# System Error Messages for the Cisco 7304 Router

**Note** This document only covers system error messages for the messages in pre-Cisco IOS Release 12.2S release trains. For the system messages on Cisco 7304 routers using Cisco IOS Release 12.2S, see *System Messages for 12.2S*.

This document provides explanations and recommended actions for all of the system error messages that are unique to the Cisco 7304 router.

This document currently provides explanations and recommended actions for all of the system error messages that were introduced in the Early Deployment software releases that can be used to run the Cisco 7304 router. These releases include:

- Cisco IOS Releases 12.1(9)EX through 12.1(13)EX3
- Cisco IOS Release 12.2(11)YZ
- Cisco IOS Release 12.2(14)SZ through 12.2(14)SZ3

This document only covers system error messages for the messages in pre-Cisco IOS Release 12.2S release trains. For the system messages on Cisco 7304 routers using Cisco IOS Release 12.2S, see *System Messages for 12.2S*.

Many of the Cisco IOS releases that run the Cisco 7304 router are based on Cisco IOS Release 12.1 E. Therefore, many of the error messages that could occur in Cisco IOS Release 12.1 E can also occur in these software releases. These error messages, however, are not covered in this document.

Similarly, the error messages that could occur in Cisco IOS Release 12.2 can also occur on the Cisco 7304 running Cisco IOS Release 12.2(11)YZ but are not covered in this document.

#### Error Message

```
%ATMLC-1-INITFAIL: The ATM linecard in slot [dec] failed to initialize (cause
[chars])
```

**Explanation** The ATM line card has failed its initialization as indicated in the message. The problem can be any one of the following: 1) memory allocation failure for control data, 2) framer, ATM SAR devices, or line card FPGA access failure, 3) uncorretable multi-bit ECC errors in line card memory,

4) PCI bus timeout, 5) failure of downloading ATM SAR firmware to the SAR devices, or 6) ATM SAR device (reassembler or segmenter) does not boot up or does not respond to configuration commands.

**Recommended Action** Consult your line card installation and configuration guide and make sure the line card is properly installed and configured. If the line card is properly installed, perform an online insertion and removal (OIR) on the line card, either via a physical removal and insertion, or via the **hw-module slot** *slot-number* [**stop | start**] command. If the OIR does not work, try and reload the system if possible. If the problem persists, the message indicates an unrecoverable hardware failure. Copy the error message exactly as it appears on the console or in the system log and call your Cisco technical support representative.

#### Error Message

```
%ATMLC-3-HWFAIL:The ATM line card in slot [dec] encountered a hardware failure:
[chars]
```

**Explanation** The ATM line card has encountered a hardware failure and should be deactivated. The problem can be any one of the following: 1) memory allocation failure for control data, 2) framer, ATM SAR devices, or line card FPGA access failure, 3) uncorrectable multi-bit ECC errors in line card memory, 4) PCI bus timeout, 5) ATM SAR device (reassembler or segmenter) does not respond to configuration commands, or 6) unrecoverable data corruption or parity error.

**Recommended Action** The message indicates a hardware failure. The line card may have been deactivated by the system. Perform a line card online insertion and removal (OIR) to confirm that the problem persists. If the problem persists, copy the error message exactly as it appears on the console or in the system log. Enter **show c7300**, **show diag** *slot-number*, **show c7300 errorlog slot**, **show interface atm**, and **show controller atm** and provide the gathered information to your Cisco technical support representative.

#### Error Message

```
%ATMLC-4-ALARM: Interface ATM[dec]/[dec], received SONET/SDH alarm: [chars]
```

**Explanation** The ATM framer interface received a SONET/SDH alarm or alarms as indicated in the message.

**Recommended Action** SONET/SDH alarms may occur when the line card is initializing and negotiating clocking with the peer. In this situation, the alarms will be cleared and the error message is used only to provide information. If the message continues to appear after the line card is initialized and the connection is set up, use the **show controller atm** command to check the framer alarms. If the alarms from **show controller atm** do not disappear, ensure that the optical fiber cable is not broken and is properly inserted and that the far end of the peer is not malfunctioning. If the error message persists, the messages should reflect the natural alarm conditions of the SONET/SDH-based network and do not indicate a network problem. In this scenario, the alarm was sent by a far-end entity and the source and purpose of the alarm should be investigated by a network administrator if not already known. If you think the message itself is being received in error, copy the message exactly as it appears on the console or in the system log and capture the output of the **show c7300** and the **show controller atm** commands. Call your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%ATMLC-6-CLOCKING: Interface ATM[dec]/[dec], changed clock source to [chars]
```

**Explanation** The clock source of the ATM interface changed to either line clock or internal clock as indicated in the message. If the ATM interface is configured for line clocking and receives SONET/SDH alarms including one of loss of signal (LOS), loss of frame (LOF), and line alarm indication signal (LineAIS), the interface will first change to internal clock before changing back to line clock when the alarms are cleared. If the ATM interface is configured for internal clocking, the SONET/SDH alarms will not cause any clocking change. This message shows the run-time clock source changes on an ATM interface while the **show controller atm** command always shows the user-configured clock source.

**Recommended Action** No action is required.

**Error Message**

```
%ENVM-0-SHUTDOWN: Environmental Monitor initiated shutdown due to [chars] in slot
[dec]
```

**Explanation** The environmental monitor initiated a system shutdown due to a temperature or voltage condition.

**Recommended Action** Look at previous environmental messages to determine the cause of the shutdown and correct if possible. If you think the shutdown was in error, 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**

```
%ENVM-2-CRITICAL: [chars] measured at [chars]
```

**Explanation** One of the measured environmental test points for voltage or temperature, as indicated by the message, has exceeded a critical threshold.

**Recommended Action** Correct the specified condition as quickly as possible or take the system offline for a power down unless the system fails or shuts itself down automatically (as a preventive measure). If it is a temperature warning, ensure that 1) a fan in a power supply module or a fan module has not failed, 2) a fan module is not missing from the system, and 3) the room cooling or air-conditioning is functioning properly. If it is a voltage condition on multiple cards, check your input AC/DC voltage source. If it is a voltage condition on a single card, ensure that a backup or spare card is available for replacement if the voltage condition continues to deteriorate on that card. If you think the message is in error, copy the 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**

```
%ENVM-3-BLOWER: [chars] may have failed
```

**Explanation** One of the cooling fans in the system might have failed. The system has detected a fan failure alarm reported by hardware or it has detected a large temperature difference between the inlet and outlet temperature sensors.

**Recommended Action** If there are redundant power supply modules, replace the power supply module containing the faulty fan. If there is a single power supply and the faulty fan resides in the power supply module, replace the working standalone fan module (each router requires two fan modules) with a power supply module. Then remove the power supply module containing the faulty fan and replace that power supply module with a fan module or another power supply module. In this way, you can replace a faulty fan in a nonredundant power supply module without shutting down the system. Contact your Cisco technical support representative for help in replacing a faulty fan module.

**Error Message**

```
%ENVM-3-ENVDATA: Environment data in [chars] invalid at slot [dec]
```

**Explanation** Environmental threshold data in this board's ID EEPROM is corrupted.

**Recommended Action** Execute the **show diag** *slot-number* command for the specified slot. 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 output of the **show diag** *slot-number* command.

**Error Message**

```
%ENVM-3-FRUUNKOWN: Power supply or fan module in bay [dec] type unknown
```

**Explanation** The power supply or fan module type is unknown. The ID EEPROM of the power supply or the fan module might not have been programmed or might have been corrupted, or the power supply or fan module is not supported by the router.

**Recommended Action** Use only system-supported power supplies or fan modules. If a redundant power supply is configured and only one power supply is not recognized by the router, replace the unrecognized power supply (which is indicated by the bay number in the error message) with a supported power supply. If a redundant power supply configuration is configured and neither power supply is recognized by the router, take the system offline for power shutdown and replace the power supplies. If a fan module is operating properly while a power supply is not, take the system offline for power shutdown and replace the power supply. *If a power supply is operating properly while a fan module is not, replace the fan module as soon as possible.* If you have attempted to replace the power supplies and fan modules with supported equipment and continue to receive this error message, enter the **show environment all** and the **show diag chassis** commands. After entering these commands, copy the error message and the output from these commands into a separate file and contact your Cisco technical support representative with the gathered information. If the problem recurs, copy the new error message and command outputs and provide the representative with the gathered information.

**Error Message**

```
%ENVM-3-IDPROM: Access to [chars] failed at slot [dec]
```

**Explanation** Environmental monitoring threshold levels could not be read from the specified card ID EEPROM. The ID EEPROM is not accessible due to a hardware failure, incompatible IOS software, or because its contents are corrupted.

**Recommended Action** Execute the **show diag** *slot-number* command for the specified slot. If the output fails to include a dump of the corresponding ID EEPROM, it is probably a card hardware failure; replace the card. If the output of the **show diag** *slot-number* command includes a dump of the ID EEPROM, the contents are probably corrupted. 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 output of the **show diag** *slot-number* command.

**Error Message**

```
%ENVM-3-LASTENV: [chars]
```

**Explanation** Environmental monitoring operational data could not be saved to nonvolatile storage in the chassis backplane EEPROM. This can be due to an EEPROM (hardware) failure.

**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 together with the output of the **show diag chassis** command and the **show environment all** command.

**Error Message**

```
%ENVM-3-NOACK: Access to [chars] in slot [dec] failed
```

**Explanation** Access to one of the temperature sensors failed because the device was not ready. Software will attempt to restart the sensor.

**Recommended Action** If the error message recurs, copy the 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 together with the output of the **show version** command and the **show diag** *slot-number* command.

**Error Message**

```
%ENVM-4-WARNING: [chars] measured at [chars]
```

**Explanation** One of the measured environmental test points for voltage or temperature, as indicated by the message, has exceeded the warning threshold.

**Recommended Action** Closely monitor the condition and correct if possible. If it is a temperature warning, ensure that 1) a fan in a power supply module or a fan module has not failed, 2) a fan module is not missing from the system, and 3) the room cooling or air-conditioning is functioning properly. If it is a voltage condition on multiple cards, check your input AC/DC voltage source. If it is a voltage condition on a single card, ensure that a backup or spare card is available for replacement if the voltage condition continues to deteriorate on that card. If you think the message is in error, copy the 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**

```
%ENVM-6-FANCHANGE: [chars] changed from [chars] to [chars]
```

**Explanation** This message indicates a change in fan status due to the removal or insertion of a fan module in the system. This is an informational message only.

**Recommended Action** No action is required.

**Error Message**

```
%ENVM-6-FANMISSING: Fan may have been removed
```

**Explanation** Software has detected a missing fan. If the system is not using a redundant power supply module, then a fan module might be missing from the empty power supply bay.

**Recommended Action** Ensure that you have installed two power supply modules or one power supply module and one fan module. If the error message recurs despite the correct number of power supply and fan modules installed, copy the message exactly as it appears on the console or in the system log, collect the output of the **show diag chassis** command, call your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%ENVM-6-PSCHANGE: [chars] changed from [chars] to [chars]
```

**Explanation** This message indicates a change in power supply status due to the removal or insertion of a power supply module in the system. This is an informational message only.

