

Managing the ProCurve 9408sl Chassis and Modules

This chapter contains information about refining the configuration of, monitoring, and managing the following ProCurve 9408sl hardware components:

- ProCurve 9408sl chassis
- Cooling system (fans)
- Interface modules
- Switch fabric module

This chapter also provides information about the following tasks:

- Enabling and disabling management module CPU usage calculations
- Displaying management module CPU usage
- Enabling and disabling packet logging for management and interface modules
- Removing MAC address entries

Managing the ProCurve 9408sl Chassis

You can perform the following management tasks for the ProCurve 9408sl chassis:

- Display chassis status and temperatures of all hardware components.
- Display the Syslog configuration and static and dynamic buffers.

Displaying Chassis Status and Temperature Readings

You can display the following information related to the ProCurve 9408sl chassis:

- Status of the AC power supplies.
- Status of the fans.
- Temperature readings of the management, switch fabric, interface, and fan control modules and the interval at which the system reads the temperature of these modules.
- The MAC address of the ProCurve 9408sl chassis.

To display this information, enter the following command at any level of the CLI:

```
ProCurveRS# show chassis
---POWERS ---
AC Powers Are Used.
Power Supply 1 (1st left): Not Installed
Power Supply 2 (2nd left): Installed (OK)
Power Supply 3 (middle left): Not Installed
Power Supply 4 (middle right): Installed (Failed)
Power Supply 5 (2nd right): Not Installed
Power Supply 6 (1st right): Installed (OK)
Slot Power-On Priority:
Slot1 (pri=1)
Slot2 (pri=1)
Slot3 (pri=1)
Slot4 (pri=1)
Slot5 (pri=1)
Slot6 (pri=1)
Slot7 (pri=1)
Slot8 (pri=1)

--- FANS ---
Fan0: Status = OK, Speed = LOW, ISP
Fan1: Status = OK, Speed = LOW, ISP

--- TEMPERATURE READINGS ---
Active Mgmt Module: 28.53C
Standby Mgmt Module: 29.21C
Fan0: 33.56C
Fan1: 29.84C
SNM0 SXPNT0: 40.18C
SNM0 SXPNT1: 45.50C
SNM0 SXPNT2: 40.75C
SNM0 SXPNT3: 42.93C
SNM0 SXPNT4: 38.3C
SNM1: not present
LP3 Sensor1: 33.81C
LP3 Sensor2: 32.3C
LP3 Sensor3: 44.50C
LP6 Sensor1: 33.56C
LP6 Sensor2: 32.71C
LP6 Sensor3: 44.9C
Temperature Monitoring Poll Period is 60 seconds

--- MISC INFO ---
Backplane EEPROM MAC Address: 000c.db80.3200
```

The display shows the following information:

Table 7.1: Chassis Status and Temperature Information

This Field...	Displays...
Powers	
XX Powers Are Used	The output displays "AC Powers Are Used" if the ProCurve 9408sl chassis is using AC power supplies provided by HP .
Power Supply 1 – 6	Indicates whether an AC power supply is installed in the specified power supply slot and the status of the power supply, which can be one of the following: <ul style="list-style-type: none"> OK – The power supply is functioning properly and supplying power to the chassis and installed modules. Failed – The power supply is not functioning and is not supplying power to the chassis and installed modules.
Slot Power-On Priority	The configured power-on priority of each interface module installed in a chassis slot.
Slot1 – Slot8	The priority of each chassis slot as configured by the lp-slot-priority command. The priority can be 1 – 8, where 1 is the lowest priority and 8 is the highest priority. (The default priority is 1.) If the supply of power to the chassis falls below a minimum threshold, the chassis slots with the lowest priority will likely lose power. For information about using the lp-slot-priority command, see "Changing Priority of Chassis Slots for Interface Modules" on page 7-18.
Fans	
Fan <number>	Information about fans 0 and 1. NOTE: "Fan 0" refers to the fan marked "Fan A" on the ProCurve 9408sl chassis rear, and "Fan 1" refers to the fan marked "Fan B."
Status	The status of a fan can be one of the following: <ul style="list-style-type: none"> OK – The fan is functioning properly and is keeping the temperature of each module within an acceptable temperature range. Failed – The fan is not functioning properly or the fan control module cannot control the fan.
Speed	The speed of a fan can be one of the following: <ul style="list-style-type: none"> Low – The fan is functioning at 50 percent of capacity. Medium – The fan is functioning at 75 percent of capacity. Medium-high – The fan is functioning at 90 percent of capacity. High – The fan is functioning at 100 percent of capacity.
Temperature Readings	
Active and Standby Mgmt Module	The temperature of the active and standby management modules.
Fan <number>	The temperature of fan0 and fan1.

Table 7.1: Chassis Status and Temperature Information (Continued)

This Field...	Displays...
SNM0 SXPNT <number>	The temperature of each super crosspoint (SXPNT) ASIC on the switch fabric module.
LP <number>	The temperature reading of the various sensors on each interface module.
Temperature Monitoring Poll Period	The interval at which the system reads the temperature sensor on the management, switch fabric, interface, and fan control modules.
Misc Info	
Backplane EEPROM MAC Address	The MAC address of the ProCurve 9408sl chassis.

Displaying the Syslog Configuration and Static and Dynamic Buffers

For information about configuring Syslog, see the *Installation and Basic Configuration Guide for ProCurve 9300 Series Routing Switches*.

To display the Syslog parameters currently in effect on a ProCurve 9408sl, enter the following command from any level of the CLI:

```
ProCurveRS> show logging
Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
  Buffer logging: level ACDMEINW, 7 messages logged
  level code: A=alert C=critical D=debugging M=emergency E=error
              I=informational N=notification W=warning
  ...
```

Syntax: show logging

The Syslog display shows the following configuration information, in the rows above the log entries themselves.

Table 7.2: Syslog Buffer Configuration

This Field...	Displays...
Syslog logging	The state (enabled or disabled) of the Syslog buffer.
messages dropped	The number of Syslog messages dropped due to user-configured filters. By default, the software logs messages for all Syslog levels. You can disable individual Syslog levels, in which case the software filters out messages at those levels. Each time the software filters out a Syslog message, this counter is incremented.
flushes	The number of times the Syslog buffer has been cleared by the clear logging command. For information about clearing the Syslog buffer, see "Static and Dynamic Buffers" on page 7-5.
overruns	The number of times the dynamic log buffer has filled up and been cleared to hold new entries. For example, if the buffer is set for 100 entries, the 101st entry causes an overrun. After that, the 201st entry causes a second overrun.

