Release Notes:

Version F.02.11 Operating System

for the HP ProCurve Switches 2512 and 2524

These release notes include information on the following:

- Downloading switch software and Documentation from the Web
- Enhancements in Release F.02.11
  - Fast-Uplink Spanning Tree Protocol (STP) 6
  - Listing Switch Configuration and Operation Details for Help in Troubleshooting
- Enhancement information on earlier software releases
- Updates and corrections for the *Management and Configuration Guide*
- Software fix listings for all Series 2500 switch software releases

Caution: Archive Pre-F.02.11 Configuration Files

A configuration file saved while using release F.02.11 or later software is not backward-compatible with earlier software versions. For this reason, HP recommends that you archive the most recent configuration on switches using software releases earlier than F.02.11 before you update any switches to software release F.02.11 or later.

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Applicable Product

HP ProCurve Switch 2512 (J4812A)
HP ProCurve Switch 2524 (J4813A)

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Downloading Software and Switch Documentation

You can download software version F.02.11 and the corresponding product documentation from HP's Procurve website as described below.

To Download a Software Version:

1. Go to HP's Procurve website at **http://www.hp.com/go/hpprocurve.**
2. Click on **software** (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 website at **http://www.hp.com/go/hpprocurve.**
2. Click on **technical support**, then **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 operating system (OS) updates through the HP Procurve website (**http://www.hp.com/go/hpprocurve**). After you acquire the new OS file, you can use one of the following methods for downloading the operating system (OS) code 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 7).
- HP's SNMP Download Manager included in HP TopTools for Hubs & Switches
- A switch-to-switch file transfer

Note

Downloading a new OS 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 an OS to the switch. You can also use the menu interface for OS downloads. For more information, refer to the *Management and Configuration Guide* for the Series 2500 switches.

TFTP Download from a Server

Syntax: copy tftp flash <*ip-address*> <*remote-os-file*>

For example, to download an OS file named F_01_03.swi from a TFTP server with the IP address of 10.28.227.103:

1. Execute the copy command as shown below:

```
HP2512# copy tftp flash 10.28.227.103 F_01_03.swi
Device will be rebooted, do you want to continue [y/n]?  y
00224K _
```

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

   Validating and Writing System Software to FLASH . . .

3. 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 operating system (OS) 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 Windows NT terminal emulator, you would use the **Send File** option in the **Transfer** dropdown menu.)

Syntax: copy xmodem flash <unix | pc>

For example, to download an OS file named F_02_03.swi 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:

   ```
   HP2512(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:

   ```
   HP2512(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 OS version.

4. To confirm that the operating system downloaded correctly:

   ```
   HP2512> show system
   ```

   Check the **Firmware revision** line.

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.)

Enhancements in Release F.02.11

Enhancement	Summary	See Page
Adds the fast-uplink spanning tree (STP) mode to spanning-tree operation	In a standard 802.1D spanning tree environment with redundant links, if the active link fails, the typical convergence time for a backup link to become the active, forwarding link is 30 seconds. Fast-uplink STP reduces the convergence time to approximately ten seconds.	below
Adds the show tech command to the switch troubleshooting capabilities	This command outputs, in a single listing, switch operating and running configuration details from several internal switch sources.	19

Description of Fast-Uplink Spanning Tree Protocol (STP)

Fast-Uplink STP improves the recovery (convergence) time in wiring closet switches with redundant uplinks. Specifically, a Series 2500 switch having redundant links toward the root device can decrease the convergence time (or failover) to a new uplink (STP root) port to as little as ten seconds. To realize this performance, a Series 2500 switch must be:

- Used as a wiring closet switch (also termed an *edge switch* or a *leaf switch*).
- Configured for fast-uplink STP mode on two or more ports intended for redundancy in the direction of the root switch, so that at any time only one of the redundant ports is expected to be in the forwarding state.

Caution

In general, fast-uplink spanning tree on the Series 2500 switches is useful when running STP in a tiered topology that has well-defined edge switches. Also, ensure that an interior switch is used for the root switch and for any logical backup root switches. You can accomplish this by using the Spanning Tree Priority (sometimes termed bridge priority) settings that define the primary STP root switch and at least one failover root switch (in the event that the primary root switch fails). Inappropriate use of Fast-Uplink STP can cause intermittant loops in a network topology. For this reason, the Fast-Uplink STP feature should be used only by experienced network administrators who have a strong understanding of the IEEE 802.1D standard and STP interactions and operation. If you want to learn more about STP operation, you may find it helpful to refer to publications such as:

Perlman, Radia, *Interconnections, Second Edition*; *Bridges, Routers, Switches, and Internetworking Protocols*, Addison-Wesley Professional Computing Series, October 1999

Note

When properly implemented, fast-uplink STP offers a method for achieving faster failover times than standard STP, and is intended for this purpose until the true Rapid Convergence STP standard (802.1w) is finalized, approved, and available.