**Recommended Action** No action is required.

**Error Message**

```
%ENVM-6-PSLEV: [chars] state changed from [chars] to [chars]
```

**Explanation** One of the power supply test points underwent a state change from normal to shutdown or vice-versa. Such a state change should only occur in a system with dual power supply modules. A state change from normal to shutdown is probably due to overheating caused by a failure of a power supply fan.

**Recommended Action** In the case of a power supply shutdown, replace the power supply module. If you think the message is in error, copy the 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 together with the output of the **show diag chassis** command and the **show environment all** command.

**Error Message**

```
%ENVM-6-PSMISMATCH: Both AC and DC power supplies detected
```

**Explanation** A mix of AC and DC power supply modules has been detected. Such a mix is not supported. Both power supply modules need to be of the same type, either AC or DC.

**Recommended Action** Use only one type of power supply. Remove one of the two power supply modules and either replace the removed one with the same type as the other power supply or operate the system on a single power supply. If you think the message is in error, copy the 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 together with the output of the **show diag chassis** command and the **show environment all** command.

**Error Message**

```
%GENERAL-3-WSEVENT. : [chars]
```

**Explanation** A general error has been detected between the IOS control code and PXF. An unexpected inconsistency occurred.

**Recommended Action** If the message only appears once and no problems are detected with the router, the message is likely intermittent and normal router operation should resume. If the message appears and a problem exists with the router, or if the message is recurring and cannot be corrected, gather the output from the **show tech-support** command and 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**

```
%LC-3-CIMUXERROR: CI-MUX: Serial Link [hex], Status [hex], [chars]
```

**Explanation** The cluster interconnect multiplexer FPGA on the Route Processor detected an error at the specified line card serial link. This error is the result of either line card FPGA logical errors or incorrect serial link initialization by the line card software driver. The line card is automatically deactivated and reactivated unless the error has occurred five times in the last hour. If the error has occurred five times in the last hour, the line card will be deactivated but not reactivated.

**Recommended Action** If this message occurs once, the line card is automatically reactivated and normal line card operation should resume with no user action. If this message occurs five times in an hour and the line card remains deactivated, enter hw-module slot slot-number start to attempt to reactivate the line card. If the message recurs, copy the error message as it appears on the console as well as the results of show tech-support and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%LC-3-CLFPGAERROR:Line card common logic fpga (slot [dec]) error: [chars]
```

**Explanation** The line card common logic FPGA in the specified slot encountered either a line card FPGA caveat or an incorrect line card reset sequence by the line card software driver. Depending on the severity of the error, the line card is automatically deactivated than reactivated. If this error occurs five times in an hour, the line card is deactivated and not reactivated.

**Recommended Action** If the line card is automatically reactivated, the line card should operate properly with no user action. If the line card stays deactivated, enter **hw-module slot** *slot-number* **start** to reactivate the line card. If this fails, copy the error message exactly as it appears on your console and gather the output of **show tech-support** and contact your Cisco support representative with the gathered information.

**Error Message**

```
%LC-3-EXCESSERRORS:No of errors seen on the line card (slot [dec]) exceed the
threshold
```

**Explanation** The software is attempting to recover the line card from certain recoverable fatal errors. These errors could be: 1) non-recoverable line card serial link errors, 2) non-recoverable errors reported by the line card FPGA and line card devices, 3) too many interrupts from a line card, 4) the line card local processor firmware has crashed, 5) a loss of keepalive packets from the line card local processor, or 6) line card local processor firmware IPC initialization failures. The line card will automatically reinitialize after this error, unless the error occurs five times in one hour. If a line card encounters five such errors in one hour, the line card will be deactivated without further attempts at recovery.

**Recommended Action** Reactivate the line card manually by entering the **hw-module slot** *slot-number* **start** command. The line card can also be reactivated by removing and reinserting the line card; if you take this approach, however, copy the error message exactly as it appears on the console or in the system log and collect the output from the **show diag** *slot-number* command before removing and reinserting the line card. If the error recurs, contact your Cisco technical support representative and provide the representative with the error message and the **show diag** *slot-number* output.

**Error Message**

```
%LC-3-IOTIMEOUT: RP CI-MUX FPGA read timeout (Slot [dec], Serial Channel [dec])
```

**Explanation** The cluster interconnect multiplexer FPGA on the Route Processor could not complete the line card I/O read transaction. This error occurs because of a time error inside the line card FPGA or because of an incorrect line card I/O access error by the line card software driver. The line card is automatically deactivated and recovered unless this error occurs five times within an hour. The line card is deactivated and not recovered if this error occurs five times within an hour.

**Recommended Action** If the line card is automatically reactivated, the line card should operate properly with no user action. If the line card stays deactivated, enter **hw-module slot** *slot-number* **start** to reactivate the line card. If this fails, copy the error message exactly as it appears on your console and gather the output of **show tech-support** and contact your Cisco support representative with the gathered information.

**Error Message**

```
%LC-3-RECOVERY:Line card (slot [dec]) recovery in progress
```

**Explanation** This information message indicates that a line card is recovering from certain recoverable fatal errors. These errors could be: 1) non-recoverable line card serial link errors, 2) non-recoverable errors reported by the line card FPGA and line card devices, 3) too many interrupts from a line card, 4) the line card local processor firmware has crashed, 5) a loss of keepalive packets from the line card local processor, or 6) line card local processor firmware IPC initialization failures.

**Recommended Action** Copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show diag** *slot-number* output, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%LC-3-SANTAANA: Santa Ana Asic: [chars] [dec], Serial Channel [char] (slot [dec]),
Error Status [hex] [chars][chars][chars]
```

**Explanation** An ASIC on the RP or the indicated line card detected an error at the associated serial link. This error could be because of the line card fpga timing errors or because of an incorrect line card serial link bring up by the line card software driver. The line card is automatically deactivated and recovered.

**Recommended Action** If the line card is automatically reactivated, the line card should operate properly with no user action. If the line card stays deactivated, enter **hw-module slot** *slot-number* **start** to reactivate the line card. If this fails, copy the error message exactly as it appears on your console and gather the output of **show tech-support** and contact your Cisco support representative with the gathered information.

**Error Message**

```
%NSE100-3-ERRORINTR: Fatal error interrupt.
IOFPGA error interrupt statuses : Asic/FPGA [hex], Line card [hex], OIR [hex],
Envm. [hex]
```

**Explanation** The system received an error interrupt from one of the sources indicated in the error message text and experienced a software forced crash. The error interrupt can be caused by a line card caveat or a problem with the Route Processor FPGA.

**Recommended Action** Copy the error message exactly as it appears on the console if possible and, after rebooting the router, collect the output of **show c7300 pxf accounting**, **show c7300 pxf interfaces all**, **show diag**, and **show c7300**. Contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%NSE100-3-FPGA_DLL: [[chars] check failed
```

**Explanation** A DLL lock bit indicates to the software that the FPGA is operational and it is set when an FPGA loads up its code and becomes operational. This message indicates that the specified FPGA did not set its DLL lock bit and is therefore not operational. This problem could be due to either a hardware failure or an earlier FPGA upgrade failure.

**Recommended Action** If the automatic reload does not correct the problem, attempt a power cycle. If the problem persists, try upgrading the FPGA. If you are already running the latest FPGA image but can downgrade the FPGA, downgrade the FPGA. If the problem persists, copy the error message exactly as it appears on the console or in the system log and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%NSE100-3-INVALID_MGMT_FE_DESC: One of the management fastethernet port receive
descriptors is invalid, entry = [dec], software buffer address = [hex], hardware
buffer address = [hex]
```

**Explanation** One of the management Fast Ethernet port descriptor fields is incorrect. This condition indicates a software failure has occurred in the management Fast Ethernet driver.

**Recommended Action** Reset the interface by entering **shutdown** followed by **no shutdown**. If the condition persists, gather the outputs of **show interface fastethernet 0** and **show controller fastethernet 0**. After gathering these outputs, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%NSE100-3-QSTATUS: Queue status FPGA FIFO overflow (Qstatus frame [hex] from the
line card i/f [chars] is dropped).
```

**Explanation** The line card eqress queue status FPGA FIFO queues are full due to a software caveat on the QSTATUS or line card FPGA. The system software forced a system crash when this error occurred.

**Recommended Action** Copy the error message exactly as it appears on the console if possible and, after rebooting the router, collect the output of **show c7300 pxf accounting**, **show c7300 pxf interfaces all**, **show diag**, and **show c7300**. Contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%NSE100-3-ROMMON_UPD_FAIL. : ROM monitor upgrade in ROM [dec] failed.
```

**Explanation** The ROM monitor upgrade failed and the router has reverted to the boot OTP ROMmon (ROM 0, the “golden ROM”) for ROMmon.

**Recommended Action** If the ROMmon upgrade is not needed for your router, no action is required. If the ROMmon upgrade is required, retry the upgrade. Ensure that an IOS image is successfully booted up using the upgraded ROMmon in order to mark the ROMmon as valid and usable. If an attempted

ROMmon upgrade is still not successful, enter the **show tech-support** command. Contact your Cisco technical support representative and provide the representative with the error message and the **show tech-support** output.

#### Error Message

```
%NSE100-4-CITXFPGA: CI-DEMUX FPGA detected an error (Status [hex])
```

**Explanation** The cluster interconnect DEM UX FPGA found an error whose type is indicated in the message status with an egress packet. This is an information message.

**Recommended Action** If this message recurs, collect the output of **show c7300 pxf accounting**, **show c7300 pxf interfaces all**, **show diag**, and **show c7300** as well as the message as it appears on the console and contact your Cisco technical support representative with the gathered information.

#### Error Message

```
%NSE100-4-GBIC_TYPE_UNKNOWN: Unknown GBIC type or GBIC not inserted properly for
interface GigabitEthernet[dec]/[dec]
```

**Explanation** The Gigabit Ethernet Converter (GBIC) is not properly inserted into its slot.

**Recommended Action** Remove the GBIC and reinsert it properly into its slot. If the error persists, try a new GBIC, moving the GBIC to a different spare port, or swapping it with another GBIC in use. If the error is persistent and moves with the GBIC, replace the GBIC. If the error remains with the port, replace the NSE.

#### Error Message

```
%NSE100-4-ROMMON_UPD_TERMINATE. : ROM monitor upgrade in ROM [dec] terminated.
```

**Explanation** The ROM monitor upgrade process was terminated by the user and the ROM monitor image upgrade was not completed.

**Recommended Action** If you do not want to complete the ROM monitor upgrade, no action is required. If you want to complete the ROM monitor upgrade, retry the upgrade. If you are unable to upgrade the ROM monitor and are receiving this message, copy the error message exactly as it appears on the screen and enter the **show tech-support** command. Call your Cisco representative with the gathered information.