Table 7.2: Syslog Buffer Configuration (Continued)

This Field...	Displays...
level	The message levels that are enabled. Each letter represents a message type and is identified by the key (level code) below the value. If you disable logging of a message level, the code for that level is not listed.
messages logged	The total number of messages that have been logged since the software was loaded.
level code	The message levels represented by the one-letter codes.

Static and Dynamic Buffers

The software provides two separate buffers:

- Static – logs power supply failures, fan failures, and temperature warning or shutdown messages
- Dynamic – logs all other message types

In the static log, new messages replace older ones, so only the most recent message is displayed. For example, only the most recent temperature warning message will be present in the log. If multiple temperature warning messages are sent to the log, the latest one replaces the previous one. The static buffer is not configurable.

The message types that appear in the static buffer do not appear in the dynamic buffer. The dynamic buffer contains up to the maximum number of messages configured for the buffer (50 by default), then begins removing the oldest messages (at the bottom of the log) to make room for new ones.

The static and dynamic buffers are both displayed when you display the log.

```
ProCurveRS(config)# show logging
...
Static Log Buffer:
Aug 27 12:42:42:A:Power Supply 6, 1st right, failed

Dynamic Log Buffer (50 lines):
Aug 27 12:19:04:I:Interface ethernet3/4, state up
Aug 27 12:19:04:I:Interface ethernet6/3, state up
Aug 27 12:19:04:I:Interface ethernet3/2, state up
Aug 27 12:19:04:I:Interface ethernet6/1, state up
Aug 27 12:19:00:N:Module up in slot 6
Aug 27 12:19:00:N:Module up in slot 3
Aug 27 12:18:43:I:Warm start
```

When you clear log entries, you can selectively clear the static or dynamic buffer, or you can clear both. For example, to clear only the dynamic buffer, enter the following command at the Privileged EXEC level:

```
ProCurveRS# clear logging dynamic-buffer
```

Syntax: clear logging [dynamic-buffer | static-buffer]

You can specify the **dynamic-buffer** keyword to clear the dynamic buffer or the **static-buffer** keyword to clear the static buffer. If you do not specify a buffer, both buffers are cleared.

Managing the Cooling System

This section provides configuration, management, and monitoring information about the ProCurve 9408sl cooling system.

Configuring the Cooling System

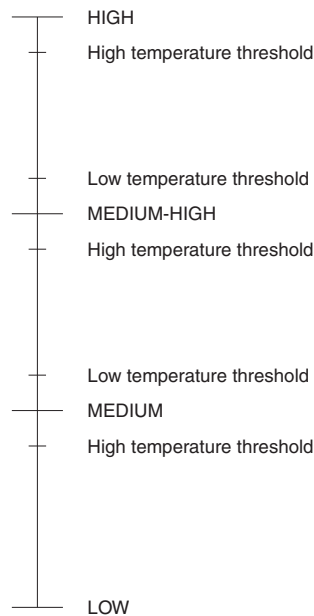
The ProCurve 9408sl provides default settings for all cooling system parameters. Therefore, no initial configuration of the cooling system is necessary. If desired, you can change the settings of the following cooling system parameters:

- Low and high temperature thresholds for modules and fan speeds
- Interval at which the system polls the temperature sensors on the module for a reading

Changing Temperature Thresholds For Modules and Fan Speeds

The ProCurve 9408sl cooling system includes two four-speed fans. The fans operate at speeds of low, medium, medium-high, and high. In general, each fan speed, except for low, has a low and high temperature threshold associated with it as shown in Figure 7.1. The low fan speed has a high temperature threshold only.

Figure 7.1 Fan Speeds and Temperature Thresholds



The low and high temperature thresholds enable the ProCurve 9408sl to determine at which speed the fans should operate. In general, the fans operate as follows:

- If the temperature of all modules falls between the low and high thresholds for a fan speed, the fan continues to operate at that fan speed.
- If the temperature of a management module or the switch fabric module or two interface modules exceeds the high threshold specified for a fan speed, the fan increases its speed to the next higher speed. If the temperature of any of these module(s) exceeds the high threshold for the high speed for 3 minutes (the actual number of polls is determined by the setting of the **temp-poll-period** command), the system shuts down the module(s) to prevent damage. (For information about **temp-poll-period** command, see “Changing the Temperature Polling Interval” on page 7-9.)
- If the temperature of a management module, the switch fabric module, and all interface modules falls below the low threshold for a fan speed, the fan decreases its speed to the next lower speed. If the temperature of all modules falls below the high threshold for the low speed, the fan operates at the low speed.

If the temperature of a management module or the switch fabric module or two interface modules exceeds the high temperature threshold for any of the fan speeds, the system sends a warning message to the system log and an SNMP trap. For information about viewing the warning messages, see “Displaying Temperature Warnings” on page 7-12.

Table 7.3 outlines the default low and high temperature thresholds for each module and fan speed.

Table 7.3: Default Low and High Temperature Thresholds For Modules and Fan Speeds

Fan Speed	Low Temperature Threshold	High Temperature Threshold
Management modules		
High	77° C	85° C
Medium-high	67° C	80° C
Medium	57° C	70° C
Low	–	60° C
Interface modules		
High	72° C	85° C
Medium-high	67° C	80° C
Medium	62° C	75° C
Low	–	70° C
Switch fabric module		
High	72° C	85° C
Medium-high	67° C	80° C
Medium	62° C	75° C
Low	–	70° C

For information about checking the current settings of the low and high temperature thresholds for modules and fan speeds, see “Displaying Temperature Thresholds for Modules and Fan Speeds” on page 7-8.

