



Release Notes:

Version M.08.54 Software

for the HP ProCurve Series 3400cl Switches

Release M.08.54 supports these switches:

- HP ProCurve Switch 3400cl-24G (J4905A)
- HP ProCurve Switch 3400cl-48G (J4906A)

These release notes include information on the following:

- Downloading switch software and Documentation from the Web ([page 1](#))
- Clarification of operating details for certain software features ([page 8](#))
- A listing of software fixes included in releases M.08.51 through M.08.xx ([page 17](#))

Related Publications

For the latest version of any of the publications listed below, visit the HP ProCurve Web site at:

<http://www.hp.com/go/hpprocurve>

Click on **Technical support**, then **Product manuals**.

Publication	Part Number and Edition	Availability
<i>Management and Configuration Guide*</i>	5990-6050, September 2004 or later	Included on version 3.8 or greater of the Documentation CD-ROM shipped with the switch, and also available on the HP ProCurve website. (Refer to the URL information, above.)
<i>Advanced Traffic Management Guide*</i>	5990-6051, September 2004 or later	
<i>Access Security Guide*</i>	5990-6052, September 2004 or later	
<i>Manual Supplement: Link-Layer Data Protocol (LLDP) for the HP ProCurve Series 3400cl Switches</i>	5990-8859, October 2004 or later	Available on the HP ProCurve Web site. (Refer to the URL information, above.)
*Covers the HP ProCurve Series 5300xl and Series 3400cl switches.		

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Applicable Product

HP ProCurve Switch 3400cl-24G	(J4905A)
HP ProCurve Switch 3400cl-48G	(J4906A)

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[http:// www.openssh.com](http://www.openssh.com).

SSL on HP ProCurve Switches is based on the OpenSSL software toolkit. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. For more information on OpenSSL, visit

<http://www.openssl.org>.

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com)

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Software Management

Software Updates

Check the HP ProCurve Web site frequently for free software updates for the various HP ProCurve switches you may have in your network.

Downloading Switch Documentation and Software from the Web

You can download software updates and the corresponding product documentation from HP's ProCurve Web site as described below.

To Download a Software Version:

1. Go to HP's ProCurve web site at:
<http://www.hp.com/go/hpprocurve>.
2. Click on **Software updates** (in the sidebar).
3. Under **Latest software**, click on **Switches**.

To Download Product Documentation: You will need the Adobe® Acrobat® Reader to view, print, and/or copy the product documentation.

1. Go to HP's ProCurve Web site at <http://www.hp.com/go/hpprocurve>.
2. Click on **Technical support**, then **Product manuals**.
3. Click on the name of the product for which you want documentation.
4. On the resulting web page, double-click on a document you want.
5. When the document file opens, click on the disk icon  in the Acrobat® toolbar and save a copy of the file.

Downloading Software to the Switch

HP periodically provides switch software updates through the HP ProCurve Web site (<http://www.hp.com/go/hpprocurve>). After you acquire the new software file, you can use one of the following methods for downloading it to the switch:

- For a TFTP transfer from a server, do either of the following:
 - Click on **Download OS** in the Main Menu of the switch's menu interface and use the (default) **TFTP** option.
 - Use the **copy tftp** command in the switch's CLI (see below).
- For an Xmodem transfer from a PC or Unix workstation, do either of the following:
 - Click on **Download OS** in the Main Menu of the switch's menu interface and select the **Xmodem** option.
 - Use the **copy xmodem** command in the switch's CLI (page 4).
- Use the download utility in HP ProCurve Manager Plus.
- A switch-to-switch file transfer

Note

Downloading new software does not change the current switch configuration. The switch configuration is contained in a separate file that can also be transferred, for example, for archive purposes or to be used in another switch of the same model.

This section describes how to use the CLI to download software to the switch. You can also use the menu interface for software downloads. For more information, refer to the *Management and Configuration Guide* for your switch.

TFTP Download from a Server

Syntax: `copy tftp flash <ip-address> <remote-os-file> [ < primary | secondary > ]`

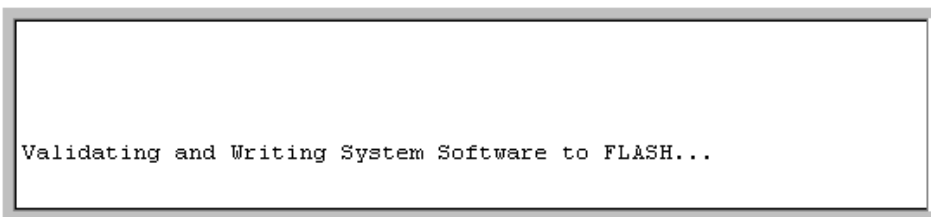
Note that if you do not specify the flash destination, the TFTP download defaults to the primary flash.