#### Error Message

```
%NSE100-6-ROMMON_UPD_DONE. : ROM monitor upgrade in ROM [dec] successful.
```

**Explanation** A ROM monitor upgrade was successful.

**Recommended Action** No action is required.

**Error Message**

```
%PLATFORM-3-FPGAUPDBRDNOACCESS:Cannot access Slot [dec], FPGA version check and
update skipped.
```

**Explanation** The line card cannot be accessed to perform the FPGA version check and update. The card may have been removed during the FPGA version check and update.

**Recommended Action** Ensure that no line cards were removed during the FPGA version check and update process. If a line card was removed during the FPGA version check and update process, reattempt the FPGA version check and update process by restarting the router or by entering the **upgrade fpga all** command. If the line card was properly inserted in a slot, insert the line card in another slot if possible. If problems persist, copy the error message exactly as it appears on the console or in the system log. Enter the **show version** and **show diag** *slot-number* commands to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or the command outputs, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-3-FPGAUPDFAIL: Slot [dec] [chars] update from version [dec].[dec] to
version [dec].[dec] failed. System may not function properly.
```

**Explanation** The FPGA update on the card in the specified slot failed after three attempts. This problem can occur because of an error in Flash programming when writing the FPGA image into the Flash. The error may have also occurred when reading from Flash during verification after programming the Flash with the new FPGA image. This error is usually hardware-related.

**Recommended Action** Enter the **upgrade fpga all** command to restart the FPGA version check and upgrade process. If the **upgrade fpga all** command fails to check and update the FPGA, copy the error message exactly as it appears on the console or in the system log. Enter the **show version** and **show diag** *slot-number* commands to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the command outputs, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-3-FPGAUPDLCNOACTIVE: Slot [dec] linecard activation failed after FPGA
update, error code = [dec]
```

**Explanation** The line card failed to activate itself after a successful FPGA update. The line card in the specified slot may have been removed, an error may have occurred when the CPLD tries to download the FPGA image from the Flash to the FPGA, or a hardware failure may have occurred in the line card of the specified slot.

**Recommended Action** Ensure that the line card in the specified slot was not removed. If the line card was removed, reinsert the line card back into the slot. Otherwise, enter the **hw-module slot** *slot-number* **start** command. If both of these actions fail, move the card into a different slot. If the problem still persists, copy the error message exactly as it appears on the console or in the system log. Enter the **show version** and **show diag** *slot-number* commands to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the command outputs, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-3-FPGAUPDLCNODEACTIVE: Slot [dec] linecard deactivation failed after
FPGA update, error code = [dec]
```

**Explanation** The line card failed to deactivate after a successful FPGA update. The line card in the specified slot may have been removed or a hardware failure may have occurred in this line card and halted the deactivation process.

**Recommended Action** Ensure that the line card in the specified slot was not removed. If the line card was removed, reinsert the line card back into the slot. If the line card was properly inserted in a slot, enter the **hw-module slot** *slot-number* **stop** command followed by the **hw-module slot** *slot-number* **start** command. If these actions fail, move the card into a different slot. If the problem still persists, copy the error message exactly as it appears on the console or in the system log. Enter the **show version** and **show diag** *slot-number* commands to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the command outputs, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-3-FPGAUPDLCNORESET: Slot [dec] linecard reset failed after FPGA update
```

**Explanation** The line card failed to reset after a successful FPGA update. The line card in the specified slot may have been removed or a hardware failure may have occurred in this line card.

**Recommended Action** Ensure that the line card in the specified slot was not removed. If the line card was removed, reinsert the line card back into the slot. If the line card was properly inserted in a slot, enter the **hw-module slot** *slot-number* **stop** command followed by the **hw-module slot** *slot-number* **start** command. If these actions fail, move the card into a different slot. If the problem still persists, copy the error message exactly as it appears on the console or in the system log. Enter the **show version** and **show diag** *slot-number* commands to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the command outputs, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-3-FPGAUPDNOACCESS: Cannot access Slot [dec] [chars], FPGA version check
and update skipped.
```

**Explanation** The FPGA Flash memory on the line card or NSE in the specified slot cannot be accessed even though the line card or NSE itself is present. This problem is usually caused by bad FPGA Flash memory on the line card or NSE.

**Recommended Action** If the specified slot is a slot that contains a line card, remove the line card and reinsert it. If the problem persists, insert the line card in another slot if possible. If that also fails, copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or the command outputs, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-3-FPGAUPDNORELOAD: After FPGA update, Primary NSE reload was aborted.
Need to reload in order for the new FPGA image(s) to take effect
```

**Explanation** An FPGA on the primary NSE was updated. The router, however, did not automatically reload in order for the new FPGA code to take effect.

**Recommended Action** Reload the router. If the router reload fails for any reason, power cycle the router. If the router cannot be reloaded or power cycled, copy the error message exactly as it appears on the console or in the system log. Enter the **show tech-support** command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show tech-support** output, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-3-FPGAUPDUITIMEOUT: System FPGA update skipped for slot [dec] and up due
to no user response.
```

**Explanation** The FPGA update process was skipped because the screen prompts on the console were not answered.

**Recommended Action** Enter the **upgrade fpga all** command to manually start the FPGA version check and update process to ensure all FPGAs in the router are compatible.

**Error Message**

```
%PLATFORM-3-MINIMALBOOT: System in minimal boot mode.
```

**Explanation** The system has started in minimal boot mode. The reason for starting in minimal boot mode is often due to an NSE that is not supported by the router or an unsupported or corrupted FPGA image on the NSE.

**Recommended Action** Check the Cisco 7304 documentation to ensure the NSE is supported by the router. Enter the **show c7300** command to ensure that the NSE is running a supported FPGA version. If the NSE is supported and the FPGA is updated, copy the error message exactly as it appears on the console or in the system log. Enter the **show tech-support** command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show tech-support** output, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-4-DEVICE: Missing device information for [chars] (Slot [dec], Device
Instance [dec])
```

**Explanation** The system software was unable to retrieve a pointer to a device information structure for the indicated device.

**Recommended Action** Copy the error message exactly as it appears on the console or in the system log. Issue the **show tech-support** command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show tech-support** output, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-4-FPGAUPDNOBNDLIMG: System cannot retrieve a compatible bundled FPGA
image for slot [dec] [chars] (hardware version [dec].[dec]), FPGA version check
and update skipped
```

**Explanation** The Cisco IOS release does not have a bundled FPGA image that is compatible with the line card or the NSE in the specified slot.

**Recommended Action** Check the field alerts and Cisco documentation to ensure the line card or NSE is supported by the Cisco IOS release. Upgrade the Cisco IOS software or the hardware if required.

**Error Message**

```
%PLATFORM-4-HWTIMERALLOCFAIL: Failed to allocate hardware timer for [chars]
```

**Explanation** The system software was unable to allocate a hardware timer from the system hardware timer pool. The feature indicated in the error message will not function because of this error.

**Recommended Action** Copy the error message exactly as it appears on the console or in the system log. Issue the **show tech-support** command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show tech-support** output, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-6-FPGAUPDSKIP: Slot [dec] [chars] update skipped.
```

**Explanation** The FPGA update was explicitly skipped by the user although the current FPGA version for the line card or the NSE in the specified slot is potentially incompatible with the running Cisco IOS release.

**Recommended Action** Check the field alerts and Cisco documentation to ensure the line card or NSE is supported by the Cisco IOS release. Upgrade the Cisco IOS software or the hardware if required. Use the **show diag** *slot-number* command to determine the hardware revision and the version of the FPGA image in the FPGA Flash and the version of the FPGA image bundled in IOS.

**Error Message**

```
%PLATFORM-6-FPGAUPDSUCCESS: Slot [dec] [chars] successfully updated from version
[dec].[dec] to [dec].[dec].
```

**Explanation** The FPGA has updated successfully.

**Recommended Action** This is an informational message that a new FPGA image was successfully programmed into Flash memory storage. No action is necessary unless a subsequent reactivation of the newly downloaded FPGA image fails to take effect.

**Error Message**

```
%POS-1-HWFAIL: [chars]([dec]) Hardware failure. [chars]
```

**Explanation** The POS line card FPGA reported a fatal error and the line card has been deactivated.

**Recommended Action** Attempt to reactivate the card by removing and reinserting it, or by using the **hw-module slot** *slot-number* **start** command. If this fails, move the card into a different spare slot. If that also fails, ensure that you did not skip any procedure for upgrading the POS line card FPGA at bootup and note the hardware and FPGA versions from the output of the **show diag** *slot-number* command for that slot. Check on Cisco.com or with your Cisco technical support representative regarding any known caveats with the hardware or FPGA versions noted. Replace the line card or upgrade the FPGA if necessary. If you still need assistance, 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 together with the output of the **show diag** *slot-number* command.

**Error Message**

```
%POS-1-INITFAIL: [chars] initialization failed
```

**Explanation** The specified POS interface could not be initialized. This is probably due to a hardware failure with the associated line card but could also be due to a software caveat.

**Recommended Action** If this message appeared on a hot insertion of the card in a running system and was preceded by a memory failure message, you might need to upgrade system memory. If this message appeared at system bootup after a memory failure message, check memory usage with respect to system configuration. Use the **show memory** command and the **show processes memory** command and consult your Cisco technical support representative if necessary. If there was no associated memory failure, proceed with the following steps. If this error message appears for all ports on the line card, temporarily enable any unused or shutdown ports, then remove and reinsert the card to ensure that it is properly seated. If the error persists, move the card to a different slot. If the error stays with the card, replace the line card. If the error goes away, try a spare card in the original failing slot. If ports on the spare card also fail, it can indicate a failure on the NSE side for that slot and require an NSE replacement. If the error occurs on a subset of ports in use on the line card, replace the line card. If you require further assistance in case the problem cannot be isolated and is not listed as a known hardware or software caveat, 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 together with the output of the **show version** command and the **show diag** *slot-number* command (*slot-number* is the number of the failing slot).

**Error Message**

```
%POS-1-TRESFAIL: [chars]([dec]/[dec]) Failed to obtain PXF resources,
error=[dec], shutting down interface
```

**Explanation** Every line card port is registered with the PXF processors. At this time, certain resources are allocated to the port together with a unique interface number that the PXF processors use to internally identify this port. This message indicates a failure in the registration process either due to lack of system memory for the port or due to unavailability of a spare interface number. The interface will be shut down. This is probably due to a software caveat.

**Recommended Action** If a memory failure message precedes this message, upgrade the system memory or ensure that you do not have more than 32K interfaces or VCs active in the system. If the number of interfaces and VCs is within these limits, check the list of known caveats for the IOS version running on this system and upgrade if necessary. If the caveat is unknown, 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 together with supporting information, such as the output of the **show c7300 pxf interfaces all** command.