If desired, you can change the default low and high temperature thresholds for a particular module and fan speed. For example, to change the low and high thresholds of the medium fan speed for the management modules to 56° C and 72° C, respectively, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# fan-threshold mp med 56 72
```

Syntax: fan-threshold <module> [low <high-threshold>] [med <low-threshold> <high-threshold>] [med-hi <low-threshold> <high-threshold>] [hi <low-threshold> <high-threshold>]

For the <module> parameter, you can specify the following:

- lp – Changes low and high temperature thresholds for the Interface modules.
- mp – Changes low and high temperature thresholds for the management modules.
- switch fabric – Changes low and high temperature thresholds for the switch fabric module.

For the <low-threshold> and <high-threshold> parameters, you can specify any temperature in Centigrade. However, when changing low and high temperature thresholds for a module’s fan speeds, remember that the low temperature threshold of a higher fan speed must be lower than the high temperature threshold of the lower fan speed. HP establishes this guideline to ensure the fan speed stability.

For example, if you are changing the temperature thresholds for a management module's high and medium-high fans speeds, the ProCurve 9408sl will accept the following values because the low temperature threshold for the high speed (79° C) is lower than the high temperature threshold (82° C) for the medium-high speed.

Fan Speed	Low Temperature Threshold	High Temperature Threshold
High	79° C	87° C
Medium-high	69° C	82° C

However, the ProCurve 9408sl will not accept the following values because the low temperature threshold for the high speed (83° C) is higher than the high temperature threshold (82° C) for the medium-high speed.

Fan Speed	Low Temperature Threshold	High Temperature Threshold
High	83° C	87° C
Medium-high	69° C	82° C

Displaying Temperature Thresholds for Modules and Fan Speeds

To check the current settings of the low and high temperature thresholds for modules and fan speeds, you can enter the following command at any level of the CLI:

```
ProCurveRS# show fan-threshold
=== Thermal Sensor Control Block (THERMAL_SENSOR_TEST_RULE_MP) ===
Fan Speed Low: -1 - 60
Fan Speed Med: 57 - 70
Fan Speed Med-Hi: 67 - 80
Fan Speed Hi: 77 - 85
state = 0 (FAN_STATE_LOW)
shut_off_count = 0 0 0 0 0 0 0 0
=== Thermal Sensor Control Block (THERMAL_SENSOR_TEST_RULE_SNM) ===
Fan Speed Low: -1 - 70
Fan Speed Med: 62 - 75
Fan Speed Med-Hi: 67 - 80
Fan Speed Hi: 72 - 85
state = 0 (FAN_STATE_LOW)
shut_off_count = 0 0 0 0 0 0 0 0
=== Thermal Sensor Control Block (THERMAL_SENSOR_TEST_RULE_LP) ===
Fan Speed Low: -1 - 70
Fan Speed Med: 62 - 75
Fan Speed Med-Hi: 67 - 80
Fan Speed Hi: 72 - 85
state = 0 (FAN_STATE_LOW)
shut_off_count = 0 0 0 0 0 0 0 0
=== Thermal Sensor Control Block (THERMAL_SENSOR_TEST_RULE_STANDBY_MP) ===
Fan Speed Low: -1 - 60
Fan Speed Med: 57 - 70
Fan Speed Med-Hi: 67 - 80
Fan Speed Hi: 77 - 85
state = 0 (FAN_STATE_LOW)
shut_off_count = 0 0 0 0 0 0 0 0
```

Syntax: show fan-threshold

The display shows the following information:

Table 7.4: Temperature Threshold Information for Modules and Fan Speeds

This Field...	Displays...
Thermal Sensor Control Block (THERMAL_SENSOR_TEST_RULE_ <module>)	The temperature threshold information for the various modules. The <module> parameter indicates the following: <ul style="list-style-type: none"> • MP – The active management module. • STANDBY_MP – The standby management module. • SNM – The switch fabric module. • LP – An interface module.
Fan Speed Low/Med/Med-Hi/Hi	The current setting of the low and high temperature thresholds for the low, medium, medium-high, and high fan speeds. NOTE: As indicated in Table 7.3 on page 7-7, the low fan speed for each module does not have a default low temperature threshold value, nor can you configure this value. The “-1” value that appears in the Fan Speed Low field for each module is an HP internal value only.
State = 0 (FAN_STATE_LOW)	For HP internal use only.
shut_off_count = 0 0 0 0 0 0 0	For HP internal use only.

Changing the Temperature Polling Interval

By default, the ProCurve 9408sl reads the temperature sensor on each module every 60 seconds. To change the interval at which the system reads the temperature sensors on each module, enter a command such as the following at the global CONFIG level of the CLI:

```
ProCurveRS(config)# temp-poll-period 120
```

Syntax: temp-poll-period <seconds>

For the <seconds> parameter, you can specify a value from 30 – 120. You can also specify 0, which disables the system from polling the temperature sensor on each module.

Managing the Cooling System

You can perform the following management tasks for the ProCurve 9408sl cooling system:

- Manually initialize one or both fan control modules.
- Manually set the speed of one or both fans.

Initializing the Fan Control Modules

The ProCurve 9408sl chassis includes two fan control modules. The management module controls the two four-speed fans through the fan control modules. If you power on the chassis or replace both of the fan control modules, the ProCurve 9408sl initializes the modules automatically. However, if for some reason the modules do not initialize automatically, you can initialize them manually.

For example, to initialize both fan control modules manually, enter a command such as the following at the global CONFIG level of the CLI:

```
ProCurveRS(config)# fan 2 init
```

Syntax: fan <fan> init

For the **fan** parameter, you can specify the following:

- 0 – The system initializes the fan control module associated with fan 0.
- 1 – The system initializes the fan control module associated with fan 1.
- 2 – The system initializes the fan control module associated with both fan 0 and fan 1.

NOTE: “Fan 0” refers to the fan marked “Fan A” on the ProCurve 9408sl chassis rear, and “Fan 1” refers to the fan marked “Fan B.”

Manually Setting the Fan Speed

Typically, the management module, in conjunction with default settings of low and high temperature thresholds, determines the speed of the two four-speed fans. (For information about changing the low and high temperature thresholds, see “Changing Temperature Thresholds For Modules and Fan Speeds” on page 7-6.) If desired, you can manually set the speed of one or both fans. The **fan** command in the global CONFIG level of the CLI and the **set-fan-speed** command in the Privileged EXEC level of the CLI allow you to manually set the speed of the fans.

For example, to set the speed of fan 0 to medium-high, enter one of the following commands:

```
ProCurveRS(config)# fan 0 set-speed 2
```

or

```
ProCurveRS(config)# set-fan-speed 0 2
```

Syntax: fan <fan> set-speed <fan-speed>

Syntax: set-fan-speed <fan> <fan-speed>

For the <fan> parameter, you can specify the following:

- 0 – The system sets the speed of fan 0.
- 1 – The system sets the speed of fan 1.
- 2 – The system sets the speed of both fan 0 and fan 1.

NOTE: “Fan 0” refers to the fan marked “Fan A” on the ProCurve 9408sl chassis rear, and “Fan 1” refers to the fan marked “Fan B.”

For the <fan-speed> parameter, you can specify the following:

- 0 – The system sets the fan speed to low.
- 1 – The system sets the fan speed to medium.
- 2 – The system sets the fan speed to medium-high.
- 3 – The system sets the fan speed to high.

Monitoring the Cooling System

You can monitor the following aspects of the ProCurve 9408sl cooling system:

- The temperature of the fan control modules.
- The status and speed of the fans.
- The temperature warnings sent to the system log and that generate an SNMP trap.

Displaying the Fan Control Module Temperature

By default, the ProCurve 9408sl polls the temperature sensor on each module every 60 seconds to get the temperature. (For information about changing the interval at which the system polls the temperature sensor on each module, see “Changing the Temperature Polling Interval” on page 7-9.)

The CLI provides two commands that allow you to display the temperature of the fan control modules. To display the temperature for the fan control modules (and all other modules), enter the following command at any level of the CLI:

