Cisco ONS 15540 ESP System Alarms and Error Messages

This document lists and describes system alarms and error messages for the Cisco ONS 15540. The system software sends these alarms and error messages to the console (and, optionally, to a logging server on another system) during operation. Not all error messages indicate problems with your system. Some are purely informational, while others might help diagnose problems with links, internal hardware, or the system software.

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About System Alarms and Error Messages

System alarms are associated with a physical entity such as a module or the chassis. Unlike simple error messages, the state of an alarm persists until an assert or clear event changes its state.

Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

When an alarm state changes, you see an associated error message describing whether the alarm is asserted or cleared. The associated error message also displays the severity and description of the entity plus the alarm type.

You can display the current state of alarms by using the **show facility-status** command on the active processor card as in the following example:

```
Switch# show facility-alarm status
System Totals  Critical: 0  Major: 5  Minor: 2

Source              Severity      Description [Index]
------              --------      -------------------
Chassis             MINOR         Chassis power supply A failed [5]
Wave3/2             MAJOR         Loss of Lock event [0]
Wave4/2             MAJOR         Loss of Lock event [0]
Wave4/2             MAJOR         Loss of Signal event [1]
CPU slot 7          MINOR         Unprotected. Peer not responding [10]
Wavep3/0/0          MAJOR         Low alarm threshold exceeded for
                                  Receive Power (in dBm)
Wavep3/0/0          INFO          Low warning threshold exceeded for
                                  Receive Power (in dBm)
Wavep3/3/0          MAJOR         Low alarm threshold exceeded for
                                  Receive Power (in dBm)
Wavep3/3/0          INFO          Low warning threshold exceeded for
                                  Receive Power (in dBm)
```

How to Read System Alarms and Error Messages

The list of system alarms and error messages is organized according to the system facility that produces the messages, in alphabetical order. Within each system facility section, messages are listed alphabetically by mnemonics. Each error message is followed by an explanation and a recommended action. System alarms and error messages appear only when the system remains operational.

Error message severity levels correspond to the keywords assigned by the **logging** global configuration commands that define where and at what level these messages appear. The default is to log messages to the console at the debugging level (7).

System error messages begin with a percent sign and are structured as follows:

```
%FACILITY-SEVERITY-MNEMONIC : Message-text
```

`FACILITY` is a code consisting of two or more uppercase letters that indicate the facility to which the alarm or error message refers. A facility is a hardware device, a protocol, or a module of the system software. Table 1 lists some system facility codes.

Table 1 System Facility Codes

Code	Facility
APS	Automatic Protection Switching
CI	Chassis hardware
COUNTER_SYNC	Redundant processor card
CPU_REDUN	Redundant processor card
CRYPTO_SYNC	Redundant processor card
FILESYS	File system

Table 1 System Facility Codes (continued)

Code	Facility
IPC	Interprocess communications
LCMDC	2.5-Gbps transponder module, 2.5-Gbps line card, mux/demux motherboard, or mux/demux module hardware
METOPT_DRV	Generic driver alarms
ODM	Online diagnostic manager
OIR	Online insertion and removal
OPTICAL_CFG_SYNC	Redundant processor card
OPTICAL_IF	Optical interface alarms
OSCP	Optical Supervisory Channel Protocol
PERF_HISTORY	Performance History
RF	Redundancy facility
SRC	Switch card redundancy controller
SYS	System
TENGIGE_LC	10-GE transponder module

SEVERITY is a single-digit code that reflects the severity of the condition. The SEVERITY code for system alarms (shown in Table 2) and error messages (shown in Table 3) are different.

System alarm SEVERITY codes range from 0 to 3 and reflect the severity of the alarm. The lower the number, the more serious the alarm. Table 2 lists the severity levels.

Table 2 Alarm Message Severity Levels

Level	Description
0 – critical	Critical condition
1 – major	Immediate action needed
2 – minor	Minor alarm condition
3 – informational	Informational message only

Error message SEVERITY codes range from 0 to 7 and reflect the severity of the condition. The lower the number, the more serious the situation. Table 3 lists the severity levels.

Table 3 System Error Message Severity Levels

Level	Description
0 – emergency	System unusable
1 – alert	Immediate action needed
2 – critical	Critical condition
3 – error	Error condition
4 – warning	Warning condition

Table 3 System Error Message Severity Levels (continued)

Level	Description
5 – notification	Normal but significant condition
6 – informational	Informational message only
7 – debugging	Appears during debugging only

`MNEMONIC` is a code that uniquely identifies the error message.

`Message-text` is a text string that describes the condition. This portion of the message might contain detailed information about the event, including terminal port numbers, network addresses, or addresses that correspond to locations in the system memory address space. Because the information in these variable fields changes from message to message, it is represented here by short strings enclosed in square brackets (`[ ]`). A decimal number, for example, is represented as `[dec]`.

Table 4 lists the representations of variable fields and the type of information in the fields.

A sample error message follows:

```
%SONICT-3-XMIT_ERR : TX Error [hex]
```

Table 4 Representation of Variable Fields in Alarms and Error Messages

Representation	Type of Information
[dec]	Decimal number
[hex]	Hexadecimal number
[char]	Single character
[chars]	Character string

Meaning of Ingress and Egress in Error Messages

When the term “ingress” appears in an error message it refers to *client* interfaces and the fault is associated with the client equipment. This term appears in the following example:

%LCMDC-3-FH_ILOSY_ALM: Ingress FC/ESCON Loss of Sync; Slot [dec] Subcard [dec] Port [dec]

When the term “egress” appears in an error message it refers to a transponder wave interface on the *trunk* side, and the fault originates from the remote node. This term appears in the following example:

%LCMDC-3-ECDRLK_ALM : Egress CDR Locking error; Slot [dec] Subcard [dec] Port [dec]

Error Message Traceback Reports

A number of messages describe internal errors and contain traceback information. This information is very important and should be included when you report a problem to your technical support representative.

The following sample error message includes traceback information:

Error Message `-Process= ”Exec”, level= 0, pid= 17`
`-Traceback= 1A82 1AB4 6378 A072 1054 1860`

Problem Determination Using System Alarms and Error Messages

This section describes how to troubleshoot a problem using the system alarms and error messages generated by the system. To demonstrate this process, a simple point-to-point network example is used to highlight the information that is available to diagnose the cause of link failures.

The following examples do not demonstrate all alarm conditions that might appear in Cisco ONS 15540 ESP networks caused by hardware defects or failure. Alarms might be symptoms of standard operating procedures. For example, a Cisco ONS 15540 ESP provisioned with 32 channels can generate multiple traps to a network management system indicating a receive loss of light or loss of signal on all 32 channels. These traps might be caused by a catastrophic site disaster, or they might be caused by scheduled maintenance on another site or by changes that are occurring in the Cisco ONS 15540 ESP network.

Example Network Configuration

The network example shown in Figure 1 supports three client signals and four channels. The nodes in the example are called Manhattan and Brooklyn.

Figure 1 Example of a Point-to-Point Network

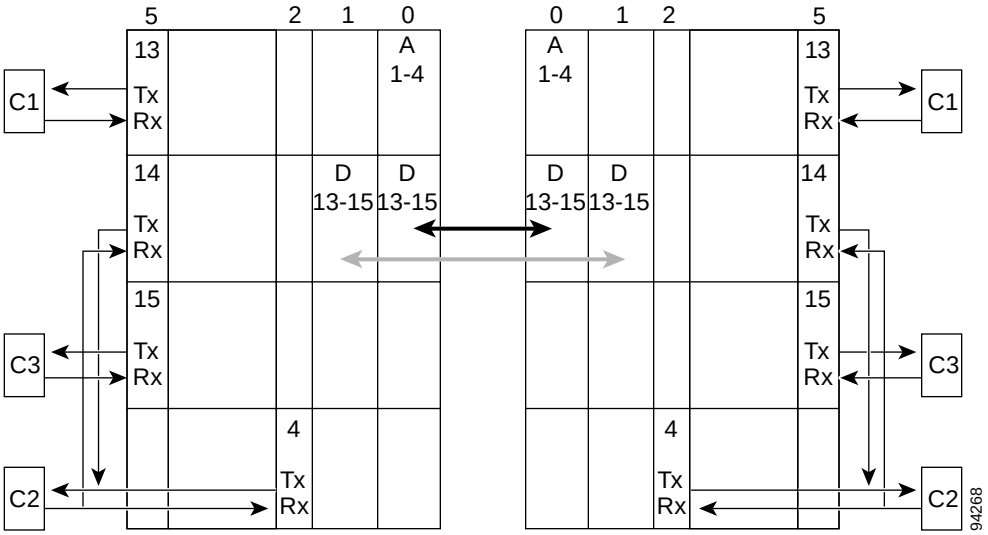


Table 5 summarizes the channels, client signal protocols, and protection schemes for the channel signals.

Table 5 Channels, Protocols, and Protection Schemes for Example Network

Channel	Client Signal Protocol	Protection Scheme
4	GE[1]	Y-cable
13	FC[2]	Unprotected
14	GE	Y-cable
15	SONET OC-48	Splitter

1. GE = Gigabit Ethernet
2. FC = Fibre Channel

Table 6 shows the Rx power values at both the client side and the trunk side of the transponder modules. We recommended creating a similar table when you turn up your network. Also, issue the **service timestamps log datetime** and **service timestamps debug datetime** [**msec**] global configuration commands to include the current time in all console log messages. Millisecond (msec) granularity is optional.

Note The *transparent* interface is the client side port of the transponder module. The *wavepatch* and *wave* interfaces are the trunk side transmit and receive interfaces on the transponder module.

Note The OSC (Optical Supervisory Channel) supports bidirectional APS communication in the example network.

Table 6 Receive Power Values for the Example Network

Channel Number and Band	Protocol	Protection Scheme	Receive Powers							
			Manhattan System				Brooklyn System			
			Client		Trunk		Client		Trunk	
			Transparent Interface	Power	Wavepatch Interface	Power	Transparent Interface	Power	Wavepatch Interface	Power
Channel13 Band D	FC	None	5/0/0	–15.77	5/0/0	–20.84	5/0/0	–12.16	5/0/0	–18.37
Channel 4 Band A	GE	Y-cable	2/3/0	–12.80	2/3/0	–11.24	2/3/0	–10.80	2/3/0	–13.32
Channel 14 Band D	GE	Y-cable	5/1/0	–12.66	5/1/0	–17.86	5/1/0	–10.80	5/1/0	–13.47
Channel 15 Band D	OC-48	Splitter	5/2/0	–2.68	5/2/0	–14.36	5/2/0	–11.84	5/2/0	–20.62
					5/2/1	–14.39			5/2/1	–17.80

Use the **show connect intermediate** command to display the complete path for the channel.

```
Manhattan# show connect intermediate
client/       wave          wave            wdm
```

```
wave          client         patch   filter   trk  channel
------------  ------------  -------  ------  -----  -------
Tran2/3/0     Wave2/3        2/3/0*  0/0/3    0/0     4
Tran5/0/0     Wave5/0        5/0/0*  0/1/4    0/1    13
                             5/0/1   1/0/12   1/1    13
Tran5/1/0     Wave5/1        5/1/0   0/1/5    0/1    14
                             5/1/1*  1/0/13   1/1    14
Tran5/2/0     Wave5/2        5/2/0*  0/1/6    0/1    15
                             5/2/1   1/0/14   1/1    15
```

Verify Normal Operational Status

It is important to understand what "good" status is for the channel links and attached devices on a Cisco ONS 15540 ESP system. Ensure that the following conditions are met:

- All channels are up. This means the transparent, wave, and wavepatch interfaces for the channels show Up and signal quality shows as Good in the **show interfaces** command output on the nodes.
- No BIP1 (section code violation) errors on the OC-48 client interfaces. You can find this information in the **show interfaces transparent** command output.
- No 8b10b CVRD errors for the Fibre Channel and Gigabit Ethernet client interfaces. You can find this information in the **show interfaces transparent** command output.
- All trunk signal power levels from the transmitting node are within trunk side receiver sensitivity and overload specifications for the transponder module. For transponder module specifications, refer to the *Cisco ONS 15540 ESP Hardware Installation Guide*.
- The **show facility-alarm status** command output shows no alarms for the channels.
- The client equipment connected to the transponder modules are up and do not show CRC errors.

Capture Event Logs and History

The event messages are displayed instantly on the console, by default, or are redirected to an internal buffer, a nonconsole terminal (using Telnet), or a syslog server. All alarms and events can also be redirected as traps to network management systems that support Simple Network Management Protocol (SNMP).

Buffer the Event Log

The **logging buffered** *buffer-size* global configuration command enables copying of log messages to an internal buffer and optionally sets the size of the buffer. This buffer is circular, so newer messages overwrite older messages after the buffer is full. The default buffer size is 131072 bytes. To display the messages that are logged in the buffer, use the **show logging** EXEC command. The first message displayed is the oldest message in the buffer. To clear the current contents of the buffer, use the **clear logging** privileged EXEC command.

The terminal monitor EXEC command locally accomplishes the task of displaying the system error messages to a nonconsole terminal (using Telnet).

Log Event Messages to a syslog Server

The **logging** *host-name* command identifies a syslog server host to receive logging messages. The *host-name* argument is the name or Internet address of the host. By issuing this command more than once, you build a list of syslog servers that receive logging messages. The **no logging** *host-name* command deletes the syslog server with the specified address from the list of syslogs.

Enable SNMP Traps for the Network Management System

If you are using a network management system to receive traps, then you must enable traps. Use the following global configuration commands:

Command	Purpose
snmp-server host *host-addr*	Specifies the SNMP server host for the traps notification log.
snmp-server enable traps *notification-type*	Enables SNMP traps notifications.
snmp-server queue-length *length*	Specifies the message queue length for each SNMP trap notification host. The default is 10 entries. The range is 1 to 1000 entries. **Note** Make sure that the queue length is large enough to accommodate all the traps generated by the configuration.

Systems that support SNMP often need a mechanism for recording notification information if notifications are lost when retransmission limits are exceeded. The notification log MIB provides a common infrastructure for other MIBs in the form of a local logging function. Use the following global configuration command to enable MIB logging:

Command	Purpose
snmp mib notification-log default [**size** *number*]	Enables the size for the MIB notification log. The default value for the **size** option is 500 entries. The range is 1 to 15000 entries.

Note For more information on event logging and SNMP, refer to the *Cisco IOS Configuration Fundamentals Configuration Guide* and the *Cisco IOS Configuration Fundamentals Command Reference*.

Channel Failure Examples

This section contains examples of channel failures in the example network shown in Figure 1 on page 5.

Loss of Signal on an FC Client Interface

In this example, an FC client device connected to a transponder module goes down on the Manhattan system. The FC client equipment in is connected to transparent interface 5/0/0.

Figure 2 shows the location of the failure.