**Error Message**

```
%LC-2-BADLCSLOT: Out of range Line Card slot [dec]
```

**Explanation** An internal function call was made with an out-of-range (invalid) line card slot number. This indicates malfunctioning software.

**Recommended Action** Check the list of known caveats for the IOS version running on this system and upgrade if necessary. If the caveat is unknown, 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 together with supporting information, such as the output of the **show tech-support** command.

**Error Message**

```
%LC-2-LCRECUR: Recursive loop while getting the daughtercard info for LC type
[dec]
```

**Explanation** An internal software function call to get daughter card information for the chassis or entity MIB resulted in an excessive recursive loop. This indicates malfunctioning software.

**Recommended Action** Check the list of known caveats for the IOS version running on this system and upgrade if necessary. If the caveat is unknown, 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 together with supporting information, such as the output of the **show tech-support** command.

**Error Message**

```
%LC-2-LCSYNC: Line Card type [dec] in slot [dec] serial link sync failed.
```

**Explanation** The NSE to line card serial link for the specified card and slot could not be initialized due to a synchronization failure. This is probably due to a hardware failure.

**Recommended Action** Remove and reinsert the card to ensure that it is properly seated. If the error persists, move the card to a different spare slot or use a different spare card to isolate the error to either the line card or the slot. If the error is identified as specific to the slot, it can require replacement of the NSE. If you require further assistance, 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**

```
%LC-2-LCWEDGED: Line Card type [dec] in slot [dec] wedged.
```

**Explanation** Line card initializaion failed in the specified slot. This could be due to a hardware failure of the line card or a portion of the NSE, or due to a software caveat.

**Recommended Action** Attempt to reactivate the card by removing and reinserting it, or by using the **hw-module slot** *slot-number* **stop** or **hw-module slot** *slot-number* **start** commands. If this fails, move the card into a different spare slot or use a different spare line card. Isolate the error to either the line card or the slot. If the error is identified as specific to the slot, it can require replacement of the NSE. If you require further assistance because the problem cannot be isolated and is not listed as a known hardware or software caveat, 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**

```
%LC-2-UNDEFLC: Undefined Line Card type [dec] in slot [dec]
```

**Explanation** The IOS version running on this system does not have a driver for this line card type or the ID EEPROM contents of the line card are corrupted.

**Recommended Action** Ensure the software version you are running supports this line card. If needed, check that the line card is properly seated. If the error message recurs, copy the 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 together with the output of the **show diag** *slot-number* command for that slot.

**Error Message**

```
%LC-3-CONFIG: Recommended line card configuration exceeded
```

**Explanation** The aggregate throughput of the line cards changed to make the system compliant or noncompliant with the hardware configuration guidelines.

**Recommended Action** Refer to the configuration guidelines for the maximum allowable aggregate throughput for the line cards. If the documentation confirms that you are exceeding the allowable aggregate bandwidth, reconfigure your hardware accordingly.

**Error Message**

```
%LC-3-DEACTIVATED: line card in slot [[dec]] deactivated.
```

**Explanation** The specified line card has been deactivated due to a previous fatal error while initializing the card. Details of the failure are probably in one or more previous messages.

**Recommended Action** Look at your console or system log for previous error messages indicating the failure that led to the deactivation. Copy all the error messages exactly as they appear on the console or in the system log. Enter the **show tech-support** command to gather data that can identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the output of the **show tech-support** command, call your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%LC-3-LCCREATE: Unable to create driver for Line Card type [dec] in slot [dec]
```

**Explanation** Possible memory shortage or line card hardware error.

**Recommended Action** Review previous memory allocation failure messages or use the **show memory** command to see the amount of free memory left. If memory is inadequate, upgrade memory or reduce memory usage. If it is not possible to obtain memory consumption information, move the failing line card to a lower-numbered slot so that it precedes an already existing line card or swap it with an existing line card in a lower-numbered slot. If the problem stays with the line card, it is probably a card-specific problem; replace the card. If the problem moves to another card, it is probably a system memory issue; upgrade memory or reduce memory usage. If the results of your investigation do not match anything covered so far, 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 together with the output of the **show tech-support** command.

**Error Message**

```
%LC-3-REVNOTSUPPORTED: LC in slot[dec] with hw version ([dec].[dec]) is old.
Requires base h/w revision of ([dec].[dec]) for this line card
```

**Explanation** A newer FPGA revision is required for correct operation on this hardware revision of the line card.

**Recommended Action** Upgrade the FPGA version of the line card.

**Error Message**

```
%MISTRAL-3-COR_MEM_ERR: Correctable DRAM memory error. Count [dec], log [hex]
```

**Explanation** A correctable error in system DRAM occurred.

**Recommended Action** No action needed if additional DRAM errors do not occur. If additional errors do occur, schedule some downtime and reseat the SDRAM SIMM on the NSE. If errors persist, replace the SIMM. If errors persist after replacing memory, replace the NSE.

**Error Message**

```
%MISTRAL-3-DUMP: Mistral Global Registers Dump
```

**Explanation** A dump of critical information regarding the internal state of Mistral, the system controller ASIC on the NSE, when an error is detected. This could be the result of a hardware or software failure.

**Recommended Action** Copy the error message and other related output 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**

```
%MISTRAL-3-ERROR: Error condition detected: [chars]
```

**Explanation** Information regarding an error condition detected by Mistral, the system controller ASIC on the NSE. This could be the result of a hardware or software failure.

**Recommended Action** Copy the error message and other related output 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**

```
%MISTRAL-3-FATAL: An unrecoverable error has been detected. The system is being
reset.
```

**Explanation** Mistral, the system controller ASIC on the NSE, has detected an unrecoverable error condition. This could be the result of a hardware or software failure.

**Recommended Action** Copy this error message and other related output 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.

**Recommended Action**

**Error Message**

```
%MISTRAL-3-INFO1: [chars]=[hex]
```

**Explanation** A dump of certain critical registers to get information regarding the internal state of Mistral, the system controller ASIC on the NSE, during fatal error conditions. This could be the result of a hardware or software failure. There can be multiple such messages displayed at a time.

**Recommended Action** Copy all occurrences of the error messages and other related output exactly as they appear on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%MISTRAL-3-INFO2: [chars]=[hex]([hex])
```

**Explanation** A dump of the interrupt status registers within Mistral, the system controller ASIC on the NSE, during an error interrupt. This could be the result of a hardware or software failure. There will be two such messages displayed at a time.

**Recommended Action** Copy the error messages and other related output exactly as they appear on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%MISTRAL-3-INVALID_SEND: Invalid send operation (packet on [chars])
```

**Explanation** A software error resulting in an invalid attempt to transmit a packet out on the inband channel from the Route Processor to the fast forwarding engine.

**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**

```
%MISTRAL-3-MORE_COR_ERR: [chars] [dec] correctable DRAM memory errors in previous
hour
```

**Explanation** An IOS process monitoring ECC-correctable errors in system DRAM has detected multiple correctable errors during the past hour.

**Recommended Action** Schedule some downtime and reseat the SDRAM SIMM on the NSE. If errors persist, replace the SIMM. If errors persist after replacing memory, replace the NSE. Call your Cisco technical support representative to arrange memory replacement or other technical assistance.

**Error Message**

```
%MISTRAL-3-RESET: Resetting Mistral due to [chars]
```

**Explanation** Mistral, the system controller ASIC on the NSE, is being reset due to internal errors.

**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**

```
%NSE100-3-GBICRDFAIL: Failed to read GBIC register after [dec] retries
```

**Explanation** A GBIC register could not be read after multiple retries. This problem occurs when the internal shared I2C bus is being heavily used for other purposes such as an FPGA upgrade. This problem often occurs when an Ethernet cable is unplugged during an FPGA upgrade.

**Recommended Action** In most cases, this problem should fix itself when the I2C bus is no longer being heavily used by a process. If the problem recurs, reboot the router. If a router reboot fails, copy the error message exactly as it appears on the console or in the system log and gather the output of **show tech-support**. Call your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%NSE100-3-MACTBLFULL: Exceeded [dec] entries in Gigabit Ethernet[dec]/[dec] MAC
filter table while addin [enet]
```

**Explanation** The destination MAC address filter table for each Gigabit Ethernet port can hold only 16 entries. An attempt was made to add more than 16 entries. The port has been set to promiscuous mode as a result. This is a warning and informational message.

**Recommended Action** See if any feature that uses MAC address filtering can be deconfigured. If not, no action need be taken.

**Error Message**

```
%NSE100-3-NO_GIG_SYNC: Inband Gig interface not syncronized, status [hex]
```

**Explanation** The inband Gigabit Ethernet channel on the NSE connecting the Route Processor to the fast forwarding engine (comprised of the PXF processors) is not functioning properly. It is a fatal error and is probably due to a hardware failure but could also be caused by a software caveat.

**Recommended Action** If this error surfaced after an IOS upgrade, look at the caveat list for that IOS version and revert to the previous version or move to a newer version. If this error appeared on a working system and the error persists after reloads, you might need to replace the NSE. Copy the error message together with any other error messages just prior to it exactly as they appear on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%NSE100-3-NO_MISTRAL_INIT_STATUS: Mistral init status of 0xf not obtained, status
[hex]
```

**Explanation** The software driver for the inband Gigabit Ethernet channel on the NSE connecting the Route Processor to the fast forwarding engine (comprised of the PXF processors) could not determine the initialization status from the Gigabit Ethernet controller ASIC. This could be due to a hardware failure or a timing issue with the driver software.

**Recommended Action** If this error surfaced after an IOS upgrade, look at the caveat list for that IOS version and revert to the previous version or move to a newer version. If this error appeared on a working system and the error persists after reloads, you might need to replace the NSE. Copy the

error message together with any other error messages just prior to it exactly as they appear on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

#### Error Message

```
%NSE100-3-NO_OBL_TO_INBAND: Mistral OBL to INBAND semaphore not obtained
```

**Explanation** The software driver for the inband Gigabit Ethernet channel on the NSE connecting the Route Processor to the fast forwarding engine (comprised of the PXF processors) could not obtain the packet buffer memory required for operation of the inband channel. It is a fatal error and is probably due to a hardware failure but could also be caused by a software caveat.

**Recommended Action** If this error surfaced after an IOS upgrade, look at the caveat list for that IOS version and revert to the previous version or move to a newer version. If this error appeared on a working system and the error persists after reloads, you might need to replace the NSE. Copy the error message together with any other error messages just prior to it exactly as they appear on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

#### Error Message

```
%NSE100-3-NOT_IDLE: Receive path not idle after reset
```

**Explanation** While disabling the inband Gigabit Ethernet channel on the NSE connecting the Route Processor to the fast forwarding engine (comprised of the PXF processors) on the NSE during a reset of the channel, the channel did not go idle within a delay period of one second. There might be a timing issue in the IOS driver for this inband channel.

**Recommended Action** If this error surfaced after an IOS upgrade, look at the caveat list for that IOS version and revert to the previous version or move to a newer version. If the system displays further errors or fails to operate because packets cannot reach the Route Processor, reload the system. If the error persists after reloads, 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