```
ProCurveRS# show chassis
...
Fan0: 31.40C
Fan1: 33.6C
...
Temperature Monitoring Poll Period is 60 seconds
...
```

NOTE: “Fan 0” refers to the fan marked “Fan A” on the ProCurve 9408sl chassis rear, and “Fan 1” refers to the fan marked “Fan B.”

The output displays the temperature of the fan control modules associated with Fan0 and Fan1 in the ProCurve 9408sl chassis. The output also indicates that the temperature readings were provided within the last 60 seconds. For information about all output generated by the **show chassis** command, see “Displaying Chassis Status and Temperature Readings” on page 7-1.

Syntax: show chassis

For example, to display the temperature of both fan control modules, enter the following command at any level of the CLI:

```
ProCurveRS# fan 2 read-temp
Fan0: Temperature = 31.40C
Fan1: Temperature = 33.6C
```

Syntax: fan <fan> read-temp

For the <fan> parameter, you can specify the following:

- 0 – The system reads the temperature of the fan control module associated with fan 0.
- 1 – The system reads the temperature of the fan control module associated with fan 1.
- 2 – The system reads the temperature of the fan control module associated with both fan 0 and fan 1.

Displaying Fan Status and Speed

The CLI provides two commands that allow you to display the status and speed of the two four-speed fans in the ProCurve 9408sl chassis. To display this information, you can enter the following command at any level of the CLI:

```
ProCurveRS# show chassis
...
Fan0: Status = OK, Speed = LOW, ISP
Fan1: Status = OK, Speed = LOW, ISP
...
```

Syntax: show chassis

For information about all output generated by the **show chassis** command, see “Displaying Chassis Status and Temperature Readings” on page 7-1.

Or, you can enter the following command at any level of the CLI:

```
ProCurveRS# fan 2 read-speed
Fan0: Status = OK, Speed = LOW, ISP
Fan1: Status = OK, Speed = LOW, ISP
```

Syntax: fan <fan> read-speed

For the <fan> parameter, you can specify the following:

- 0 – The system reads the status and speed of fan 0.
- 1 – The system reads the status and speed of fan 1.
- 2 – The system reads the status and speed of both fan 0 and fan 1.

NOTE: “Fan 0” refers to the fan marked “Fan A” on the ProCurve 9408sl chassis rear, and “Fan 1” refers to the fan marked “Fan B.”

The displays show the following information:

Table 7.5: Fan Status and Speed Fields

This Field...	Displays...
Status	The status can be one of the following: <ul style="list-style-type: none"> • OK – The fan is functioning properly and is keeping the temperature of each module within an acceptable temperature range. • Failed – The fan is not functioning properly or the fan control module cannot control the fan.
Speed	The speed can be one of the following: <ul style="list-style-type: none"> • LOW – The fan is functioning at 50 percent of capacity. • MEDIUM – The fan is functioning at 75 percent of capacity. • MEDIUM-HIGH – The fan is functioning at 90 percent of capacity. • HIGH – The fan is functioning at 100 percent of capacity.
ISP	The fan is a version suited for use in an ISP setting.

Displaying Temperature Warnings

If the temperature of a module exceeds the high temperature threshold for any of the fan speeds, the system sends a warning message to the system log and an SNMP trap. (For more information about the low and high temperature thresholds, see “Changing Temperature Thresholds For Modules and Fan Speeds” on page 7-6.) This section describes how to view the system log. If you have configured the ProCurve 9408sl to use a Syslog server or SNMP trap receiver, see the documentation for the server or receiver.

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

```
ProCurveRS# show log
```

Syntax: show log

Managing the Interface Modules

This section contains the following information:

- Configuring interface module boot parameters.
- Changing the priority of chassis slots for interface modules.
- Disabling and reenabling power to the interface modules.

Configuring Interface Module Boot Parameters

The 10 Gigabit Ethernet interface module has its own system software and boots after the management module boots. By default, the following boot-related events occur:

- The ProCurve 9408sl synchronizes or prompts you to synchronize the interface modules' software images between the management module and the interface modules.
- The interface modules boot from a source specified by the management module (the default source is a primary software image in the interface modules' flash memory).

If desired, you can change the following:

- Disable the synchronization of software images between the management and all interface modules. You can also initiate an immediate synchronization.
- Change the boot source of one or all interface modules.

Synchronizing the Interface Module's Software Images Between Management and Interface Modules

An interface module can have two software images: primary and secondary. These images contain the layer 1 – 3 software that the interface modules run. These images reside in the interface module's flash memory. Either the primary or secondary image is run by the interface module from this location.

If you copy the primary and/or secondary software image to all interface modules using the **copy** command with the **all** keyword, the management module makes a copy of the file and stores it in its code flash under the names `lp-primary-0` or `lp-secondary-0`. The images are stored in this location only and are not run by the management module or the interface modules. If you copy the primary and/or secondary software image to a specified chassis slot using the **copy** command with the `<chassis-slot-number>` parameter, the management module does not make a copy of the file.

If the management module has a copy of the primary and/or secondary software image in its code flash, by default, the ProCurve 9408sl synchronizes or prompts you to synchronize the interface modules' software images between the management module and the interface modules during bootup. When the ProCurve 9408sl synchronizes the software images, the management module copies the software images from its code flash to the interface modules' code flash (the interface modules' default boot source).

The system allows you to manage synchronization of the software images between management and interface modules in the following situations:

- You are prompted to synchronize the software images during bootup.
- You want to initiate an immediate synchronization; for example, you want an immediate update of the software images on one or all interface modules.
- You want to disable synchronization; for example, you have upgraded the software image of one interface module but want to continue running the older image on all other interface modules.

The following section discuss how to manage the software image synchronization in these situations.

Synchronizing the Interface Modules' Software Images During Bootup

By default, the ProCurve 9408sl checks the software images in the interface module's flash memory during boot to ensure they are the same as the software images in the management module's flash memory. If an interface module does not have a software image, the system automatically downloads the image from the management module's flash memory to the interface module's flash memory.

If an interface module has different software images, the system prompts you to do the following:

- If you want to update the primary and secondary software images in the interface module's flash memory with the images in the management module's flash memory, enter the **lp cont-boot sync <slot-number>** command at the Privileged EXEC prompt.
- If you want to retain the software images in the interface module's flash memory, enter the **lp cont-boot no-sync <slot-number>** command at the Privileged EXEC prompt.

Specifying an Immediate Synchronization

You can immediately synchronize the software images between the management module and one or all interface modules. For example, to immediately synchronize the software images between the management module and all interface modules, enter the following command at the Privileged EXEC level:

