Chapter 3
Using Redundant Management Modules

This chapter describes the Redundant Management modules and how to configure and manage them. Redundant Management modules provide increased routing capacity and failover for the HP 9304M and 9308M chassis.

The Redundant Management module is a fully-functional CPU management module for the HP 9304M and 9308M. You can use one or two Redundant Management modules in an HP 9304M or 9308M chassis.

The Redundant Management module provides increased route capacity for routing switches running Border Gateway Protocol Version 4 (BGP4). In addition, the Redundant Management module contains a configurable temperature sensor that sends a Syslog message and SNMP trap if the temperature on the module exceeds a specified warning level. The temperature sensor also can shut the module down automatically to prevent damage.

You can use one or two Redundant Management modules in a chassis. Using two Redundant Management modules adds fault protection against system outage. The two modules work together as active and standby management modules. If the active module becomes unavailable, the standby module automatically takes over system operation.

You do not need to sacrifice port density when using Redundant Management modules. The Redundant Management module is available in the following configurations:

- 8-port 1000BaseSX module
- 8-port 1000BaseLX module
- 0-port module

Configuration Considerations

- You can use one or two Redundant Management modules in a chassis.
- You cannot use older management modules in the same chassis with Management II modules.

  NOTE: The J4141A HP ProCurve 9300 10/100 Management Module, the J4144A HP ProCurve 1000BaseSX Management Module, and the J4146A HP ProCurve 1000Base 4LX/4SX Management Module cannot be used in the same chassis with Redundant Management Modules.

- The flash code (system software) image file for a device running the Redundant Management modules is different from the flash code for systems running older management modules. The flash code for Redundant Management modules begins with "H2R". The flash code for older management modules begins with “HPR”.

Border Gateway Protocol Version 4 Routes

The Redundant Management module enhances the capacity of routing switches running BGP4. The Redundant Management module can support up to 256,000 BGP4 routes on a 9304M or 9308M routing switch.

Temperature Sensor

The Redundant Management module contains a temperature sensor. You can use the CLI or Web management interface to display the active Redundant Management module's temperature and to change the warning and shutdown temperature levels. See "Temperature Sensor" on page 3-14.

Switchover

When you power on or reload a chassis that contains two Redundant Management modules, the active Redundant Management module is selected based on the chassis slot previously specified by you or according to the lower slot number.

After the active module is selected, the active module loads its boot and flash code (boot and system software) and its system-config file and manages the system. The standby module also boots, using its own boot code but using the active module's flash code and system-config file. The standby module monitors the heartbeat of the active module. If the active module becomes unavailable, the standby module notices the absence of the heartbeat and assumes management control of the system.

NOTE: By default, the system does not use the boot code on the active module to boot the standby module. If you upgrade the boot code on the active module and the code contains a problem, you can still use the system by running the older boot code that is on the standby module. You can configure the standby to synchronize with the active module's boot code. See "File Synchronization Between the Active and Standby Redundant Management Modules" on page 3-10.

The standby module's system-config file is updated whenever the system-config file on the active module is updated. In addition, the running-config file on the standby module is updated at regular intervals to match the active module's running-config data. Thus, when a switchover occurs, the standby module also can reinstate the configuration data in the active module's running-config.

Following this switchover to the standby module, the standby module becomes the active module and continues to manage the system. When the other Redundant Management module (the one that used to be the active module) becomes available again or is replaced, that module becomes the standby module.

The active module also monitors the standby module. If the standby module becomes unavailable, the active module tries to reboot the standby module. You can display the status of each module using the CLI or the Web management interface, as described in "Determining Redundant Management Module Status" on page 3-7.

Management Sessions

You can establish management sessions only with the active Redundant Management module, not with the standby Redundant Management module. During switchover, all the CLI and Web management sessions open on the system are closed. To manage the system following a switchover, you must open a new management session. Although the system's MAC addresses change following switchover, the IP addresses do not. You can open new management sessions on the same IP addresses you were using before the switchover if desired.

To establish a serial connection to the CLI, you must move the serial cable to the serial port on the active Redundant Management module.

Syslog and SNMP Traps

When a switchover occurs, the software sends a Syslog message to the local Syslog buffer and also to the SyslogD server, if you have configured the HP device to use one. In addition, if you have configured an SNMP trap receiver, the software sends an SNMP trap to the receiver.

When the system is powered on or otherwise reset normally, the software sends a cold start message and trap. However, if the system is reset as the result of switchover to the standby Redundant Management module, the software instead sends a switchover message and trap.

MAC Address Changes

The MAC addresses in the system are based on the MAC address of the active management module. During switchover, the system's MAC addresses change and the system sends out gratuitous ARP requests to flush the old MAC addresses from the ARP caches on attached IP devices, and update the caches with the HP device's new MAC addresses.

Configuring the Redundant Management Parameters

You can configure the following Redundant Management module parameters:

- Installation parameters:
  - Slot configuration. As with other module types, you must configure a chassis slot for the type of module you are installing in the slot.
  - Active Redundant Management module slot. By default, the Redundant Management module with the lower slot number is the active module.
- Operational parameters:
  - Boot code synchronization. By default, the standby Redundant Management module does not automatically synchronize to the boot code version installed on the active module. The standby module does automatically synchronize to the flash code (system software) on the active module.
  - Synchronization interval for running-config file
  - Warning and shutdown temperatures

Installing Redundant Management Modules

To install a Redundant Management module, perform the following tasks:

- Configure the chassis slot to receive the module.

  NOTE: The system must be running a version of software that supports the module you want to install.

- Insert the module.
- Specify the default active module (if you do not want to use the system default, which is the Redundant Management module with the lower slot number).

In addition, if you use a TFTP or BootP server to boot the active module, you need to copy the flash code (system software) into the primary or secondary flash on the active Redundant Management module, then direct the active Redundant Management module to use the code to boot the standby module.