Figure 2 FC Client Failure Example

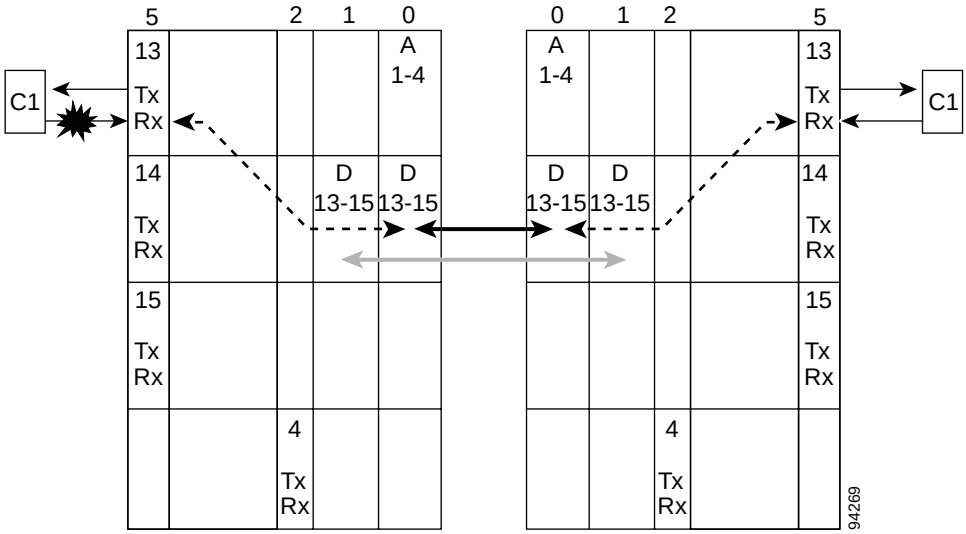
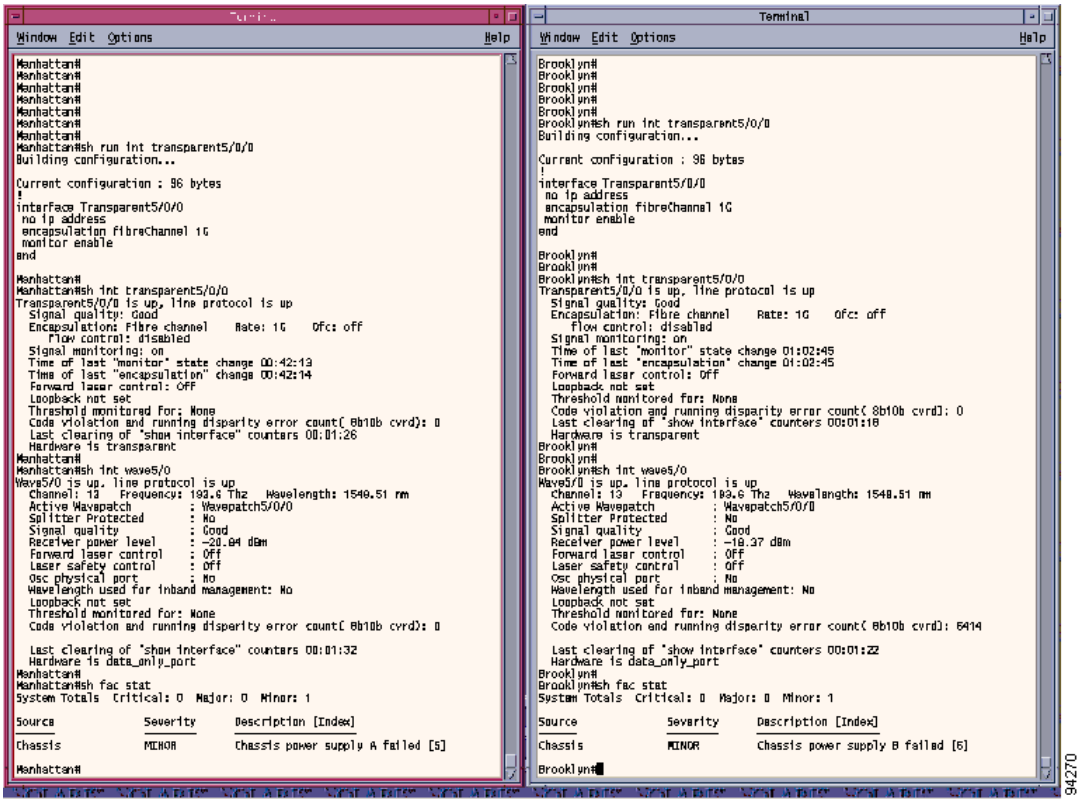


Figure 3 shows the interface status before the failure occurred. It shows that the interface is Up, the signal quality is Good, and there are no alarms related to this interface.

Note Ignore the MINOR alarm that indicates that the shelf does not have a redundant power supply.

Figure 3 Status Before FC Client Failure

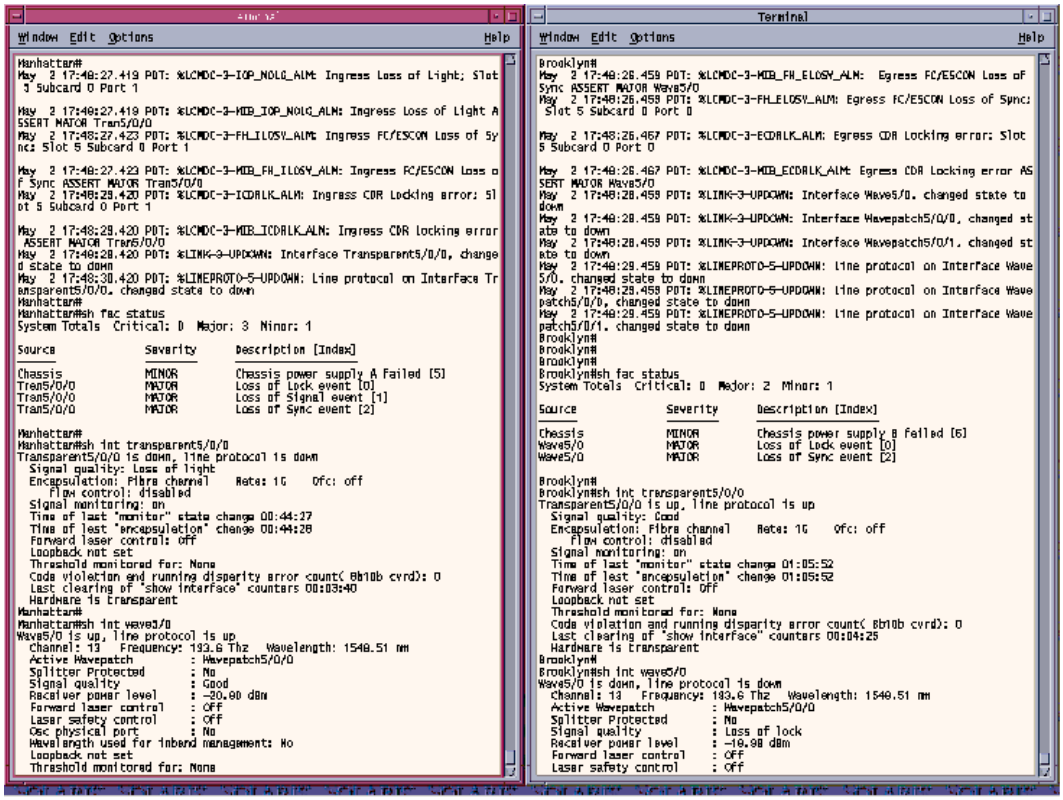


The first indications of a failure might be the following:

- Error messages are displayed on the system console or a terminal indicating that the transparent interface 5/0/0 went down.
- The **show facility-alarm status** command output shows a loss of signal event.
- If SNMP traps are enabled, SNMP traps are sent to the configured IP address of the NMS or syslog server indicating that transparent interface 5/0/0 link is down.

Figure 4 shows the console messages and alarms during the failure. The first message on the Manhattan console is `Ingress Loss of Light,` which indicates that the problem is on client side of the transponder module in slot 5, subcard 0. The console on the Brooklyn system shows that `Egress FC/ESCON loss of sync` occurred on wave interface 5/0, which again points the problem in the direction of the Manhattan system. Also, the **show facility-alarm status** command output shows MAJOR alarms (loss of signal, loss of lock, and loss of sync) on transparent interface 5/0/0 and MAJOR alarms (loss of lock and loss of sync) on Brooklyn wave interface 5/0. Use the **show interfaces** command to display the status of both Manhattern transparent interface 5/0/0 and Brooklyn wave interface 5/0.

Figure 4 Status After FC Client Failure



The **show facility-status alarm** command output shows three MAJOR alarms. All are the result of a Rx failure on transparent interface 5/0/0. These alarms are posted from different entities in the system, as follows:

- A loss of light event is posted when optical receiver detects loss of light.
- A loss of lock event is posted when CDR (clock and data recovery unit) cannot lock onto the incoming signal.
- A loss of sync event is posted when protocol state machine detects an out-of-synchronization failure.

These alarms are independent of each other. However, depending on the nature of the failure, you might see one or more of these alarms. In this particular example, Rx light is lost, which means that there is no data to lock or sync. That is the reason for all three alarms. In some types of failures, loss of lock, loss of sync, or both are posted.

Problem Determination Summary

The symptoms observed in this example were loss of signal and loss of light. This condition can be caused by one of the following conditions.

- Hardware defect conditions
  - Dirty fiber cable connector on Tx of Fibre Channel client equipment or Rx of Manhattan transparent interface 5/0/0
  - Broken fiber in the fiber cable connected to the Rx connector of Manhattan transparent interface 5/0/0
  - Faulty optical transmitter or SFP optics in the Fibre Channel client equipment

  - Faulty optical receiver or SFP optics in Manhattan transparent interface 5/0/0
- Operational conditions
  - Fibre Channel client equipment connected to Manhattan transparent interface 5/0/0 is offline, administratively shut down, or powered off for scheduled maintenance or changes.

In this example, the link errors were caused by disconnecting the client Rx fiber cable from the Manhattern transparent interface 5/0/0.

Loss of Signal on Trunk Interface

In this example the failure occurs on the SONET OC-48 channel, which is configured for splitter protection. Figure 5 shows where the failure occurred.

Figure 5 Loss of Signal on Trunk Interface Example

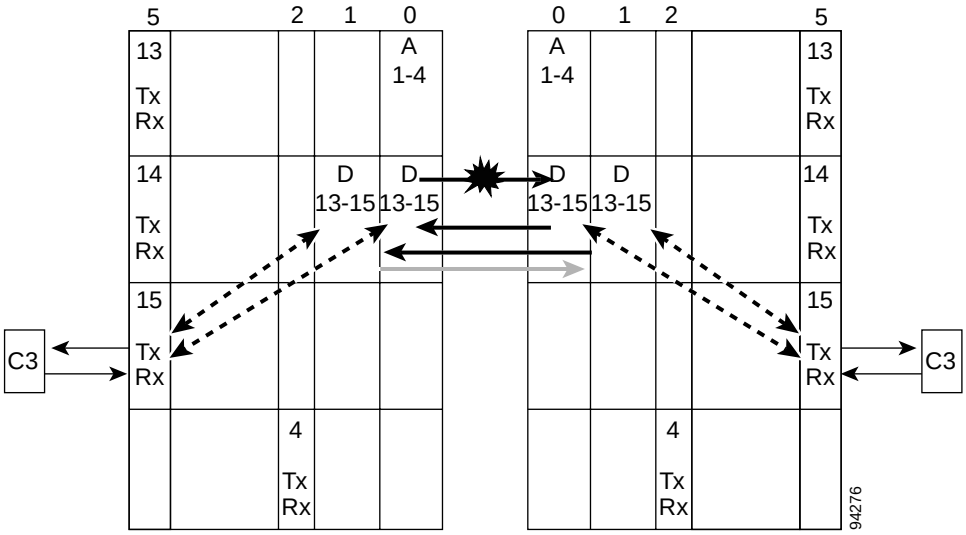


Figure 6 and Figure 7 show the interface, alarm, and splitter APS status before the failure occurred.

Figure 6 Status Before Loss of Signal on Trunk Interface

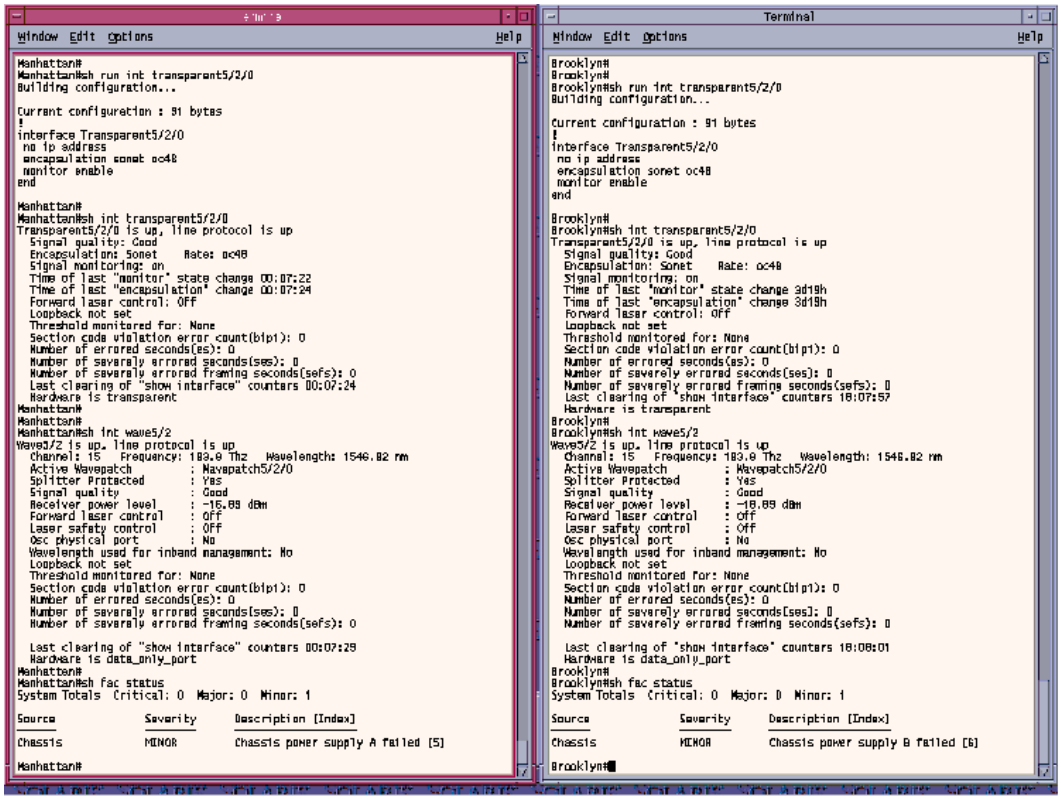


Figure 7 APS Status Before Loss of Signal on Trunk Interface

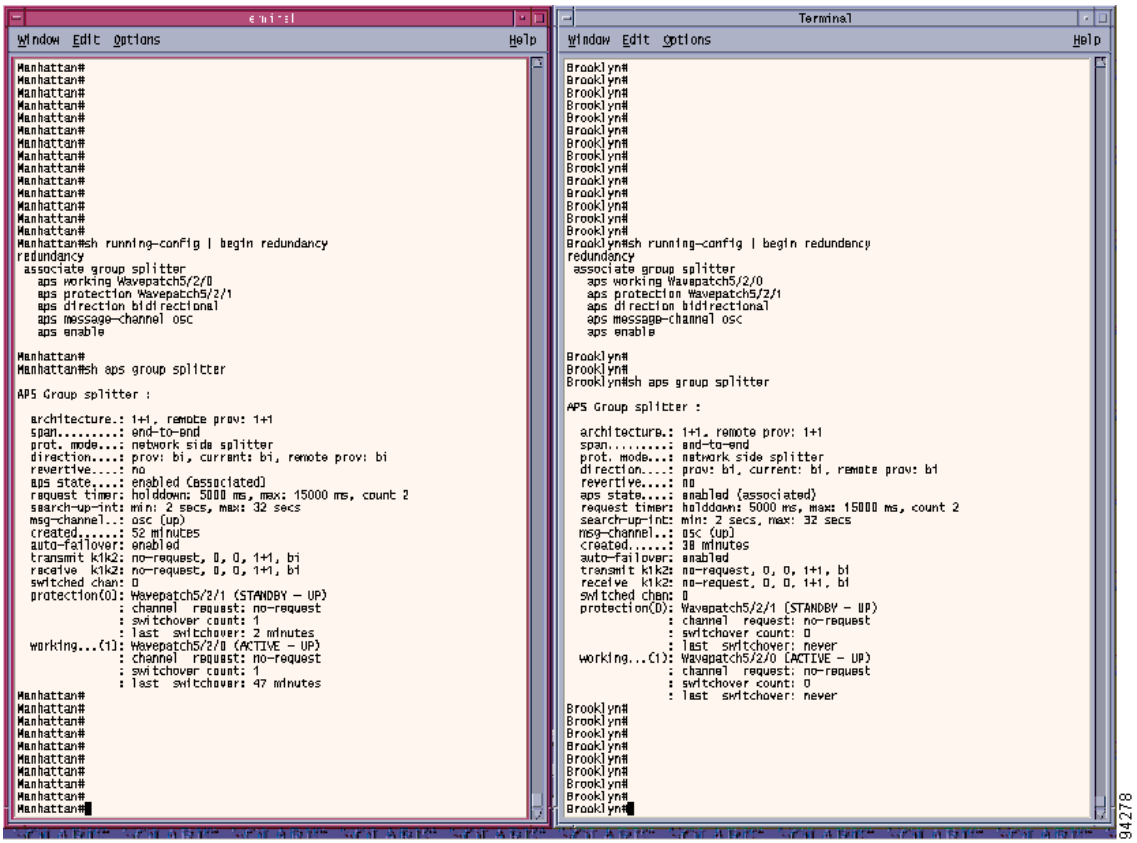


Figure 8 and Figure 9 show all the messages generated during the failure. All three channels are down because of trunk failure (common to all channels). The only indication on the Manhattan system is messages generated for the APS switchovers.