```
ProCurveRS# lp sync all
```

Syntax: lp sync all | <slot-number>

The **all** keyword indicates that the immediate synchronization applies to all interface modules in the ProCurve 9408sl chassis.

The <slot-number> parameter specifies the ProCurve 9408sl chassis slot number that contains the interface module to which the immediate synchronization applies. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

Disabling or Reenabling an Automatic Check and Synchronization

By default, the ProCurve 9408sl system checks the software images in the interface module's flash memory during bootup to ensure it is the same as the software images in the management module's flash memory. For information about what the system does if the interface module does not currently have a software image or if the image is different from that of the management module, see "Synchronizing the Interface Modules' Software Images During Bootup" on page 7-13.

To disable the automatic check and synchronization during bootup, enter the following command at the global CONFIG level:

```
ProCurveRS(config)# lp disable-lp-sync-check
```

Syntax: lp disable-lp-sync-check

Provided that you save this configuration by entering the **write memory** command, the system will disable the automatic check and synchronization of the software images starting with the next software reload or system reset and each reload or reset after that.

To reenabling the automatic check and synchronization of the software images during bootup, enter the following command at the global CONFIG level:

```
ProCurveRS(config)# no lp disable-lp-sync-check
```

Syntax: no lp disable-lp-sync-check

Changing the Boot Source

By default, the interface modules boot from the primary software image located in the interface modules' flash memory. If desired, you can change the boot source of one or all interface modules to one of the following sources:

- Management module
 - PCMCIA flash card in slot 1 or 2
 - Primary or secondary image in the management module's flash memory
- Interface module
 - Secondary image in interface module's flash memory
- TFTP server

You can also specify an interactive boot, which allows you to enter a separate command after the interface module comes up. The command specifies the source from which one or all interface modules should boot.

When changing the boot source for one or all interface modules, you can specify one of the following:

- An immediate boot for one interface module from a specified source.
- An automatic boot for one or all interface modules from a specified source starting with the next software reload or system reset and each reload or reset after that.

The CLI command for specifying an immediate boot for one interface module is the same as that for specifying an automatic boot for one or all modules. The only difference is the CLI level from which you specify the command. You must specify the command for an immediate boot in the Privileged EXEC level and the command for an automatic boot in the global CONFIG level.

The following sections explain how to specify an immediate boot and an automatic boot.

Specifying an Immediate Boot

You can specify an immediate boot for one interface module from a specified source by entering the **lp boot system** command in the Privileged EXEC level. The entered command will override the default or configured boot source one time only.

Specifying an Immediate Boot from the Management Module's PCMCIA Slot

For example, to specify an immediate boot for the interface module installed in slot 1 from the management module's PCMCIA slot 1, enter the following command at the Privileged EXEC level of the CLI:

```
ProCurveRS# lp boot system slot1 mpr01000.bin 1
```

Syntax: lp boot system slot1 | slot2 <filename> <slot-number>

The **slot1** and **slot2** keywords indicate the management module's PCMCIA slot from which to boot the interface module.

The <filename> parameter specifies the name of the image from which to boot the interface module.

The <slot-number> parameter specifies the ProCurve 9408sl chassis slot number that contains the interface module that will undergo an immediate boot. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

Specifying an Immediate Boot from the Management Module's Flash Memory

For example, to specify an immediate boot from the primary software image in the management module's flash memory for the interface module installed in slot 1, enter the following command at the Privileged EXEC level of the CLI:

```
ProCurveRS# lp boot system mp primary 1
```

Syntax: lp boot system mp primary | secondary <slot-number>

The **primary** and **secondary** keywords specify the primary or secondary software image in the management module's flash memory.

The <slot-number> parameter specifies the ProCurve 9408sl chassis slot number that contains the interface module that will undergo an immediate boot. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

Specifying an Immediate Boot from the Interface Module's Flash Memory

For example, to specify an immediate boot from the primary software image in the interface module's flash memory for the interface module installed in slot 1, enter the following command at the Privileged EXEC level of the CLI:

```
ProCurveRS# lp boot system flash primary 1
```

Syntax: lp boot system flash primary | secondary <slot-number>

The **primary** and **secondary** keywords specify the primary or secondary software image in the interface module's flash memory.

The <slot-number> parameter specifies the ProCurve 9408sl chassis slot number that contains the interface module that will undergo an immediate boot. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

Specifying an Immediate Boot from a TFTP Server

For example, to specify an immediate boot for the interface module installed in slot 1 from a TFTP server, enter the following command at the Privileged EXEC level of the CLI:

```
ProCurveRS# lp boot system tftp 123.123.123.123 mpr01000.bin 1
```

Syntax: lp boot system tftp <ip-address> <filename> <slot-number>

The <ip-address> parameter specifies the IP address of the TFTP server from which the interface module will be booted.

The <filename> parameter specifies the name of the image from which to boot the interface module.

The <slot-number> parameter specifies the ProCurve 9408sl chassis slot number that contains the interface module that will undergo an immediate boot. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

Specifying an Immediate Interactive Boot

To specify an immediate interactive boot for the interface module installed in slot 1, enter the following command at the Privileged EXEC level of the CLI:

```
ProCurveRS# lp boot system interactive 1
```

Syntax: lp boot system interactive <slot-number>

The <slot-number> parameter specifies the ProCurve 9408sl chassis slot number that contains the interface module that will undergo an immediate boot. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

After you enter this command, the system enters the interface module's monitor mode. For example, to boot from the primary software image in the interface module's flash memory, enter the following command at the monitor prompt:

```
LP MONITOR> boot system flash primary
```

Configuring an Automatic Boot

You can configure an automatic boot for one or all interface modules from a specified source by entering the **lp boot system** command in the global CONFIG level. Provided that you save this configuration by entering the **write memory** command, the system will implement the automatic boot starting with the next software reload or system reset and each reload or reset after that.

Configuring an Automatic Boot from the Management Module's PCMCIA Slot

For example, to configure an automatic boot for all interface modules from the management module's PCMCIA slot 1, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# lp boot system slot1 mpr01000.bin all
```

Syntax: lp boot system slot1 | slot2 <filename> all | <slot-number>

The **slot1** and **slot2** keywords indicate the management module's PCMCIA slot from which to boot the interface module.