For example, to download a software file named M_08_54.swi from a TFTP server with the IP address of 10.28.227.103:

1. Execute the copy command as shown below:

```
HPswitch# copy tftp flash 10.28.227.103 M_08_54.swi
Device will be rebooted, do you want to continue [y/n]? y
00224K _
```

2. When the switch finishes downloading the software file from the server, it displays this progress message:

A screenshot of a terminal window with a white background and a thin black border. The text 'Validating and Writing System Software to FLASH...' is displayed in a monospaced font, centered horizontally within the window.

```
Validating and Writing System Software to FLASH...
```

Figure 1. Message Indicating the Switch Is Writing the Downloaded Software to Flash Memory

3. After the switch writes the downloaded software to flash memory, you will see this screen:

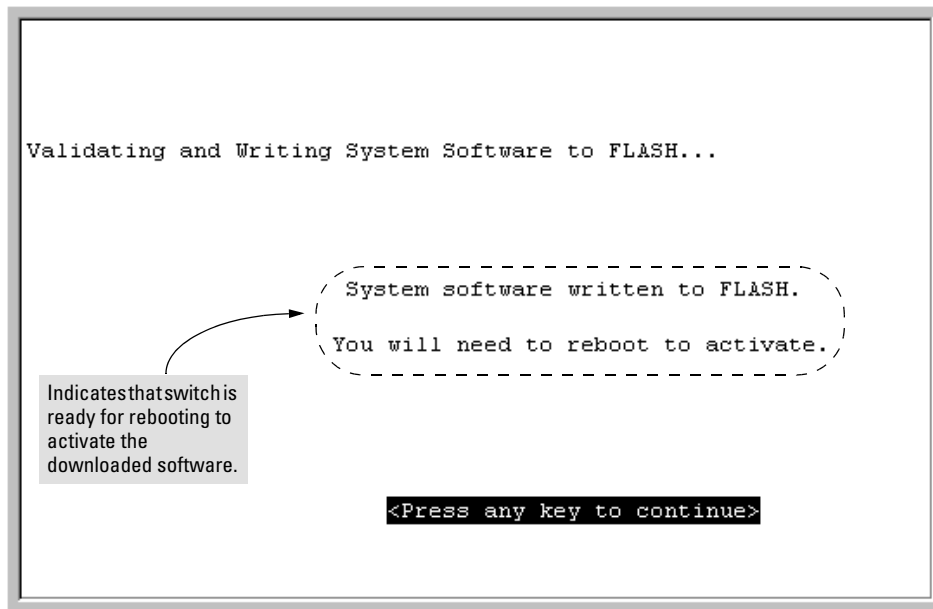


Figure 2. Message Indicating the Switch Is Ready To Activate the Downloaded Software

4. Reboot the switch.

After the switch reboots, it displays the CLI or Main Menu, depending on the **Logon Default** setting last configured in the menu's Switch Setup screen.

Xmodem Download From a PC or Unix Workstation

This procedure assumes that:

- The switch is connected via the Console RS-232 port on a PC operating as a terminal. (Refer to the Installation Guide you received with the switch for information on connecting a PC as a terminal and running the switch console interface.)
- The switch software is stored on a disk drive in the PC.
- The terminal emulator you are using includes the Xmodem binary transfer feature. (For example, in the Microsoft Windows NT® terminal emulator, you would use the **Send File** option in the **Transfer** drop-down menu.)

Syntax: `copy xmodem flash < unix | pc >`

For example, to download a software file from a PC:

1. To reduce the download time, you may want to increase the baud rate in your terminal emulator and in the switch to a value such as 57600 bits per second. (The baud rate must be the same in both devices.) For example, to change the baud rate in the switch to 57600, execute this command:

```
HPswitch(config)# console baud-rate 57600
```

(If you use this option, be sure to set your terminal emulator to the same baud rate.)