A standby Redundant Management module does not boot from a TFTP or BootP server.

Configuring the Chassis to Receive the Module

When you plan to insert a module into a chassis slot, you first must configure the slot to receive the module unless the slot already contains the same type of module.

USING THE CLI

To prepare slot 1 to receive an 8-port Gigabit Redundant Management module, enter the following commands at the global CONFIG level:

```
HP9300(config)# module 1 8-port-gig-management-module
HP9300(config)# write mem
```

Syntax: module <slot> <module-type>

In the current software release, the <module-type> for a Redundant Management module can be one of the following:

- 0-port-management-module – J4847A
- 8-port-gig-management-module – J4845A or J4846A

NOTE: Some module strings apply to more than one module. This is because the slot configuration does not differ based on the physical layer. For example, a slot does not distinguish between an 8-port LX Fiber module and 8-port SX Fiber module. However, the software does indicate the physical layer type when you display module information. For example, the output of the **show module** command indicates the physical layer types of each module.

See the “Swapping Modules (chassis platforms only)” on page 2-45 for a list of other module types.

USING THE WEB MANAGEMENT INTERFACE

1. Enter the chassis’ IP address in your Web browser's Location or Address field, then press Enter.
2. Log on to the chassis using a valid user name and password for read-write access.
3. Select the System link to display the System configuration sheet (if not already displayed).
4. Select the Module link to display the Module panel.
5. Select the Add Module link to display a panel such as the one shown in Figure 3.1.
6. Select the chassis slot that will receive the module from the Slot field's pulldown menu.
7. Select the module type from the Module Type field's pulldown menu. In this example, the 0-port Management II module is selected. In the current software release, the following module types apply to Redundant Management modules:
   - 0-port-management-module
   - 8-port-gig-management-module
8. Click the Add button to send the configuration information to the chassis.
9. Select the Save To Flash link to save the configuration change to the active Redundant Management module's startup-config file. (The change is automatically sent to the standby module when the active module's system-config file is copied to the standby module.)

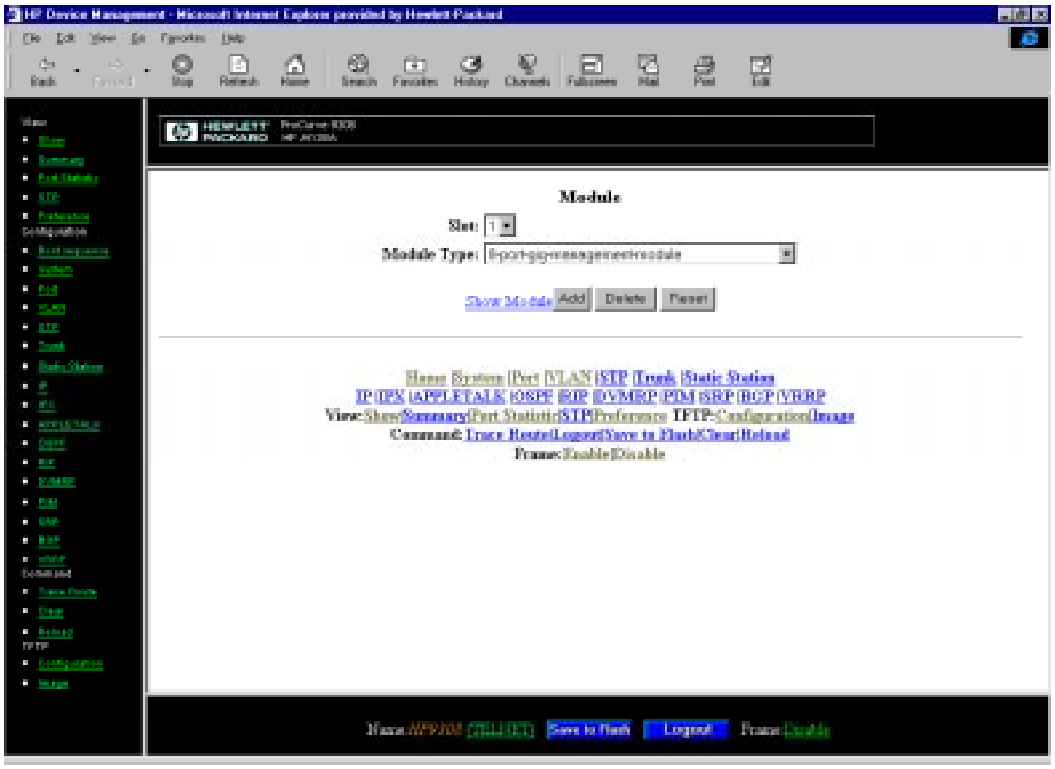

Figure 3.1 Module panel

Specifying the Default Active Module

By default, the Redundant Management module in the lower slot number becomes the active Redundant Management module when you start the system. For example, if you install Redundant Management modules in slots 1 and 8 in an HP 9308M chassis, the default active module is the module in slot 1.

NOTE:

- Slots on the HP 9304M are numbered 1 – 4, from top to bottom.
- Slots on the HP 9308M are numbered 1 – 8, from left to right.

You can override the default and specify the active module.

NOTE: The change does not take effect until you reload the system. If you save the change to the active module's system-config file before reloading, the change persists across system reloads. Otherwise, the change affects only the next system reload.

USING THE CLI

To override the default and specify the active Redundant Management module, enter a command such as the following:

```
HP9300(config)# m2 active-management 5
```

Syntax: m2 active-management <slot-num>

This command overrides the default and makes the Redundant Management module in slot 5 the active module following the next reload. The change affects only the next reload and does not remain in effect for future reloads.