The <filename> parameter specifies the name of the image from which to boot the interface module.

The **all** | <slot-number> parameter specifies that the automatic boot applies to all interface modules in the ProCurve 9408sl chassis or to an interface module in the specified chassis slot number only. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

Configuring an Automatic Boot from the Management Module's Flash Memory

For example, to configure an automatic boot from the primary software image in the management module's flash memory for all interface modules, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# lp boot system mp primary all
```

Syntax: lp boot system mp primary | secondary all | <slot-number>

The **primary** and **secondary** keywords specify the primary or secondary software image in the management module's flash memory.

The **all** | <slot-number> parameter specifies that the automatic boot applies to all interface modules in the ProCurve 9408sl chassis or to an interface module in the specified chassis slot number only. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

Configuring an Automatic Boot from the Interface Module's Flash Memory

For example, to configure an automatic boot from the primary software image in the interface module's flash memory for all interface modules, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# lp boot system flash primary all
```

Syntax: lp boot system flash primary | secondary all | <slot-number>

The **primary** and **secondary** keywords specify the primary or secondary software image in the interface module's flash memory.

The **all** | <slot-number> parameter specifies that the automatic boot applies to all interface modules in the ProCurve 9408sl chassis or to an interface module in the specified chassis slot number only. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

Configuring an Automatic Boot from a TFTP Server

For example, to configure an automatic boot for all interface modules from a TFTP server, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# lp boot system tftp 123.123.123.123 mpr01000.bin all
```

Syntax: lp boot system tftp <ip-address> <filename> all | <slot-number>

The <ip-address> parameter specifies the IP address of the TFTP server from which the interface module will be booted.

The <filename> parameter specifies the name of the image from which to boot the interface module.

The **all** | <slot-number> parameter specifies that the automatic boot applies to all interface modules in the ProCurve 9408sl chassis or to an interface module in the specified chassis slot number only. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

Configuring an Automatic Interactive Boot

For example, to configure an automatic interactive boot for all interface modules, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# lp boot system interactive all
```

Syntax: lp boot system interactive all | <slot-number>

The **all** | <slot-number> parameter specifies that the automatic boot applies to all interface modules in the ProCurve 9408sl chassis or to an interface module in the specified chassis slot number only. You can specify 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

After you enter this command, the system enters the interface module's monitor mode. For example, to boot from the primary software image in the interface module's flash memory, enter the following command at the monitor prompt:

```
LP MONITOR> boot system flash primary
```

Changing Priority of Chassis Slots for Interface Modules

You can prioritize the ProCurve 9408sl chassis slots in which the interface modules are installed. The priority range is 1 – 8, where 1 is the lowest priority and 8 is the highest priority. You can set one, some, or all chassis slots to the same priority or each chassis slot to a different priority. If you assign the same priority to all slots, the leftmost slot has the highest priority, while the rightmost slot has the lowest priority.

By default, the priority of all chassis slots is 1, which is the lowest priority. If the supply of power to the chassis falls below a minimum threshold, the chassis slots will likely lose power because of their low priority. In this scenario, chassis slot 8 will lose power first, then slot 7, slot 6, and so on until slot 1 loses power.

For example, to set the priority of chassis slot 1 to the highest priority (8), enter the following command:

```
ProCurveRS(config)# lp-slot-priority 1 8
```

Syntax: lp-slot-priority <slot-number> <priority>

The <slot-number> parameter indicates that the chassis slot number for which you are changing the priority. You can specify slots 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

The <priority> parameter indicates that the priority of the chassis slot if the chassis loses power. You can specify a value of 1 – 8, where 1 is the lowest priority and 8 is the highest priority. You can set one, some, or all chassis slots to the same priority or each chassis slot to a different priority.

Disabling and Reenabling Power to the Interface Modules

If needed, you can disable power to a specified interface module and then reenabling it. For example, to disable power to the interface module in chassis slot 1, enter the following command at the Privileged EXEC level of the CLI:

```
ProCurveRS# power-off lp 1
```

Syntax: power-off lp <slot-number>

The <slot-number> parameter indicates the chassis slot number for which you are disabling the power. You can specify slots 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

For example, to reenabling power to the interface module in chassis slot 1, enter the following command at the Privileged EXEC level of the CLI:

```
ProCurveRS# power-on lp 1
```

Syntax: power-on lp <slot-number>

The <slot-number> parameter indicates the chassis slot number for which you are reenabling the power. You can specify slots 1 – 8: 1 indicates the leftmost chassis slot, while 8 indicates the rightmost chassis slot.

Managing the Switch Fabric Module

This section contains the following information:

- Disabling and reenabling power to the switch fabric module.
- Monitoring the switch fabric module.

Disabling and Reenabling Power to the Switch Fabric Module

If desired, you can disable power to the switch fabric module and then reenabling it. To disable the power, enter the following command at the Privileged EXEC level of the CLI:

```
ProCurveRS# power-off snm 0
```

Syntax: power-off lp 0

To reenable power to the switch fabric module, enter the following command at the Privileged EXEC level of the CLI:

```
ProCurveRS# power-on snm 0
```

Syntax: power-on snm 0

Monitoring the Switch Fabric Module

The ProCurve 9408sl system allows you to monitor the following aspects of the switch fabric module:

- Status of link between each super crosspoint (SXPNT) ASIC and installed modules.
- Temperature of each SXPNT.

Displaying the Link Status

The switch fabric module contains five SXPNT ASICs, each of which can communicate with the installed interface modules. You can monitor the link between each SXPNT and installed interface modules by entering the following command at the global CONFIG level of the CLI:

```
ProCurveRS# snm 0 check-link-status
-----Cards Present in Slots 0-7-----
Card in Slot 0
Card in Slot 4

-----SXPNT Link Status-----
Serdes#(0-7)  0    1    2    3    4    5    6    7
Slot#(0-7)   7    1    6    5    2    0    4    3
Device#
SXPNT #0     UP    UP    UP    UP    UP    UP    UP    UP
SXPNT #1     UP    UP    UP    UP    UP    UP    UP    UP
SXPNT #2     UP    UP    UP    UP    UP    UP    UP    UP
SXPNT #3     UP    UP    UP    UP    UP    UP    UP    UP
SXPNT #4     UP    UP    UP    UP    UP    UP    UP    UP
```

Syntax: snm 0 check-link-status

The module parameter indicates the switch fabric module for which you are checking the link status. Currently, you can specify 0 only, which indicates the switch fabric module in chassis slot SF.