To use fast-uplink STP on a Series 2500 switch, configure fast-uplink (**Mode** = **Uplink**) only on the switch's upsteam ports; (that is, two or more ports forming a group of redundant links in the direction of the STP root switch). If the active link in this group goes down, fast-uplink STP selects a different upstream port as the root port and resumes moving traffic in as little as ten seconds. The device(s) on the other end of the links must be running STP. However, because fast uplink should be configured only on the Series 2500 switch uplink ports, the device(s) on the other end of the links can be either HP devices or another vendor's devices, regardless of whether they support fast uplink. For example:

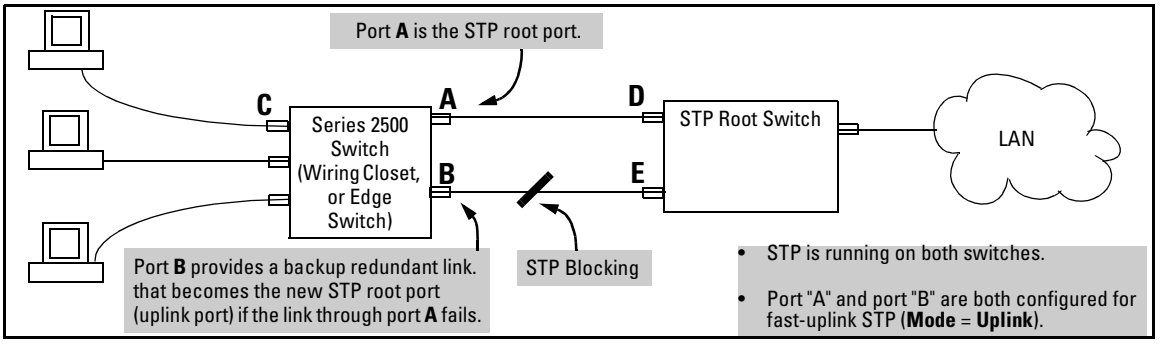

Figure 1. Example of How To Implement Fast-Uplink STP

Terminology

Term	Definition
downlink port (downstream port)	A switch port that is linked to a port on another switch (or to an end node) that is sequentially further away from the STP root device. For example, port "C" in figure 1, above, is a downlink port.
edge switch	For the purposes of fast-uplink STP, this is a switch that has no other switches connected to its downlink ports. An edge switch is sequentially further from the root device than other switches to which it is connected. Also termed *wiring closet switch* or *leaf switch*. For example, switch "4" in figure 2 (page 10) is an edge switch.
interior switch	In an STP environment, a switch that is sequentially closer to the STP root device than one or more other switches to which it is connected. For example, switches "1", "2", and "3" in figure 2 (page 10) are interior switches.
single-instance spanning tree	A single spanning-tree ensuring that there are no logical network loops associated with any of the connections to the switch, regardless of whether there are any VLANs configured on the switch. For more information, see "Spanning Tree Protocol (STP)" in chapter 9, "Configuring Advanced Features", in the Management and Configuration Guide for your Series 2500 switch.
uplink port (upstream port)	A switch port linked to a port on another switch that is sequentially closer to the STP root device. For example, ports "A" and "B" in figure 1 on page 9 are uplink ports.
wiring closet switch	Another term for an "edge" or "leaf" switch.

When single-instance spanning tree (STP) is running in a network and a forwarding port goes down, a blocked port typically requires a period of

(2 x (*forward delay*) + link down detection)

to transition to forwarding. In a normal spanning tree environment, this transition is usually 30 seconds (with the **Forward Delay** parameter set to its default of 15 seconds). However, by using the fast-uplink spanning tree feature, a port on a Switch 2512 or 2524 used as an *edge switch* can make this transition in as little as ten seconds. (In an STP environment, an *edge switch* is a switch that is connected only to switches that are closer to the STP root switch than the edge switch itself, as shown by switch "4" in figure 2, below.)

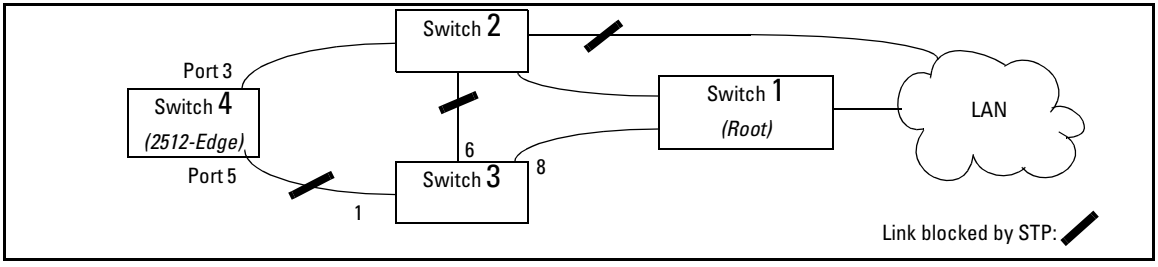

Figure 2. Example of an Edge Switch in a Topology Configured for STP Fast Uplink

In figure 2, STP is enabled and in its default configuration on all switches, unless otherwise indicated in table 1, below:

Table 1. STP Parameter Settings for Figure 2

STP Parameter	Switch "1"	Switch "2"	Switch "3"	Switch "4"
Switch Priority	0[1]	1[2]	32,768 (default)	32,768 (default)
(Fast) Uplink	No	No	No	Ports 3 & 5

[1]This setting ensures that Switch "1" will be the primary root switch for STP in figure 2.
[2]This setting ensures that Switch "2" will be the backup root switch for STP in figure 2.

