Troubleshooting the Cisco RPS

The key to troubleshooting is to isolate the problem to a specific subsystem. Start by reading the LEDs on the front panel of the Cisco RPS and any error messages displayed on the external device console. If you are unable to resolve the problem, refer to the "Getting Technical Support" section on page 5-14.

This chapter contains the following sections:

Reading the LEDs

The LEDs on the front panel of the Cisco RPS (see Figure 5-1) display the current operating condition of the Cisco RPS. Refer to Table 1-2 on page 1-10 for the meaning of various LED colors. When the Cisco RPS is working properly, the LEDs are solid green. When there is a problem with any component, the related LED is amber.

Note Some external devices also have LEDs that show the operating condition of the Cisco RPS. Refer to the installation guide that accompanied the device for detailed information about the LEDs.

Table 5-1 lists symptoms indicating a problem, along with possible causes and suggested corrective actions.

Figure 5-1 Cisco RPS LEDs

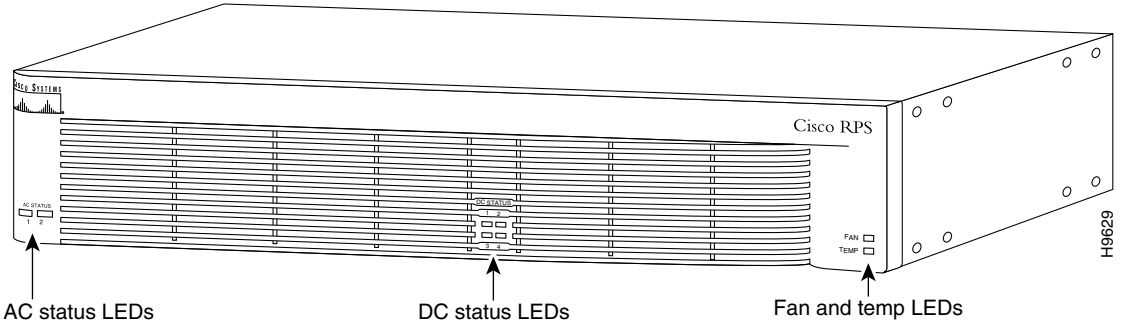

Table 5-1 Symptoms and Recommended Responses

Symptom	Description of Error	Corrective Action
DC LED 1, 2, 3, or 4 is amber. **Note** The DC LED is always amber for 10 to 15 seconds after the DC output module has been connected and the external device has been powered on.	The cable connected to an internal DC output module is loose, or the internal DC output module has failed. **Note** If you are using a Cisco RPS with a revision level lower than Z3 with a Catalyst 3508G or a Catalyst 3548 XL switch, the switch RPS LED and the RPS DC LED of the connector to the switch might display amber (normally indicating a Cisco RPS malfunction) even when the Cisco RPS is functioning properly. The LEDs display correctly for Cisco RPS revision level Z3 or later. The label on the bottom of the Cisco RPS shows the revision level.	The DC status LED numbers correspond to the DC output connectors on the Cisco RPS rear panel. Check the LEDs to determine which connector is affected. **Note** The following steps power down the external device if it is not already down. 1. Disconnect the corresponding output cable from the external device. The amber light goes off. 2. Ensure that the other end of the output cable is securely connected to the Cisco RPS and that the connector is fully seated. 3. Reconnect the output cable to the external device. 4. Ensure that the connector is fully seated and is attached securely to the external device. 5. Wait 15 seconds. The LED is amber for 15 seconds and then is green. If the failure persists, the DC output module has failed, and the Cisco RPS needs to be replaced. If there is an unused DC output module, try switching to it as a temporary solution.

Table 5-1 Symptoms and Recommended Responses (continued)

Symptom	Description of Error	Corrective Action
AC 1 or 2 LED is amber or off.	One of the following has occurred: • Power has been turned off to one of the wall outlets into which the specific Cisco RPS AC power cord is plugged. • One of the power cords has been disconnected from either the Cisco RPS or the wall outlet. • One of the AC modules has been turned off. • One of the AC modules has failed.	Look at the AC LEDs to determine which AC module is reporting the error. 1. Ensure that the AC module power switch is on and that the power cord is locked in place. 2. Ensure that the power cord is securely connected to a wall outlet and that the wall outlet is receiving power. If the failure persists, one of the AC output modules has failed, and the Cisco RPS needs to be replaced. Contact your Cisco representative or reseller.
FAN LED is amber.	One of the fans has failed. The remaining fans switch to full speed to keep the Cisco RPS cool.	The Cisco RPS continues to operate with a single fan failure. To correct the failure, replace the Cisco RPS. Contact your Cisco representative or reseller.
TEMP LED is amber.	The temperature inside the Cisco RPS is too high.	1. Ensure that the temperature of the room where the Cisco RPS is located is not above 40°C and adjust temperature setting if necessary. 2. Ensure that the front and rear panels of the Cisco RPS are clear of any obstructions. If the LED remains amber, replace the Cisco RPS. Contact your Cisco representative or reseller.