To make the change permanent across future reloads, enter the write memory command to save the change to the system-config file, as shown in the following example:

```
HP9300(config)# m2 active-management 5

HP9300(config)# write mem
```

USING THE WEB MANAGEMENT INTERFACE

1. Select the System link to display the System configuration sheet, if not already displayed.
2. Select the Redundant link from the System configuration sheet. The Redundant Management Modules panel is displayed, as shown in Figure 3.2.
3. Select the slot number for the active Redundant Management module from the Active Management Slot field's pulldown menu. If you use the default value, Auto Select, the chassis uses the Redundant Management module in the lower slot number.
4. Click the Apply button to send the configuration change to the chassis.
5. If you want the change to remain in effect following the next system reload, select the Save To Flash link to save the configuration change to the active Redundant Management module's startup-config file. (The change is automatically sent to the standby module when the active module's system-config file is copied to the standby module.)

   If you do not save the change to flash, the change affects only the next reload.

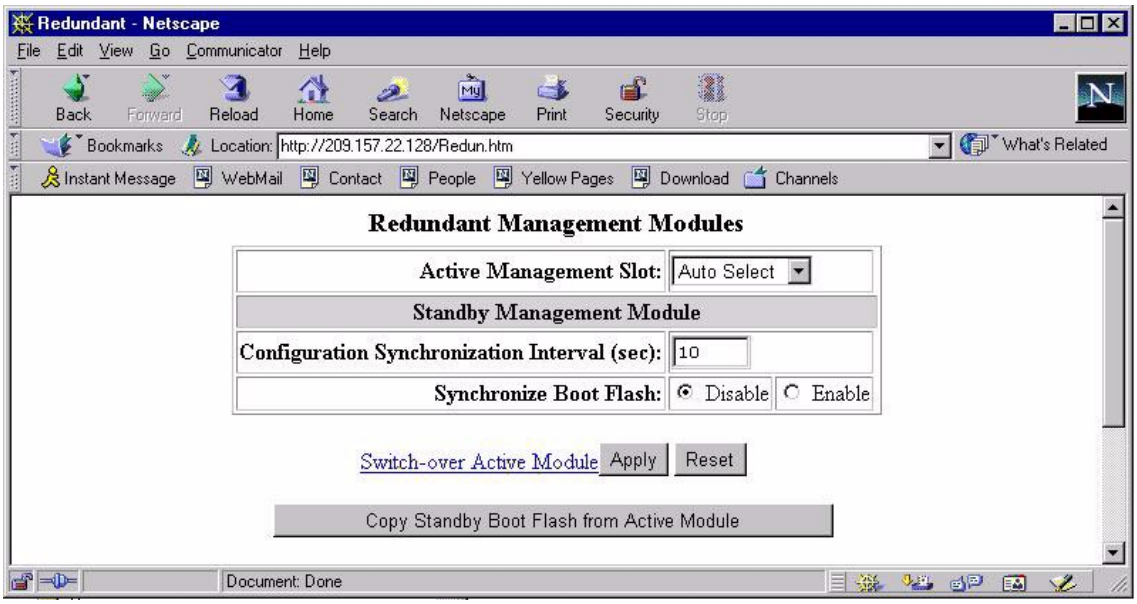

Figure 3.2 Redundant Management Modules panel

NOTE: The other options on this panel are described in later sections.

Inserting the Module

You can remove and insert modules when the system is powered on. Make sure you adhere to the cautions noted in "Installation Precautions" on page 2-3.

1. Put on an ESD wrist strap and attach the clip end to a metal surface (such as an equipment rack) to act as ground.
2. Remove the module or faceplate from the slot:

3. If you are replacing another module, loosen the two screws on the module you are removing.
    - Pull the card ejectors towards you, away from the module front panel. The card will unseat from the backplane.
    - Pull the module out of the chassis and place in an anti-static bag for storage.
4. If you are installing a Redundant Management module in an unoccupied module slot, remove the blank faceplate from the slot in which the module is to be installed. Place the blank faceplate in a safe place for future use.
5. Remove the Redundant Management module from its packaging.
6. Insert the module into the chassis slot and glide the card along the card guide until the card ejectors on the front of the module touch the chassis.
    - Modules for the HP 9308M slide in vertically with the module label at the top.
    - Modules for the HP 9304M slide in horizontally with the module label on the left.
7. Push the ejectors toward the center of the module until they are flush with the front panel of the module. The module will be fully seated in the backplane.
8. Tighten the two screws at either end of the module.
9. If you do not use one or more of the slots, make sure that a slot faceplate is still attached over each unused slot for safe operation and proper system cooling.

Specifying the Standby Boot Source on Systems that Boot from TFTP

During switchover, the standby Redundant Management module boots using the system software it copied from the other Redundant Management module's primary or secondary flash. By default, the standby module uses the same flash (primary or secondary) as the active module uses for its primary boot source.

However, a standby Redundant Management module does not boot from a TFTP or BootP server. If the active module uses a TFTP or BootP server as the primary boot source, you must copy the flash code (system software) onto the active module's flash, then instruct the active module to boot the standby module using the software.

USING THE CLI

To copy the routing switch flash code for software version 05.2.00 (B2R05200) from a TFTP server to the active Redundant Management module's primary flash, then load the standby module using the copied flash code, enter the following commands:

```
HP9300# copy tftp flash 209.157.22.5 B2R05200.bin primary
HP9300# m2 load-standby-source primary
```

Syntax: copy tftp flash <TFTP-IP-addr> <file-name> primary|secondary

Syntax: m2 load-standby-source primary|secondary

USING THE WEB MANAGEMENT INTERFACE

You cannot perform this procedure using the Web Management interface.

Determining Redundant Management Module Status

You can determine the status of a Redundant Management module in the following ways:

- Status LED – The Redundant Management module has two green LEDs on the right side of the CLI serial port. The lower LED shows the management status.
- Module information in software – The module information displayed by the software indicates whether the module is the active module, the standby module, or has another status.

Status LED

If you are located near the chassis, you can determine which Redundant Management module is currently the active module and which one is the standby by observing the upper green LED to the right of the serial management port. If the upper green LED is lit, the module is currently the active Redundant Management module. If the LED is dark, the module is the standby. The lower green LED indicates the power status. If the lower LED is dark, the module is not receiving power. (A module without power will not function as the active or standby module.)