With the above-indicated topology and configuration:

- **Scenario 1:** If the link between switches "4" and "2" goes down, then the link between switches "4" and "3" will begin forwarding in as little as ten seconds.
- **Scenario 2:** If Switch "1" fails, then:
  - Switch "2" becomes the root switch.
  - The link between Switch "3" and Switch "2" begins forwarding.
  - The link between Switch "2" and the LAN begins forwarding.

Operating Rules for Fast Uplink

- A switch with ports configured for fast uplink must be an edge switch and not either an interior switch or the STP root switch.

  Configure fast-uplink on only the edge switch ports used for providing redundant STP uplink connections in a network. (Configuring Fast-Uplink STP on ports in interior switches can create network performance problems.) That is, a port configured for STP uplink should not be connected to a switch that is sequentially further away from the STP root device. For example, switch "4" in figure 2 (page 10) is an edge switch.

- Configure fast uplink on a group (two or more) of redundant edge-switch uplink ports where only one port in the group is expected to be in the forwarding state at any given time.

- Edge switches cannot be directly linked together using fast-uplink ports. For example, the connection between switches 4 and 5 in figure 3 is not allowed for fast-uplink operation.

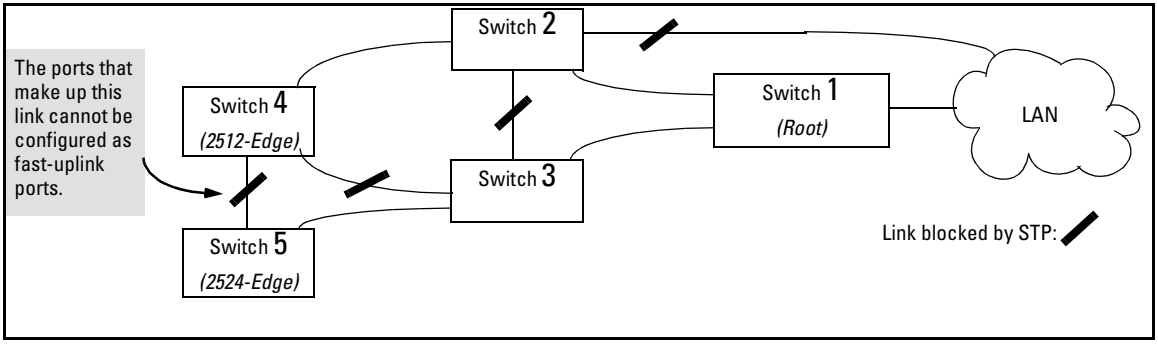

Figure 3. Example of a Disallowed Connection Between Edge Switches

- Apply fast-uplink only on the uplink ports of an edge switch. For example, on switch "4" (an edge switch) in figure 3 above, only the ports connecting switch "4" to switches "2" and "3" are upstream ports that would use fast uplink. Note also that fast uplink should *not* be configured on both ends of a point-to-point link, but only on the uplink port of an edge switch.
- Ensure that the switch you intend as a backup root device will in fact become the root if the primary root fails, and that no ports on the backup root device are configured for fast-uplink operation. For example, if the **STP Priority** is the same on all switches—default: 32768—then the switch with the lowest MAC address will become the root switch. If that switch fails, then the switch with the next-lowest MAC address will become the root switch. Thus, you can use **STP Priority** to control which switch STP selects as the root switch and which switch will become the root if the first switch fails.
- Fast-Uplink STP requires a minimum of two uplink ports.

Menu: Viewing and Configuring Fast-Uplink STP

You can use the menu to quickly display the entire STP configuration and to make any STP configuration changes.

To View and/or Configure Fast-Uplink STP. This procedure uses the Spanning Tree Operation screen to enable STP and to set the Mode for fast-uplink STP operation.