Figure 8 Status After Loss of Signal on the Trunk Interface

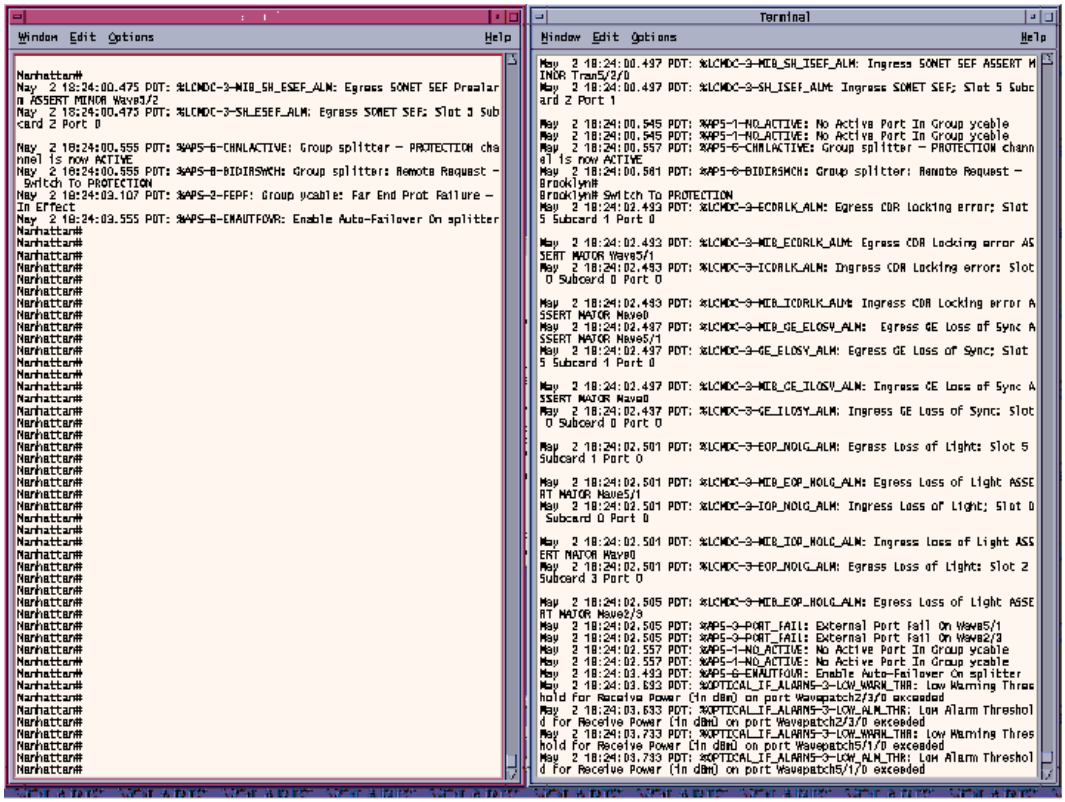
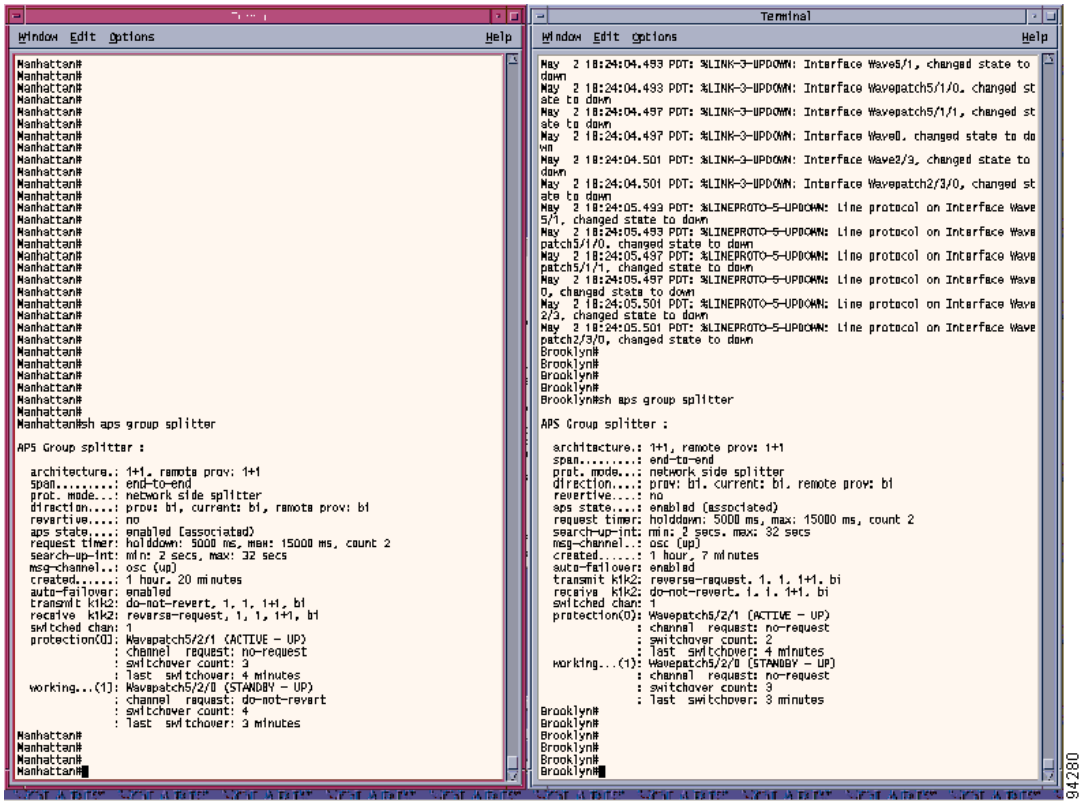


Figure 9 Status After Loss of Signal on the Trunk Interface



Problem Determination Summary

The symptoms observed were loss of signal and loss of light. These problems can be caused by one of the following conditions:

- Hardware defect conditions
  - Dirty trunk Tx MU connector on the Manhattan system or Rx MU connector on the Brooklyn system.
  - Broken trunk fiber between Manhattan and Rx of Brooklyn.
  - Broken patch cable on a mux/demux module.
  - Faulty mux/demux module on the Manhattan system or the Brooklyn system.
- Operational conditions
  - The trunk cable is disconnected for maintenance or changes.

In this example, the link errors are caused by disconnecting the trunk Rx fiber cable (connected to the TRUNK_IN port on the mux/demux module in slot 0, subcard 0) of the Brooklyn system.

List of System Alarm and Error Messages

Cisco ONS 15540 software error messages are separated according to the facility codes shown in Table 1.

APS

Error Message `%APS-1-NO_ACTIVE: No Active Port In Group [chars]`

Explanation After an active interface failure, the system switches over to the standby interface if y-cable APS was enabled. This message is posted if after a switchover the system finds that both the working and protection interfaces are not operational.

Recommended Action Isolate the cause of the failure on both the working and protection interfaces.

Error Message `%APS-2-CHNLMISMATCH: Group [chars]: Channel Mismatch - In Effect`
`%APS-2-CHNLMISMATCH: Group [chars]: Channel Mismatch - Cleared`

Explanation The received bridged channel number (in the REVERSE-REQUEST from the remote network element) does not match the request channel number in the APS request sent by the local network element. This message is relevant only for bidirectional operation.

For 1+1 APS, this message should not be posted unless the transmit bridged channel number in the REVERSE-REQUEST from remote network element is somehow corrupted, or there is a problem in the APS software itself.

Recommended Action Check for any failures on the APS communication channel. If APS communication channel is operational, contact Cisco TAC.

Error Message `%APS-2-FEPF: Group [chars]: Far End Prot Failure - In Effect`
`%APS-2-FEPF: Group [chars]: Far End Prot Failure - Cleared`

Explanation The local network element detects a Far End Protection Failure condition if the Far End Protection Defect count exceeds a threshold. The local network element detects a Far End Protection Defect when it receives a remote APS message with the request set to SF (signal failure) and the request channel set to 0 (null or protection channel).

Recommended Action Isolate the cause of the failure on the protection channel on the remote network element.

Error Message `%APS-2-MODEMISMATCH: Group [chars]: Mode Mismatch - In Effect`
`%APS-2-MODEMISMATCH: Group [chars]: Mode Mismatch - Cleared`

Explanation The local APS group was configured for bidirectional operation but the associated remote APS group was configured for unidirectional operation. A mismatch in the path switching mode (unidirectional or bidirectional) was detected.

Recommended Action Configure the remote APS group for bidirectional operation or remove bidirectional configuration on local node if unidirectional is needed.

Error Message `%APS-2-NOSOCKET: Failed To Open Socket`

Explanation The APS subsystem fails to create a UDP socket for exchanging APS channel protocol messages over APS message channel configured for IP. This usually is due to a low memory condition in the system.

Recommended Action Check that the NME interface is up and no collision is detected on the NME interface. A collision causes the system to use up the small NME buffer pool. Isolate the collision problem first. Reduce other system activity to ease memory demands. If the problem persists, upgrade to a larger memory configuration.

Error Message `%APS-2-PSBF: Group [chars]: Prot Switch Byte Failure - In Effect`
`%APS-2-PSBF: Group [chars]: Prot Switch Byte Failure - Cleared`

Explanation The local network element detected a Protection Switch Byte Failure when the Protection Switch Byte Defect count exceeded a threshold. The local network element detects Protection Switch Byte Defect one of the following occurs:

1. The remote APS request is not one of the supported requests.

2. The remote APS request channel number is invalid. For 1+1 APS, the channel number must be 0 or 1.

3. Operation is bidirectional and neither the local nor the remote network element is sending a REVERSE-REQUEST, and the remote APS request is of lower priority than the local APS request.

4. Operation is bidirectional and the sequence number in the remote APS REVERSE-REQUEST does not match the sequence number of the most recent APS request sent by the local network element.

This error message is posted if one of the following occurs:

1. The APS request is corrupted.

2. There is a bug in the APS software.

3. The APS communication between two network elements is not operating correctly. For example, the local network element can send and receive, but the remote network element can send but not receive.

Recommended Action Check for failures on the APS communication channel (OSC, IP, or in-band message channel).

Error Message `%APS-3-PORT_FAIL: External Port Fail On [char]`

Explanation The y-cable APS subsystem received a port fail indication from the driver subsystem. The specified interface has detected a failure condition (for example, loss of light).

Recommended Action Isolate the cause of the failure and restore the interface to its normal operational condition.

Error Message `%APS-6-ADJUSTMODE: Group [chars]: Mode Mismatch - switching to UNI`

Explanation The local APS group was configured for bidirectional operation but the associated remote APS group was configured for unidirectional operation. The local network element detected the mismatch and changed the operation to unidirectional.

Recommended Action This message is informational only.

Error Message `%APS-6-ADJUSTMODE: Group [chars]: Mode Mismatch - Cleared, Restore BI`

Explanation The local APS group was configured for bidirectional operation but the associated remote APS group was configured for unidirectional operation. The local network element detected the mismatch and changed the operation to unidirectional then changed back to bidirectional when the mismatch was cleared.

Recommended Action This message is informational only.

Error Message `%APS-6-AUTOFOVER: Auto-Failover - Group [chars]`

Explanation The APS hardware successfully switched over to the standby interface after the failure of the active interface.

Recommended Action This message is informational only.

Error Message `%APS-6-BIDIRSWCH: Group [chars]: Remote Request - Switch to WORKING`
`%APS-6-BIDIRSWCH: Group [chars]: Remote Request - Switch to PROTECTION`

Explanation An APS switchover was triggered by an APS request from the remote network element.

Recommended Action This message is informational only.

Error Message `%APS-6-CHNLACTIVE: Group [chars] - WORKING channel is now ACTIVE`
`%APS-6-CHNLACTIVE: Group [chars] - PROTECTION channel is now ACTIVE`

Explanation A previously standby channel becomes the active channel.

Recommended Action This message is informational only.

Error Message `%APS-6-ENAUTFOVR: Enable Auto-Failover On [chars]`

Explanation The APS software enabled the hardware to perform APS actions for failures detected by the hardware.

Recommended Action This message is informational only and displayed only when none of the following APS conditions exist on an APS channel.

- Lockout.
- Channel request is set to SF-LP0 (signal fail on protection channel).
- Channel request on protection is set to forced_switch (FS0).
- Channel request is set to SF-LP1 (signal fail on working).

CI

Error Message `%CI-1-CRITICAL_TEMP: Alarm: ASSERT, CRITICAL, Chassis, Chassis temp > critical limit`

Explanation The inlet temperature is greater than or equal to 176˚F (80˚C) or the outlet temperature is greater than or equal to 194˚F (90˚C).

Recommended Action Reduce the chassis temperature immediately by checking for the following: blocked air intake, fan tray failure, abnormal ambient environmental conditions, temperature sensor failures, and system hardware failures. One or more of these conditions probably exists. Use the **show temperature** command to determine the current temperatures, the thresholds, and the number and type of alarms raised.

Error Message `%CI-1-FAN_MISSING: Alarm: ASSERT, CRITICAL, Chassis, Chassis fan tray missing`

Explanation The system does not detect the presence of a fan tray.

Recommended Action The chassis fan tray is not installed or fails. Check the fan tray module.

Error Message `%CI-1-TOTAL_BLOWER_FAIL: Alarm: ASSERT, MAJOR, Chassis, two or more fans failed`

Explanation Two or more of the fans in the chassis fan tray have failed.

Recommended Action Check the fan tray module.

Error Message `%CI-3-MAJOR_TEMP: Alarm: ASSERT, MAJOR, Chassis, Chassis temp > major limit`

Explanation The inlet temperature is greater than or equal to 167˚F (75˚C) or the outlet temperature is greater than or equal to 185˚F (85˚C).

Recommended Action Reduce the chassis temperature by checking for the following: blocked air intake, fan tray failure, abnormal ambient environmental conditions, temperature sensor failures, and system hardware failures. One or more of these conditions probably exists. One or more of these conditions probably exists. Use the **show temperature** command to determine the current temperatures, the thresholds, and the number and type of alarms raised

Error Message `%CI-3-MAJOR_TEMP_LOW: Alarm: ASSERT, MAJOR, Chassis, Chassis temp less than -15 C`

Explanation The chassis inlet or outlet temperature is less than 5˚F (–15˚C).

Recommended Action Increase the ambient environmental temperature to greater than 5˚F (–15˚C). One or more of these conditions probably exists. Use the **show temperature** command to determine the current temperatures, the thresholds, and the number and type of alarms raised

Error Message `%CI-3-MINOR_TEMP: Alarm: ASSERT, MINOR, Chassis, Chassis temp > minor limit`

Explanation The inlet temperature is greater than or equal to 149˚F (65˚C) or the outlet temperature is greater than or equal to 167˚F (75˚C).

Recommended Action Reduce the chassis temperature by checking for the following: blocked air intake, fan tray failure, abnormal ambient environmental conditions, temperature sensor failures, and system hardware failures. One or more of these conditions probably exists. One or more of these conditions probably exists. Use the **show temperature** command to determine the current temperatures, the thresholds, and the number and type of alarms raised

Error Message `%CI-3-PARTIAL_FAN_FAIL: Alarm: ASSERT, MINOR, Chassis, One fan failed`

Explanation One of the fans in the chassis fan tray failed.

Recommended Action Check the fan tray module.

Error Message `%CI-3-PWRA_FAIL: Alarm: ASSERT, MINOR, Chassis, Chassis power supply A failed`

Explanation Either power source A failed or the hardware that monitors it malfunctioned.

Recommended Action Replace, reconnect, or reinstall power source A.

Error Message `%CI-3-PWRB_FAIL: Alarm: ASSERT, MINOR, Chassis, Chassis power supply B failed`

Explanation Either power source B failed or the hardware that monitors it malfunctioned.

Recommended Action Replace, reconnect, or reinstall power source B.

Error Message `%CI-4-MULTIPLE_FAN_FAILURE:Line cards will be shutdown in 60 seconds`

Explanation Two or more fans have failed and the system will power off or reset the transponder modules in the shelf to prevent damage from overheating.