Displaying Status

Cisco IOS Release 11.2(7)P and later releases support status messages for Cisco 3620 and Cisco 3640 series routers using the Cisco RPS. Cisco IOS Release 11.3(2) and later releases support status messages for Cisco 2600 series routers using the Cisco RPS. Cisco IOS Release 12.2(8)T, Cisco IOS Release 12.2(11)YT, and later releases support status messages for Cisco 3725 series routers using the Cisco RPS.

Status messages are not supported for the FastHub 400 series hubs, Cisco 1516M hubs (HP 10BASE-T Hub-16M), Catalyst 1900 series and Catalyst 2820 switches, Catalyst 2900 series and Catalyst 3500 series XL switches, Cisco 2500 series and Cisco 4000 series routers, and Cisco MC3810 multiservice concentrators.

The **show env** command (available in Cisco IOS Releases 11.2(7) and later releases) provides an environmental status of the Cisco RPS. A sample display follows:

```
router# show env

Power Supply:
Redundant Power supply is present.
Thermal status is normal.
AC status is normal.
DC status is normal.
Board Temperature:
Warning: Board overtemperature condition detected.
```

Caution If the Cisco RPS gets too hot, it shuts down to prevent damage to its components. If thermal shutdown occurs because the cooling system failed or the ambient temperature rose above normal operating limits, a thermal warning displays on the router console, and an SNMP trap is sent before shutdown.

Error Messages on Cisco 2600 Series and Cisco 3620, Cisco 3640, and Cisco 3725 Routers

When a Cisco RPS status failure is detected while connected to Cisco 2600 series, Cisco 3620, Cisco 3640, and Cisco 3725 routers, Cisco IOS software receives an interrupt and displays the error messages on the router console. The following sections describe the console messages and SNMP traps issued following each error condition and after corrective action.

DC Failure

LED status:

DC LED 1, 2, 3, or 4 is amber.

Note The DC LED is always amber for 10 to 15 seconds after the DC output module has been connected and the external device has been powered on.

Console Error Message:

- When an external device console monitor screen displays the Cisco IOS software prompt (`routername>` or `routername#`)

  ```
  System detected Redundant Power Supply DC FAIL condition.
  ```

  The Cisco IOS software checks the condition once every 30 seconds. If the condition still exists, the error message reappears.

- When an external device console monitor screen displays the ROMMON prompt (`rommon#>`)

  ```
  *** System Environmental Interrupt ***
  WARNING: REDUNDANT POWER SUPPLY DC FAIL BIT IS ASSERTED.
  ```

Error Description:

The cable connected to one of the internal DC output modules is loose, or one of the internal DC output modules in the Cisco RPS has failed.

Note Cisco 2600 series, Cisco 3620, Cisco 3640, and Cisco 3725 routers report the failure of any of the Cisco RPS DC output modules, including the DC output modules to which they are not directly connected.

SNMP Trap Issued Upon Error:

ciscoEnvMonRedundantSupplyNotification is generated.

The varbinds included are ciscoEnvMonSupplyStatusDescr and ciscoEnvMonSupplyState.

The value of ciscoEnvMonSupplyState is a warning.

How to Correct Error:

Check the DC LEDs on the front panel of the Cisco RPS to determine which cable is loose or if the module has failed, and try the corrective actions described in Table 5-1.

Console Message Issued Upon Correction of Error:

- When an external device console monitor screen displays the Cisco IOS software prompt (`routername>` or `routername#`)

  ```
  Redundant Power Supply DC condition is now normal.
  ```

- When an external device console monitor screen displays the ROMMON prompt (`rommon#>`), no console message is issued when the error is corrected.

SNMP Trap Issued Upon Correction of Error:

ciscoEnvMonRedundantSupplyNotification is generated.

The varbinds included are ciscoEnvMonSupplyStatusDescr and ciscoEnvMonSupplyState.