1. From the Main Menu select:

   2. Switch Configuration . . .
   4. Spanning Tree Operation

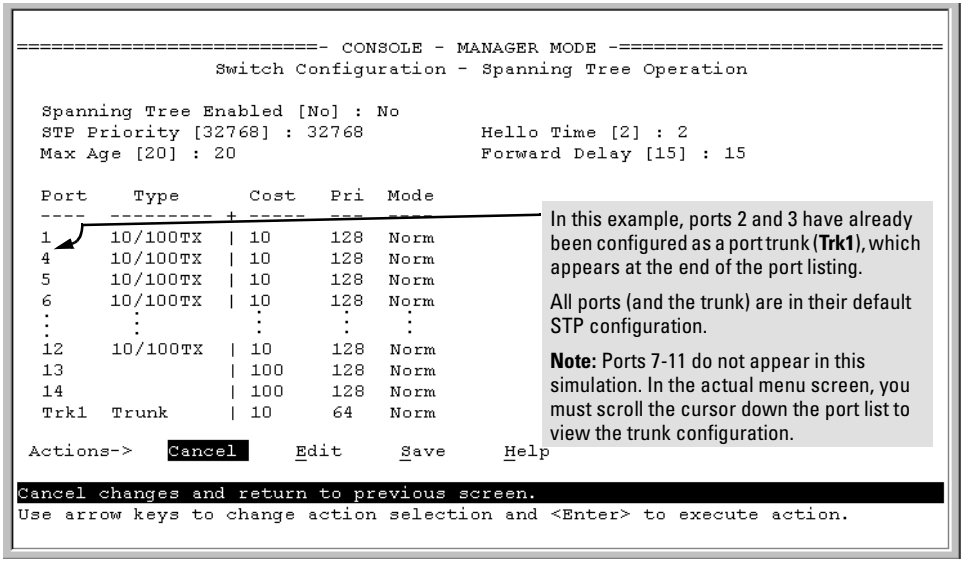

Figure 4. The Spanning Tree Operation Screen

2. On the ports and/or trunks you want to use for redundant fast uplink connections, change the mode to **Uplink**. In this example, port 1 and Trk1 (using ports 2 and 3) provide the redundant uplinks for STP:

   a. Press [E] (for **Edit**), then enable STP on the switch by using the Space bar to select **Yes** in the Spanning Tree Enabled field.

   a. Use [Tab] to move to the Mode field for port 1.

   b. Use the Space bar to select **Uplink** as the mode for port 1.

   c. Use [↓] to move to the Mode field for Trk1.

   d. Use the Space bar to select **Uplink** as the Mode for Trk1.

   e. Press [Enter] to return the cursor to the Actions line.

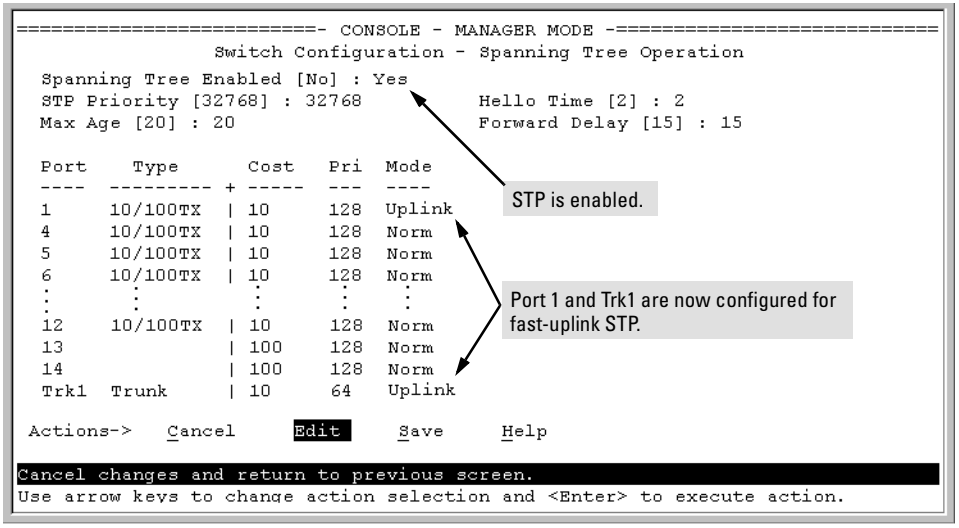

Figure 5. Example of STP Enabled with Two Redundant Links Configured for Fast-Uplink STP

3. Press [S] (for **Save**) to save the configuration changes to flash (non-volatile) memory.

To View Fast-Uplink STP Status. Continuing from figures 4 and 5 in the preceding procedure, this task uses the same screen that you would use to view STP status for other operating modes.