In this display, the link between each SXPNT and interface module is UP, which means that the link between the SXPNT ASIC and the interface module is functioning properly. The state of the link could also be DOWN, which indicates that the link between the SXPNT ASIC and the interface module is down and not functioning properly.

Displaying Temperature

The switch fabric module contains five SXPNT ASICs. Each ASIC contains a temperature sensor that, by default, the ProCurve 9408sl system polls every 60 seconds to get the temperature. (For information about changing the interval at which the system polls the temperature sensor on each module, see “Changing the Temperature Polling Interval” on page 7-9.)

To display the temperature of the SXPNTs, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS# snm 0 read-temperature
SNM0/SXPNT0 temp is 41.87C
SNM0/SXPNT1 temp is 48.71C
SNM0/SXPNT2 temp is 43.3C
SNM0/SXPNT3 temp is 45.0C
SNM0/SXPNT4 temp is 39.40C
```

Syntax: snm 0 read-temperature

You can also display the temperature of the SXPNTs using the **show chassis** command. For more information about this command and the display it generates, see “Displaying Chassis Status and Temperature Readings” on page 7-1.

Enabling and Disabling Management Module CPU Usage Calculations

You can enable the ProCurve 9408sl to perform usage averaging calculations on tasks handled by the management module’s CPU. If you enable the calculation performance, you can display usage averages for all tasks performed by the management module’s CPU for an interval of up to 1 hour. You can display these statistics using the **show cpu** command. Typically, these statistics are used for debugging purposes.

By default, the performance of the calculations is disabled. When disabled, you can use the **show cpu** command without optional parameters to display usage averages for all tasks performed by the management module’s CPU in the last 1 second.

To enable the performance of the usage averaging calculations, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# cpu-usage on
```

Syntax: cpu-usage on

To disable the performance of the usage averaging calculations, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# cpu-usage off
```

Syntax: cpu-usage off

NOTE: When finished gathering statistics for debugging purposes, HP recommends disabling the usage averaging calculations, which are CPU-intensive and can affect the performance of the management module.

Displaying Management Module CPU Usage

You can display the tasks handled by the management module and the amount of the management module's CPU used by each task. To do so, enter the following command at any level of the CLI:

```
ProCurveRS# show tasks
Task Name   Pri   State   PC       Stack     Size   CPU Usage(%)  task id  task vid
-----
idle        0     run     00001904  040560a0  256    66            0        0
monitor    20    susp    0000c658  0404bd80  8192   0             0        0
int        16    susp    0000c658  04051f90  16384  0             0        0
timer     15    susp    0000c658  04055f90  16384  0             0        0
dbg       30    susp    0000c658  0404df10  8192   0             0        0
flash     17    susp    0000c658  0409cf98  8192   0             0        0
wd        31    susp    0000c658  0409af80  8192   0             0        0
boot      17    susp    0000c658  041dbe30  65536  0             0        0
main       3    susp    0000c658  2060cf38  65536  0             0        1
itc        6    susp    0000c658  20610af0  16384  0             0        1
tmr        5    susp    0000c658  206a7638  16384  0             0        1
ip_rx     5    susp    0000c658  206aef48  16384  0             0        1
scp        5    susp    0000c658  206b3638  16384  0             0        1
console   5    susp    0000c658  206bf628  32768  0             0        1
vlan       5    susp    0000c658  206c6628  16384  0             0        1
mac_mgr   5    susp    0000c658  206d5638  16384  0             0        1
mrp_mgr   5    susp    0000c658  206db638  16384  0             0        1
vsrp      5    susp    0000c658  206e1630  16384  0             0        1
snms      5    susp    0000c658  206e5638  16384  0             0        1
rtm        5    susp    0000c658  20756638  16384  0             0        1
ip_tx     5     run     0000c658  20763638  16384  0             0        1
mcast     5    susp    0000c658  20767638  16384  0             0        1
l4        5    susp    0000c658  2076b630  16384  0             0        1
stp        5    susp    0000c658  20970628  16384  0             0        1
gvrp_mgr  5    susp    0000c658  20979638  16384  0             0        1
snmp      5    susp    0000c658  20982638  32768  0             0        1
web        5    susp    0000c658  2098d638  32768  0             0        1
lACP      5    susp    0000c658  20991638  16384  0             0        1
hw_access  5    susp    0000c658  20996638  16384  0             0        1
telnet_0  5     run     0000c658  209db638  32768  0             0        1
```

Syntax: show tasks

Examine the CPU Usage (%) field to determine the percentage of the management module's CPU used by each task.

NOTE: The total CPU usage may not add up to 100 percent. The total may not include resources used by the management processes.

A problem could exist if the CPU usage is distributed unevenly to one task, other than the idle task, for a prolonged period. If this situation occurs, contact HP's technical support for assistance.

Enabling and Disabling Packet Logging for Management and Interface Modules

You can enable the logging of packets transmitted, received, or both transmitted and received by a management or interface module in the ProCurve 9408sl chassis. If you enable packet logging, you can display the packet log

using the **show packet-logging** command. (For information about displaying the contents of the packet log, see “Displaying a Packet Log” on page 7-23.) Typically, the packet log is used for debugging purposes.

By default, packet logging is disabled for all management and interface modules. For example, to enable packet logging of packets transmitted and received by the interface module installed in chassis slot 1, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# packet-logging 1 start 0
```

Syntax: packet-logging <slot-number> start <packet-direction>

For the <slot-number> parameter, you can specify 1 – 10. 1 – 8 indicate interface modules: 1 indicates the interface module installed in the leftmost chassis slot, while 8 indicates the module installed in the rightmost chassis slot. 9 – 10 indicate management modules: 9 indicates the module installed in the top slot, while 10 indicates the module installed in the bottom slot.

Specify the **start** keyword to start packet logging and write the log to the system’s memory. You must also specify the direction of packets that you want logged by entering one of the following for the <packet-direction> parameter:

- 0 – Logs packets transmitted and received by the specified module.
- 1 – Logs packets received by the specified module.
- 2 – Logs packets transmitted by the specified module.