Caution Do not save the startup configuration file after the line cards shutdown. This action would result in losing the previous configuration.

Recommended Action Power cycle the chassis after the to restart after resolving the fan failure.

Error Message `%CI-6-FANFAIL_SHUTDOWN:Line cards are being shutdown on fan failure.`

Explanation Two or more fans have failed and the system is powering off or resetting the transponder modules in the shelf to prevent damage from overheating.

Recommended Action Power cycle the chassis to restart after resolving the fan failure.

COUNTER_SYNC

Error Message `%COUNTER_SYNC-3-TRANSMIT_ERROR: Unable to transmit message type`

Explanation A transmit error occurred while sending sending a message to the standby processor card.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

Error Message `%COUNTER_SYNC-3-NO_BUFFER: No memory to sync`

Explanation A transmit error occurred because the buffer was unavailable while sending a message to the standby processor card.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

Error Message `%COUNTER_SYNC-3-ENCODE_ERROR: Counter record mismatch`

Explanation A mismatch in error counters encoded and in error counters for the interface was detected.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

Error Message `%COUNTER_SYNC-3-SUBSYS_COMPAT: Standby processor card does not preserve counters on switchover`

Explanation The standby processor card does not preserve the counters on switchover because it is missing the counter sync subsystem.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

Error Message `%COUNTER_SYNC-3-STATUS:`

Explanation The interface counter sync failed on successive tries.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

CPU_REDUN

Error Message `%CPU_REDUN-2-INITSYS: CPU REDUN failed RF client registration`

Explanation The processor card redundancy facility client registration failed.

Recommended Action Check for sufficient processor card memory.

Error Message `%CPU_REDUN-2-INITSYS: CPU REDUN missing translation index entry`

Explanation The processor card redundancy facility cannot find a translation index when synchronizing messages between system image versions.

Recommended Action Check for compatible system images on the active and standby processor cards.

Error Message `%CPU_REDUN-2-INITSYS: Unable to create CPU REDUN process`

Explanation The processor card cannot create the redundancy facility process.

Recommended Action Check for sufficient processor card memory.

Error Message `%CPU_REDUN-3-4MSEC_DISABLED: [chars] [dec] MSGDEF_LIMIT_MEDIUM`

Explanation The 4-msec timer interrupt shuts off for an extended period while the hardware watchdog is enabled.

Recommended Action If the problem persists, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-BKPLN_IDPROM_ACCESS: Alarm: ASSERT, MAJOR, CPU slot [dec], Can't access bkpln IDPROM`

Explanation The processor card cannot access the backplane IDPROM.

Recommended Action Confirm that the processor card is fully seated into the chassis slot.

Error Message `%CPU_REDUN-3-CAPAB_SIZE: Mismatch in [chars]. Active=[dec], Standby=[dec].`

Explanation The standby processor card reported lower capabilities than the active processor card. See message text for the type o f limitation.

Recommended Action Check for sufficient standby processor card memory for the type of memory indicated.

Error Message `%CPU_REDUN-3-CAPAB_VERS: Mismatch in [chars]. Active=[dec].[dec], Standby=[dec].[dec]`

Explanation The standby processor card reports lower versions than the active processor card. See message text for the type of limitation.

Recommended Action Check the standby processor card functional version numbers.

Error Message `%CPU_REDUN-3-CAPABILITIES: Alarm: ASSERT, MINOR, CPU slot [dec], Standby with lower capabilities`

Explanation The capabilities reported by the standby processor card are less than the active processor card. The processor cards are conditionally redundant, which means that a switchover could result in a partial loss of system control.

Recommended Action Upgrade either the peer software version or the hardware capability as indicated by the mismatched capability in the **show redundancy capability** command display.

Error Message `%CPU_REDUN-3-DRIVER_MISSING: Missing [chars] driver support on Standby. Active=[dec].[dec]`

Explanation The standby processor card is missing support for one of the drivers available on the active processor card. The corresponding module fails in the event of a switchover.

Recommended Action Try upgrading the software image on the standby processor card.

Error Message `%CPU_REDUN-3-DRIVER_VERSIONS: Mismatch in [chars] driver versions. Active=[dec].[dec], Standby=[dec].[dec]`

Explanation The standby processor card reported lower driver versions than the active processor card. See the message text for the type of limitation.

Recommended Action Check whether the standby and active processor cards are running the same software images.

Error Message `%CPU_REDUN-3-EHSA_SVCS:`

Explanation An error occurred affecting processor card redundancy services.

Recommended Action If the problem persists, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-EHSA_SVCS: cannot open standby port [chars]`

Explanation The enhanced high system availability (EHSA) standby port is not opened between the processor cards.

Recommended Action Check for sufficient processor card memory.

Error Message `%CPU_REDUN-3-EHSA_SVCS: Can't communicate config register to Standby.`

Explanation The configuration registers cannot be copied to the standby processor card.

Recommended Action Confirm that interprocess communications (IPC) is up.

Error Message `%CPU_REDUN-3-EHSA_SVCS: Can't open slave port for EHSA msgtype [chars]`

Explanation The connection between processor cards cannot transfer a specific enhanced high system availability (EHSA) message.

Recommended Action Check for sufficient processor card memory.

Error Message `%CPU_REDUN-3-EHSA_SVCS: cant_send_bootvar`

Explanation The bootvar (boot variable) cannot be copied between processor cards.

Recommended Action Confirm that interprocess communications (IPC) is up.

Error Message `%CPU_REDUN-3-EHSA_SVCS: Didn't receive response for EHSA msgtype [chars]`

Explanation The active processor card could not receive a response for an enhanced high system availability (EHSA) message from the standby processor card because of broken interprocess communications.

Recommended Action Confirm that interprocess communications (IPC) is up.

Error Message `%CPU_REDUN-3-EHSA_SVCS: standby CPU can not create named port [chars]`

Explanation The standby processor card cannot configure a specific port.

Recommended Action Check for sufficient processor card memory.

Error Message `%CPU_REDUN-3-EHSA_SVCS: standby CPU can not register named port [chars]`

Explanation The standby processor card cannot register a specific port.

Recommended Action Confirm that interprocess communications (IPC) is up.

Error Message `%CPU_REDUN-3-EHSA_SVCS: Standby CPU can't allocate response for msgtype [chars]`

Explanation The standby processor card cannot create a response to a specific enhanced high system availability (EHSA) message.

Recommended Action Check for sufficient processor card memory.

Error Message `%CPU_REDUN-3-EHSA_SVCS: standby CPU can't register with IPC port mgr for [chars]`

Explanation The standby processor card cannot register a specific port manager.

Recommended Action Confirm that interprocess communications (IPC) is up.

Error Message `%CPU_REDUN-3-EHSA_SVCS: Unable to create time sync process`

Explanation The time enhanced high system availability (EHSA) synchronization process is not created between processor cards.

Recommended Action Check for sufficient processor card memory.

Error Message `%CPU_REDUN-3-GT_STATUS_REG: Parity Error on PCI Bus from PCI Device`

Explanation The processor card system controller (GT) receives the parity error from one of the PCI device such as the PC Card, Fastethernet (NME, BPE), and SRC FPGA.

Recommended Action If the problem persists, contact Cisco TAC with **show tech**, **show logging** and **show gt** comman d outputs

Error Message `%CPU_REDUN-3-INCONSISTENT_STATES: Alarm: ASSERT, MAJOR, CPU slot [dec], Inconsistent redun states`

Explanation The processor card redundancy state is either not consistent with the state or the software state is not consistent with the hardware state.

Recommended Action Confirm both processor cards are fully seated into the chassis slots. If the problem persists, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-INIT_ERROR: Could not create peer cpu idb 0 0`

Explanation The processor card cannot create an interface data block for the interprocess communications interface.

Recommended Action Check for sufficient processor card memory.

Error Message `%CPU_REDUN-3-INIT_ERROR: Couldn't create master control port 0 0`

Explanation The processor card cannot create a master control port.

Recommended Action Check for sufficient processor card memory.

Error Message `%CPU_REDUN-3-INIT_ERROR: Delayed IPC registration didn't succeed 0 0`

Explanation The processor card cannot queue a request for delayed interprocess communications registration.

Recommended Action Check for sufficient processor card memory.

Error Message `%CPU_REDUN-3-INIT_ERROR: MAX_CLIENTS exceeded. (Client Count, MAX_CLIENTS) = [dec] [dec]`

Explanation The processor card detects that the maximum number of client connections was exceeded.

Recommended Action Check for compatible software images on the active and standby processor cards.

Error Message `%CPU_REDUN-3-INIT_ERROR: MAX_DRIVERS exceeded. (Driver Count, MAX_DRIVERS) = [dec] [dec]`

Explanation The processor card detects that the maximum number of controller drivers was exceeded.

Recommended Action Check for compatible software images on the active and standby processor cards.

Error Message `%CPU_REDUN-3-INIT_ERROR: metopt_get_peer_client_version (ClientID, MAX_CLIENT_ID) = [dec] [dec]`

Explanation Processor card redundancy arbitration of the client processor card image versions fails.

Recommended Action Check for compatible software images on the active and standby processor cards.

Error Message `%CPU_REDUN-3-INIT_ERROR: metopt_init_local_version table init error by ClientID=[dec] [dec]`

Explanation Processor card redundancy encounters a client ID error in the local version table.

Recommended Action Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-INIT_ERROR: metopt_init_vers_translation table init error by ClientID= [dec] [dec]`

Explanation The processor card redundancy facility encounters a client ID error in the translation table.

Recommended Action Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-INIT_ERROR: Unable to read backplane IDPROM 0, 0`

Explanation The processor card cannot read the IDPROM on the backplane.

Recommended Action Check that the processor card is fully seated in the chassis slot.

Error Message `%CPU_REDUN-3-INTRPT_HOG: [chars] [dec] sec, [chars] = [hex], MSGDEF_LIMIT_SLOW`

Explanation The processor card redundancy process does not run for a long period of time because an interrupt routine runs too long.

Recommended Action If the problem persists, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-INVALID_CPU_STATES: Detected invalid redundancy states, local = [chars], peer = [chars]`

Explanation The processor card detects an invalid combination of redundant states.

Recommended Action Check that both processor cards are firmly seated in their chassis slots. If so, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-INVALID_MSG: Incorrectly formatted message ([dec], [dec]) received by SLO channel`

Explanation An inconsistent data message is received from the peer processor card, possibly due to an incompatible image version.

Recommended Action Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-LOCK_ERR: Can't get Global Lock`

Explanation The peer processor card is not relinquishing the arbitration lock.

Recommended Action Check that both the local and peer processor cards are fully seated in the backplane. Check the status of the peer processor card.

Error Message `%CPU_REDUN-3-MULTI_CARD_ACCESS: Alarm: ASSERT, MAJOR, CPU slot [dec], Can't access multiple linecards`

Explanation The processor card failed the line card access test for multiple line cards.

Recommended Action Verify that the processor card can access the line cards. If so, replace the failed processor card.

Error Message `%CPU_REDUN-3-PCI_TEST: Alarm: ASSERT, MAJOR, CPU slot [dec], PCI diag failure`

Explanation The processor card failed the online diagnostic internal PCI bus test.

Recommended Action Replace the processor card.

Error Message `%CPU_REDUN-3-PCMCIA_TEST: Alarm: ASSERT, MINOR, CPU slot [dec], PCMCIA diag failure`

Explanation The processor card failed the online diagnostic internal PC card slot test.

Recommended Action Replace the processor card.

Error Message `%CPU_REDUN-3-PEER_COMM: Alarm: ASSERT, MINOR, CPU slot [dec], Unprotected. Peer not responding`

Explanation The peer processor card is present but not responding or sending keepalives.

Recommended Action If this condition persists, check the status of the standby processor card. This alarm is suppressed by changing the redundancy configuration to maintenance mode.

Error Message `%CPU_REDUN-3-PEER_MISSING: Alarm: ASSERT, MINOR, CPU slot [dec], Unprotected. Peer missing`

Explanation The peer processor card is either missing or cannot be detected. The active processor card is currently not protected.

Recommended Action Insert a compatible processor card into the standby peer chassis slot. You can suppress this alarm by changing the redundancy configuration to maintenance mode.

Error Message `%CPU_REDUN-3-PEER_SEVERITY_ERR: Invalid peer CPU severity ([dec]) (current peer register=[hex])`

Explanation The peer processor card reports an invalid severity value.

Recommended Action Reseat the peer processor card. Use the **show redundancy** command to verify that the same system image version is running on both the active and standby processor cards.

Error Message `%CPU_REDUN-3-PEER_SRC_REGS: Alarm: ASSERT, MAJOR, CPU slot [dec], Read invalid SRC regs from peer`

Explanation The active processor card detects bad parity on the active/standby status bits read from the standby processor card.

Recommended Action Reseat the peer processor card. If the problem persists, replace the peer processor card.

Error Message `%CPU_REDUN-3-PEER_STATE_ERR: Invalid peer CPU state ([chars]) (current peer register=[hex])`

Explanation The peer processor card reports an invalid redundancy state. The valid states are active, standby, or non-participant.

Recommended Action Reseat the peer processor card. If the problem persists, replace the peer processor card.

Error Message `%CPU_REDUN-3-RCSF: Unable to sync running config to standby`

Explanation The active processor card cannot send the running configuration file to standby processor card.

Recommended Action Confirm that interprocess communications (IPC) is up.

Error Message `%CPU_REDUN-3-RCSF_FAIL:Attempt to sync running config to standby failed`

Explanation The running configuration file changed but was not successfully synchronized with the standby processor card.

Recommended Action Confirm that interprocess communications (IPC) is up.

Error Message `%CPU_REDUN-3-READBACK_ERR: Can't change my state. desired state [chars], read-back [chars]`

Explanation The local processor card cannot set its redundancy state to the desired calculated value.

Recommended Action If accompanied by a LOCK_ERR, disregard. Otherwise, reseat the processor card. If the problem persists, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-SLOT_IDPROM_MISMATCH: Alarm: ASSERT, MAJOR, CPU slot [dec], IDPROM/bkpln slot mismatch`

Explanation The slot ID read from the backplane IDPROM does not match the slot ID read from the processor card.

Recommended Action Confirm that the processor card is fully seated into the chassis slot. If so, confirm that the backplane IDPROM slot IDs are consistent with the actual slot position.

Error Message `%CPU_REDUN-3-SRC_TEST: Alarm: ASSERT, MAJOR, CPU slot [dec], SRC diag failure`

Explanation The processor card failed the online diagnostic internal SRC test.

Recommended Action Replace the processor card.

Error Message `%CPU_REDUN-3-STARTUP_SYNC_FAIL:Attempt to sync startup config to standby failed`

Explanation The startup configuration file changed but was not successfully synchronized with the standby processor card.

Recommended Action Check that communications are up on the standby processor card.

Error Message `%CPU_REDUN-3-STARTUP_SYNC_FAIL: Attempt to sync [chars] config to standby failed`

Explanation The active processor card cannot send the startup or private configuration file to the standby processor card.

Recommended Action If the problem persists, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-SUBSYS_COMPAT: [chars] [chars] software subsystem. Active=[dec], Standby=[dec]`

Explanation A specific software subsystem is not compatible with the active and standby image versions.

Recommended Action The standby processor card software subsystem is old or missing. See message text for software subsystem type.There might be feature losses in the event of a switchover.

Error Message `%CPU_REDUN-3-SW_STATE_MISMATCH: Software state ([chars]) doesn't reflect local hardware ([chars])`

Explanation The software state is not following the underlying hardware redundancy state.

Recommended Action Confirm that the processor card is firmly seated in the chassis. If so, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-UNKNOWN_COMMON: Alarm: ASSERT, MINOR, CPU slot [dec], Unknown alarm (metro family)`

Explanation When asserted for the standby processor card, it has a different system image from the active processor card. It indicates that there is an alarm condition on the standby processor card that the active processor card cannot decode. If asserted for the active processor card, it indicates a software error condition.

Recommended Action If asserted for the standby processor card, check the status of the standby processor card and use the **show logging** command on the standby console connection to search for any error messages indicating an alarm condition. If asserted for the active processor card, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-3-UNKNOWN_MSG: Unknown message type [chars] received by Sby EHSA svc`

Explanation An unknown message type is received from the peer processor card, possibly due to an incompatible image version.

Recommended Action Check the status and configuration of the standby processor card.