Software

You can display status information for the modules using either of the following methods.

NOTE:

- Slots on the HP 9304M are numbered 1 – 4, from top to bottom.
- Slots on the HP 9308M are numbered 1 – 8, from left to right.

USING THE CLI

To display the status of a Redundant Management module using the CLI, enter the following command at any CLI level:

```
HP9300> show module

Module                                Status    Ports Starting MAC
S1: 8 Port Gig Management Module      ACTIVE      8   00e0.5202.a2d4
S2: 24 Port Copper Module             OK         24   00e0.5202.a2d4
S3: 24 Port Copper Module             OK         24   00e0.5202.a2d4
S4: 24 Port Copper Module             OK         24   00e0.5202.a2d4
S5: 8 Port Gig Management Module      STANDBY     8   00e0.5202.a334
S6: 24 Port Copper Module             OK         24   00e0.5202.a2d4
S7: 24 Port Copper Module             OK         24   00e0.5202.a2d4
S8: 24 Port Copper Module             OK         24   00e0.5202.a2d4
```

Syntax: show module

NOTE: The module descriptions do not distinguish between SX and LX ports.

The Status column shows the module status. The Redundant Management modules can have one of the following statuses:

- ACTIVE – The module is currently the active management module.
- STANDBY – The module is the standby management module.
- COMING UP – The module is coming up as the standby module. This status can be observed during switchover.

The statuses above apply only to management modules. The following statuses apply only to host modules:

- FAILED – This status applies only to host modules, not to management modules. This status indicates that the host module failed to come up.
- OK – This status applies only to host modules, not to management modules. This status indicates that the module came up and is operating normally.

USING THE WEB MANAGEMENT INTERFACE

1. Select the System link to display the System configuration sheet, if not already displayed.
2. Select the Module link to display the Module panel, as shown in Figure 3.3.

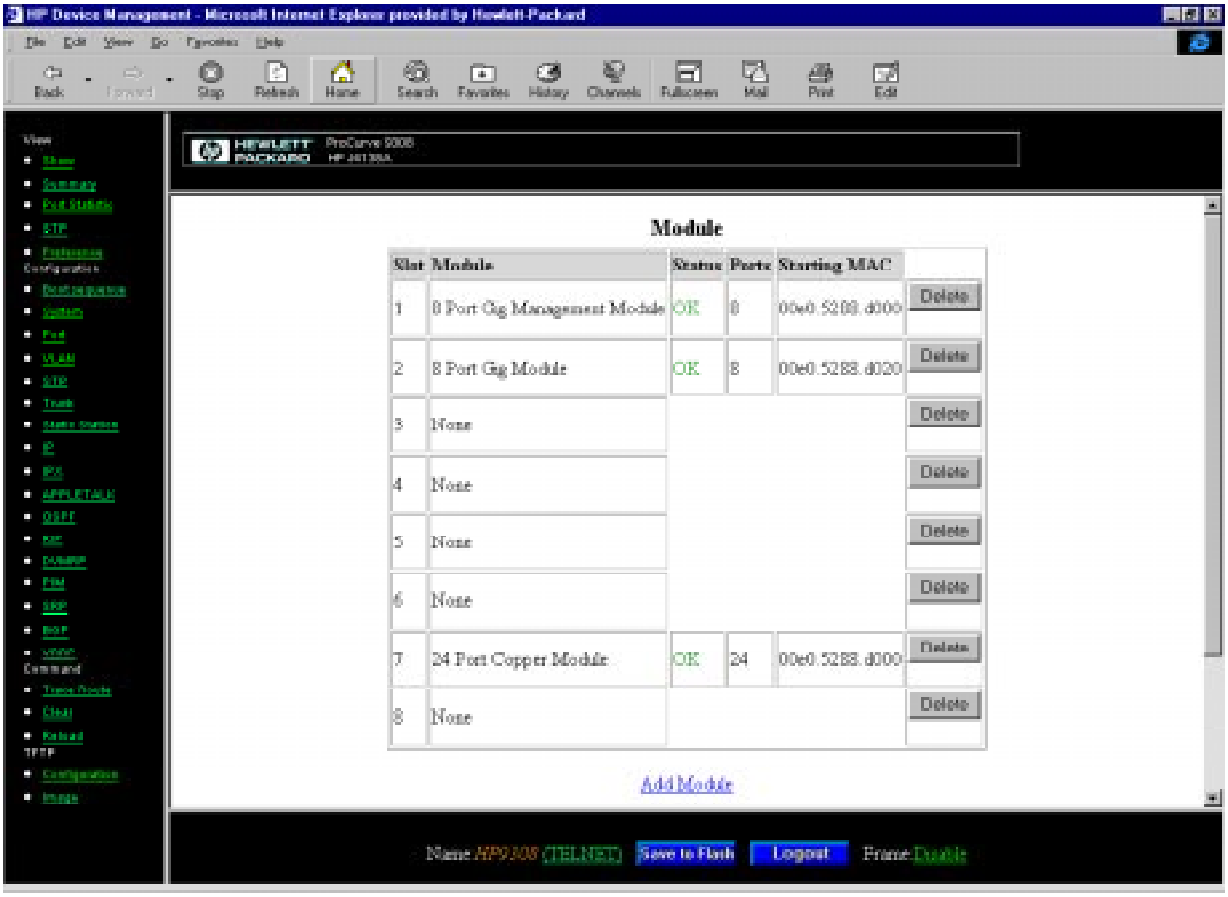

Figure 3.3 Module panel

The Status column shows the module status. The Redundant Management modules can have one of the following statuses:

- ACTIVE – The module is currently the active management module.
- STANDBY – The module is the standby management module.