1. From the Main Menu, select:

   1. Status and Counters . . .

   7. Spanning Tree Information

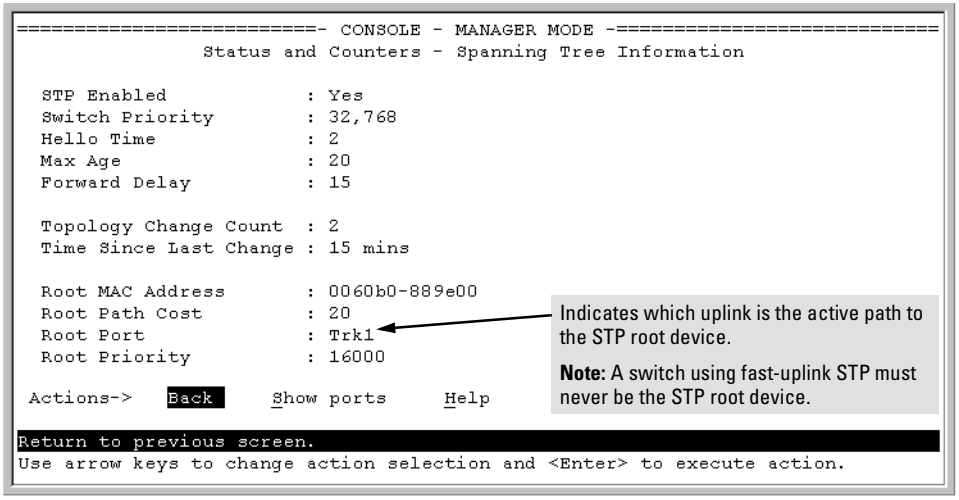

Figure 6. Example of STP Status with Trk1 (Trunk 1) as the Path to the STP Root Device

2. Press [S] (for **Show ports**) to display the status of individual ports.

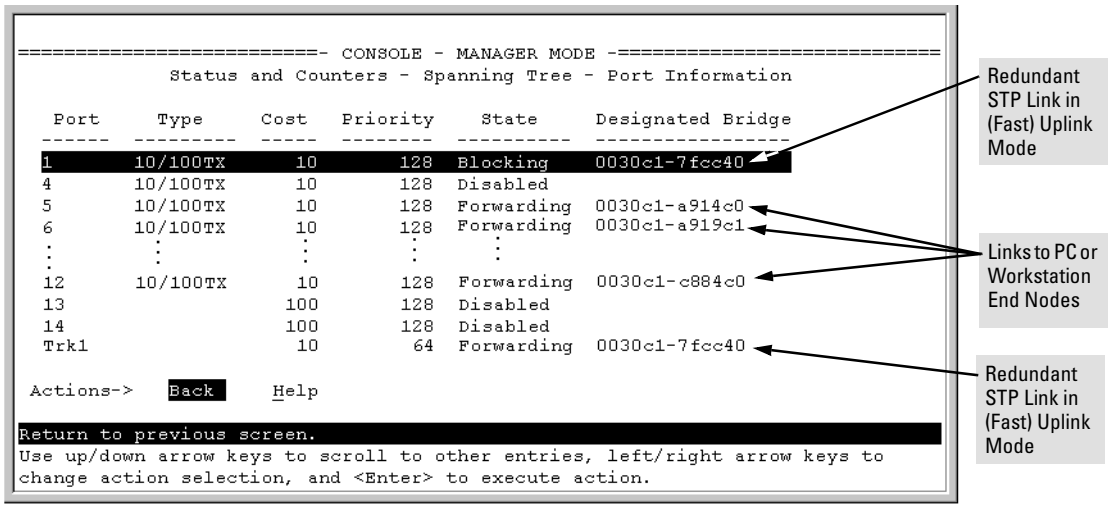

Figure 7. Example of STP Port Status with Two Redundant STP Links

In figure 7:

- Port 1 and Trk1 (trunk 1; formed from ports 2 and 3) are redundant fast-uplink STP links, with trunk 1 forwarding (the active link) and port 1 blocking (the backup link). (To view the configuration for port 1 and Trk1, see figure 5 on page 14.)
- If the link provided by trunk 1 fails (on both ports), then port 1 begins forwarding in fast-uplink STP mode.
- Ports 5, 6, and 12 are connected to end nodes and do not form redundant links.

CLI: Viewing and Configuring Fast-Uplink STP

Using the CLI to View Fast-Uplink STP. You can view fast-uplink STP using the same **show** commands that you would use for standard STP operation:

Syntax:	show spanning-tree	Lists STP status.
	show spanning-tree config	Lists STP configuration for the switch and for individual ports.

For example, figures 8 and 9 illustrate a possible topology, STP status listing, and STP configuration for a Series 2500 switch with:

- STP enabled and the switch operating as an Edge switch
- Port 1 and trunk 1 (Trk1) configured for fast-uplink STP operation
- Several other ports connected to PC or workstation end nodes