The value of ciscoEnvMonSupplyState is a warning.

AC Failure

LED status:

AC LED 1 or 2 is amber or off.

Console Error Message:

- When an external device console monitor screen displays the Cisco IOS software prompt (`routername>` or `routername#`)

  ```
  System detected Redundant Power Supply AC FAIL condition.
  ```

  The Cisco IOS software checks the condition every 30 seconds. If the condition still exists, the error message reappears.

- When an external device console monitor screen displays the ROMMON prompt (`rommon#>`)

  ```
  *** System Environmental Interrupt ***
  WARNING: REDUNDANT POWER SUPPLY AC FAIL BIT IS ASSERTED.
  ```

Error Description:

One of the AC modules has been turned off or has been disconnected or has failed. See Table 5-1 for details. The Cisco IOS software checks the condition every 30 seconds. If the condition still exists, the error message reappears.

SNMP Trap Issued Upon Error:

ciscoEnvMonRedundantSupplyNotification is generated.

The varbinds included are ciscoEnvMonSupplyStatusDescr and ciscoEnvMonSupplyState.

The value of ciscoEnvMonSupplyState is a warning.

How to Correct Error:

Check the AC LEDs on the Cisco RPS to determine which AC module is reporting the error, and try the corrective actions described in Table 5-1.

Console Message Issued Upon Correction of Error:

- When an external device console monitor screen displays the Cisco IOS software prompt (`routername>` or `routername#`)

  ```
  Redundant Power Supply AC condition is now normal.
  ```

- When an external device console monitor screen displays the ROMMON prompt (`rommon#>`), no console message is issued when the error is corrected.

SNMP Trap Issued Upon Correction of Error:

ciscoEnvMonRedundantSupplyNotification is generated.

The varbinds included are ciscoEnvMonSupplyStatusDescr and ciscoEnvMonSupplyState.

The value of ciscoEnvMonSupplyState is a warning.

Fan Failure

LED status:

FAN LED is amber.

Console Error Message:

- When an external device console screen displays the Cisco IOS software prompt (`routername>` or `routername#`)

  ```
  System detected Redundant Power Supply THERMAL FAIL condition.
  ```

  The Cisco IOS software checks the condition once every 30 seconds. If the condition still exists, the error message reappears.

- When an external device console monitor screen displays the ROMMON prompt (`rommon#>`)

  ```
  *** System Environmental Interrupt ***
  WARNING: REDUNDANT POWER SUPPLY THERMAL BIT IS ASSERTED.
  ```

Error Description:

One of the Cisco RPS fans has failed. The remaining fans switch to full speed to keep the Cisco RPS cool.

SNMP Trap Issued Upon Error:

ciscoEnvMonRedundantSupplyNotification is generated.

The varbinds included are ciscoEnvMonSupplyStatusDescr and ciscoEnvMonSupplyState.

The value of ciscoEnvMonSupplyState is a warning.

How to Correct Error:

The Cisco RPS continues to operate with a single fan failure, but to correct the failure, replace the Cisco RPS.

Console Message Issued Upon Correction of Error:

- When an external device console monitor screen displays the Cisco IOS software prompt (`routername>` or `routername#`)

  ```
  Redundant Power Supply THERMAL condition is now normal.
  ```

- When an external device console screen displays the ROMMON prompt (`rommon#>`), no console message is issued when the error is corrected.

SNMP Trap Issued Upon Correction of Error:

ciscoEnvMonRedundantSupplyNotification is generated.

The varbinds included are ciscoEnvMonSupplyStatusDescr and ciscoEnvMonSupplyState.

The value of ciscoEnvMonSupplyState is a warning.

Temperature Error

LED status:

TEMP LED is amber.

Console Error Message:

- When an external device console monitor screen displays the Cisco IOS software prompt (`routername>` or `routername#`)

  ```
  System detected Redundant Power Supply THERMAL FAIL condition.
  ```

  The Cisco IOS software checks the condition once every 30 seconds. If the condition still exists, the error message reappears.

- When an external device console screen displays the ROMMON prompt (`rommon#>`)

  ```
  *** System Environmental Interrupt ***
  WARNING: REDUNDANT POWER SUPPLY THERMAL BIT IS ASSERTED.
  ```

Error Description:

The temperature inside the Cisco RPS is too hot.

SNMP Trap Issued Upon Error:

ciscoEnvMonRedundantSupplyNotification is generated.