The statuses above apply only to management modules. The following statuses apply only to host modules:

- FAILED – This status applies only to host modules, not to management modules. This status indicates that the host module failed to come up.
- OK – This status applies only to host modules, not to management modules. This status indicates that the module came up and is operating normally.

Displaying Switchover Messages

You can determine whether a switchover has occurred by viewing the system log or the traps logged on an SNMP trap receiver.

USING THE CLI

To view the system log, enter the following command at any level of the CLI:

```
HP9300> show log

Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
Buffer logging: level ACDMEINW, 8 messages logged
level code: A=alert C=critical D=debugging M=emergency E=error
I=informational N=notification W=warning

Log Buffer (50 entries):

at 0 days 0 hours 0 minutes 0 seconds, level alert
Management module at slot 1 state changed,
changed state from standby to active
```

USING THE WEB MANAGEMENT INTERFACE

1. Select the Show link from the link menu to display the Show Statistics panel.
2. Select the System Log link to display the system log.

File Synchronization Between the Active and Standby Redundant Management Modules

Each Redundant Management module contains four files that can be synchronized between the two modules:

- Boot code – The code the module runs when it first starts up. By default, the boot code is not synchronized between Redundant Management modules. This ensures that the system can still operate if a new version of boot code contains a bug that prohibits normal operation. If the new code on the active module does not work properly, the system can still run using the older version of boot code on the standby module.

  You can configure the standby Redundant Management module to synchronize with the active Redundant Management module's boot code whenever the boot code on the active module is updated or the system starts up.
- Flash code (system software) – The flash code is automatically synchronized between the Redundant Management modules. When the system starts up, the active Redundant Management module sends its flash code to the standby Redundant Management module to boot the module.
- System-config file – The system-config file is automatically copied from the active Redundant Management module to the standby Redundant Management module when the system starts up. The file is also copied to the standby module whenever you save changes to the file. If switchover occurs, the standby Redundant Management module loads system parameters from the running-config data that was last received from the active Redundant Management module. If the standby module did not receive running-config data from the active module, the standby module uses configuration information in the system-config file copied from the active module.
- Running-config – The running-config is automatically copied from the active Redundant Management module to the standby Redundant Management module at regular intervals. The default interval is 10 seconds. You can change the interval to 4 – 20 seconds. If you set the interval to 0, the configuration data is not copied to the standby Redundant Management module. As described above, if switchover occurs, the standby Redundant Management module loads system parameters from the running-config that was last received from the active Redundant Management module.

Figure 3.4 shows how the files are synchronized between the active Redundant Management module and the standby Redundant Management module.

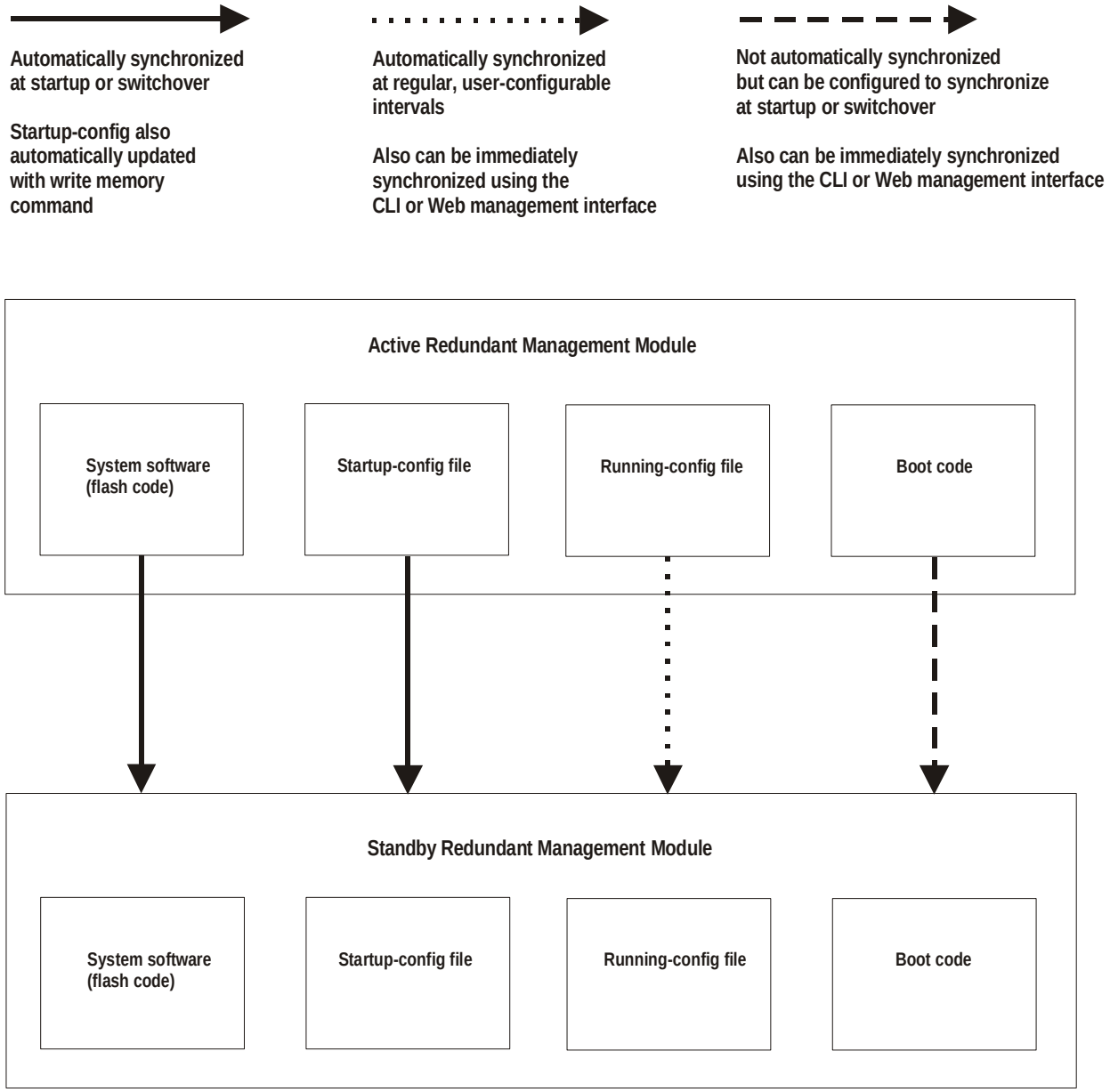

Figure 3.4 Redundant Management Module File Synchronization

Enabling Boot Flash Synchronization

By default, the active Redundant Management module does not synchronize its boot flash code with the boot flash code on the standby Redundant Management module. Thus, it is possible for the Redundant Management modules to have different boot flash releases. If the active module is updated with boot code that contains a problem, the system can still run using the standby module, which is running the older boot code.