2. Execute the following command in the CLI:

```
HPswitch(config)# copy xmodem flash pc
Device will be rebooted, do you want to continue [y/n]? y
Press 'Enter' and start XMODEM on your host...
```

3. Execute the terminal emulator commands to begin the Xmodem transfer.

The download can take several minutes, depending on the baud rate used in the transfer.

When the download finishes, the switch automatically reboots itself and begins running the new software.

4. To confirm that the software downloaded correctly:

```
HPswitch> show system
```

Check the **Firmware revision** line.

```
HP ProCurve Switch 3400cl-48G# show system

Status and Counters - General System Information

System Name       : HP ProCurve Switch 3400cl-48G
System Contact    :
System Location   :

MAC Age Time (sec) : 300
Time Zone         : -480
Daylight Time Rule : None

Firmware revision : M.08.54
ROM Version       : I.08.03
Up Time           : 7 days
CPU Util (%)      :

IP Mgmt - Pkts Rx : 163,587
          Pkts Tx : 3499

Base MAC Addr     : 000a57-c86700
Serial Number     : SG31600588

Memory - Total    : 19,070,216
        Free      : 9,473,784

Packet - Total    : 1152
Buffers Free      : 642
               Low : 635
               Missed : 0
```

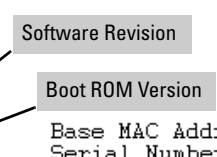


Figure 3. Verifying the Software Revision and the Boot ROM Version

5. If you increased the baud rate on the switch ([step 1](#)), use the same command to return it to its previous setting. (HP recommends a baud rate of 9600 bits per second for most applications.) Remember to return your terminal emulator to the same baud rate as the switch.

Saving Configurations While Using the CLI

The switch operates with two configuration files:

- **Running-Config File:** Exists in volatile memory and controls switch operation. Rebooting the switch erases the current running-config file and replaces it with an exact copy of the current startup-config file. To save a configuration change, you must save the running configuration to the startup-config file.
- **Startup-Config File:** Exists in flash (non-volatile) memory and preserves the most recently-saved configuration as the “permanent” configuration. When the switch reboots for any reason, an exact copy of the current startup-config file becomes the new running-config file in volatile memory.

When you use the CLI to make a configuration change, the switch places the change in the running-config file. If you want to preserve the change across reboots, you must save the change to the startup-config file. Otherwise, the next time the switch reboots, the change will be lost. There are two ways to save configuration changes while using the CLI:

- Execute **write memory** from the Manager, Global, or Context configuration level.
- When exiting from the CLI to the Main Menu, press **[Y]** (for YES) when you see the “save configuration” prompt:

Do you want to save current configuration [y/n] ?

HP ProCurve Switch Software Key

Software Letter	HP ProCurve Switch
C	1600M, 2400M, 2424M, 4000M, and 8000M
E	Switch 5300xl Series (5304xl, 5308xl, 5348xl, and 5372xl)
F	Switch 2500 Series (2512 and 2524), Switch 2312, and Switch 2324
G	Switch 4100GL Series (4104GL, 4108GL, and 4148GL)
H	Switch 2600 Series, Switch 2600-PWR Series • H.07.50 and Earlier • H.08.55 and Greater
H	Switch 6108: H.07.xx and Earlier
I	Switch 2800 Series (2824 and 2848)
M	Switch 3400cl Series (3400-24G and 3400-48G)
N/A	Switch 9300 Series (9304M, 9308M, and 9315M), Switch 6208M-SX and Switch 6308M-SX (Uses software version number only; no alphabetic prefix. For example 07.6.04.)

Clarifications and Updates

Non-Genuine Mini-GBIC Detection and Protection Initiative

Non-genuine ProCurve Transceivers and Mini-GBICs have been offered for sale in the marketplace. To protect customer networks from these unsupported products, ProCurve switch software includes the capability to detect and disable non-genuine transceivers and mini-GBICs discovered in Series 3400cl Switch ports. When a non-genuine device is discovered, the switch disables the port and generates an error message in the Event Log.

Publication Updates

Table 1 lists updates to the manual set covering the first software release for the Series 3400cl switches (M.08.53).

Table 1. Publication Updates for Software Release M.08.53

Advanced Traffic Management Guide
p/n 5990-6051, September 2004 Edition

Update

Chapter 4: "Multimedia Traffic Control with IP Multicast (IGMP)

The switch provides four IGMP commands not currently described in this chapter.
igmp delayed-flush < time-period >
show igmp delayed-flush
[no] ip igmp fastleave < port-list >
[no] ip igmp forcedfastleave < port-list >
For more on these commands, refer to ["IGMP Command Update"](#) on page 10.