The varbinds included are ciscoEnvMonSupplyStatusDescr and ciscoEnvMonSupplyState.

The value of ciscoEnvMonSupplyState is a warning.

How to Correct Error:

- Check the temperature of the room where the Cisco RPS is located, and correct the temperature setting if it is above 40°C.
- Check the front and rear panels of the Cisco RPS to make sure they are clear of any obstructions.
- If the error message persists, replace the Cisco RPS.

Console Message Issued Upon Correction of Error:

- When an external device console screen displays the Cisco IOS software prompt (routername> or routername#)

  ```
  Redundant Power Supply THERMAL condition is now normal
  ```

- When an external device console screen displays the ROMMON prompt (`rommon#>`), no console message is issued when the error is corrected.

SNMP Trap Issued Upon Correction of Error:

ciscoEnvMonRedundantSupplyNotification is generated.

The varbinds included are ciscoEnvMonSupplyStatusDescr and ciscoEnvMonSupplyState.

The value of ciscoEnvMonSupplyState is a warning.

Multiple Errors

LED status:

Two or more of the Cisco RPS LEDs are amber.

Console Error Message:

- When an external device console screen displays the Cisco IOS software prompt (`routername>` or `routername#`)

  ```
  There is more than one failure with the redundant power systems;
  please resolve problems immediately.
  ```

  The Cisco IOS software checks the condition once every 30 seconds. If the condition still exists, the error message reappears.

Note It is not a multiple failure when two or more DC output modules have failed.

- When an external device console screen displays the ROMMON prompt (`rommon#>`),

  ```
  The message will vary depending on the mix of failures.
  ```

Error Description:

The Cisco RPS has two or more failures of any of the previous types.

SNMP Trap Issued Upon Error:

ciscoEnvMonRedundantSupplyNotification is generated.

The varbinds included are ciscoEnvMonSupplyStatusDescr and ciscoEnvMonSupplyState.

The value of ciscoEnvMonSupplyState is a warning.

How to Correct Error:

Look at the LEDs on the Cisco RPS front panel to determine the types of failures that have occurred. Go to the section in Table 5-1 describing each failure type for instructions on how to correct it.

If the error message persists, replace the Cisco RPS.

Console Message Issued Upon Correction of Error:

- When an external device console screen displays the Cisco IOS software prompt (`routername>` or `routername#`)

  ```
  Redundant power system is now normal.
  ```

- When an external device console screen displays the ROMMON prompt (`rommon#>`), no console message is issued when the error is corrected.

SNMP Trap Issued Upon Correction of Error:

ciscoEnvMonRedundantSupplyNotification is generated.

The varbinds included are ciscoEnvMonSupplyStatusDescr and ciscoEnvMonSupplyState.

The value of ciscoEnvMonSupplyState is a warning.

Replacing an External Device

If an external device (hub, switch, router, or concentrator) that is receiving power from the Cisco RPS fails, you can replace it without powering down the Cisco RPS or interrupting power to any other external devices. Follow these steps to replace a failed external device that is connected to the Cisco RPS:

Note Do not power down the Cisco RPS.

Step 1 Power down the external device.

a. If the external device is a router or concentrator, press the on/off switch to the OFF position.

b. If the external device is a hub or switch configured in redundant-with-reboot mode, disconnect the AC power cord. (If the hub or switch is in quasi-redundant mode, Step 2 powers down the switch.)

Step 2 Disconnect the Cisco RPS connector from the external device. Make sure to leave the AC input power cable connected to the Cisco RPS.

Step 3 Replace the failed external device.

Step 4 If the external device is a hub or switch in redundant-with-reboot mode, connect the external device AC power cord to an AC power outlet to turn on power.

Note If you use this configuration, you must always power up the external device *before* you connect the Cisco RPS cable connector to the switch.

Step 5 Reconnect the new external device to the Cisco RPS power cable.

Step 6 If the external device is a router or concentrator, press the device on/off switch to the ON (|) position to power up the device.

The new external device powers up in 10 to 15 seconds.

Getting Technical Support

If you cannot locate the source of the problem, refer to the information packet publication that shipped with your Cisco RPS for information about how to contact technical support. Before you contact technical support, have the following information ready:

- Chassis serial number
- Maintenance agreement, license, or warranty information
- Date you received the Cisco RPS
- Brief description of the problem
- Brief explanation of the steps you have taken to isolate the problem

If the product is under warranty or is covered by a Cisco maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, tac@cisco.com, or http://www.cisco.com.