```
%NSE100-3-TOOBIG: attempt to send giant packet on [chars] ([dec] bytes from [hex],
max allowed [dec])
```

**Explanation** A process inside the router is attempting to send an oversized packet from the Route Processor out to the specified interface through the inband Gigabit Ethernet channel on the NSE connecting the Route Processor to the fast forwarding engine (comprised of the PXF processors). The packet is dropped. This is probably due to a software caveat.

**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**

```
%PACC-0-DLL_OUTOFLOCK: [chars] HW DLLS failed to lock in linecard at slot [dec]
```

**Explanation** The Port Adapter Carrier Card has failed to initialize. This condition indicates a hardware failure.

**Recommended Action** Remove and reinsert the line card. If reseating the card does not fix the problem, a later IOS image may have an updated FPGA bundle that could potentially solve the problem. If this message recurs, enter the **show diag** *slot-number* to gather data that can help identify the nature of the problem.

**Error Message**

```
%PACC-0-INITFAIL: [chars] initialization failure for slot [dec], [chars]
```

**Explanation** The initialization of a device on the Port Adapter Carrier Card has failed. The error message first specifies the device whose initialization failed. Slot number and either the interface name or more details about the error are displayed at the end of the message. This condition indicates a software error.

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

**Error Message**

```
%PACC-1-ALLOCFAIL: [chars] (slot [dec]) [chars] allocation failure
```

**Explanation** The router has failed to allocate sufficient memory for a component of the Port Adapter Carrier Card. This component is displayed after the slot number in the message text.

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

**Error Message**

```
%PACC-3-FLOWCTRL: PA-CC FPGA flow control failure from slot [dec]
```

**Explanation** The FPGA on the Port Adapter Carrier Card was unable to generate a flow control frame.

**Recommended Action** This problem could be caused by either faulty hardware (either the Cisco 7300 or the Port Adapter Carrier Card), by a corrupted FPGA image, or, with a very low likelihood, by software problems. If this problem occurs frequently, remove and reinsert the Port Adapter Carrier Card. If reseating the card does not fix the problem, a later IOS image may have an updated FPGA bundle that could potentially solve the problem. If this message recurs, enter the **show diag** *slot-number* to gather data that can help identify the nature of the problem.

**Error Message**

```
%PACC-3-HEARTBEAT_LOSS: [chars] Loss of heatbeat from linecard in slot [dec]
```

**Explanation** The Port Adapter Carrier Card has failed to send keepalives (heartbeats) to the Route Processor (RP). The slot number is specified in the error message. This condition usually indicates a software error.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC-3-NOPA:No Port Adapter detected in slot [dec]
```

**Explanation** The Port Adapter Carrier Card ROM monitor has not detected any port adapter plugged into the Port Adapter Carrier Card.

**Recommended Action** Ensure that the port adapter is plugged correctly into the Port Adapter Carrier Card.

**Error Message**

```
%PACC-3-NOPATYPE: No Port Adapter type obtained for slot [dec]
```

**Explanation** The Port Adapter Carrier Card ROM monitor has not reported any information about the port adapter that is plugged into the Port Adapter Carrier Card. This condition could be caused by either a hardware or a software problem and indicates a communication problem between the ROM monitor for the carrier card and the Cisco 7304 router.

**Recommended Action** Remove and reinsert the line card. If this message recurs, enter the **show diag** *slot-number* command to gather information that could help diagnose the issue.

**Error Message**

```
%PACC-3-REVNOTSUPPORTED: PA (type [dec]) in slot [dec] requires base h/w revision
of ([dec].[dec]) for this PA-CC
```

**Explanation** The port adapter in the slot specified in the error message has a downlevel hardware revision. A newer hardware revision of the port adapter is required for the Port Adapter Carrier Card to function on the chassis.

**Recommended Action** Replace the downlevel port adapter with a port adapter of a later hardware revision. The PA-2FE-TX and the PA-2FE-FX port adapters require a minimum hardware revision of 1.0. The PA-A3-T3 and the PA-A3-E3 port adapters require a minimum hardware revision of 2.0.

**Error Message**

```
%PACC-3-RXOFLOW: PA-CC FPGA ingress buffer overflow on slot [dec]
```

**Explanation** The FPGA on the Port Adapter Carrier Card detected a failure of hardware flow control for ingress frames.

**Recommended Action** This problem could be caused by either faulty hardware (either the Cisco 7300 router or the Port Adapter Carrier Card), by a corrupted FPGA image, or, with a very low likelihood, by software problems. If this occurs frequently, remove and reinsert the Port Adapter Carrier Card. If reseating the card does not fix the problem, a later IOS image may have an updated FPGA bundle that could potentially solve the problem. If this message recurs, enter the **show diag** *slot-number* command to gather information that could help diagnose the issue.

**Error Message**

```
%PACC-3-RXPARITY: Ingress packet parity error on slot [dec]
```

**Explanation** The FPGA on the Port Adapter Carrier Card detected a parity error on an ingress frame.

**Recommended Action** This problem could be caused by either faulty hardware (either the Cisco 7300 or the Port Adapter Carrier Card), by a corrupted FPGA image, or, though less likely, by software problems. If this occurs frequently, remove and reinsert the Port Adapter Carrier Card. If reseating the card does not fix the problem, a later IOS image may have an updated FPGA bundle that could potentially solve the problem. If this message recurs, enter the **show diag** *slot-number* command to gather information that could help diagnose the issue.

**Error Message**

```
%PACC-3-RXSMALLPAK: PA-CC FPGA ingress small packet error on slot [dec]
```

**Explanation** The FPGA on the Port Adapter Carrier Card detected a packet that was too small for an ingress frame from the Port Adapter Carrier Card CPU interface.

**Recommended Action** Monitor the frequency of these failures.

**Error Message**

```
%PACC-3-SYSRET: PA-CC in slot [dec] has returned to ROM Monitor:[chars]
```

**Explanation** The Port Adapter Carrier Card in the slot specified in the error message has experienced a system failure and has returned to ROM monitor mode. Additional information in the error message shows the stack trace from the Port Adapter Carrier Card failure.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC-3-TXERROR: PA-CC FPGA Common Logic egress packet error on slot [dec]
```

**Explanation** The backplane side of the common logic in the FPGA on the Port Adapter Carrier Card has experienced an error on an egress packet.

**Recommended Action** This problem could be caused by either faulty hardware (either the Cisco 7300 or the Port Adapter Carrier Card), by a corrupted FPGA image, or, though less likely, by software problems. If this occurs frequently, remove and reinsert the Port Adapter Carrier Card. If reseating the card does not fix the problem, a later IOS image may have an updated FPGA bundle that could potentially solve the problem. If this message recurs, enter the **show diag** *slot-number* command to gather information that could help diagnose the issue.

**Error Message**

```
%PACC-3-TXOFLOW: PA-CC FPGA Common Logic egress buffer overflow on slot [dec]
```

**Explanation** The backplane side of the common logic in the FPGA on the Port Adapter Carrier Card has experienced a buffer overflow for egress packets.

**Recommended Action** This problem could be caused by either faulty hardware (either the Cisco 7300 or the Port Adapter Carrier Card), by a corrupted FPGA image, or, with a very low likelihood, by software problems. If this occurs frequently, remove and reinsert the Port Adapter Carrier Card. If reseating the card does not fix the problem, a later IOS image may have an updated FPGA bundle that could potentially solve the problem. If this message recurs, enter the **show diag** *slot-number* command to gather information that could help diagnose the issue.

**Error Message**

```
%PACC-3-TXPARITY: Egress packet parity error on slot [dec]
```

**Explanation** The FPGA on the Port Adapter Carrier Card detected a parity error on an egress frame.

**Recommended Action** This problem could be caused by either faulty hardware (either the Cisco 7304 router or the Port Adapter Carrier Card), by a corrupted FPGA image, or, though less likely, by software problems. If this occurs frequently, remove and reinsert the Port Adapter Carrier Card. If reseating the card does not fix the problem, a later IOS image may have an updated FPGA bundle that could potentially solve the problem. If this message recurs, enter the **show diag** *slot-number* command to gather information that could help diagnose the issue.

**Error Message**

```
%PACC-3-TXSLOTID: Egress packet slot ID mismatch on slot [dec]
```

**Explanation** The FPGA on the Port Adapter Carrier Card detected a slot ID mismatch on an egress packet.

**Recommended Action** This problem could be caused by either faulty hardware (either the Cisco 7304 or the Port Adapter Carrier Card), by a corrupted FPGA image, or, with a very low likelihood, by software problems. If this occurs frequently, remove and reinsert the Port Adapter Carrier Card. If reseating the card does not fix the problem, a later IOS image may have an updated FPGA bundle that could potentially solve the problem. If this message recurs, enter the **show diag** *slot-number* command to gather information that could help diagnose the issue.

**Error Message**

```
%PACC-3-UNKNPA: Unrecognized Port Adapter in slot [dec]
```

**Explanation** The Port Adapter Carrier Card ROM monitor has detected a port adapter but was unable to determine the port adapter type from the port adapter ID PROM.

**Recommended Action** Insert the port adapter into another router. If the port adapter is not functional in another router, the Port Adapter ID PROM may have become corrupted.

**Error Message**

```
%PACC-3-UNSUPPORTED_PA: Unsupported Port Adapter (type [dec]) in slot [dec]
```

**Explanation** An unsupported port adapter of the indicated type has been inserted into the Port Adapter Card Carrier in the slot indicated in the error message.

**Recommended Action** Replace the port adapter.

**Error Message**

```
%PACC_IPC-0-DOORBELL: Doorbell register information incorrect
```

**Explanation** A number of parameters are passed to the initialization code through registers known as doorbells. The parameters supplied by the RP are of the incorrect type.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC_IPC-0-DOORBELL_NOINT: Nothing written to doorbells yet
```

**Explanation** The Route Processor (RP) software has not yet written the information needed by the Port Adapter Carrier Card startup code. The startup code does not wait for the data and therefore the Port Adapter Carrier Card could not be initialized.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC_IPC-0-IPC_MASTER: Cannot create the master seat
```

**Explanation** The master IPC seat could not be created. The master seat resides on the Route Processor (RP) and the Port Adapter Carrier Card was not able to create an entry to the RP seat. This indicates a communication problem with the RP.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC_IPC-1-DECODE: Unrecognised message: [dec]
```

**Explanation** The Port Adapter Carrier Card received an unrecognized IPC message. The error message shows the unrecognized command. This condition most likely indicates a software problem.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC_IPC-1-EVENT: Unexpected wakeup event [dec]. Process: [chars]
```

**Explanation** An unexpected event was received in process only waiting for timer events. This condition indicates a software problem.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC_IPC-1-EVENT_PORT: Cannot open event port. IPC error [chars]
```