Chapter 8: "Quality of Service (QoS): Managing Bandwidth More Effectively"

Ignore references to per-port mask usage by the QoS feature in the 3400cl switches. Mask usage is not an issue when configuring QoS on switches covered by this guide.
In the displayed output for the **show qos resources** (or **show access-list resources**) command, the **Masks Available** column has been renamed to **ACL Masks Available**. The values in this column apply only to mask usage by the ACL feature on the 3400cl switches. For example:

HPswitch(config)# show qos resources
QoS/ACL Resource Usage

Port	Rules Available	ACL Masks Available
1	120	8
2	120	8
3	120	8
⋮	⋮	⋮

Advanced Traffic Management Guide p/n 5990-6051, September 2004 Edition	Update
Chapter 6: "Spanning-Tree Operation"	The switch provides the following 802.1D (STP) and 802.1s (RSTP) spanning-tree commands that are not included in the current version of the guide: show spanning-tree detail show spanning-tree < port-list > [detail config] For more on these commands, refer to "Displaying Spanning-Tree Configuration Detail" on page 12.
Chapter 10: "Access Control Lists (ACLs) for the Series 3400cl Switches"	The switch includes a fixed maximum of eight ACL masks per-port. The count of available masks in the ACL Masks Available column of the show access-list resources command is based on this maximum. Text references and examples of show access-list resources output in this chapter incorrectly include an additional seven masks per-port (for QoS and rate-limiting use). (The masks reserved for QoS and rate-limiting use cannot be oversubscribed, even with the maximum possible QoS and rate-limiting configuration, and thus are not included in the per-port mask count displayed by show access-list resources.) Configuring IGMP on one or more VLANs consumes one ACL per-port mask on all ports. If IGMP is configured and an attempt is made to apply an ACL requiring all eight masks on any port, the attempt fails and the CLI displays the following message: Unable to apply access control list. (The same message appears if IGMP is not configured, but there is an attempt to apply an ACL that either requires more than eight per-port masks or requires more rules than are currently available on at least one target port.) Similarly, if there is an attempt to configure IGMP (on any VLAN in the switch) and an ACL using all eight per-port masks is already assigned to any port on the switch, the IGMP attempt fails and the CLI displays the following message: Cannot enable IGMP. ACL(s) already using the needed resources. The first paragraph on page 10-22 incorrectly states that "...enabling IGMP on a VLAN consumes one ACL mask per-port for all ports belonging to that VLAN". Configuring IGMP on one or more VLANs in the switch consumes one ACL mask per-port for <i>all ports on the switch</i>. Note also that only one per-port mask is used for IGMP, regardless of how many instances of IGMP are configured on the switch.
Page 13-4: "Note for Rate-Limiting on Series 3400cl Switches"	Ignore the reference to "one per-port QoS mask" when configuring rate-limiting. Per-Port mask usage is not an issue when configuring rate-limiting on switches covered by this guide.

IGMP Command Update

The following information updates and clarifies information in Chapter 4, “Multimedia Traffic Control with IP Multicast (IGMP)” in the *Advanced Traffic Management Guide*—part number 5990-6051, September 2004 edition. Please refer to this chapter for a detailed explanation of IGMP operation.

The 3400cl switches support the following standards and RFCs:

- RFC2236 (IGMP V.2, with backwards support for IGMP V.1)
- Interoperability with RFC3376 (IGMPv3)
- IETF draft for IGMP and MLD snooping switches (for IGMP V1, V2 V3)

The 3400cl switches:

- Provide full IGMPv2 support as well as full support for IGMPv1 Joins.
- Forward packets for the joined group from all sources, including IGMPv3 Joins.
- Do not support IGMPv3 “Exclude Source” or “Include Source” options in the Join Reports.
- Can operate in IGMPv2 Querier mode on VLANs with an IP address.

IGMP is supported in the HP MIB, rather than the standard IGMP MIBs, as the latter reduce Group Membership detail in switched environments.

Using Delayed Group Flush. This feature continues to filter IGMP groups for a specified additional period of time after IGMP leaves have been sent. The delay in flushing the group filter prevents unregistered traffic from being forwarded by the server during the delay period. In practice, this is rarely necessary on switches such as the Series 3400cl switches, which support data-driven IGMP. (Data-Driven IGMP, which is enabled by default, prunes off any unregistered streams detected on the switch.)