Error Message `%CPU_REDUN-3-UNKNOWN_MSG: Unknown message type [chars] received by SLO channel`

Explanation An unknown message type is received from the peer processor card, possibly due to an incompatible image version.

Recommended Action Check the status and configuration of the standby processor card.

Error Message `%CPU_REDUN-3-UNKNOWN_MSG: Unknown message type [chars] received by Standby CPU`

Explanation An unknown message type is received from the peer processor card, possibly due to an incompatible image version.

Recommended Action Check the status and configuration of the standby processor card.

Error Message `%CPU_REDUN-3-UNKNOWN_MSG: Unknown message type [hex] received by Active CPU`

Explanation An unknown message type is received from the peer processor card, possibly due to an incompatible image version.

Recommended Action Check the status and configuration of the standby processor card.

Error Message `%CPU_REDUN-3-UNKNOWN_PLAT: Alarm: ASSERT, MINOR, CPU slot [dec], Unknown alarm (platform-specific)`

Explanation When asserted for the standby processor card, it has a different system image from the active processor card. It indicates that there is an alarm condition on the standby processor card that the active processor card cannot decode. If asserted for the active processor card, it indicates a software error condition.

Recommended Action If asserted for the standby processor card, check the status of the standby processor card and use the **show logging** command on the standby processor card console connection to search for any error messages indicating an alarm condition. If asserted for the active processor card, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-4-REPROGRAM_ACTIVE_CPU: Active CPU FPGA has been reprogrammed. Please remove and re-insert the CPU in slot <slot> or power-cycle the box, for the new FPGA to take effect.`

Explanation The active processor card functional image has been reprogrammed and further action is required for it to take effect.

Recommended Action If possible make the processor card in the numbered slot the standby processor card, then remove and reinsert it. Alternatively, save the configuration and power-cycle the entire box if a data outage is tolerable.

Error Message `%CPU_REDUN-4-STARTUP_CONFIG_MISSING: Non-volatile configuration memory is not present`

Explanation The startup configuration is missing. This may be because of a manual **user erase** command or an interrupted write to the startup configuration.

Recommended Action Perform a **copy running-config startup-config** to save the current system configuration. If the problem persists, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command ouptuts.

Error Message `%CPU_REDUN-4-UNPROTECTED: Peer CPU hasn't reached Hot Standby after [dec] minutes.`

Explanation The system is running for an extended period in an unprotected mode even though a peer processor card is present.

Recommended Action Check whether the standby processor card booted the system image. If the standby processor card is not responsive, reseat the card and try again. If the problem persists, replace the peer processor card.

Error Message `%CPU_REDUN-5-BASIC_CAPABILITY: Peer CPU hardware and software is fully compatible.`

Explanation The standby processor card, drivers, and software subsystems have matching versions and capabilities.

Recommended Action This message is informational only.

Error Message `%CPU_REDUN-5-EHSA_SVCS_RESP: Sending [chars] = [dec], 30*ONESEC`

Explanation A normal EHSA redundancy service response is sent by the processor card.

Recommended Action This message is informational only.

Error Message `%CPU_REDUN-5-FORCE_CLOSE: Forcibly closing fd: [dec] name:[chars]`

Explanation A file activity timeout occurred on the standby processor card.

Recommended Action If the problem persists, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-5-NEGOTIATED_SWITCHOVER: Reloading due to negotiated switchover, sev = [dec]`

Explanation A switchover occurred due to a change in either the severity or state of one of the processor cards as a result of either a hardware or software fault.

Recommended Action Check the status of the new standby processor card and replace it if it is faulty.

Error Message `%CPU_REDUN-5-PEER_EXITED_IOS:Peer CPU has exited IOS`

Explanation The peer processor card exited Cisco IOS and temporarily returned to ROM monitor mode. This might indicate either a user-initiated reload or a software crash.

Recommended Action If the peer processor card rebooted, issue a **show stacks** command to verify if a crash stack trace was recorded. Check the **show version** command output to verify the reported reason for return to ROM monitor mode. If a software crash occurred, contact Cisco TAC with the crash information.

Error Message `%CPU_REDUN-5-PEER_REMOVED:Peer CPU has been removed from the chassis`

Explanation The peer processor card was either partially or fully removed from the chassis.

Recommended Action If the peer processor card is still physically present in the chassis, verify that both processor cards are fully seated in their slots.

Error Message `%CPU_REDUN-5-RCSF_SYNCED:Running config successfully synced to standby`

Explanation The running configuration file successfully synchronized with the standby processor card.

Recommended Action This message is informational only.

Error Message `%CPU_REDUN-5-RELOAD_COMM_DOWN: Reloading standby since Active CPU shows loss of comm.`

Explanation A reload of the standby processor card occurred because the active processor card reported that communications to the standby processor card were down.

Recommended Action Check that the standby processor card is firmly seated in the chassis slot. If it is, check that communications are up between the processor cards.

Error Message `%CPU_REDUN-5-STARTUP_CONFIG_SYNCED:Startup config successfully synced to standby`

Explanation The startup configuration file successfully synchronized with the standby processor card.

Recommended Action This message is informational only.

Error Message `%CPU_REDUN-5-STATE_MISMATCH_RELOAD: Reloading due to a hardware software state mismatch.`

Explanation A reload occurred because the software state is not consistent with the processor card hardware state as a result of either a hardware or software fault (IPC down).

Recommended Action Check the status of the processor card that issued the error message. Replace the processor card if it is faulty.

Error Message `%CPU_REDUN-5-STATUS_CHG; A CPU hardware redundancy status change occurred.`

Explanation A processor redundancy switchover recently took place.

Recommended Action Check the reason for the processor redundancy switchover. If it was due to activeUnitFailed, check the status of the peer processor card hardware. If the problem persists, contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%CPU_REDUN-5-SWITCHOVER:Switchover occurred. Reason:[chars]`

Explanation A processor redundancy switchover recently took place.

Recommended Action Check the reason for the processor redundancy switchover. If it was due to activeUnitFailed, check the status of the peer processor card hardware.

Error Message `%CPU_REDUN-5-UNSUPPORTED_MSG: Msgtype [chars] sent by [chars] unsupported by peer. MSGDEF_LIMIT_SLOW`

Explanation The peer processor card does not recognize messages sent by the local processor card possibly due to a different image version. This can also happen if the message is corrupted in transit from the active to the standby processor card.

Recommended Action Upgrade the software image on the standby processor card. If the problem persists, contact Cisco TAC with show tech, show logging, and show hardware detail command ouputs.

Error Message `%CPU_REDUN-5-UNSUPPORTED_MSG: Msgtype SLAVE_SERVICES_SETTIME_REQ sent by EHSA svcs uncsupported by peer.`

Explanation Redundancy Set Time message updates occur every minute. This error is likely due to a corrupted message or a busy peer CPU that failed to handle the message during one of those minutes. The time will synchronize the next minute unless there is another error message.

Recommended Action This message in informational only.

Error Message `%CPU_REDUN-6-BOOTED_AS_ACTIVE:After returning to ROM by [chars]`

Explanation This processor card initially came up as active and no switchovers have occurred.

Recommended Action This message is informational only.

Error Message `%CPU_REDUN-6-EHSA_SVCS_EVENT: %s %s", 30*ONESEC`

Explanation A significant EHSA redundancy service event occurred.

Recommended Action This message is informational only.

Error Message `%CPU_REDUN-6-RUNNING_CONFIG_CHG:Running config on this CPU has possibly changed`

Explanation The running configuration file might have changed as a result of a global configuration command entered from the CLI.

Recommended Action This message is informational only.

Error Message `%CPU_REDUN-6-STARTUP_CONFIG_CHG:Startup config on this CPU has possibly changed`

Explanation The startup configuration file might have changed as a result of a user configuration command.

Recommended Action This message is informational only.

CRYPTO_SYNC

Error Message `%CRYPTO_SYNC-3-TRANSMIT_ERROR: Unable to transmit message`

Explanation A transmit error occurred while sending a message to the standby processor card because of a message translation.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

Error Message `%CRYPTO_SYNC-3-NO_BUFFER: No memory to sync`

Explanation A transmit error occurred because the buffer was unavailable while sending a message to the standby processor card.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

Error Message `%CRYPTO_SYNC-3-SUBSYS_COMPAT: Standby is missing the Crypto Sync subsystem`

Explanation The standby processor card does not preserve the crypto keys on switchover because it is missing the crypto sync subsystem.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

Error Message `%CRYPTO_SYNC-3-UNKNOWN_MSG: Unknown message received`

Explanation An unknown message type was received from the peer processor card, possibly because of an incompatible image version.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

FILESYS

Error Message `%FILESYS-4-RCSF: running config Too big to sync.. [dec]`

Explanation The file system detects the running configuration file is too large to synchronize with the standby processor card.

Recommended Action Check for sufficient processor card memory.

Error Message `%FILESYS-4-RCSF: Secondary running config close failed [chars] [chars]`

Explanation The file system tries to close the standby processor card running configuration file and the process fails.

Recommended Action Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%FILESYS-4-RCSF: Secondary running config is not opened [chars]`

Explanation The standby processor card running configuration file is not opened.

Recommended Action Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%FILESYS-4-RCSF: Secondary running config open failed [chars] [chars]`

Explanation The file system tries to open the standby processor card running configuration file and the process fails.

Recommended Action Confirm that interprocess communications (IPC) is up.

Error Message `%FILESYS-4-RCSF: Secondary running config write error [chars] [chars]`

Explanation The file system tries to write the standby processor card running configuration file and the process fails.

Recommended Action Confirm that interprocess communications (IPC) is up. Use the **redundancy manual-sync running-config** command to attempt setting the configuration again.

Error Message `%FILESYS-4-RCSF: Secondary running config write incomplete [chars]`

Explanation The file system tries to write the standby processor card running configuration file and the process fails before completion.

Recommended Action Confirm that interprocess communications (IPC) is up. Use the **redundancy manual-sync running-config** command to attempt setting the configuration again.

IPC

Error Message `%IPC-2-CANT_SEND: Cannot send IPC message: [chars]`

Explanation There is an error in the IPC standby discovery mechanism. It might result in a malfunction in the operation of the IPC.

Recommended Action Something is seriously wrong. Examine the traceback for clues. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-2-INVALSIZE: IPC message received with invalid size(size/type - [dec]/[dec])`

Explanation An IPC message is received with an invalid size and is probably corrupted.

Recommended Action Check the traceback for the failed component. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-2-LOCK: Lock done a deleted element`

Explanation An internal inconsistency was found in some IPC data structures.

Recommended Action Something is seriously wrong. Examine the traceback for clues. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-2-NODISPATCH: Message for [dec].[dec] has no receive queue or dispatch routine`

Explanation An IPC caller fails to provide any means of handling a received message.

Recommended Action Someone created an IPC port with no handler for it. Use the output of the **show ipc ports** command to try to determine who created the port. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-2-NOMEM: No memory available for Deferred-close Ports`

Explanation The IPC protocol subsystem cannot obtain the memory it needs.

Recommended Action There is not enough memory to initialize the required data structures needed by the IPC. This message should appear only when the system is booting. If the IPC cannot initialize, add more memory to the system.

Error Message `%IPC-2-NOMEM: No memory available for failed to create [dec] messages`

Explanation The IPC protocol subsystem cannot obtain the memory it needs.

Recommended Action There is not enough memory to initialize the required data structures needed by the IPC. This message should appear only when the system is booting. If the IPC cannot initialize, add more memory to the system.

Error Message `%IPC-2-NOMEM: No memory available for getbuffer fails`

Explanation The IPC protocol subsystem cannot obtain the memory it needs.

Recommended Action There is not enough memory to initialize the required data structures needed by the IPC. This message should appear only when the system is booting. If the IPC cannot initialize, add more memory to the system.

Error Message `%IPC-2-NOMEM: No memory available for IPC system initialization`

Explanation The IPC protocol subsystem cannot obtain the memory it needs.

Recommended Action There is not enough memory to initialize the required data structures needed by the IPC. This message should appear only when the system is booting. If the IPC cannot initialize, add more memory to the system.

Error Message `%IPC-2-ONINT: Called from interrupt level: ipc_close_ports_on_seat()`

Explanation The IPC user issues a prohibited call into the IPC while the IPC is running on the interrupt stack.

Recommended Action Look at the traceback and the output of the **show ipc status** command to try to determine the cause of the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-2-ONINT: Called from interrupt level: ipc_remove_port()`

Explanation The IPC user issues a prohibited call into the IPC while the IPC is running on the interrupt stack.

Recommended Action Look at the traceback and the output of the **show ipc status** command to try to determine the cause of the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-2-ONINT: Called from interrupt level: ipc_remove_ports_on_seat()`

Explanation The IPC user issues a prohibited call into the IPC while the IPC is running on the interrupt stack.

Recommended Action Look at the traceback and the output of the **show ipc status** command to try to determine the cause of the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-2-PRECLOSE: IPC port pre-closure overflow : [dec] : [dec]`

Explanation An application attempts to close an IPC port when there are messages pending in the retransmit queue and the IPC defer table overflows.

Recommended Action Look at the traceback and the output of the **show ipc ports** command to try to determine the application that caused the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-2-UNLOCK: Unlock done on already unlocked element`

Explanation An internal inconsistency is found in some IPC data structures.

Recommended Action Something is seriously wrong. Examine the traceback for clues. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-3-DELETED: Attempt to delete an IPC message ([hex]) a second time`

Explanation An internal inconsistency is found in some IPC data structures.

Recommended Action An IPC message was freed twice. Look at the traceback and the output of the **show ipc status** and **show ipc queue** commands to try to determine the cause of the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-3-GIANT: Request for giant IPC packet denied. Request size = [dec]`

Explanation An IPC user requests a message that is too large for the IPC system.

Recommended Action Check the traceback for the source of the request.

Error Message `%IPC-3-LOWBUFF: The main IPC message header cache below application reserve count ([dec]).`

Explanation The main IPC message header cache falls below the application reserve count.

Recommended Action Check for sufficient processor card memory.

Error Message `%IPC-3-NOBUFF: The [chars] IPC message header cache has emptied`

Explanation The given IPC message header cache is empty.

Recommended Action Check for sufficient processor card memory.

Error Message `%IPC-4-CONSISTENCY: Message failed consistency check: ipc_fragment_first: message already has fragment.`

Explanation An IPC message is received with an invalid size and is probably corrupted.

Recommended Action Check the traceback for the source of the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-4-CONSISTENCY: Message failed consistency check: ipc_remove_port: missing name.`

Explanation An internal inconsistency is found in some IPC data structures. An IPC caller probably passed on bad information.

Recommended Action Check the traceback for the source of the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-4-CONSISTENCY: Message failed consistency check: message data_buffer & data == NULL`

Explanation An internal inconsistency is found in some IPC data structures. An IPC caller probably passed on bad information.

Recommended Action Check the traceback for the source of the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-4-CONSISTENCY: Message failed consistency check: send_message: dest port send vector is NULL.`

Explanation An internal inconsistency was found in some IPC data structures. An IPC caller probably passed on bad information.

Recommended Action Check the traceback for the source of the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-4-CONSISTENCY: Message failed consistency check: send_message: input IPC dest port info is NULL.`

Explanation An internal inconsistency was found in some IPC data structures. An IPC caller probably passed on bad information.

Recommended Action Check the traceback for the source of the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-4-CONSISTENCY: Message failed consistency check: send_message: input IPC message is NULL.`

Explanation An internal inconsistency was found in some IPC data structures. An IPC caller probably passed on bad information.

Recommended Action Check the traceback for the source of the problem. Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%IPC-4-GET_PAK_MSG: Failed for message size=[dec]`

Explanation The system is out of packet type buffers of required size.

Recommended Action It could be either transient, which might require an image with reconfigured packet type buffers, or permanent, which could be a memory leak (check the traceback). Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

LCMDC

Error Message `%LCMDC-3-ACCESS_FAIL: Alarm: ASSERT, MAJOR, MuxDemuxMB [dec], Access to LRC failed`

Explanation The online diagnostics cannot access the line card redundancy controller on the mux/demux motherboard without OSC.

Recommended Action Reseat the line card motherboard. If the problem persists, replace the line card motherboard.

Error Message `%LCMDC-3-ACCESS_FAIL: Alarm: ASSERT, MAJOR, MuxDmuxOSCMB [dec], Access to LRC failed`

Explanation The online diagnostics cannot access the line card redundancy controller (LRC) from the mux/demux motherboard with OSC.

