223951 pre-HDLC bytes
     0  input long packets , 0  input runt packets
     0  input CRCerror packets , 0  input drop packets
     0 input abort packets
     0 input packets dropped by ucode

     0 packets input, 0 bytes
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
              0 parity
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort

     2216  total output packets, 223807  output pre-HDLC bytes
     224003 output post-HDLC bytes

     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 applique, 8 interface resets
     0 output buffer failures, 0 output buffers swapped out
     0 carrier transitions
```

Related Commands show controller pos
clear counters

show ons alarm

Use this command to display all the active alarms on the card.

Syntax Description

This command has no arguments or keywords.

Defaults

N/A

Command Modes

Privileged EXEC

Usage Guidelines

This command can be used to help diagnose and isolate card problems.

Examples

```
router# show ons alarm
Equipment Alarms
Active: CONTBUS-IO-A CTNEQPT-PBWORK

Port Alarms
  POS0  Active: None
  POS1  Active: None
  FastEthernet0  Active: None
  FastEthernet1  Active: None
  FastEthernet2  Active: None
  FastEthernet3  Active: None
  FastEthernet4  Active: None
  FastEthernet5  Active: None
  FastEthernet6  Active: None
  FastEthernet7  Active: None
  FastEthernet8  Active: None
  FastEthernet9  Active: None
  FastEthernet10  Active: None
  FastEthernet11  Active: None

POS0

Active Alarms : None
Demoted Alarms: None

POS1 VCG State: VCG_NORMAL
VCAT Group
Active Alarms : None
Demoted Alarms: None

Member 0
Active Alarms : None
Demoted Alarms: None

Member 1
Active Alarms : None
Demoted Alarms: None
```

Related Commands

show controller pos
show ons alarm defects
show ons alarm failures

show ons alarm defect eqpt

This commands displays the equipment layer defects.

Syntax Description This command has no arguments or keywords.

Defaults N/A

Command Modes Privileged EXEC

Usage Guidelines This commands displays the set of active defects for the equipment layer and the possible set of defects that can be set.

Examples

```
router# show ons alarm defect eqpt
Equipment Defects
Active: CONTBUS-IO-B
Reportable to TCC/CLI: CONTBUS-IO-A CONTBUS-IO-B CTNEQPT-PBWORK CTNEQPT-PBPROT EQPT
RUNCFG-SAVENEED ERROR-CONFIG
```

Related Commands show ons alarm failures

show ons alarm defect port

This commands displays the port layer defects.

Syntax Description

This command has no arguments or keywords.

Defaults

N/A

Command Modes

Privileged EXEC

Usage Guidelines

This commands displays the set of active defects for the link layer and the possible set of defects that can be set. Note that the TPTFAIL defect can only occur on the POS ports and the CARLOSS defect can only occur on the Ethernet ports.

Examples

```
router# show ons alarm defect port
Port Defects
  POS0
  Active: TPTFAIL
  Reportable to TCC: CARLOSS TPTFAIL
  POS1
  Active: TPTFAIL
  Reportable to TCC: CARLOSS TPTFAIL
  GigabitEthernet0
  Active: None
  Reportable to TCC: CARLOSS TPTFAIL
  GigabitEthernet1
  Active: None
  Reportable to TCC: CARLOSS TPTFAIL
```

Related Commands

show interface

show ons alarm failures

show ons alarm defect pos *interface-number*

This commands displays the link layer defects.

Syntax Description

Parameter	Description
interface-number	Number of the interface (0–1)

Defaults

N/A

Command Modes

Privileged EXEC

Usage Guidelines

This commands displays the set of active defects for the POS layer and the possible set of defects that can be set.

Examples

```
router# show ons alarm defect pos0
POS0
Active Defects: None
Alarms reportable to TCC/CLI: PAIS PRDI PLOP PUNEQ PPLM PTIM PPDI BER_SF_B3 BER_SD_B3
```

Related Commands

show controller pos

show ons alarm failures

show ons alarm failure eqpt

This commands displays the equipment layer failures.

Syntax Description This command has no arguments or keywords.

Defaults N/A

Command Modes Privileged EXEC

Usage Guidelines This commands displays the set of active failures for the equipment layer. If an EQPT alarm is present, the Board Fail defect that was the source of the alarm is displayed.

Examples

```
router# show ons alarm failure eqpt
Equipment
Active Alarms: None
```

Related Commands show ons alarm defect

show ons alarm failure port

This commands displays the port layer failures.

Syntax Description This command has no arguments or keywords.

Defaults N/A

Command Modes Privileged EXEC

Usage Guidelines This commands displays the set of active failures for the link layer.

Examples