Syntax: igmp delayed-flush < time period >

Where leaves have been sent for IGMP groups, enables the switch to continue to flush the groups for a specified period of time (0 - 255 seconds). This command is applied globally to all IGMP-configured VLANs on the switch. A setting of 0 (zero) disables the feature. (Default: Disabled.)

Syntax: show igmp delayed-flush

Displays the current setting for the switch.

Setting Fast-Leave and Forced Fast-Leave from the CLI. In earlier switch models, including the 5300xl switches, fast-leave and forced fast-leave options for a port were configured with a lengthy **setmib** command. The following commands now allow a port to be configured for fast-leave or forced fast-leave operation with a conventional CLI command instead of the **setmib** command. Note that these command must be executed in a VLAN context.

Syntax: [no] ip igmp fastleave < *port-list* >

*Enables IGMP fast-leaves on the specified ports in the selected VLAN. In the Config context, use the VLAN specifier, for example, **vlan < vid > ip igmp fastleave < port-list >**. The **no** form of the command disables IGMP fast-leave. (Default: Enabled)*

[no] ip igmp forcedfastleave < *port-list* >

Forces IGMP Fast-Leaves on the specified ports in the selected VLAN, even if they are cascaded. (Default: Disabled)

To view a non-default IGMP forced fast-leave configuration on a VLAN, use the **show running-config** command. (The **show running-config** output does not include forced fast-leave if it is set to the default of 0.)

Note

In a future version of the 3400cl switch software, the **show running-config** command output will include any nondefault fast-leave settings configured. However, this information is not included in the output for the M.08.53 software release.

IGMP Operating Notes.

- On the Series 3400cl switches, the delayed group flush feature offers little additional benefit over the IGMP data-driven feature (which is enabled by default).
- Forced fast-leave can be used when there are multiple devices attached to a port.

Routing Table Capacity

The Series 3400cl hardware routing tables support up to 8,000 locally connected destinations (which are destinations in VLANs configured on the switch). The hardware routing tables support up to 1,000 routes to non-connected subnets (which are subnets configured on other devices). Additional entries can be supported in software, but traffic routed by software travels at a significantly slower speed and can be accompanied by packet loss.

Displaying Spanning-Tree Configuration Detail

These commands are available in the Series 3400cl switches, but are not included in chapter 6, “Spanning-Tree Operation” (in the *Advanced Traffic Management Guide* for your switch).

Syntax: show spanning-tree detail

Displays the 802.1D (STP) or 802.1w (RSTP) status and counters for all ports on the switch, depending on which spanning-tree option is enabled.

show spanning-tree < port-list > [config | detail]

config: *Displays the 802.1D (STP) or 802.1w (RSTP) spanning-tree configuration for the specified ports, depending on which spanning-tree option is enabled.*

detail: *Displays the 802.1D (STP) or 802.1w (RSTP) status and counters for the specified ports, depending on which spanning-tree option is enabled.*

General Switch Traffic Security Guideline

Where the switch is running multiple security options, it implements network traffic security based on the OSI (Open Systems Interconnection model) precedence of the individual options, from the lowest to the highest. The following list shows the order in which the switch implements configured security features on traffic moving through a given port.

1. Disabled/Enabled physical port
2. MAC lockout (Applies to all ports on the switch.)
3. MAC lockdown
4. Port security
5. Authorized IP Managers
6. Application features at higher levels in the OSI model, such as SSH.

(The above list does not address the mutually exclusive relationship that exists among some security features.)

The Management VLAN IP Address

The optional Management VLAN, if used, must be configured with a manual IP address. It does not operate with DHCP/Bootp configured for the IP address.