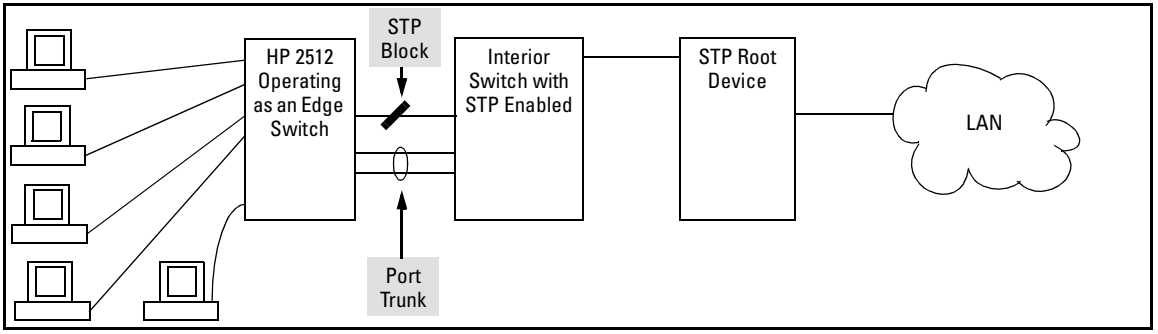

Figure 8. Example Topology for the Listing Shown in Figure 9

```
HP2512(config)# show spanning-tree_

Status and Counters - Spanning Tree Information

 STP Enabled             : Yes
 Switch Priority         : 32,768
 Hello Time              : 2
 Max Age                 : 20
 Forward Delay           : 15

 Topology Change Count   : 25
 Time Since Last Change  : 13 mins

 Root MAC Address        : 0001e7-a09900
 Root Path Cost          : 20
 Root Port               : Trk1
 Root Priority           : 16768

 Port   Type       Cost  Priority State      | Designated Bridge
 ------ ---------- ----- -------- ---------- + -----------------
 1      10/100TX   10    128      Blocking   | 0030c1-a9c800
 4      10/100TX   10    128      Disabled   |
 5      10/100TX   10    128      Forwarding | 0030c1-7fec40
 6      10/100TX   10    128      Forwarding | 0030c1-a9c800
-- MORE --
 7      10/100TX   10    128      Forwarding | 0030c1-a9c822
 8      10/100TX   10    128      Disabled   |
 9      10/100TX   10    128      Forwarding | 00a0c9-a234c3
 10     10/100TX   10    128      Forwarding | 0030c1-449bc0
 11     10/100TX   10    128      Disabled   |
 12     10/100TX   10    128      Disabled   |
 13                100   128      Disabled   |
 14                100   128      Disabled   |
 Trk1              10    64       Forwarding | 0030c1-a9c800
```

Indicates that Trk1 (Trunk 1) provides the currently active path to the STP root device.

Redundant STP link in the Blocking state.

Links to PC or Workstation End Nodes

Redundant STP link in the Forwarding state. (See the "Root Port field, above. This is the currently active path to the STP root device.)

Figure 9. Example of a Show Spanning-Tree Listing for the Topology Shown in Figure 8

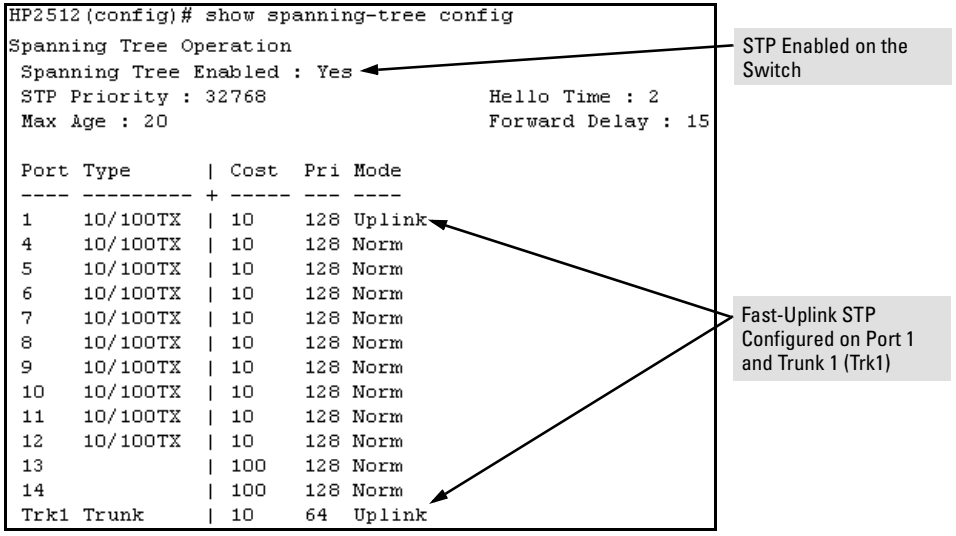

Figure 10. Example of a Configuration Supporting the STP Topology Shown in Figure 8

Using the CLI To Configure Fast-Uplink STP. This example uses the CLI to configure the switch for the fast-uplink operation shown in figures 8, 9, and 10. (The example assumes that ports 2 and 3 are already configured as members of the port trunk—Trk1, and all other STP parameters are left in their default state.)

Syntax:	spanning-tree e <*port/trunk-list*> mode uplink	Enables STP on the switch and configures fast-uplink STP on the designated interfaces (port or trunk).

```
HP2512(config)# spanning-tree e 1,trk1 mode uplink
```

Operating Notes

Effect of Reboots on Fast-Uplink STP Operation. When configured, fast-uplink STP operates on the designated ports in a running Series 2500 switch. However, if the switch experiences a reboot, the fast-uplink ports (Mode = **Uplink**) use the longer forwarding delay used by ports on standard 802.1D STP (non fast-uplink). This prevents temporary loops that could otherwise result while the switch is determining the STP status for all ports. That is, on ports configured for fast-uplink STP, the first STP state transition after a reboot takes the same amount of time as for redundant ports that are not configured for fast-uplink STP.