Recommended Action Reseat the mux/demux motherboard. If the problem persists, replace the mux/demux motherboard.

Error Message `%LCMDC-3-ACCESS_FAIL: Alarm: ASSERT, MAJOR, TranspdrMB [dec], Access to LRC failed`

Explanation The online diagnostics cannot access the line card redundancy controller (LRC) on the line card motherboard.

Recommended Action Reseat the line card motherboard. If the problem persists, replace the line card motherboard.

Error Message `%LCMDC-3-ACCESS_FAIL: Alarm: ASSERT, MAJOR, TranspdrSC [dec]/[dec], Access to Tspcard failed`

Explanation The online diagnostics cannot access the transponder module.

Recommended Action Reseat the transponder module and try again. If the problem persists, replace the transponder module or the line card motherboard.

Error Message `%LCMDC-3-CDL_HEC_ETX_ALM: CDL HEC Err count; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a converged data link header error control error when it exceeds the HEC error failure threshold.

Recommended Action Check for high or low power levels. Also check for and clean dirty optical patch cable connectors.

Error Message `%LCMDC-3-CDL_RFOF_IND: CDL Drop FIFO OvrFL; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a converged data link drop first-in first-out error.

Recommended Action Check the network connection.

Error Message `%LCMDC-3-ECDRLK_ALM : Egress CDR Locking error; Slot [dec] Subcard [dec] Port [dec]`

Explanation The monitoring on a transponder module reports a loss of lock.

Recommended Action Check the connecting cable and laser power levels. Check configured encapsulation or clock rate.

Error Message `%LCMDC-3-EOP_NOLG_ALM: Egress Loss of Light; Slot [dec] Subcard [dec] Port [dec]`

Explanation The received power level on the trunk drops below the low alarm threshold or a loss of light condition occurs on the trunk.

Recommended Action Check for broken or dirty trunk Rx fiber cable. Excessive attenuation on the trunk can also cause this error condition. It is also likely that the transponder module transmitter on the remote end is bad or the transponder module receiver is faulty.

Error Message `%LCMDC-3-EOP_NOLG_PALM: Egress Loss of Light Prealarm: Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a loss of light pre-alarm error on an egress connection.

Recommended Action Check for broken or dirty trunk Rx fiber cable. Excessive attenuation on the trunk can also cause this error condition. It is also likely that the transponder module transmitter on the remote end is bad or the transponder module receiver is faulty.

Error Message `%LCMDC-3-EOP_TKSW_ALM: Egress Trunk Switch Mech. Failure; Slot [dec] Subcard [dec] Port [dec]`

Explanation A line card motherboard generates a mechanical error on an egress connection.

Recommended Action Reseat the line card motherboard and test the optical switch. If the problem persists, replace the line card motherboard.

Error Message `%LCMDC-3-FH_ECETX_ALM: Egress Fiber Channel/ESCON Line Err; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a Fibre Channel or ESCON line error on an egress connection.

Recommended Action Check the trunk power level for high or low conditions that can cause this error. Adjust the attenuation as needed. Also check for dirty cables or connectors and clean them.

Error Message `%LCMDC-3-FH_ELOSY_ALM: Egress FC/ESCON Loss of Sync; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a Fibre Channel or ESCON loss of synchronization error on an egress connection.

Recommended Action Check for high or low optical power levels, broken cable, and dirty connectors or cable on the trunk side.

Error Message `%LCMDC-3-FH_ILOSY_ALM: Ingress FC/ESCON Loss of Sync; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a Fibre Channel or ESCON loss of synchronization error on an ingress connection.

Recommended Action Check for high or low optical power levels, broken cable, and dirty connectors or cable on the trunk side.

Error Message `%LCMDC-3-GE_ECETX_ALM: Egress GE Line Code Err count; Slot [dec] Subcard [dec]Port [dec]`

Explanation A transponder module Gigabit Ethernet line code error count exceeds the maximum setting on an egress connection.

Recommended Action Check the optical fiber patch between the mux/demux modules or the cable on the client side.

Error Message `%LCMDC-3-GE_ELOSY_ALM: Egress GE Loss of Sync; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a Gigabit Ethernet loss of synchronization error on an egress connection.

Recommended Action Check for high or low optical power levels, broken cable, and dirty connectors or cable on the trunk side.

Error Message `%LCMDC-3-GE_ILOSY_ALM: Ingress GE Loss of Sync; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a Gigabit Ethernet loss of synchronization error on an ingress connection.

Recommended Action Check for high or low optical power levels, broken cable, and dirty connectors or cable on the trunk side.

Error Message `%LCMDC-3-GE_LOSY_ALM : GE Loss of Sync; Slot [dec] Subcard [dec] Port [dec]`

Explanation The monitoring on a transponder module reports loss of synchronicity.

Recommended Action Check for high or low optical power levels, broken cable, and dirty connectors or cable on the trunk side.

Error Message `%LCMDC-3-GH_ICETX_ALM: Ingress GE Line Code Err; Slot [dec] Subcard [dec] Port [dec]`

Explanation The Gigabit Ethernet line code error count on a transponder module exceeds the maximum setting on an ingress connection.

Recommended Action Check the optical fiber patch between the mux/demux modules or the cable on the client side.

Error Message `%LCMDC-3-ICDRLK_ALM : Ingress CDR Locking error; Slot [dec] Subcard [dec] Port [dec]`

Explanation The CDR (clock and data recovery unit) on a transponder module cannot lock to incoming signal on the client side.

Recommended Action Check for high or low optical power levels, broken cables, and dirty connectors or cables on the client side. Check configured encapsulation or clock rate.

Error Message `%LCMDC-3-IDPROM_ACCESS_FAIL: Alarm: ASSERT, MINOR, MuxDemuxMB [dec], Access to IDPROM failed`

Explanation The online diagnostics cannot access the IDPROM on a mux/demux motherboard with OSC.

Recommended Action Reseat the mux/demux motherboard. If the problem persists, replace the mux/demux motherboard.

Error Message `%LCMDC-3-IDPROM_ACCESS_FAIL: Alarm: ASSERT, MINOR, MuxDmuxOSCMB [dec], Access to IDPROM failed`

Explanation The online diagnostics cannot access the IDPROM on a mux/demux motherboard with OSC.

Recommended Action Reseat the mux/demux motherboard. If the problem persists, replace the mux/demux motherboard.

Error Message `%LCMDC-3-IDPROM_ACCESS_FAIL: Alarm: ASSERT, MINOR, TranspdrMB [dec], Access to IDPROM failed`

Explanation The online diagnostics cannot access the IDPROM on a line card motherboard.

Recommended Action Reseat the line card motherboard. If the problem persists, replace the line card motherboard.

Error Message `%LCMDC-3-IDPROM_ACCESS_FAIL: Alarm: ASSERT, MINOR, TranspdrSC [dec]/[dec], Access to IDPROM  failed`

Explanation The online diagnostics cannot access the IDPROM on a transponder module.

Recommended Action Reseat the transponder module. If the problem persists, replace the transponder module.

Error Message `%LCMDC-3-IOP_NOLG_ALM Ingress Loss of Light; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a loss of light error on an ingress connection.

Recommended Action Check for high or low optical power levels, broken cables, and dirty connectors or cables on the client side.

Error Message `%LCMDC-3-LINE_LASER_FAIL: Alarm: ASSERT, MAJOR, TranspdrSC [dec]/[dec], Line laser failure detected`

Explanation The client side laser failed.

Recommended Action Replace the transponder module or SFP optics.

Error Message `%LCMDC-3-LN_OFC_IND: Line OFC IND; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates an open fiber control (OFC) indication error.

Recommended Action Check the connecting cables or connectors.

Error Message `%LCMDC-3-LN_TX_ALM: Line Laser Failure; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a client side laser error.

Recommended Action Replace the transponder module or SFP optics.

Error Message `%LCMDC-3-MDSUBCARD_IDPROM_FAIL: Alarm: ASSERT, MINOR, MuxDemuxSC [dec]/[dec], Access to IDPROM failed`

Explanation The online diagnostics cannot read the IDPROM on a mux/demux module.

Recommended Action Reseat the mux/demux module. If the problem persists, replace the mux/demux module.

Error Message `%LCMDC-3-OPT_SWITCH_0_FAIL: Alarm: ASSERT, MAJOR, TranspdrMB[dec], Waveport 0 opt switch failed`

Explanation The system associated with wave port 0 fails.

Recommended Action Reseat the line card motherboard and test the optical switch. If the problem persists, replace the line card motherboard.

Error Message `%LCMDC-3-OPT_SWITCH_1_FAIL: Alarm: ASSERT, MAJOR, TranspdrMB[dec], Waveport 1 opt switch failed`

Explanation The system associated with wave port 1 fails.

Recommended Action Reseat the line card motherboard and test the optical switch. If the problem persists, replace the line card motherboard.

Error Message `%LCMDC-3-OSC_HW_FAIL: Alarm: ASSERT, MAJOR, MuxDmuxOSCMB [dec], OSC hardware failure detected`

Explanation The online diagnostics detects an OSC hardware failure (loopback and monitoring access).

Recommended Action Reseat the mux/demux motherboard. If the problem persists, replace the mux/demux motherboard.

Error Message `%LCMDC-3-SH_BIP_ETX_ALM : SONET BIP Err count; Slot [dec] Subcard [dec] Port [dec]`

Explanation The performance monitor on a transponder module reports bit interleave parity (BIP) error rate exceeds failure threshold.

Recommended Action Check the optical fiber patch between the mux/demux modules or the cable on the client side. Also check that the power levels are too high or too low.

Error Message `%LCMDC-3-SH_EBIP_ALM: Egress SONET BIP Err count; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a SONET bit interleave parity (BIP) error on an egress connection.

Recommended Action Check the optical fiber patch between the mux/demux modules or the cable on the client side. Also check that the power levels are too high or too low.

Error Message `%LCMDC-3-SH_ELOF_ALM: Egress SONET Loss of Frame; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a SONET loss of frame (LOF) error on an egress connection.

Recommended Action Check the power level for too high or too low conditions. Apply the appropriate attenuation. Also check for dirty cables or connectors and clean them.

Error Message `%LCMDC-3-SH_ESEF_ALM: Egress SONET SEF; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a SONET severely errored frame (SEF) error on an egress connection.

Recommended Action Check the power level for too high or too low conditions. Apply the appropriate attenuation. Also check for dirty cables or connectors and clean them.

Error Message `%LCMDC-3-SH_IBIP_ALM: Ingress SONET BIP error; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a SONET bit interleave parity (BIP) error on an ingress connection.

Recommended Action Check the optical fiber patches between the mux/demux modules or the cable on the client side. Check the power level for too high or too low conditions. Adjust the attenuation if necessary. Also check for dirty cables or connectors and clean them.

Error Message `%LCMDC-3-SH_ILOF_ALM: Ingress SONET Loss of Frame; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a SONET loss of frame (LOF) error on an ingress connection.

Recommended Action Check for high/low optical power levels, broken cables, and dirty connectors or cables on the client side.

Error Message `%LCMDC-3-SH_ISEF_ALM: Ingress SONET SEF; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a SONET severely errored frame (SEF) error on an ingress connection.

Recommended Action Check for high/low optical power levels, broken cables, and dirty connectors or cables on the client side.

Error Message `%LCMDC-3-SH_LOF_ALM : SONET Loss of Frame; Slot [dec] Subcard [dec] Port [dec]`

Explanation The performance monitor on a transponder module reports a loss of frame (LOF); an auto-failover will be attempted to correct it.

Recommended Action Check the transponder module or line card motherboard specific to slot/subslot.

Error Message `%LCMDC-3-TK_TX_ALM Transmit Failure; Slot [dec] Subcard [dec] Port [dec]`

Explanation A transponder module generates a transmit failure error.

Recommended Action Replace the transponder module or line card motherboard.

Error Message `%LCMDC-3-TRUNK_LASER_DEGRADE: Alarm: ASSERT, MAJOR, MuxDmuxOSCMB [dec], Trunk laser degrade detected`

Explanation The multiprotocol monitor in the OSC reports a trunk laser degrade monitor alarm or general transmit circuit fault.

Recommended Action If the problem persists when the OSC wave interface is up, replace the mux/demux motherboard with OSC.

Error Message `%LCMDC-3-TRUNK_LASER_DEGRADE: Alarm: ASSERT, MAJOR, TranspdrSC [dec]/[dec], Trunk laser degrade detected`

Explanation The multiprotocol monitor in the transponder module reports a trunk laser degrade monitor alarm or general transmit circuit fault.

Recommended Action If the problem persists when the transponder module interfaces are up, replace the transponder module.

Error Message `%LCMDC-3-TRUNK_LASER_DEVIATION: Alarm: ASSERT, MAJOR, MuxDmuxOSCMB [dec], Trunk laser lambda deviation`

Explanation The multiprotocol monitor in the OSC reports a trunk laser wavelength deviation alarm.

Recommended Action If the problem persists when the OSC wave interface is up, replace the mux/demux motherboard with OSC.

Error Message `%LCMDC-3-TRUNK_LASER_DEVIATION: Alarm: ASSERT, MAJOR, TranspdrSC [dec]/[dec], Trunk laser lambda deviation`

Explanation The multiprotocol monitor in transponder module reports trunk laser wavelength deviation alarm.

Recommended Action If the problem persists when the transponder module interfaces are up, replace the transponder module.

Error Message `%LCMDC-3-WAVELENGTH_MISMATCH: Alarm: ASSERT, MAJOR, TranspdrSC [dec]/[dec], Wavelength mismatch error`

Explanation The wavelength from a wave port on the transponder module is not the same as the filter port.

Recommended Action Confirm that the transponder module is installed in the correct channel slot and that the line card motherboard is patched to the correct mux/demux module.

Error Message `%LCMDC-4-SH_BIP_ETX_ALM : SONET BIP Err count; Slot [dec] Subcard [dec] Port [dec]`

Explanation The performance monitor on a transponder module reports bit interleave parity (BIP) error rate exceeds degrade threshold.

Recommended Action Check the optical fiber patch between the mux/demux modules or the cable on the client side.

Error Message `%LCMDC-4-SH_ESEF_ALM : Egress SONET SEF`

Explanation The performance monitor on a transponder module reports severely errored frames (SEF).

Recommended Action Check for high or low optical power level, broken cables, and dirty connectors or cables.

Error Message `%LCMDC-4-SH_LOF_ALM : SONET Loss of Frame; Slot [dec] Subcard [dec] Port [dec]`

Explanation The performance monitor on a transponder module reports a loss of frame (LOF).

Recommended Action Check for high or low optical power level, broken cables, and dirty connectors or cables on the client side.

Error Message `%LCMDC-6-SH_ESEF_ALM : Egress SONET SEF`

Explanation The performance monitor on a transponder module reports severely errored frames (SEF).

Recommended Action Check for high or low optical power level, broken cables, and dirty connectors or cables.

METOPT_DRV

Error Message `%METOPT_DRV-2-NOMEMORY: No memory available for Notification Process`

Explanation There is no memory to create the notification process, which handles port alarms and port fail interrupts. This is a very critical error.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, and report it to Cisco technical support.

Error Message `%METOPT_DRV-2-NOMEMORY: No memory available for OIR process`

Explanation There is no memory for the creation of the OIR process. Online insertion and removal does not work without this process.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, and report it to Cisco technical support.

Error Message `%METOPT_DRV-2-NOMEMORY: No memory available for SRC Standby To Active Process`

Explanation There is no memory to create the SRC standby-to-active process, which handles SRC driver actions during a switchover. The system cannot function correctly without this process.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, and report it to Cisco technical support.

Error Message `%METOPT_DRV-2-PORTFAIL: Port Fail event received Slot [dec] Subcard [dec] Port [dec]; HWIDB, [chars]`

Explanation A port has failed.

Recommended Action Check the trunk and client side connections.

Error Message `%METOPT_DRV-2-ZEROLEN_MSG: Zero length while writing to linecard. Datalen [dec]`

Explanation A zero length message is received while writing to a module.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, and report it to Cisco technical support.

Error Message `%METOPT_DRV-3-IDPROM_MISMATCH: Mismatch in backplane IDPROM, [chars]: Active-side=[chars], Sby-side=[chars]`

Explanation The backplane contains two IDPROMs that should be programmed with identical values for most fields, but mismatch on the current backplane.