Interoperating with 802.1s Multiple Spanning-Tree

The HP ProCurve implementation of Multiple Spanning-Tree (MSTP) complies with the IEEE 802.1s standard and interoperates with other devices running compliant versions of 802.1s. Note that the HP ProCurve Series 9300 routing switches do not offer 802.1s-compliant MSTP. Thus, to support a connection between a 9300 routing switch and a 3400cl switch running MSTP, configure the 9300 with either 802.1D (STP) or 802.1w (RSTP). For more information on this topic, refer to the chapter titled “Spanning-Tree Operation” in the *Advanced Traffic Management Guide* for your 3400cl switch. (To download switch documentation, refer to [“Software Updates” on page 1.](#))

Rate-Limiting

The configured rate limit on a port reflects the permitted forwarding rate from the port to the switch fabric, and is visible as the *average* rate of the outbound traffic originating from the rate-limited port. (The most accurate rate-limiting is achieved when using standard 64-byte packet sizes.) Also, rate-limiting reflects the available percentage of a port’s entire inbound bandwidth. The rate of inbound flow for traffic of a given priority and the rate of flow from a rate-limited port to a particular queue of an outbound port are not measures of the actual rate limit enforced on a port. Also, rate-limiting is byte-based and is applied to the available bandwidth on a port, and not to any specific applications running through the port. If the total bandwidth requested by all applications together is less than the available, configured maximum rate, then no rate-limit can be applied. This situation occurs with a number of popular throughput-testing software applications, as well as most regular network applications.

As a performance consideration, implementing rate-limiting in heavy traffic situations involving QoS, can affect overall performance. For more information on rate-limiting operation, refer to “Operating Notes for Rate-Limiting” in the chapter titled “Optimizing Traffic Flow with Port Controls, Port Trunking, and Filters” of the *Management and Configuration Guide* for your HP ProCurve Series 3400cl switch. (To download switch documentation, refer to [“Software Updates” on page 1.](#))

Heterogeneous Switch Meshing

When Series 3400cl switches are placed in backward-compatibility mode, they can operate in switch mesh domains that include HP ProCurve 1600M, 2400M, 2424M, 4000M, and 8000M switches. However, because these older switch models use a single-forwarding database, a heterogeneous domain must be free of duplicate MAC addresses on multiple switches and different VLANs. Refer to [figure 4](#) and [figure 5](#):

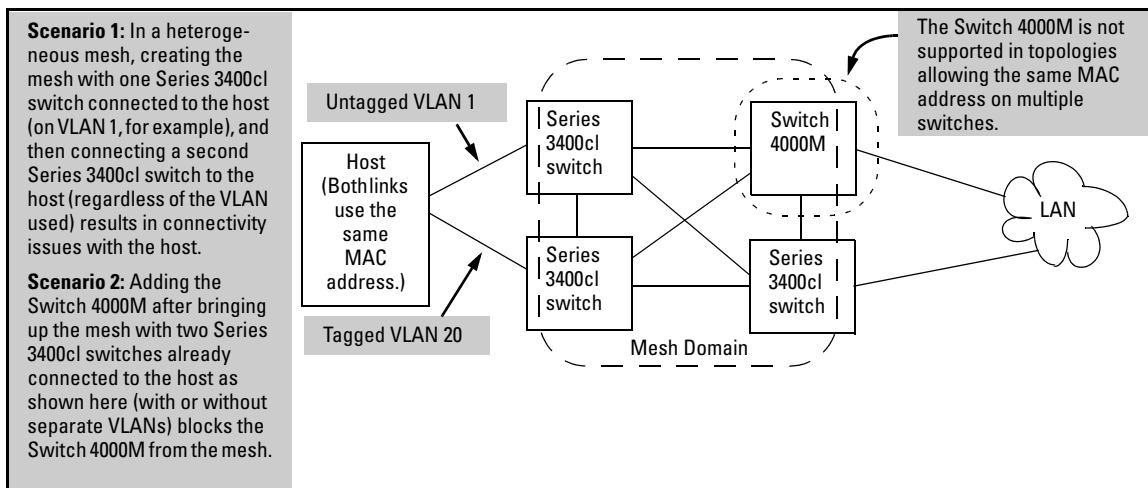


Figure 4. Example of an Unsupported Heterogeneous Topology Where Duplicate MAC Addresses Come Through Different Switches (Regardless of the VLANs Used)