Using Fast Uplink with Port Trunks. To use a port trunk for fast-uplink STP, configure it in the same way that you would an individual port for the same purpose. A port trunk configured for fast uplink operates in the same way as an individual, non-trunked port operates; that is, as a logical port.

Note

When you add a port to a trunk, the port takes on the STP mode configured for the trunk, regardless of which STP mode was configured on the port before it was added to the trunk. Thus, all ports belonging to a trunk configured with **Uplink** in the STP **Mode** field will operate in the fast-uplink mode. (If you remove a port from a trunk, the port reverts to the STP Mode setting it had before you added the port to the trunk.

To use fast uplink over a trunk, you must:

1. Create the trunk.
2. Configure the trunk for fast uplink in the same way that you would configure an individual port for fast uplink.

When you first create a port trunk, its STP Mode setting will be **Norm**, regardless of whether one or more ports in the trunk are set to fast uplink (Mode = **Uplink**). You must still specifically configure the trunk Mode setting to **Uplink**. Similarly, if you eliminate a trunk, the Mode setting on the individual ports in the trunk will return to their previous settings.

Fast-Uplink Troubleshooting

Some of the problems that can result from incorrect useage of Fast-Uplink STP include temporary loops and generation of duplicate packets.

Problem sources can include:

- Fast-Uplink is configured on a switch that is the STP root device.
- Either the **Hello Time** or the **Max Age** setting (or both) is too long on one or more switches. Return the **Hello Time** and Max Age settings to their default values (2 seconds and 20 seconds, respectively, on a Series 2500 switch).
- A "downlink" port is connected to a switch that is further away (in hop count) from the root device than the switch port on which fast-uplink STP is configured.
- Two edge switches are directly linked to each other with a fast-uplink (Mode = **Uplink**) connection.
- Fast uplink is configured on both ends of a link.
- A switch serving as a backup STP root switch has ports configured for fast-uplink STP and has become the root device due to a failure in the original root device.

Listing Switch Configuration and Operation Details for Help in Troubleshooting

Release F.02.11 includes the **show tech** command. This command outputs, in a single listing, switch operating and running configuration details from several internal switch sources, including:

- Image stamp (software version data)
- Running configuration
- Event Log listing
- Boot History
- Port settings
- Status and counters — port status
- IP routes
- Status and counters — VLAN information
- GVRP support
- Load balancing (trunk and LACP)
- Stacking status — this switch
- Stacking status — all

Syntax: show tech

Executing **show tech** outputs a data listing to your terminal emulator. However, using your terminal emulator's text capture features, you can also save **show tech** data to a text file for viewing, printing, or sending to an associate. For example, if your terminal emulator is the Hyperterminal application available with Microsoft® Windows® software, you can copy the show tech output to a file and then use either Microsoft Word or Notepad to display the data. (In this case, Microsoft Word provides the data in an easier-to-read format.)

To Copy show tech output to a Text File. This example uses the Microsoft Windows terminal emulator. To use another terminal emulator application, refer to the documentation provided with that application.

1. In Hyperterminal, click on **Transfer** | **Capture Text...**

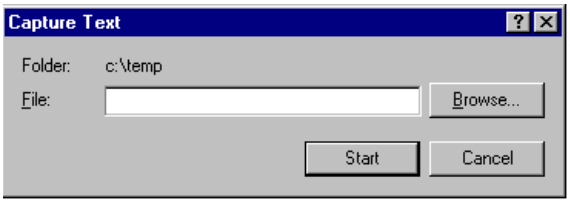

Figure 11. The Capture Text window of the Hypertext Application Used with Microsoft Windows Software

2. In the **File** field, enter the path and file name under which you want to store the **show tech** output.

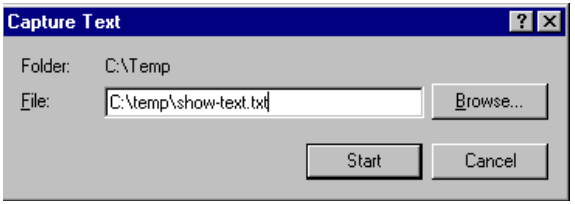

Figure 12. Example of a Path and Filename for Creating a Text File from show tech Output

3. Click Start to create and open the text file.
4. Execute **show tech**:

   ```
   HP2512# show tech
   ```

   a. Each time the resulting listing halts and displays `-- MORE --`, press the Space bar to resume the listing.

   b. When the CLI prompt appears, the show tech listing is complete. At this point, click on **Transfer** | **Capture Text** | **Stop** in HyperTerminal to stop copying data into the text file created in the preceding steps.

Note

Remember to do the above step to stop HyperTerminal from copying into the text file. Otherwise, the text file remains open to receiving additional data from the HyperTerminal screen.