To simplify the boot flash update process, you can configure the device to automatically update the boot flash on the standby Redundant Management module to the version installed on the active Redundant Management module. The "active" module is the Redundant Management module that is active when you enter the command or select the Web management option.

USING THE CLI

To enable boot code synchronization using the CLI, enter the following command at the global CONFIG level:

```
HP9300(config)# m2 sync boot-standby
HP9300(config)# write mem
```

Syntax: m2 sync boot-standby

USING THE WEB MANAGEMENT INTERFACE

1. Select the System link to display the System configuration sheet, if not already displayed.
2. Select the Redundant link from the System configuration sheet. The Redundant Management Modules panel is displayed, as shown in Figure 3.2.
3. Select the checkbox next to Boot Flash.

NOTE: Do not click the Synchronize Boot Flash Now button unless you want the active module to immediately copy its boot flash image to the standby module.

4. Click the Apply button to send the configuration change to the chassis.
5. Select the Save To Flash link to save the configuration change to the active Redundant Management module's startup-config file. (The change is automatically sent to the standby module when the active module's system-config file is copied to the standby module.)

Changing or Disabling Running-Config Synchronization

At system startup and each time you save the system-config file, the active Redundant Management module updates the system-config file on the standby Redundant Management module. By default, the active Redundant Management module also sends a copy of the running-config file to the standby Redundant Management module every 10 seconds. Thus, if a switchover occurs, the standby module contains not only the configuration information in the system-config file, but also the unsaved configuration changes, which are contained in the running-config file.

You can change the interval at which the active Redundant Management module updates the running-config file on the standby Redundant Management module. You also can disable the updates.

USING THE CLI

To change the synchronization interval for the running-config file to 15 seconds, enter the following commands at the global CONFIG level:

```
HP9300(config)# m2 sync running-config 15
HP9300(config)# write mem
```

Syntax: m2 sync running-config [<num>]

You can specify from 4 – 20 seconds. If you set the interval to 0, the file is not copied to the standby Redundant Management module. If you do not specify a value, the current value is shown. Here is an example:

```
HP9300(config)# m2 sync running-config
Current m2 sync running-config-standby period is 15 seconds
```

USING THE WEB MANAGEMENT INTERFACE

1. Select the System link to display the System configuration sheet, if not already displayed.
2. Select the Redundant link from the System configuration sheet. The Redundant Management Modules panel is displayed, as shown in Figure 3.2.
3. Edit the value in the field next to Running Configuration Interval.

NOTE: Do not press the Synchronize Configuration Now button unless you want the active module to immediately copy its running-config to the standby module.

---

4. Click the Apply button to send the configuration change to the device.
5. Select the Save To Flash link to save the configuration change to the active Redundant Management module's startup-config file. (The change is automatically sent to the standby module when the active module's system-config file is copied to the standby module.)

Immediately Synchronizing Boot Code or the Running-Config

You can immediately synchronize the boot code or running-config file. When you synchronize code or a file on the active and standby modules, the active module updates the standby module.

USING THE CLI

To immediately synchronize the running-config file on the standby module with the running-config on the active module, enter the following command at the Privileged EXEC level of the CLI:

```
HP9300# m2 sync-running-config
```

Syntax: m2 sync-running-config

To immediately synchronize the boot code, enter the following command:

```
HP9300# copy flash flash boot standby
```

Syntax: copy flash flash boot standby

USING THE WEB MANAGEMENT INTERFACE

1. Select the System link to display the System configuration sheet, if not already displayed.
2. Select the Redundant link from the System configuration sheet. The Redundant Management Modules panel is displayed, as shown in Figure 2.
3. Click the button for the code or file you want to immediately synchronize:

- To synchronize the running-config, select the Synchronize Configuration Now button.
- To synchronize the boot flash code, select the Synchronize Boot Flash Now button.

As soon as you click the button, the Web management interface immediately performs the synchronization.

Switching Over to the Standby Redundant Management Module

If you reload the software using the **reload** command, the behavior of the management modules is the same as when you power the system on. The system selects the active module based on the slot you specified or based on the lower slot number if you did not specify a slot. Then both Redundant Management modules load their own boot code and load the active Redundant Management module's flash code (system software) and system-config file.

If you do not want to reload the system but you instead want to force the system to switch over to the standby module (and thus make it the active Redundant Management module), use one of the following methods.

USING THE CLI

To switch over to the other Redundant Management module, enter a command such as the following:

```
HP9300# reset 2
```

Syntax: reset <slot-num>

Specify the slot number containing the currently active management module. Do not specify the slot number containing the standby module to which you want to switch over.

USING THE WEB MANAGEMENT INTERFACE

1. Select the System link to display the System configuration sheet, if not already displayed.
2. Select the Redundant link from the System configuration sheet. The Redundant Management Modules panel is displayed, as shown in Figure 2.
3. Select the Switch-over Active Module link. A message appears asking you to verify that you want to switch over from the active module to the standby.
4. Select Yes to switch over or No to cancel the switchover request.