**Explanation** The IPC port to receive events from the Route Processor could not be opened. The IPC error code is specified at the end of the error message.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC_IPC-1-LOCAL_CMD: Cannot register local command port. IPC error [chars]
```

**Explanation** The IPC local command port could not be registered with the Route Processor. The IPC error code is specified at the end of the error message.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC_IPC-1-PORT_CREATE: Cannot create IPC port. IPC error [chars]
```

**Explanation** The IPC command port could not be created on the Port Adapter Carrier Card. This condition indicates a resource allocation problem in the IPC code.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC_IPC-3-EGRESS: IPC received too many particles ([dec])
```

**Explanation** The IPC code on the Port Adapter Carrier Card received a packet that had too many particles. This condition indicates a software problem.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC_IPC-3-REPLY_MSG: Cannot obtain an IPC reply buffer
```

**Explanation** The Port Adapter Carrier Card could not obtain an IPC message buffer to send a reply back to the Route Processor. This condition indicates a resource allocation problem in the IPC code.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PACC-3-RXPAKLEN: PA-CC FPGA detected an ingress packet length error on slot [dec]
```

**Explanation** The PA Carrier Card has detected a packet length error during reception of an ingress packet.

**Recommended Action** This problem could be caused by either faulty hardware (either the Cisco 7300 or the PA Carrier Card), by a corrupted FPGA image, or, with a very low likelihood, by software problems. If this occurs frequently, remove and reinsert the PA Carrier Card. If reseating the card does not fix the problem, a later IOS image may have an updated FPGA bundle that could potentially solve the problem. If this message recurs, do the following: copy the error message exactly as it appears on the console or in the system log, enter the show diag command to gather additional data, and contact your Cisco technical support representative with the gathered information

**Error Message**

```
%PACC-3-TXPAKLEN: PA-CC FPGA detected an egress packet length error on slot [dec]
```

**Explanation** The PA Carrier Card has detected a packet length error during transmission of an egress packet.

**Recommended Action** This problem could be caused by either faulty hardware (either the Cisco 7300 or the PA Carrier Card), by a corrupted FPGA image, or, with a very low likelihood, by software problems. If this occurs frequently, remove and reinsert the PA Carrier Card. If reseating the card does not fix the problem, a later IOS image may have an updated FPGA bundle that could potentially solve the problem. If this message recurs, do the following: copy the error message

exactly as it appears on the console or in the system log, enter the show diag command to gather additional data, and contact your Cisco technical support representative with the gathered information

**Error Message**

```
%PACC_IPC-3-SEND_FAILED:Failed to send IPC message. IPC error [chars]
```

**Explanation** An IPC message could not be sent. This condition indicates a resource allocation problem in the IPC code.

**Recommended Action** Copy the error message, and any messages preceding this message that may be related to this message, exactly as they appear on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PLATFORM-3-SPEED_DUPLEX_MISMATCH<EMB_ErrMsgBody>:[chars] does not support mixed
auto and non-auto speed and duplex settings. Default both speed and duplex to auto.
```

**Explanation** The hardware does not support a mix of autonegotiated and non-autonegotiated speed and duplex settings. The speed and the duplex settings, therefore, should either both be autonegotiated or both be nonautonegotiated. The default setting for both speed and duplex is autonegotiated and this default setting will be restored if this error message is received.

**Recommended Action** If you want both speed and duplex autonegotiated, nothing. If you do not want speed and duplex autonegotiated, configure both speed and duplex settings as non-autonegotiated.

**Error Message**

```
%PLATFORM-3-LCCONFIG: System hardware configuration [chars]compliant
with recommended guidelines.
```

**Explanation** This warning message is displayed in the following cases: 1) at system bootup, a noncompliant hardware configuration is detected, 2) on online insertion of a line card, the system becomes noncompliant with respect to recommended guidelines, and 3) on online removal of a line

card, the system goes from a noncompliant to a compliant state. A system is deemed to be noncompliant when the total aggregate throughput of the line cards exceeds the aggregate throughput capacity of the NSE.

**Explanation** No action is necessary when a system goes from a noncompliant to a compliant state. When a system is noncompliant, it is recommended that one or more line cards be removed to bring the system into compliance. If certain line cards are needed for connectivity, avoid congestion on the NSE by ensuring that they are not driven to their capacity. Refer to the configuration guidelines for the maximum allowable aggregate throughput for the line card in this system.

#### Error Message

```
%PLATFORM-3-NOMAC: Can't allocate MAC address for interface [int]/[int]
```

**Explanation** MAC address allocation failed due to one of the following: 1) an incorrect slot and port combination, 2) the MAC address block information in the backplane ID EEPROM is corrupted, or 3) a software caveat. Each system is assigned a block of 256 MAC addresses with a current allocation of 32 addresses per slot.

**Recommended Action** If the slot and port numbers shown in the message are valid, it is a case of a corrupted backplane ID EEPROM or a software caveat. First look at the dump of the midplane EEPROM as shown in the output of the **show diag chassis** command and confirm that the MAC address block size is 256 and chassis MAC address is valid. If the MAC address information is correct, look at the list of known caveats for the IOS software version running on the system. If this is not a known caveat, 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 together with the output of the **show diag chassis** command. If the MAC address information from the **show diag chassis** command looks invalid, contact your Cisco technical support representative.

#### Error Message

```
%PLATFORM-4-COOKIE: Corrupt or missing MAC address cookie using random base [enet]
```

**Explanation** The MAC address information in the backplane ID EEPROM is invalid or corrupted, or the version indicator in the EEPROM header is invalid or corrupted. The system is using a random MAC address base value as shown in the message.

**Recommended Action** Look at the dump of the midplane EEPROM in the output of the **show diag chassis** command to confirm that the MAC address block size or chassis MAC address are invalid or that the EEPROM format version is not 4. Copy the error message and the output of the **show diag chassis** command exactly as they appear on the console or in the system log, call your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%PXF_ACL_DISABLED-3-WSEVENT: [chars] [dec] [dec]
```

**Explanation** PXF TurboACL matching was temporarily disabled due to insufficient PXF memory for one of the TurboACL tables. This problem may occur during periods of high traffic coupled with highly varying traffic flows on systems with complex ACL match statements. This problem will automatically correct itself when an ACL configuration change is made or if the system received a packet for which it has not yet generated any ACL match outcomes.

**Recommended Action** If this message only occurs once, the system should re-enable the PXF ACL automatically and correct the problem with no user action. If this message recurs, copy the error message exactly as it appears on the console or in the system log and gather the contents of **show tech-support** and call your Cisco technical support representative with the gathered information.

**Error Message**

```
%PXF_FIB-3-WS_FIB_EVENT: [chars]
```

**Explanation** A generic PXF CEF error occurred.

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

**Error Message**

```
%PXF_FLOW-4-AGG_SCHEME: Agg scheme from PXF IPC msg may be corrupted: scheme
expected: [dec], scheme in ipc msg: [dec]
```

**Explanation** While retrieving netflow aggregation data from the PXF processors, the data returned by the PXF processors did not match the aggregation scheme for which the data was requested. This error is due to a malfunction in the software.

**Recommended Action** Look at the list of known caveats for the IOS software version running on the system. If this is not a known caveat, 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 together with the output of the **show version** command and the **show running-config** command.

**Error Message**

```
%PXF_FLOW-4-INVLDAGG: Invalid agg scheme.
```

**Explanation** While retrieving netflow aggregation data from the PXF processors, the data returned by the PXF processors indicated an invalid or unconfigured aggregation scheme. This error is due to a malfunction in the software.

**Recommended Action** Look at the list of known caveats for the IOS software version running on the system. If this is not a known caveat, 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 together with the output of the **show version** command and the **show running-config** command.

**Error Message**

```
%PXF_FLOW-4-INVLDEXP:Invalid export version [dec] (control [hex])
```

**Explanation** The export version field from the PXF record might have been corrupted. This record is sent by the PXF processors to the Route Processor and contains Netflow data. The corruption is likely due to a software caveat.

**Recommended Action** Copy the error message exactly as it appears on the console or in the system log and gather the **show tech-support** command output. Contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%PXF_FLOW-4-NPKT_NULL: The number of packets in received flow record is zero
 and reset to 1.
```

**Explanation** While retrieving netflow aggregation data from the PXF processors, the data returned by the PXF processors indicated a packet count of zero. This indicates a corruption of the received record and is probably due to a malfunction in the software.

**Recommended Action** Look at the list of known caveats for the IOS software version running on the system. If this is not a known caveat, 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 together with the output of the **show version** command and the **show running-config** command.

**Error Message**

```
%PXF_FLOW-4-NULL_PKTS: The number of packets/bytes is zero.
```

**Explanation** While retrieving netflow aggregation data from the PXF processors for export to a netflow collector, the data returned by the PXF processors indicated the packet count or the byte count as zero. This indicates a corrupted record and is probably due to a malfunction in the software.

**Recommended Action** Look at the list of known caveats for the IOS software version running on the system. If this is not a known caveat, 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 together with the output of the **show version** command and the **show running-config** command.

**Error Message**

```
%PXF_FLOW-4-PREFIX_UNSUPPORTED: Prefix aggregation is not supported on PXF.
```

**Explanation** The prefix aggregation scheme for netflow is not supported in PXF.

**Recommended Action** None

**Error Message**

```
%PXF_FLOW-4-SRING_INDX_BAD: Show ring index ([dec]) is out of range.
```

**Explanation** While retrieving netflow cache information from the PXF processors for display, the software detected an invalid index value used internally for storing the retrieved data. This indicates a nonfatal malfunction in the software.

**Recommended Action** Look at the list of known caveats for the IOS software version running on the system. If this is not a known caveat, 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 together with the output of the **show version** command and the **show running-config** command.

**Error Message**

```
%PXF_GRE-4-INVLDCFG_SEQUENCE<EMB_ErrMsgBody>:PXF will enable the [chars] config
after access-lists are configured.
```

**Explanation** The configuration has no effect in the PXF packet classification until access lists are configured. The configuration command, however, is remembered on the interface and will take effect in PXF as soon as the first access list is configured.

**Recommended Action** Configure an access list so the feature is processed in the PXF-switching path. If this fails to correct the problem, reattempt configuring the intial feature after configuring an access list. If the problem persists, copy the error message exactly as it appears on the console or in the system log and call your Cisco technical support representative.

**Error Message**

```
%PXF_NAT-3-MAIN_TABLES_ALLOC_ERR:PXF NAT:insufficient memory for main tables
```

**Explanation** The system does not contain enough memory for PXF NAT tables and all PXF-switched traffic that requires Network Address Translation will not be translated using NAT.

**Recommended Action** Check your system for a memory leak. If no memory leak is present, deconfigure other features if possible and see if enough memory is freed for PXF NAT translation. If this cannot be done, upgrade SDRAM to get the additional memory required for the PXF NAT translations.