```
router# show ons alarm failure port
Port Alarms
  POS0  Active: TPTFAIL
  POS1  Active: TPTFAIL
  GigabitEthernet0  Active: None
  GigabitEthernet1  Active: None
```

Related Commands show interface

show ons alarm defect

show ons alarm failure pos *interface-number*

This commands displays the link layer failures.

Syntax Description

Parameter	Description
interface-number	**Number of the interface (0–1)**

Defaults

N/A

Command Modes

Privileged EXEC

Usage Guidelines

This commands displays the set of active failures for a specific interface at the POS layer. The display also specifies if an alarm has been demoted, as defined in Telcordia GR-253.

Examples

```
router# show ons alarm failure pos 0
POS0
Active Alarms : None
Demoted Alarms: None
```

Related Commands

show controller pos

show ons alarm defect

spr drpri-id { 0 | 1 }

Creates a DRPRI identification number of 0 or 1 to differentiate between the ML-Series cards paired for the DRPRI protection feature.

Defaults

N/A

Command Modes

Shared packet ring (SPR) interface configuration

Usage Guidelines

DRPRI paired sets share the same SPR station ID, so the DRPRI identification number helps identify a particular card in a DRPRI pair.

Examples

The following example assigns a DRPRI identification number of zero to the SPR interface on an ML-Series card:

```
Router(config)# interface spr 1
Router(config-if)# spr drpri-id 0
```

Related Commands

interface spr 1

spr-intf-id

spr station-id

spr wrap

spr-intf-id *shared-packet -ring-number*

Assigns the POS interface to the SPR interface.

Syntax Description

Parameter	Description
shared-packet-ring-number	The only valid shared-packet-ring-number (SPR number) is 1.

Defaults

N/A

Command Modes

POS interface configuration

Usage Guidelines

- The SPR number must be 1, which is the same SPR number assigned to the SPR interface.
- The members of the SPR interface must be POS interfaces.
- An SPR interface is configured similarly to a EtherChannel (port-channel) interface. Instead of using the **channel-group** command to define the members, you use the **spr-intf-ID** command. Llike port-channel, you then configure the SPR interfaces instead of the POS interface.

Examples

The following example assigns an ML-Series card POS interface to an SPR interface with a shared-packet-ring-number of 1:

```
Router(config)# interface pos 0
Router(config-if)# spr-intf-id 1
```

Related Commands

interface spr 1

spr drpri-id

spr station-id

spr wrap

[no] spr load-balance { auto | port-based }

Specifies the RPR load-balancing scheme for Unicast packets.

Syntax Description

Parameter	Description
auto	The default *auto* option balances the load based on the MAC addresses or source and destination addresses of the IP packet.
port-based	The *port-based* load balancing option maps even ports to the POS 0 interface and odd ports to the POS 1 interface.

Defaults

The default setting is auto.

Command Modes

SPR interface configuration

Examples

The following example configures an SPR interface to use port-based load balancing:

```
Router(config)# interface spr 1
Router(config-if)# spr load-balance port-based
```

Related Commands

interface spr 1

spr station-id *station-id-number*

Configures a station ID.

Syntax Description

Parameter	Description
staion-id-number	The user must configure a different number for each SPR interface that attaches to the RPR. Valid station ID numbers range from 1 to 254.

Defaults

N/A

Command Modes

SPR interface configuration

Usage Guidelines

The different ML-Series cards attached to the RPR all have the same interface type and number, spr1. The station ID helps to differentiate the SPR interfaces.

Examples

The following example sets an ML-Series card SPR station ID to 100:

```
Router(config)# interface spr 1
Router(config-if)# spr station-id 100
```

Related Commands

interface spr 1

spr drpri-id

spr-intf-id

spr wrap

spr wrap immediate | delayed

Sets the RPR wrap mode to either wrap traffic the instant it detects a link state change or to wrap traffic after the carrier delay, which gives the SONET protection time to register the defect and declare the link down.

Syntax Description

Parameter	Description
immediate	Wraps RPR traffic the instant it detects a link state change.
delayed	Wraps RPR traffic after the carrier delay time expires.

Defaults

The default setting is immediate.

Command Modes

SPR interface configuration

Usage Guidelines

Immediate should be used if RPR is running over unprotected SONET circuits. Delayed should be run for SONET protected circuits (BLSR or path protection).

Examples

The following example sets an ML-Series card to delayed:

```
Router(config)# interface spr 1
Router(config-if)# spr wrap delayed
```

Related Commands

interface spr 1

spr drpri-id

spr-intf-id

spr station-id