Temperature Sensor

The Redundant Management module contains a temperature sensor. Depending on the temperature reported by the sensor, the software can send a warning if the temperature exceeds the normal threshold and can even shut the module down if the temperature exceeds the safe threshold. The software reads the temperature sensor according to the chassis poll time, which is 60 seconds by default.

When the software reads the temperature sensor, if the temperature equals or exceeds the warning or shutdown temperature, the software does the following:

- Warning message – If the temperature of the module reaches the warning value, the software sends a Syslog message to the Syslog buffer and also to the SyslogD server, if configured. In addition, the software sends an SNMP trap to the SNMP trap receiver, if you have configured the device to use one.
- Shutdown – If the temperature matches or exceeds the shutdown temperature, the software sends a Syslog message to the Syslog buffer and also to the SyslogD server if configured. The software also sends an SNMP trap to the SNMP trap receiver, if you have configured the device to use one.

If the temperature equals or exceeds the shutdown temperature for five consecutive polls of the temperature by the software, the software shuts down the module to prevent damage.

You can display the temperature of the module. You also can change the warning and shutdown temperatures and the chassis poll time.

Displaying the Temperature

By default, the software polls the temperature sensor on the active Redundant Management module every 60 seconds to get the current temperature. This poll rate is controlled by the chassis poll time, which also controls how often the software polls other system components. You can display the temperature of the active Redundant Management module using either of the following methods.

USING THE CLI

To display the temperature of a Redundant Management module, enter the following command at any level of the CLI:

```
HP9300> show chassis

power supply 1 not present
power supply 2 not present
power supply 3 ok
power supply 4 not present
power supply 1 to 4 from bottom to top
```

```
fan 1 ok
fan 2 bad
fan 3 ok
fan 4 ok
Current temperature : 34.5 C degrees
Warning level : 45 C degrees, shutdown level : 55 C degrees
```

Syntax: show chassis

USING THE WEB MANAGEMENT INTERFACE

1. Select the Show link to display the Show Statistics screen.
2. Select the Device link to display the Device Information panel. Figure 3.5 shows an example of the panel. The temperature is listed in the Temperature field. The temperature information is color coded to indicate the state.
   - Green indicates the temperature is within the normal operating range.
   - Orange indicates the temperature has reached the warning level.
   - Red indicates the temperature has reached the shutdown level.

NOTE: You also can display the Device Information panel by clicking on the graphic of the chassis panel, in the upper right frame. The graphic is shown only if the Web management interface frames are enabled.

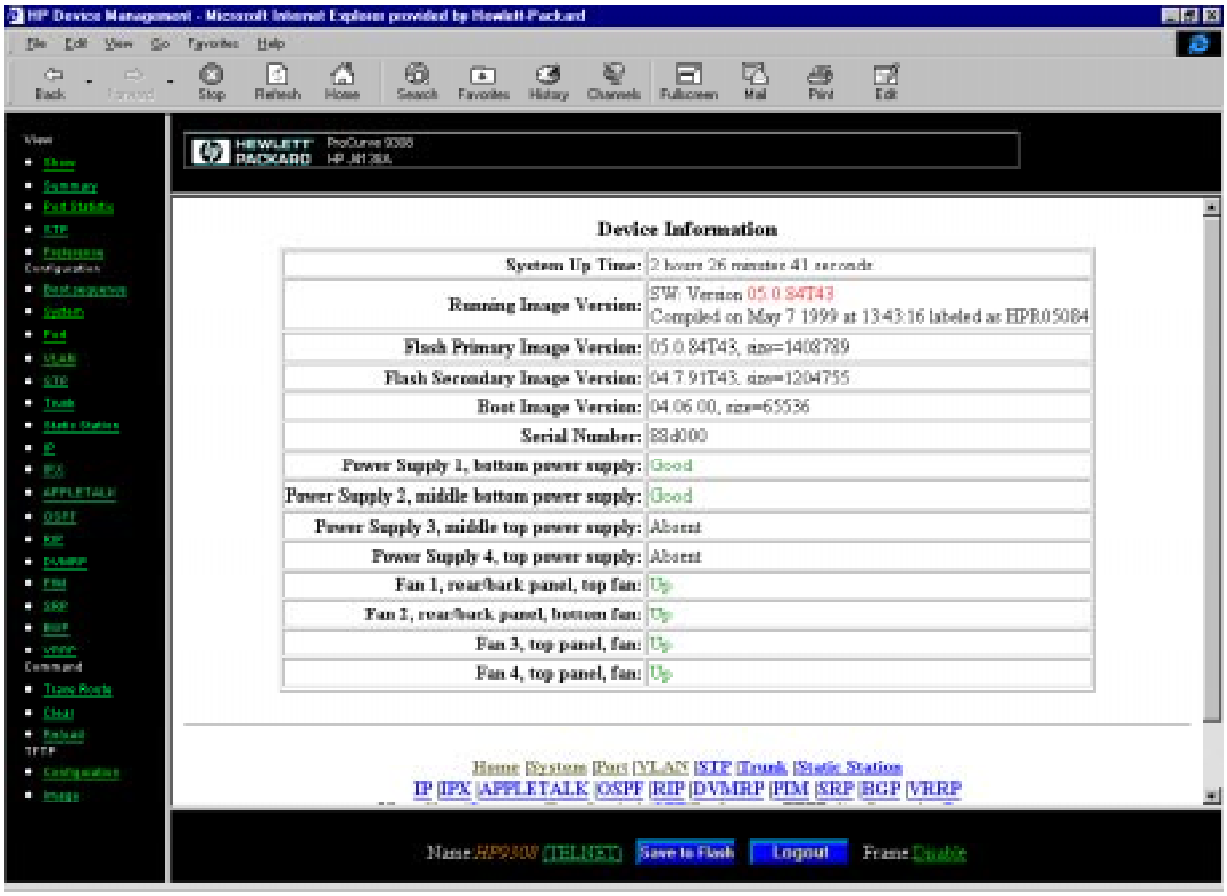

Figure 3.5 Device Information panel

Displaying Temperature Messages

The software sends a Syslog message and an SNMP trap if the temperature crosses the warning or shutdown thresholds. The following methods describe how to view the system log on the device. If you have configured the device to use a SyslogD server or SNMP trap receiver, see the documentation for the server or receiver.