**Error Message**

```
%PXF_NAT-3-ST_FIB_ALLOC_ERR
```

**Explanation** The system does not contain enough memory for PXF NAT tables and some PXF-switched traffic that requires Network Address Translation will not be translated using NAT.

**Recommended Action** Check your system for a memory leak. If no memory leak is present, deconfigure other features if possible and see if enough memory is freed for PXF NAT translation. If this cannot be done, upgrade SDRAM to get the additional memory required for the PXF NAT translations.

**Error Message**

```
%PXF_VRFS-3-WS_VRFS_EVENT: [chars]
```

**Explanation** The system is experiencing generic PXF VRFS errors.

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

**Error Message**

```
%SBFIFO-1-BAD_IDB:Allocation of an Interface Descriptor Block failed
```

**Explanation** The Packet FIFO MAC driver failed to obtain an IDB for the Packet FIFO MAC interface. This condition indicates a software problem.

**Recommended Action** Open a case with Development Engineering.

**Error Message**

```
%SBFIFO-1-BAD_POOL: Could not initialize [chars]
```

**Explanation** The Packet FIFO MAC driver failed to obtain a pool of buffers from the Cisco IOS software. This condition indicates a software problem.

**Recommended Action** Open a case with Development Engineering.

**Error Message**

```
%SBFIFO-1-BAD_STRUCT: Could not allocate memory for [chars]
```

**Explanation** The Packet FIFO MAC driver failed to allocate memory for the specified component. This condition indicates a software problem.

**Recommended Action** Open a case with Development Engineering.

**Error Message**

```
%SBFIFO-1-INITFAIL_NOMEM:[chars], initialization failed, no buffer memory
```

**Explanation** The Packet FIFO MAC port failed to initialize due to insufficient memory. This condition most likely indicates a software problem.

**Recommended Action** The router requires more packet memory—consider an upgrade.

**Error Message**

```
%SBFIFO-3-ERRINT: [chars], error interrupt, mac_status = [hex]
```

**Explanation** The Packet FIFO MAC controller has signalled an error condition.

**Recommended Action** Copy the error message exactly as it appears on the console or in the system log and gather the **show tech-support** command output. Contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%SBFIFO-3-NOINT: Packet FIFO interface not created
```

**Explanation** A Packet FIFO interface could not be created.

**Recommended Action** Gather previous messages sent to the console as they should contain the exact reason for this error.

**Error Message**

```
%SBFIFO-3-TOOBIG:[chars], packet too big ([dec])
```

**Explanation** The Packet FIFO interface has detected a packet that was larger than the predefined maximum transmission unit (MTU). This condition most likely indicates a software problem.

**Recommended Action** Check the other station's MTU setting.

**Error Message**

```
%SERIAL-0-860_BOOT_NOTOK: [chars] Linecard local processor at slot [dec] failed
to boot
```

**Explanation** The DS3 line card local processor boot code did not initialize properly. The line card will be deactivated. This error indicates a line card hardware failure.

**Recommended Action** Enter the **hw-module slot** *slot-number* **start** command to try to reactivate the line card. If the line card did not recover from the error, copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather additional data, and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-0-BADPORT: [chars] (slot [dec]) [chars] [dec]
```

**Explanation** Several bad packets were received on the specified port, and the port has been shut down so that the line card does not continue to receive these bad packets.

**Recommended Action** Ensure that the configuration is correct. Ensure that the following configurations match on both ends of the connection: transmit/receive pairs, clock source (one end line, other internal), DSU (mode and subrate), framing settings, scrambling settings, and encapsulation settings. Verify the physical conditions on the line, the signal strength, and the cable length. If all of these configurations appear correct, collect the **show tech-support** command output and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-0-DLL_OUTOFLOCK: [chars] HW DLLs failed to lock in linecard at slot [dec]
```

**Explanation** The DS3 line card could not initialize. The line card is deactivated.

**Recommended Action** Try to reactivate the line card using the **hw-module slot** *slot-number* **start** command. If the error persists, copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show tech-support** output, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%SERIAL-0-INITFAIL: [chars] initialization failure for slot [dec], [chars]
```

**Explanation** The DS3 line card driver has failed to initialize properly. This indicates a software initialization issue. The line card is deactivated.

**Recommended Action** Try to reactivate the line card using the **hw-module slot** *slot-number* **start** command. If the error persists, copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show diag** *slot-number* output, contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-1-ALLOCFAIL: [chars] (slot [dec]) [chars] allocation failure
```

**Explanation** The DS3 driver data structure could not be allocated during line card initialization. This condition occurs when the system is running low on memory because of a misconfiguration or because the memory installed in the system is not large enough to meet the demands of different applications in high traffic conditions. The line card is deactivated if this error message is received.

**Recommended Action** Attempt to reactivate the line card using the **hw-module slot** *slot-number* **start** command. If the error recurs, check the system configuration for the amount of Route Processor-switched traffic. A large amount of Route Processor-switched traffic can cause this error, so reconfigure the system for less Route Process-switched traffic if possible. If the amount of installed memory can be upgraded, consider upgrading main memory by removing and replacing the SDRAM SODIMM. If the problem persists, collect the **show tech-support** command output and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-3-BMAENG: [chars] (slot [dec]) [chars] HDLC, [chars] [chars][chars].
(src=[hex], det1=[hex], det2=[hex])
```

**Explanation** A hardware race condition, which occurs when access to shared memory is not properly synchronized, has occurred. The line card has been deactivated and an automatic recovery has been initiated. If the error occurs more than five times within an hour, the line card will not reactivate after the fifth reactivation in the hour.

**Recommended Action** The line card can be reactivated manually using the **hw-module slot** *slot-number* **start** command if it has been deactivated after five failures. If the error persists, copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather additional data, and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-3-BMAPAR: [chars] (slot [dec]) [chars] HDLC, [chars].
BMA_DATA[3:0]=[hex]. (src=[hex], det1=[hex], det2=[hex])
```

**Explanation** A parity error occurred on the High-Level Data Link Control Broadcast Multi-Access (HDLC BMA) engine data bus. The line card has been deactivated and subsequently reactivated. If the error occurs more than five times within an hour, the line card will not reactivate after the fifth reactivation in the hour.

**Recommended Action** Attempt to reactivate the line card manually using the **hw-module slot** *slot-number* **start** command if it has been deactivated after five automatic recoveries. If the error persists, copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather additional data that may help identify the nature of the error, and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-3-BOOTCODE_CRASHED: [chars] linecard boot code in slot [dec] crashed,
reason: [chars] ([hex])
```

**Explanation** The DS3 line card local processor boot code crashed. This error message indicates a line card hardware failure. The line card will be deactivated.

**Recommended Action** Manually attempt to activate the line card using the **hw-module slot** *slot-number* **start** command and check if the line card recovers from the error. If the error persists, copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather additional data, and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-3-BOOTCODE_NOT_READY: [chars] linecard boot code in slot [dec] not ready
for firmware download, boot code status [hex]
```

**Explanation** The DS3 line card boot code did not initialize properly. This error message indicates a line card hardware failure. The line card will be deactivated.

**Recommended Action** Manually attempt to initialize the line card using the **hw-module slot** *slot-number* **start** command and check if the line card recovers from the error. If the error persists, copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather additional data, and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-3-CORRUPT: [chars] Corrupt configuration, unsupported [chars] ([int])
encountered
```

**Explanation** The running configuration for the DS3 line card is corrupted. The DS3 driver data structures that store snapshots of interface configurations are corrupted or are not correctly updated with the corresponding interface configurations in NVRAM. This problem is caused by a software caveat.

**Recommended Action** Attempt a graceful OIR of the line card by removing and reinserting the line card into the slot or into another slot. A graceful OIR can also be performed by entering the **hw-module slot** *slot-number* **stop** command followed by the **hw-module slot** *slot-number* **start** command. If the problem persists, copy the error message exactly as it appears on the console or in the system log, enter the **show tech-support** command to gather additional data, and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-3-DAUGHTER_CARD: [chars] Slot [dec]: [chars]
```

**Explanation** A daughter card is inserted into the 6T3 line card. The line card has been disabled because the daughter card is not supported. If the message appears and no daughter card is inserted into the 6T3 line card, an I2C bus access failure has occurred on the line card.

**Recommended Action** Unmount the daughter card from the line card if a daughter card is present. After removing the daughter card, or if no daughter card is present, enter the **hw-module slot** *slot-number* **start** command to reactivate the line card. If the error persists, copy the error message exactly as it appears on the console or in the system log, enter the **show tech-support** command to gather additional data, and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-3-FAREND_UNKNOWN: [chars] Interface [chars] received an unknown far end
request ([int])
```

**Explanation** The DS3 driver received an unknown far end request. The far end is sending an unknown FEAC code. This is not a catastrophic condition.

**Recommended Action** Check the configurations at both ends of the connection. If the configuration appears correct, copy the error message exactly as it appears on the console or in the system log. Enter the **show controller serial** *slot-number/port-number* command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show controller serial** *slot-number/port-number* output, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%SERIAL-3-FW_CHECKSUM_FAILED: [chars] linecard in slot [dec] firmware integrity
check failed. (section: [dec], expected checksum: [hex], calculated checksum:
[hex])
```

**Explanation** The DS3 line card local processor firmware download from the system main processor on the NSE to the line card local processor memory failed. This error message indicates a hardware failure. The line card will be deactivated.

**Recommended Action** Copy the error message exactly as it appears on the console or in the system log, enter the **show version** and **show diag** *slot-number* commands to gather additional data, and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-1-FW_CRASHED: [chars] line card firmware in slot [dec] crashed
```

**Explanation** The DS3 line card local processor firmware crashed. The line card will be restarted after the firmware crash. If the firmware crashes more than five continuous times, the line card will not reactivate after the fifth reactivation.