Recommended Action Report the error message text to Cisco technical support.

Error Message `%METOPT_DRV-3-IDPROM_MISMATCH: Mismatch in backplane IDPROM, lengths: Active-side=[dec], Sby-side=[dec]`

Explanation A hardware version mismatch occurs on the backplane IDPROM.

Recommended Action Confirm that the compatibility of the processor card hardware and image versions.

Error Message `%METOPT_DRV-3-IDPROM_STR_MISMATCH: Mismatch in backplane IDPROM, [chars], Active-side=[chars] Sby-side=[chars]`

Explanation An IDPROM string mismatch occurs on the backplane IDPROM.

Recommended Action Replace the transponder module.

Error Message `%METOPT_DRV-3-IDPROM_STR_MISMATCH: Mismatch in backplane IDPROM, initialization, Active-side=[chars/chars] Sby-side=[chars/chars]`

Explanation An IDPROM string mismatch occurs during initialization on the backplane IDPROM.

Recommended Action Replace the transponder module.

Error Message `%METOPT_DRV-3-REPROGRAM_ERROR`

Explanation The reprogramming of the functional image fails and does not identify the nature of the problem.

Recommended Action Reprogram the card again. If the problem persists, remove and reinsert the card. If the problem still persists, save the console log and contact Cisco technical support.

Error Message `%METOPT_DRV-3-TP_INTERNAL_ERROR:[chars]`

Explanation The transponder driver subsystem encountered an internal software error.

Recommended Action Ensure that the card present and that the interface exists in the system.

Error Message `%METOPT_DRV-3-UNEXP_INTR: [chars]`

Explanation This problem should be self-correcting but indicates either a hardware or a software defect. If it is a hardware defect, further problems are to be expected. If it is a software problem, certain types of error and alarm conditions might be left undetected.

Recommended Action Copy the error message exactly as it appears, and report it to Cisco technical support.

Error Message `%METOPT_DRV-6-AUTOFAILOVER: Failover Event received Slot [dec] Subcard [dec] Port [dec]`

Explanation One of the branches of the splitter failed to receive light and the hardware switched over to the other branch.

Recommended Action Check the trunk side connections for kinks or a fiber cut.

ODM

Error Message `%ODM-3-CPU_TEST_FAIL:CPU card, [chars] Failed`

Explanation The online diagnostic test failed for this processor card.

Recommended Action Remove and reinsert the processor card. If the problem persists, then replace the processor card.

Error Message `%ODM-3-DIAG_DISABLE:Online Diags disabled for all slots without specific config`

Explanation The online diagnostic tests were disabled for all slots except those with specific configurations.

Recommended Action The message is informational only.

Error Message `%ODM-3-DIAG_ENABLE:Online Diags enabled for all slots without specific config`

Explanation The online diagnostic tests were enabled for all slots except those with specific configurations.

Recommended Action The message is informational only.

Error Message `%ODM-3-LC_TEST_FAIL:Slot [dec] [chars] Failed`

Explanation The online diagnostic test failed for the line card.

Recommended Action Check the line card seating and LEDs. Remove and reinsert the line card. If the problem persists, replace the line card.

Error Message `%ODM-3-PEER_INCOMPATIBLE:Online Diags Peer Version is different`

Explanation The version of the peer online diagnostics manager is different.

Recommended Action The message is informational only.

Error Message `%ODM-3-SC_TEST_FAIL:Slot [dec], Subcard [dec], [chars] Failed`

Explanation The online diagnostic test failed for a module.

Recommended Action Check the line card seating and LEDs. If the problem persists, remove and reinsert the motherboard. If the problem still persists, replace the module.

OIR

Error Message `%OIR-3-BADFPGAIMG: Controller in in slot [dec] does not have a valid FPGA image`

Explanation A line card is inserted online and the line card is not able to verify that the functional image is valid.

Recommended Action Reseat the line card. If the problem persists, replace the line card.

Error Message `%OIR-3-BADIDPROM: IDPROM in slot [dec] not properly programmed`

Explanation The line card is inserted and the IDPROM on the line card is not accessible.

Recommended Action Reseat the line card. If the problem persists, replace the line card.

Error Message `%OIR-3-LINE_CARD_NOT_READY: Line card in slot [dec] not becoming ready after OIR`

Explanation The module inserted in the slot (shown in the message) is not becoming ready for access. This can apply to mux/demux modules or any other module inserted in a specific slot.

Recommended Action Reseat the module. If the problem persists, replace the module.

Error Message `%OIR-3-RF_REGISTRTN_FAILED: OIR Client failed to register with RF`

Explanation The OIR process failed to register with the RF (redundancy facility) and redundancy might not be available.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, and report it to Cisco technical support.

Error Message `%OIR-3-SUBCARD_SCAN_ERR: Error in scanning subcards in slot [dec]`

Explanation The module inserted in the slot (given in the message) is not becoming ready for access. This can apply to mux/demux modules or any other module inserted in a specific slot.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, and report it to Cisco technical support.

Error Message `%OIR-6-DETECT: Detected Mux Demux card in slot [dec]`

Explanation A mux/demux module is inserted into the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-DETECT: Detected CPU card in slot [dec]`

Explanation A processor card is inserted into the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-DETECT: Detected Transponder card in slot [dec]`

Explanation A 2.5-Gbps transponder module is inserted into the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-DETECT: Detected Unknown card in slot [dec]`

Explanation An unknown card type is inserted into the slot. This card will not work properly.

Recommended Action Try removing the card and inserting it again. If the problem persists, copy the message exactly as it appears and contact Cisco technical support.

Error Message `%OIR-6-REMOVE: Removed Mux Demux card in slot [dec]`

Explanation A mux/demux module was removed from the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-REMOVE: Removed CPU card in slot [dec]`

Explanation A processor card was removed from the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-REMOVE: Removed Transponder card in slot [dec]`

Explanation A 2.5-Gbps transponder module was removed from the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-REMOVE: Removed Unknown card in slot [dec]`

Explanation An unknown card type was removed from the slot.

Recommended Action Try reinserting the card and removing it again. If the problem persists, copy the message exactly as it appears and contact Cisco technical support.

Error Message `%OIR-6-SUBCARD_DEACT: Slot [dec]: [LC [dec]] subcards deactivated`

Explanation A 2.5-Gbps line card motherboard was removed from the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-SUBCARD_DEACT: Slot [dec]: [MDC [dec]] subcards deactivated`

Explanation A mux/demux module was removed from the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-SUBCARD_DISC:  Slot [dec]: [MDC [dec]] subcards discovery`

Explanation A mux/demux module is inserted into the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-SUBCARD_DISC: Slot [dec]: [LC [dec]] subcards discovery`

Explanation A 2.5-Gbps transponder module is inserted into the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-SUBCARDDETECT: Slot [dec] LC [dec]: subcard [dec] inserted`

Explanation A 2.5-Gbps transponder module is inserted into the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-SUBCARDDETECT: Slot [dec] MDC [dec]: subcard [dec] inserted`

Explanation A mux/demux module is inserted into the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-SUBCARDREMOVE: Slot [dec] LC [dec]: subcard [dec] removed`

Explanation A 2.5-Gbps transponder module was removed from the slot.

Recommended Action This message is informational only.

Error Message `%OIR-6-SUBCARDREMOVE: Slot [dec] MDC [dec]: subcard [dec] removed`

Explanation A mux/demux module was removed from the slot.

Recommended Action This message is informational only.

OPTICAL_CFG_SYNC

Error Message `%OPTICAL_CFG_SYNC-3-NO_BUFFER: No memory to sync`

Explanation A transmit error occurred because the buffer was unavailable while sending a message to the standby processor card.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

Error Message `%OPTICAL_CFG_SYNC-3-TRANSMIT_ERROR: Unable to transmit message type`

Explanation A transmit error occurred while sending sending a message to the standby processor card.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

Error Message `optical configuration on switchoner`

Explanation The standby processor card is missing the optical configuration sync subsystem and does not preserve the optical configuration on switchover.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

OPTICAL_IF

Error Message `%OPTICAL_IF-1-ALARM : Transparent[dec]/[dec]/[dec], [chars]: Signal degrade threshold cleared`

Explanation A specific threshold degrade alarm for a transparent interface was cleared.

Recommended Action Check the source of the alarm.

Error Message `%OPTICAL_IF-1-ALARM : Transparent[dec]/[dec]/[dec], [chars]: Signal degrade threshold exceeded`

Explanation A specific threshold degrade alarm for a transparent interface was exceeded.

Recommended Action Check the source of the alarm.

Error Message `%OPTICAL_IF-1-ALARM : Transparent[dec]/[dec]/[dec], [chars]: Signal failure threshold cleared`

Explanation A specific threshold failure alarm for a transparent interface was cleared.

Recommended Action Check the source of the alarm.

Error Message `%OPTICAL_IF-1-ALARM : Transparent[dec]/[dec]/[dec], [chars]: Signal failure threshold exceeded`

Explanation A specific threshold failure alarm for a transparent interface was exceeded.

Recommended Action Check the source of the alarm.

Error Message `%OPTICAL_IF-1-ALARM : Wave[dec]/[dec], [chars]: Signal degrade threshold cleared`

Explanation A specific threshold degrade alarm for a wave interface was cleared.

Recommended Action Check the source of the alarm.

Error Message `%OPTICAL_IF-1-ALARM : Wave[dec]/[dec], [chars]: Signal degrade threshold exceeded`

Explanation A specific threshold degrade alarm for a wave interface was exceeded.

Recommended Action Check the source of the alarm.

Error Message `%OPTICAL_IF-1-ALARM : Wave[dec]/[dec], [chars]: Signal failure threshold cleared`

Explanation A specific threshold failure alarm for a wave interface was cleared.

Recommended Action Check the source of the alarm.

Error Message `%OPTICAL_IF-1-ALARM : Wave[dec]/[dec], [chars]: Signal failure threshold exceeded`

Explanation A specific threshold failure alarm for a wave interface was exceeded.

Recommended Action Check the source of the alarm.

Error Message `%OPTICAL_IF-1-INTERNAL_ERROR : [chars]`

Explanation The metopt subsystem encounters an internal software error. Use the error message text to identify the problem.

Recommended Action Check the source of the alarm.

OSCP

Error Message `%OSCP-3-INTERNAL_ERROR: Cannot add Optical interface [dec]`

Explanation A processor card cannot add a specific optical interface number.

Recommended Action Check the status or configuration of the specific optical interface.

Error Message `%OSCP-3-INTERNAL_ERROR: Cannot add OSCP interface [dec]`

Explanation The processor card cannot add the OSC interface wave 0 or 1.

Recommended Action Check the status or the configuration of the OSC interface.

Error Message `%OSCP-3-INTERNAL_ERROR: group id out of bounds [chars]`

Explanation A group ID is configured out of bounds of the group.

Recommended Action Check the configuration of the OSCP neighbor node IP address and peer group name.

Error Message `%OSCP-3-INTERNAL_ERROR: Hello state machine error in state [chars], event [chars] port [dec]`

Explanation The OSCP receives a Hello state error.

Recommended Action Check the status of the transmitting node.

Error Message `%OSCP-3-INTERNAL_ERROR: OSCP failed to get the argument to oscp_hello process, pid = [dec]`

Explanation The OSCP fails to get an argument for the OSCP Hello process and displays its PID (process identifier).

Recommended Action Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

Error Message `%OSCP-3-INTERNAL_ERROR: OSCP failed to set the argument to oscp hello process, pid = [dec]`

Explanation The OSCP fails to set an argument to the OSCP Hello process and displays the PID group messages.

Recommended Action Check the OSCP configuration of the Hello interval and hold-down timers.

Error Message `%OSCP-3-INTERNAL_ERROR: Received API message to create an interface for an existing port [dec]`

Explanation An API (application programmable interface) tries to create an interface where one already exists.

Recommended Action Check the configuration and status of the NMS application and the interface being configured.

Error Message `%OSCP-3-INTERNAL_ERROR: Received unrecognized API message [chars]`

Explanation An unrecognized API message is received.

Recommended Action Check the configuration of the NMS applications and the connecting interface.

Error Message `%OSCP-4-BADPACKET: Invalid pkt: length shorter than header size [dec].`

Explanation An invalid packet is received from a network peer.

Recommended Action Check the originating device for a cause of the corrupted packets.

PERF_HISTORY

Error Message `%PERF_HISTORY-3-UNEXPECTED: Unexpected counter value on [interface name]`

Explanation The performance history counters for the specified interface have unexpected values.

Recommended Action Copy the error message exactly as it appears on the console or in the system log. Research and attempt to resolve the error using the output interpreter and perform a search of the bug tool kit. If you still require assistance, open a case with the Cisco Technical Assistance Center (TAC), or contact your Cisco technical support representative and provide the representative with the gathered information.

Error Message `%PERF_HISTORY-5-RESET: Performance history counters reset on [Interface name]`

Explanation The performance history counters for the specified interface have been cleared and reset. This message is displayed after you execute the **clear performance history** command.

Recommended Action This message is informational only.

RF

Error Message `%RF-1-SYSTEM_INTEGRITY: Automatic switch of activity occurred while the CPUs were in maintenance mode`

Explanation An automatic switch of activity occurs when the processor card is disabled.

Recommended Action Check the status of the active and standby processor cards and the configuration of the disabling application.

Error Message `%RF-3-COMMUNICATION: Communication with the peer CPU has been established`

Explanation Communication with the peer processor card is established.

Recommended Action The message is informational only.

Error Message `%RF-3-COMMUNICATION: Communication with the peer CPU has been lost`

Explanation The interprocess communication was lost to the peer processor card. This could indicate that the processor card is not currently fully operational, or that there is a hardware problem in one of the processor cards.

Recommended Action Check the status of the peer processor card. Check that both processor cards are firmly seated in the chassis.

Error Message `%RF-3-IPC_PORT: Unable to create [chars] [chars]`

Explanation The processor card cannot create a configuration for an interface.

Recommended Action Check for sufficient processor card memory.

Error Message `%RF-3-IPC_PORT: Unable to open [chars] [chars]`

Explanation The processor card cannot open an interface.

Recommended Action Check for sufficient processor card memory.

Error Message `%RF-3-IPC_PORT: Unable to register [chars] [chars]`

Explanation The processor card cannot register the configuration for an interface.

Recommended Action Check for sufficient processor card memory.

Error Message `%RF-3-SIMPLEX_MODE: The peer CPU has been lost`

Explanation The absence of the peer processor card was detected.

Recommended Action Check the status of the standby processor card. It could have failed.

Error Message `%RF-3-STANDBY_RELOAD: The standby CPU is being reset because [chars] took too long processing a progression event`

Explanation The peer processor card was reset. This allows recovery from an indeterminate standby state.

Recommended Action Confirm that interprocess communications (IPC) is up.

Error Message `%RF-3-STANDBY_RELOAD: The standby CPU is being reset because keepalive message(s) not received from peer CPU`

Explanation The standby processor card is reset because keepalive messages are not being received from the active processor card.

Recommended Action Check the status of the active processor card and the communication between the active and standby processor cards.

Error Message `%RF-3-STANDBY_RELOAD: The standby CPU is being reset because the peer CPU failed during progression`

Explanation The error occurs for the reason reported in the error message. This allows recovery from an indeterminate standby state.

Recommended Action Confirm that interprocess communications (IPC) is up.

Error Message `%RF-3-SYSTEM_INTEGRITY: Automatic switch of activity occurred while an application had disabled it`

Explanation An automatic switch of activity occurred when redundancy synchronization was disabled.

Recommended Action Contact Cisco TAC with **show tech**, **show logging**, and **show hardware detail** command outputs.

SRC

Error Message `%SRC-3-LC_REG_READ_FAIL: Register read failed for slot [dec], addr [hex], with failcode as [hex]`

Explanation The SRC cannot read the line card register.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

Error Message `%SRC-3-LC_REG_WRITE_FAIL: Register write failed for slot [dec], addr [hex], with failcode as [hex]`

Explanation The SRC cannot write the line card register.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

Error Message `%SRC-3-LC_CMI_INTF_FAULT: SRC detected a CMI interface fault for line card in slot [dec]`

Explanation The SRC detected a CMI interface fault.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

Error Message `%SRC-3-LC_APS_INTF_FAULT: SRC detected a APS interface fault for line card in slot [dec]`

Explanation The SRC detected an APS interface fault.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

Error Message `%SRC-3-LC_APS_INTF_INIT_FAULT: SRC-LRC APS interface could not be initialized for line card in slot [dec]`

Explanation The SRC unable to read the line card register.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

Error Message `%SRC-3-LC_APS_TIMEOUT: SRC detected keep alive timeout on APS intferace for slot[dec]`

Explanation The SRC unable to read the line card register.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, call your Cisco Technical support representative, and provide the representative with the gathered information.