USING THE CLI

To display the system log, enter the following command at any CLI level:

```
HP9300# show log

Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
Buffer logging: level ACDMEINW, 8 messages logged
level code: A=alert C=critical D=debugging M=emergency E=error
I=informational N=notification W=warning

Log Buffer (50 entries):

at 0 days 0 hours 2 minutes 0 seconds, level alert
Temperature 48.0 C degrees, warning level 45.0 C degrees, shutdown level 55.0 C
degrees

at 0 days 0 hours 1 minutes 0 seconds, level alert
Temperature 50.0 C degrees, warning level 45.0 C degrees, shutdown level 55.0 C
degrees
```

USING THE WEB MANAGEMENT INTERFACE

1. Select the Show link from the link menu to display the Show Statistics panel.
2. Select the System Log link to display the system log.

Changing Temperature Warning and Shutdown Levels

The default warning temperature is 45.0 C degrees. The default shutdown temperature is 55.0 C degrees. You can change the warning and shutdown temperatures using the following commands. The valid range for each value is 0 – 125 C degrees.

NOTE: You cannot set the warning temperature to a value higher than the shutdown temperature.

USING THE CLI

To change the temperature at which the module sends a warning, enter a command such as the following at the Privileged EXEC level of the CLI:

```
HP9300# m2 temperature warning 47
```

Syntax: m2 temperature warning <value>

The **<value>** can be 0 – 125.

To change the shutdown temperature, enter a command such as the following at Privileged EXEC level of the CLI:

```
HP9300# m2 temperature shutdown 57
```

Syntax: m2 temperature shutdown <value>

The **<value>** can be 0 – 125.

USING THE WEB MANAGEMENT INTERFACE

1. Select the System link to display the System configuration sheet, if not already displayed.
2. Select the Advance link to display the panel shown in Figure 3.6.
3. Edit the value in the Temperature Warning Threshold field to change the warning temperature.
4. Edit the value in the Temperature Shutdown Threshold field to change the shutdown temperature.
5. Click the Apply button to activate the changes.
6. Select the Save To Flash link to save the configuration change to the active Redundant Management module's startup-config file. (If you are using two Redundant Management modules, the change is automatically sent to the standby module when the active module's system-config file is copied to the standby module.)

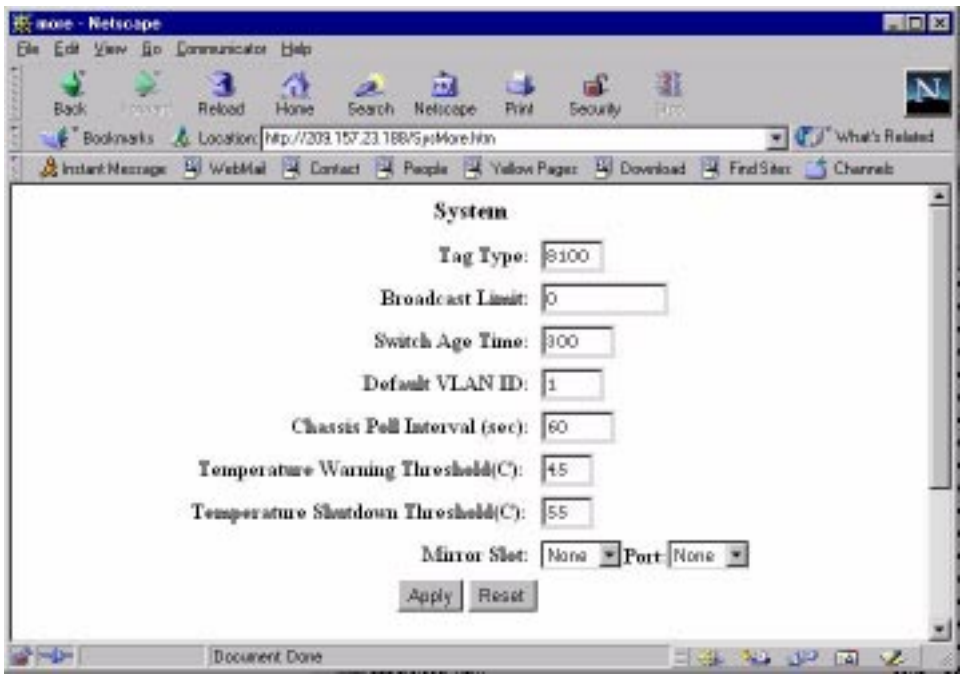

Figure 3.6 System panel for advanced system parameters

Changing the Chassis Polling Interval

The software reads the temperature sensor and polls other hardware sensors according to the value set for the chassis poll time, which is 60 seconds by default. You can change chassis poll time using the CLI

USING THE CLI

To change the chassis poll time, enter a command such as the following at the global CONFIG level of the CLI:

```
HP9300(config)# chassis poll-time
HP9300(config)# write mem
```

Syntax: chassis poll-time <value>

The **<value>** can be 0 – 65535.

USING THE WEB MANAGEMENT INTERFACE

1. Select the System link to display the System configuration sheet, if not already displayed.
2. Select the Advance link to display the panel shown in Figure 3.6.
3. Edit the value in the Chassis Poll Interval field to change polling interval. You can enter a value from 0 – 65535. The default is 60 seconds.
4. Click the Apply button to activate the changes.
5. Select the Save To Flash link to save the configuration change to the active Redundant Management module's startup-config file. (If you are using two Redundant Management modules, the change is automatically sent to the standby module when the active module's system-config file is copied to the standby module.)