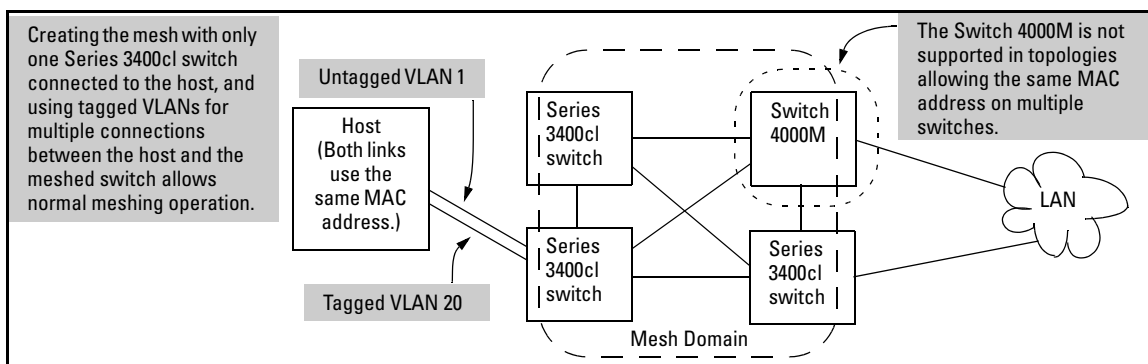


Figure 5. Example of a Supported Heterogeneous Topology Where Duplicate MAC Addresses Come Through Different VLANs on the Same Switch

Note that in [figure 4](#) and [figure 5](#), if all switches are Series 3400cl switches, then you can use either topology.

For more on this topic, refer to “Multiple VLAN Considerations” in the VLAN chapter of the *Management and Configuration Guide* for your Series 3400cl switches (part number 5990-6051, September 2004 or later edition). (The latest version of this manual is available on the HP ProCurve Web site. Refer to [“Software Updates”](#) on page 1.)

Switch Mesh Considerations When Upgrading the Software

Upgrading the Software in Meshed, Series 3400cl Switches

When performing a software update in a mesh domain, you must always update all Series 3400cl switches to the same software version.

- Supported switch mesh operation requires all Series 3400cl switches in the mesh to run the same software version.
- Although a mesh may appear to operate properly with some switches running a later release and other switches running an earlier release, this scenario creates an unsupported mesh environment.

Upgrading in Heterogeneous Meshes

If your mesh includes Series 3400cl switches and/or Series 5300xl switches *and* any HP ProCurve 1600M/2400M/2424M/4000M/8000M switches, then you must enable mesh interoperability between the 3400cl/5300xl switch families and the 1600M/2400M/2424M/4000M/8000M switches. To do so, execute the following command in the CLI of each Series 3400cl and Series 5300xl switch in the mesh:

```
HPswitch(config)# mesh backward-compat
```

Note:

Until you complete this step, the Series 3400cl and 5300xl switches *will not interoperate* in the mesh with the HP ProCurve 1600M/2400M/2424M/4000M/8000M switches. For more on heterogeneous meshes, refer to the Switch Meshing chapter in the *Advanced Traffic Management Guide* for your Series 3400cl and Series 5300xl switches (September 2004, or a later edition), available on the HP ProCurve Web site. (Refer to [“Software Updates” on page 1.](#))

OS/Web/Java Compatibility Table

The switch web agent supports the following combinations of OS browsers and Java Virtual Machines:

Operating System	Internet Explorer	Java
Windows NT 4.0 SP6a	5.00 5.01 5.01, SP1 6.0, SP1	Sun Java 2 Runtime Environment: – Ver 1.3.1.12 – Ver. 1.4.2.05
Windows 2000 Pro SP4	5.05, SP2 6.0, SP1	
Windows XP Pro SP1a	6.0, SP1	
Windows Server SE 2003	6.0, SP1	

Minimum Software Versions for Series 3400cl Switch Features

For Software Features. To view a tabular listing of major switch software features and the minimum software version each feature requires:

1. Visit the HP ProCurve web site at <http://www.hp.com/go/hpprocurve>.
2. Click on **software updates**.
3. Click on **Minimum Software Version Required by Feature**.

For Switch 3400cl Hardware Accessories.

HP ProCurve Device	Minimum Supported Software Version
J8434A ProCurve 10GbE CX4 Copper Module	M.08.54
J8435A ProCurve 10GbE Media Flex Module	M.08.54

Software Fixes in Release M.08.51 - M.08.xx

Release M.08.51 was the first software release for the HP ProCurve 3400cl Series.

Release M.08.54

Problems Resolved in Release M.08.54

- First release to fully support LR and CX4 transceivers installed in the optional cl Module (J8434A and J8435A).

Release M.08.53 (Never Released)

Problems Resolved in Release M.08.53

- Updated Boot ROM image to I.08.03 to address Manufacturing test condition.

Release M.08.52

Problems Resolved in Release M.08.52

- Updated Boot ROM image to I.08.02 to address Manufacturing test condition.



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