Error Message `%SRC-3-LC_CMI_TIMEOUT: SRC detected keep alive timeout on CMI intferace for slot [dec]`

Explanation The SRC unable to read the line card register.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

Error Message `%SRC-3-AFOVEN_ERROR: Attempt to enable [chars] protection autofailover on interface [chars] when port status is [hex]`

Explanation Software attempt at enabling autofailover port status is does not succeed.

Recommended Action Copy the error message exactly as it appears on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

SYS

Error Message `%SYS-4-CONFIG_NEWER: Configuration may not be understood`

Explanation The saved configuration was written by a newer version of system software. The active system software might not be able to implement some commands saved in memory.

Recommended Action Upgrade the active software image.

TENGIGE_LC

Error Message `%TENGIGE_LC-3-LASER_TEMP_ERR: Laser Temperature Alarm : [dec]/[dec]`

Explanation The 10-GE laser temperature exceeds the normal operating temperature.

Recommended Action Reduce the temperature immediately by checking for the following: blocked air intake, fan tray failure, abnormal ambient environmental conditions, temperature sensor failure, and 10-GE hardware failure. One or more of these conditions probably exists.

Error Message `%TENGIGE_LC-3-LASER_TX_POWER_ERR: Laser did not reach the expected power level... disabling now : [dec]/[dec]`

Explanation The laser power does not reach the expected power level.

Recommended Action Reseat the 10-GE transponder module. If the problem persists, replace the module.

Error Message `%TENGIGE_LC-3-XPLTA2D: Err calculating xpolated value: [chars]`

Explanation The 10-GE transponder module not seated properly or the IDPROM is corrupted.

Recommended Action Reseat the 10-GE transponder module. If the problem persists, replace the module.

Error Message `%TENGIGE_LC-3-INTF_CREATE_FAILED: Interface Create Failed : [chars]`

Explanation The 10-GE driver subsystem cannot obtain the memory it needs to initialize its data structures. This message should only appear when this problem occurs during system booting.

Recommended Action Check for any offending processes hogging processor card memory. Add more memory to the system if needed.

Error Message `%TENGIGE_LC-3-RDWRFAIL: Read/write failed: [chars]`

Explanation The error occurs when 10-GE driver tries to access hardware registers.

Recommended Action Reseat the 10-GE transponder module. If the problem persists, replace the module.

Error Message `%TENGIGE_LC-3-TENGIGE_RXLOP_ALM: [chars] Receive Loss Of Light: [chars]`

Explanation The 10-GE receiver detects a loss of light on the client side.

Recommended Action Check for broken or dirty client Rx fiber cables. Excessive attenuation on the client side can also cause this error condition. It is also likely that 10-GE client equipment connected to the 10-GE transponder module is offline or faulty.

Error Message `%TENGIGE_LC-3-TENGIGE_LSBIAS_ALM: [chars] Laser BIAS threshold exceeded alarm; laser is starting to die; [chars]`

Explanation The error occurs when 10-GE laser bias current exceeded the threshold.

Recommended Action Reseat the 10-GE transponder module and check that you have a surge-free power supply source. If the problem persists, replace the module.

Error Message `%TENGIGE_LC-3-TENGIGE_LSTMP_ALM: [chars] Laser exceeded the operating temperature threshold: [chars]`

Explanation The 10-GE laser temperature exceeds the operating temperature threshold.

Recommended Action Reduce the temperature immediately by checking for the following: blocked air intake, fan tray failure, abnormal ambient environmental conditions, temperature sensor failure, and 10-GE 10-GE transponder hardware failure. One or more of these conditions probably exists.

Error Message `%TENGIGE_LC-6-TENGIGE_TRUNK_RX_PALM: Trunk side Loss of Light Pre-Alarm: [chars]`

Explanation The 10-GE receiver detects a loss of light or low power level below the configured low threshold on the previous active interface.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-3-TENGIGE_RXLCK_ALM: [chars] Loss of Lock on Receive: [chars]`

Explanation The 10-GE CDR (clock and data recovery) unit cannot lock to incoming signal.

Recommended Action Check for dirty cables or connectors, for excessive attenuation of the signal, and that the OSNR is within the recommended level.

Error Message `%TENGIGE_LC-3-TENGIGE_TRUNK_RX_LCK_PALM: Trunk side Loss of Lock Pre-Alarm: [chars]`

Explanation The 10-GE CDR (clock and data recovery) unit cannot lock to incoming trunk signal.

Recommended Action Check for dirty cables or connectors on the trunk side, for excessive attenuation of the signal, and that the OSNR is within recommended level.

Error Message `%TENGIGE_LC-3-TENGIGE_OVF_ALM: [chars] Transmit to Trunk FIFO overflow: [chars]`

Explanation The trunk transmit buffer overflowed.

Recommended Action This could be a temporary condition. If it persists, reseat the card and verify.

Error Message `%TENGIGE_LC-3-TENGIGE_SF_ALM: Signal Failure : [chars]`

Explanation The 10-GE receiver detects a loss of sync or loss of lock.

Recommended Action Check for broken or dirty Rx fiber cables or connectors. Excessive attenuation can also cause this error.

Error Message `%TENGIGE_LC-6-TENGIGE_TRUNK_RX_SF_PALM: Trunk side Signal Failure Prealarm: [chars]`

Explanation The 10-GE receiver detects a loss of sync or loss of lock on the trunk Rx.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-3-TENGIGE_LOSYNC_ALM: [chars] side Loss of Sync lock: [chars]`

Explanation The 10-GE protocol monitor detects a loss of sync lock.

Recommended Action Check for dirty Rx fiber cables or connectors. Check receive power levels.

Error Message `%TENGIGE_LC-3-TENGIGE_TRUNK_RX_LOSYNC_PALM: Trunk side Loss of Sync lock Prealarm: [chars]`

Explanation The 10-GE protocol monitor detects a loss of sync lock pre-alarm.

Recommended Action This message is information only

Error Message `%TENGIGE_LC-3-TENGIGE_CETXE: [chars] side Line Code Err count: [chars]`

Explanation The 10-GE receiver detects a line code error.

Recommended Action Check for dirty Rx fiber cables or connectors. Check receive power levels.

Error Message `%TENGIGE_LC-3-TENGIGE_TRUNK_CETXE_PALM: Trunk side Line Code err count: [chars]`

Explanation The 10-GE transponder module detects a line code error.

Recommended Action Check for dirty Rx fiber cables or connectors. Check receive power levels.

Error Message `%TENGIGE_LC-3-TENGIGE_CDL_HEC_ETX_ALM: [chars] side CDL HEC error count: [chars]`

Explanation The 10-GE transponder module detects a CDL HEC error.

Recommended Action Check receive power levels. Check for dirty Rx fiber cables or connectors.

Error Message `%TENGIGE_LC-3-TENGIGE_TRUNK_CDL_HETX_PALM: Trunk side CDL HEC error count: [chars]`

Explanation The 10-GE transponder module detects a CDL HEC error.

Recommended Action Check receive power levels. Check for dirty Rx fiber cables or connectors.

Error Message `%TENGIGE_LC-3-TENGIGE_TRUNK_CDL_RFOF_IND: Trunk side CDL Drop FIFO OvrFL: [chars]`

Explanation The trunk transmit CDL buffer overflowed.

Recommended Action This could be a temporary condition. If it persists, reseat the card and verify.

Error Message `%TENGIGE_LC-6-TENGIGE_FOV_IND: Trunk Receive splitter Hardware Autofailover occured: [chars]`

Explanation A hardware switchover on the splitter occurred.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-3-TENGIGE_SW_ALM: Autofailover switch failed to switch to the other branch: [chars]`

Explanation The hardware switchover to the standby path fails. This could happen due to a bad switch on the line card motherboard.

Recommended Action Reseat the 10-Gbps line card motherboard. If the problem persists, replace the 10-Gbps line card motherboard.

Error Message `%TENGIGE_LC-6-TENGIGE_RXLOP_ALM_CLR: CLEARED : [chars] Loss Of Light: [chars]`

Explanation The loss of light alarm is cleared.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-TENGIGE_LSBIAS_ALM_CLR: CLEARED : [chars] Laser BIAS threshold  [chars]`

Explanation The laser bias threshold alarm is cleared.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-TENGIGE_LSTMP_ALM_CLR: CLEARED : [chars] Laser temperature threshold: [chars]`

Explanation The laser temperature threshold alarm is cleared.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-TENGIGE_RXLCK_ALM_CLR: CLEARED : [chars] Loss of Lock on Receive: [chars]`

Explanation The loss lock alarm is cleared.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-TENGIGE_OVF_ALM_CLR: CLEARED : [chars] Transmit to Trunk FIFO overflow: [chars]`

Explanation The Tx trunk buffer overflow alarm is cleared.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-TENGIGE_SF_ALM_CLR: CLEARED : [chars] Signal Failure : [chars]`

Explanation The signal failure alarm is cleared.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-TENGIGE_LOSYNC_ALM_CLR: CLEARED : [chars] Loss of Sync lock: [chars]`

Explanation The loss of sync alarm is cleared.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-TENGIGE_CETXE_CLR: CLEARED : [chars] Line code Err count: [chars]`

Explanation The line code error alarm is cleared.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-TENGIGE_CDL_HEC_ETX_ALM_CLR: CLEARED : [chars] CDL HEC error count: [chars]`

Explanation The CDL HEC error alarm is cleared.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-LASER_SOFT_START: Starting the 10GE trunk laser turn on procedures for : [dec], [dec]`

Explanation The 10-GE transponder module in the process of turning on the trunk laser.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-LASER_TEMP_WAIT: Waiting for the laser to reach the expected temperature level : [dec]/[dec]`

Explanation The 10-GE transponder module is waiting for the laser temperature to reach its expected temperature for laser to operate normally.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-LASER_DISABLED: Laser disabled as per user configuration [dec]/[dec]`

Explanation Forward laser control is enabled on the 10-GE transponder module.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-LASER_OK: Laser on [dec]/[dec] is ready for traffic !!`

Explanation The laser is turned on after initialization and is ready to receive traffic.

Recommended Action This message is informational only.

Error Message `%TENGIGE_LC-6-LASER_TX_POWER_WAIT: Waiting for the 10GE laser to reach steady power : [dec]/[dec]`

Explanation 10-GE transponder module is waiting for the laser to reach steady power.

Recommended Action This message is informational only.

Related Documentation

Use this Cisco ONS 15540 ESP System Alarms and Error Messages guide in conjunction with the following referenced publications:

- *Regulatory Compliance and Safety Information for the Cisco ONS 15500 Series*

  Provides the regulatory compliance and safety information for the Cisco ONS 15500 Series.
- *Cisco ONS 15540 ESP Planning Guide*

  Provides detailed information on the Cisco ONS 15540 ESP architecture and functionality.
- *Cisco ONS 15540 ESP Hardware Installation Guide*

  Provides detailed information about installing the Cisco ONS 15540 ESP.
- *Cisco ONS 15540 ESP Optical Transport Turn-Up and Test Guide*

  Provides acceptance testing procedures for Cisco ONS 15540 ESP nodes and networks.
- *Cisco ONS 15540 ESP Command Reference Guide*

  Provides commands to configure and manage the Cisco ONS 15540 ESP.
- *Cisco ONS 15540 ESP Configuration Guide*

  Describes how to configure and manage the Cisco ONS 15540 ESP.
- *Cisco ONS 15540 ESP Troubleshooting Guide*

  Describes how to identify and resolve problems with the Cisco ONS 15540 ESP.
- *Network Management for the Cisco ONS 15540 ESP*

  Provides information on the network management systems that support the Cisco ONS 15540 ESP.
- *Cisco ONS 15540 ESP TL1 Command Reference*

  Provides a full TL1 command and autonomous message set including parameters, AIDs, conditions and modifiers for the Cisco ONS 15540 ESP.

- *MIB Quick Reference for the Cisco ONS 15500 Series*

  Describes the Management Information Base (MIB) objects and explains how to access Cisco public MIBs for the Cisco ONS 15500 Series.
- *Cisco ONS 15540 ESP Software Upgrade Guide*

  Describes how to upgrade system images and functional images on the Cisco ONS 15540 ESP.
- *Introduction to DWDM Technology*

  Provides background information on the dense wavelength division multiplexing (DWDM) technology.
- *Cisco IOS Configuration Fundamentals Configuration Guide*

  Provides useful information on the CLI (command-line interface) and basic shelf management.

Document Conventions

This publication uses the following conventions:

Convention	Application
boldface	Commands and keywords in body text.
italic	Command input that is supplied by the user.
[ ]	Keywords or arguments that appear within square brackets are optional.
{ x | x | x }	A choice of keywords (represented by x) appears in braces separated by vertical bars. The user must select one.
Ctrl	The control key. For example, where Ctrl + D is written, hold down the Control key while pressing the D key.
`screen font`	Examples of information displayed on the screen.
`boldface screen font`	Examples of information that the user must enter.
< >	Command parameters that must be replaced by module-specific codes.

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the document.

Caution Means *reader be careful*. In this situation, the user might do something that could result in equipment damage or loss of data.

Warning **IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Where to Find Safety and Warning Information

For safety and warning information, refer to the *Cisco Optical Transport Products Safety and Compliance Information* document that accompanied the product. This publication describes the international agency compliance and safety information for the Cisco ONS 15xxx systems. It also includes translations of the safety warnings that appear in the ONS 15xxx system documentation.

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/techsupport

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Product Documentation DVD

The Product Documentation DVD is a comprehensive library of technical product documentation on a portable medium. The DVD enables you to access multiple versions of installation, configuration, and command guides for Cisco hardware and software products. With the DVD, you have access to the same HTML documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .PDF versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD= or DOC-DOCDVD=SUB) from Cisco Marketplace at this URL:

http://www.cisco.com/go/marketplace/

Cisco Optical Networking Product Documentation CD-ROM

Optical networking-related documentation, including Cisco ONS 15xxx product documentation, is available in a CD-ROM package that ships with your product. The Optical Networking Product Documentation CD-ROM is updated periodically and may be more current than printed documentation.

Ordering Documentation

Registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

http://www.cisco.com/go/marketplace/

Nonregistered Cisco.com users can order technical documentation from 8:00 a.m. to 5:00 p.m. (0800 to 1700) PDT by calling 1 866 463-3487 in the United States and Canada, or elsewhere by calling 011 408 519-5055. You can also order documentation by e-mail at tech-doc-store-mkpl@external.cisco.com or by fax at 1 408 519-5001 in the United States and Canada, or elsewhere at 011 408 519-5001.

Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can submit comments about Cisco documentation by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you will find information about how to:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories, security notices, and security responses for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

To see security advisories, security notices, and security responses as they are updated in real time, you can subscribe to the Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed. Information about how to subscribe to the PSIRT RSS feed is found at this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you have identified a vulnerability in a Cisco product, contact PSIRT:

- For Emergencies only—security-alert@cisco.com

  An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- For Nonemergencies—psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product (for example, GnuPG) to encrypt any sensitive information that you send to Cisco. PSIRT can work with information that has been encrypted with PGP versions 2.*x* through 9.*x*.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

The link on this page has the current PGP key ID in use.

If you do not have or use PGP, contact PSIRT at the aforementioned e-mail addresses or phone numbers before sending any sensitive material to find other means of encrypting the data.

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

Note Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests, or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—An existing network is down, or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of the network is impaired, while most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The *Cisco Product Quick Reference Guide* is a handy, compact reference tool that includes brief product overviews, key features, sample part numbers, and abbreviated technical specifications for many Cisco products that are sold through channel partners. It is updated twice a year and includes the latest Cisco offerings. To order and find out more about the Cisco Product Quick Reference Guide, go to this URL:

  http://www.cisco.com/go/guide

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

  or view the digital edition at this URL:

  http://ciscoiq.texterity.com/ciscoiq/sample/

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

  http://www.cisco.com/en/US/products/index.html

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

  http://www.cisco.com/discuss/networking

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.