After enabling packet logging using the **start** keyword, you can optionally specify the **flash** keyword to copy the packet log in the system’s memory to the management module’s flash memory. The name of the packet log in the management module’s flash memory is pktlog.txt. For example, to copy a log of packets transmitted and received by the interface module installed in chassis slot 1 to the management module’s flash memory, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# packet-logging 1 flash 0
```

Syntax: packet-logging <slot-number> flash <packet-direction>

For the <slot-number> parameter, you can specify 1 – 10. 1 – 8 indicate interface modules: 1 indicates the interface module installed in the leftmost chassis slot, while 8 indicates the module installed in the rightmost chassis slot. 9 – 10 indicate management modules: 9 indicates the module installed in the top slot, while 10 indicates the module installed in the bottom slot.

You must specify the direction of packets that you want logged:

- 0 – Logs packets transmitted and received by the specified module.
- 1 – Logs packets received by the specified module.
- 2 – Logs packets transmitted by the specified module.

For example, to disable packet logging for the interface module installed in chassis slot 1, enter the following command at the global CONFIG level of the CLI:

```
ProCurveRS(config)# packet-logging 1 stop
```

Syntax: packet-logging <slot-number> stop

For the <slot-number> parameter, you can specify 1 – 10. 1 – 8 indicate interface modules: 1 indicates the interface module installed in the leftmost chassis slot, while 8 indicates the module installed in the rightmost chassis slot. 9 – 10 indicate management modules: 9 indicates the module installed in the top slot, while 10 indicates the module installed in the bottom slot.

Specify the **stop** keyword to stop packet logging.

NOTE: When finished gathering packet logging information for debugging purposes, HP recommends disabling the generation of a packet log, which is CPU-intensive and can affect the performance of the management module.

Displaying a Packet Log

You can use the following methods to display the contents of a packet log:

- You can use the **show packet-logging** command, which is discussed in this section.
- If you decided to write the log (pktlog.txt) to the management module flash memory, in addition to using the **show packet-logging** command, you can access and view the log using flash memory file management commands. For more information, see “Flash Memory and PCMCIA Flash Card File Management Commands” on page 6-10.

For example, to display a packet log for the interface module in chassis slot 1 that has been written to the system's memory, enter the following command at any CLI level:

```
ProCurveRS# show packet-logging 1 memory
..Total 31 packet records...
-----
--> TX
(Assist Header 0x11f: ver-0, priority-0, pkt_type-ARP packet)
(HP Header: fid-0x82, priority-3, sac-0, monitor-0, ipc_flag-0x1f, reserved-0,
pri_tagged-0, multicast_vid-0, protocol_type-0x2, us-0, brd-0, dav-0, sav-0, dpv-
0, sv-0, error-0, txa-0, sas-0, tagged-0, offset-16, vlan_prio-0, cfi- 0, vlan_id-
1)

011f0082 cf820010 000107c0 0060800b 020000e0 52ealf00 000cdb80 32820806
00010800 06040002 000cdb80 32820101 010100e0 52ealf00 01010102 5204ab10
-----
--> RX
(Assist Header 0x0: ver-0, priority-0, pkt_type-IP packet)
(LP2MP_ALT_FDRY_HDR 10 bytes: data-8 bytes, source_port-130, pkt_data_offset-30,
virtual_src_int-130)

0000bfff cf808810 00012087 80824de9 4001000c db803282 00e052ea 1f000800
4500002c 28e40000 40014de9 01010102 01010101 08003916 abcd0001 61626364
-----
==> TX
(Assist Header 0xf: ver-0, priority-0, pkt_type-IP packet)
(HP Header: fid-0x82, priority-3, sac-0, monitor-0, ipc_flag-0x1f, reserved-0,
pri_tagged-0, multicast_vid-0, protocol_type-0x1, us-0, brd-0, dav-0, sav-0, dpv-
0, sv-0, error-0, txa-0, sas-1, tagged-0, offset-16, vlan_prio-0, cfi- 0, vlan_id-
1)

000f0082 cf810090 000107c0 004c800b 020000e0 52ealf00 000cdb80 32820800
4500002c 86a20000 4001f02a 01010101 01010102 00004116 abcd0001 61626364
-----
...
```

Syntax: show packet-logging <slot-number> memory | flash pktlog.txt

For the <slot-number> parameter, you can specify 1 – 10. 1 – 8 indicate interface modules: 1 indicates the interface module installed in the leftmost chassis slot, while 8 indicates the module installed in the rightmost chassis slot. 9 – 10 indicate management modules: 9 indicates the module installed in the top slot, while 10 indicates the module installed in the bottom slot.

The **memory** | **flash pktlog.txt** keyword specifies that the packet log is written to the system's memory or to a file (pktlog.txt) written to the system's flash memory.

The display shows the following information:

Table 7.6: Packet Log Fields

This Field...	Displays...
...Total <number> packet records...	The total number of packets recorded in the packet log for a specified module.
TX or RX	TX indicates the packet was transmitted by the module, while RX indicates the packet was received by the module.
Assist Header <number>	An HP header associated with the packet.
pkt_type	The packet type, which can be one of the following: <ul style="list-style-type: none"> • IP – An IP packet. • ARP – An ARP packet. • STP – An STP packet. • TCP – A TCP packet. • UDP – A UDP packet. • IPC packet – An interprocessor communication packet. • ITC packet – An intertask communication packet.
<hexadecimal numbers>	The contents of the packet.

Removing MAC Address Entries

You can remove learned MAC address entries from the ProCurve 9408sl's MAC address table. You can remove the following:

- All MAC address entries.
- All MAC address entries for a specified interface module.
- All MAC address entries for a specified Ethernet port.
- All MAC address entries for a specified VLAN.
- A specified MAC address entry in all VLANs.

For example, to remove entries for the MAC address 000d.cb80.00d0 in all VLANs, enter the following command at the Privileged EXEC level of the CLI:

```
ProCurveRS# clear mac-address 000d.cb80.00d0
```

Syntax: clear mac-address <mac-address> | ethernet <slot>/<port> | module <slot> | vlan <number>

If you enter the **clear mac-address** command without any parameters, the software removes all MAC entries.

Use the <mac-address> parameter to remove a specified MAC address from all VLANs. Specify the MAC address in the following format: HHHH.HHHH.HHHH.

Use the **ethernet** <slot>/<port> parameter to remove all MAC addresses for a specified Ethernet port. For the <slot> parameter, enter the number of the chassis slot in which the Ethernet interface module is installed. For the <port> parameter, enter the Ethernet port for which to remove all MAC addresses.

Use the **module** <slot> parameter to remove all MAC addresses for an interface module in a specified chassis slot.

Use the **vlan** <number> parameter to remove all MAC addresses for a specified VLAN.