**Recommended Action** Copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show diag** *slot-number* output, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%SERIAL-3-FW_DOWNLOAD_FAILED: [chars] linecard in slot [dec] firmware download
failed
```

**Explanation** The DS3 line card local processor firmware download from the system main processor on the NSE to the line card local processor memory failed.

**Recommended Action** This error, if not preceded by a firmware checksum failed error, indicates a software failure. Copy the error message exactly as it appears on the console or in the system log. Enter the **show diag** *slot-number* command to gather data that may help identify the nature of the

error. If you cannot determine the nature of the error from the error message text or from the **show diag** *slot-number* output, contact your Cisco technical support representative and provide the representative with the gathered information.

#### Error Message

```
%SERIAL-3-FW_IPC_INIT_FAILED: [chars] linecard in slot [dec] firmware ipc
initialization failed
```

**Explanation** The Cisco IPC module in the DS3 line card local processor firmware failed to complete a successful initialization. The source of the problem could be a line card hardware failure or a software failure. The line card has been deactivated and will be automatically reactivated. If this error occurs more than five times in an hour, the automatic reactivation will not occur and the line card will remain deactivated.

**Recommended Action** If the line card is no longer automatically reactivating, copy the error message exactly as it appears on the console or in the system log and enter the **show version**, **show diag** *slot-number*, **show ipc status**, and **show ipc port** commands to gather additional data. Contact your Cisco technical support representative with the gathered information to determine whether to replace the line card or upgrade the IOS version.

#### Error Message

```
%SERIAL-3-FW_MSG: [chars] DS3 LC(slot [dec]), [chars]
```

**Explanation** An informational message has been sent from the DS3 line card firmware to the system main processor on the NSE.

**Recommended Action** None. The message from the DS3 firmware is informational.

#### Error Message

```
%SERIAL-3-HDLCENG: [chars] (slot [dec]) [chars] HDLC, [chars]. [chars], port [dec]
(src=[hex], det1=[hex], det2=[hex])
```

**Explanation** The High-Level Data Link Control (HDLC) engine inside the HDLC ASIC on the line card detected unrecoverable errors. The line card is deactivated and then an automatic recovery is initiated. If this error occurs more than five times within an hour, the line card remains deactivated.

**Recommended Action** Attempt to reactivate the line card using the **hw-module slot** *slot-number* **start** command. If the error persists, copy the error message exactly as it appears on the console or in the system log, enter the **show version** and **show diag** *slot-number* commands to gather additional data, and contact your Cisco technical support representative with the gathered information to determine whether to replace the line card or upgrade the IOS version.

**Error Message**

```
%SERIAL-3-KEEPALIVE_LOSS: [chars] Loss of keepalives from linecard in slot [dec]
```

**Explanation** The system main processor is not receiving keepalive messages from the line card local processor. The source of the problem could be a line card hardware failure or a software failure. The line card has been deactivated and automatically reactivated. If this error occurs more than five times in an hour, the automatic reactivation will not occur and the line card will remain deactivated.

**Recommended Action** If the line card is no longer automatically reactivating, copy the error message exactly as it appears on the console or in the system log, enter the **show version** and **show diag** *slot-number* commands to gather additional data, and contact your Cisco technical support representative with the gathered information to determine whether to replace the line card or upgrade the IOS version.

**Error Message**

```
%SERIAL-3-SRAMPAR: [chars] (slot [dec]) [chars] HDLC, [chars].
[chars]=[hex][chars]. (src=[hex], det1=[hex], det2=[hex])
```

**Explanation** A parity error occurred on High-Level Data Link Control (HDLC) ASIC external SRAM. The source of the problem is a hardware failure. The line card has been deactivated and automatically reactivated. If this error occurs more than five times in an hour, the automatic reactivation will not occur after the fifth reactivation and the line card will remain deactivated.

**Recommended Action** If the line card is no longer automatically reactivating, copy the error message exactly as it appears on the console or in the system log, enter the **show diag** *slot-number* command to gather additional data, and contact your Cisco technical support representative with the gathered information for a replacement of the line card.

**Error Message**

```
%SERIAL-4-UNKNOWNPARAM: [chars] [dec]/[dec][chars] parameter value is unknown
```

**Explanation** The IPC command parameter is unknown and the corresponding IPC message has been dropped. This is an informational message.

**Recommended Action** Check the release notes for your Cisco IOS version to see if this is associated with a documented caveat. If not, copy the error message exactly as it appears on the console or in the system log, gather the **show tech-support** command output, and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%SERIAL-5-BERT: Interface [chars], BERT [chars]
```

**Explanation** The DS3 driver processed a BERT task.

**Recommended Action** None, this is just a notification that a BERT task was completed.

**Error Message**

```
%SERIAL-5-FAREND_EVENT: [chars] Interface [chars] [chars] far end request of type
([chars])
```

**Explanation** The DS3 driver received and processed a known far end request, or loopback.

**Recommended Action** None. The purpose of this message is to provide notification that a known request was received from the far end of the link; in other words, to inform the router that the loopback was successful.

**Error Message**

```
%SWITCHOVER-2-LCFAILED: [chars] (slot [dec]): [chars]
```

**Explanation** The line card in the specified slot encountered problems during a Route Processor failover due to a hardware or software caveat. If this problem is severe, the line card is automatically deactivated and reactivated.

**Recommended Action** If the line card reactivates effectively and the message is no longer seen, nothing. If the message recurs, or the line card does not reactivate after a deactivation, copy the error message exactly as it appears on the console and gather the output of **show diag** *slot-number*. Contact your Cisco technical support representative and provide the gathered information to the representative.

**Error Message**

```
%SWITCHOVER-3-LCRESET: [chars] Line card reset during RP switchover (slot [dec])
(Line card CPLD Reset Register = [hex]
```

**Explanation** The line card in the specified slot was reset during RP failover. If RP redundancy mode is configured to be RPR-PLUS or SSO, linecard should not be reset when there is a RP switchover. This problem is a result of hardware or software caveat. The line card is automatically deactivated and recovered.

**Recommended Action** If linecard fails to come up or if this is seen multiple times, copy the error message exactly as it appears on the console and collect the show diag slot-number output. Remove the line card and place it in a different slot. If the line card fails to initialize in the new slot, call your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%SWITCHOVER-6-LC_RPRPLUS_UNAWARE: Line card (type [hex]) in slot [dec] is not
RPRPLUS mode aware
```

**Explanation** The line card in the specified slot does not support the configured Route Processor redundancy mode. The line card, therefore, will be reset and reinitialized during a Route Processor failover.

**Recommended Action** Nothing. This is an informational message only.

**Error Message**

```
%TMCIPC-4-DUP: Received a duplicated IPC record for [chars] with seq #:[dec].
```

**Explanation** While retrieving information from the PXF processors through a packetized Inter-Processor Communication (IPC) scheme, a duplicate packet sequence number was detected. The sequence number in the current record is the same as the sequence number in the previous message. The duplicate packet is dropped. This message is normally due to retransmissions from the PXF processors when the Route Processor load is high.

**Recommended Action** Look at the list of known caveats for the IOS software version running on the system. If there is a known caveat related to this message, determine an action based on its release note. If there is no known caveat, no action need be taken.

**Error Message**

```
%TWOBIT-3-FSMERROR: [chars]: Error encountered (fsm rc [dec])
```

**Explanation** A 2bt protocol driver finite state machine error has been detected.

**Recommended Action** In most cases, the retry mechanism should correct this error and nothing needs to be done by the user. If this message is seen repeatedly, copy the error messages exactly as they appear on the console or in the system log and gather the output of show diag. Contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%TWOBIT-3-FSMINVALID: [chars]: Invalid fsm state ([chars]) (state [dec])
```

**Explanation** A 2bt protocol driver finite state machine error has been detected.

**Recommended Action** In most cases, the retry mechanism should correct this error and nothing needs to be done by the user. If this message is seen repeatedly, copy the error messages exactly as they appear on the console or in the system log and gather the output of show diag. Contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%TWOBIT-3-HWTIMER: Failed to allocate hardware timer
```

**Explanation** The 2bt protocol driver finite state was unable to allocate a hardware timer that is required for operation. This error causes the 2bt protocol to malfunction and cause the higher-layer applications that use this communication mechanism to fail.

**Recommended Action** Copy the error message exactly as it appears on the console or in the system log, enter the **show diag** command to gather additional data, and contact your Cisco technical support representative with the gathered information.

**Error Message**

```
%WSHTF-3-FPGA_DLL: [chars]
```

**Explanation** The software could not initialize the line card packet forwarding controller. This could be a hardware failure.

**Recommended Action** Copy the error message exactly as it appears and report it to your technical support representative.

**Error Message**

```
%WSHTF-1-INITFAIL_NOBUF: [chars], buffer replacement failed, no buffers available
```

**Explanation** The HT-Fpga data plane driver could not secure replacement buffers packet reception.

**Recommended Action** The router either requires more packet memory - consider upgrade.Or some software module is holding onto the receive buffers andnot releasing them back to the driver.If this message recurs, copy the error message exactly as it appears on the console or in the system log, contact your Cisco technical support representative, and provide the representative with the gathered information.

**Error Message**

```
%WSHTF-3-NOTHTFPGA: Device ID seen as [hex], expected [hex]. Bus number [hex]
device number [hex].
```

**Explanation** The software could not recognize the data plane chip.

**Recommended Action** Copy the error message exactly as it appears and report it to your technical support representative.

**Error Message**

```
%WSHTF-1-RESFAIL: [chars]
```

**Explanation** The HT-Fpga data plane driver failed to get resources to attach its data structures to the global table. System is running low on memory

**Recommended Action** Copy the error message exactly as it appears along with the dump of show memory summary, and report it to your technical support representative.

**Error Message**

```
%WSHTF-3-TOOBIG: attempt to send giant packet on [chars] ([dec] bytes from [hex],
max allowed [dec])
```

**Explanation** A process inside the router is attempting to send an oversized packet.

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

**Error Message**

```
%WSIPC-3-RESTART: [chars]
```

**Explanation** An error has been detected during line card IPC reinitialization after a Route Processor switchover.

**Recommended Action** This can be because of system is operating under heavy traffic at the time of RP switchover. If line card software can not proceed after this error, linecard will be deactivated and recovered.

**Error Message**

```
%WS_PXF_QOS-3-TOO_MANY_POSSIBLE_OUTCOMES: Too many possible turbo acl outcomes:
[dec] (max policies: [dec]).
```

**Explanation** The QoS PXF Classification Engine, which is based on Turbo Access Control Lists (Turbo ACLs), does not contain enough memory to hold all possible outcomes of the Turbo ACL compilation.

**Recommended Action** If possible, remove unneeded ACLs or access control entries (ACEs) or rearrange the ACEs so that high-level ACEs receive more hits and require less processing. If the problem persists, copy the error message exactly as it appears on the console or in the system log. Enter the **show tech-support** command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show tech-support** output, contact your Cisco technical support representative and provide the representative with the gathered information.

**Error Message**

```
%WS_PXF_QOS-3-UNKNOWN_QOS_ACTION:Unknown QoS action type: [hex].
```

**Explanation** A QoS feature, unrecognized by PXF, has been configured within the Modular QoS CLI. The feature will work, but many packets may be punted to the Route Processor if the feature is on an output interface. This condition is caused by a software caveat and should not happen in normal conditions.

**Recommended Action** Consult the “Caveats” section of the Cisco IOS software release notes for your IOS version and see if any recommended workarounds are given for your release. If you are comfortable forwarding outgoing traffic through the Route Processor (RP), none. If the caveat is not documented in the release notes or a usable workaround is not available, copy the error message exactly as it appears on the console or in the system log. Enter the **show tech-support** command to gather data that may help identify the nature of the error. If you cannot determine the nature of the error from the error message text or from the **show tech-support** output, contact your Cisco technical support representative and provide the representative with the gathered information.