---

5. To access the file, open it in Microsoft Word, Notepad, or a similar text editor.

Enhancements in Release F.02.02

Documentation for Release F.02.02 Enhancements. For details about the enhancements listed below, refer to the *Release Notes for Software Release F.02.xx for the HP Procurve Series 2500 Switches*, Edition 1, January 2001 (p/n: 5969-2371), available on the HP Procurve website at:

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

(Click on **technical support**, then **manuals** and select the switch model from the listing.)

Software release F.02.02 contains these enhancements:

Enhancement	Summary
TACACS+	TACACS+ authentication enables you to use a central server to allow or deny access to Series 2500 switches (and other TACACS-aware devices) in your network. This means that you can use a central database to create multiple unique username/password sets with associated privilege levels for use by individuals who have reason to access the switch from either the switch's console port (local access) or Telnet (remote access).
CDP	In the Series 2500 switches, CDP-v1 (Cisco®Discovery Protocol, version 1) provides data that aids SNMP-based network mapping utilities designed to discover devices running CDP in a network. To make this data available, the switch transmits information about itself via CDP packets to adjacent devices, and also receives and stores information about adjacent devices running CDP. This enables each CDP device to receive and maintain identity data on each of its CDP neighbors and pass this information off to an SNMP utility designed to query the CDP area of the device's MIB.
TimeP change	Changes how to select the TimeP time protocol option.
SNTP Time Protocol enhancement	Adds SNTP, which uses two time protocol operating modes: • **Broadcast Mode:** The switch acquires time updates by accepting the time value from the first SNTP time broadcast detected. • **Unicast Mode:** The switch requests a time update from the configured SNTP server.
IGMP enhancements	IGMP on the Series 2500 switches now supports IGMP without IP addressing and Forced Fast-Leave IGMP.
Port security enhancement	Changes how the switch retains learned static addresses across a reboot.
Using the CLI to configure usernames	Prior to release F.02.02, you could configure Manager and Operator usernames only from the web browser interface. Beginning with F.02.02 you can also use the CLI to configure usernames.

Releases F.01.08, F.01.09, and F.01.10

These three releases did not include enhancements.

Updates and Corrections for the Management and Configuration Guide

This section lists updates to the *Management and Configuration Guide* (p/n 5969-2354; August 2000).

Time Protocol Changes

Because the switch now offers both TimeP and SNTP (Simple Network Time Protocol) as time synchronization methods, the TimeP configuration information on pages 5-3 through 5-10 has changed. See “Enhancements in Release F.02.02” on page 21.

Error in Command Shown for Viewing the Current Configuration Files

On page C-4, the manual incorrectly states that **show startup-config** displays the current startup-config file. Instead, the following is true:

- **show config**: Displays a listing of the current startup-config file.
- **show config run**: Displays a listing of the current running-config file.
- **write terminal**: Displays a listing of the current running-config file.

Change in Command Line Operation

For the (port) Interface and VLAN commands, the command line accepts only one parameter at a time. For example, for port 1, you would use either of the following two command sets to configure duplex, flow control, and broadcast limit (instead of combining them all in one command).

At the Interface Context Level

```
HP2512(eth-1)# enable speed-duplex auto
HP2512(eth-1)# enable flow-control
HP2512(eth-1)# enable broadcast-limit 50
```

At the Global Configuration Level

```
HP2512(config)# int e 1 enable speed-duplex auto
HP2512(config)# int e 1 enable flow-control
HP2512(config)# int e 1 enable broadcast-limit 50
```

This change affects the following commands:

Interface Commands	VLAN Commands
broadcast-limit	forbid
disable	tagged
enable	untagged
flow-control	
lacp	
monitor	
speed-duplex	
unknown-vlans	

Restoring the Factory-Default Configuration

Page 11-20 in the Management and Configuration guide incorrectly implies that the **erase startup-config** command clears passwords. This command does reset the switch to its factory-default configuration, *but does not remove any user names or passwords (Manager or Operator) configured in the switch.* To remove user names and passwords, do any one of the following:

- Execute the **no password** command in the CLI.
- Select the **Delete Password Protection** option in the "Set Password" menu screen.
- Press and hold the Clear button on the switch for one second.
- Restore the factory-default configuration by using the Clear/Reset button combination, as described under "Restoring the Factory Default Configuration" in the "Troubleshooting" chapter of the *Installation and Getting Started Guide* you received with the switch.

Incomplete IP Multicast (IGMP) Filtering Data

The Note on page 9-92 in the *Management and Configuration Guide* states that "IGMP requires an IP address and subnet mask for any VLAN used for IGMP traffic." This is no longer true. See “Enhancements in Release F.02.02” on page 21.

The second paragraph in the note on page 9-101 in the *Management and Configuration Guide* provides incomplete data on the "well-known" or reserved IP multicast addresses that IGMP does not filter in the Series 2500 switches. See "The Switch Excludes Well-Known or Reserved Multicast Addresses from IP Multicast Filtering" in the *Release Notes for Software Release F.02.xx for the HP Procurve Series 2500 Switches*, Edition 1, January 2001 (p/n: 5969-2371), available on the HP Procurve website at:

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

(Click on **technical support**, then **manuals** and select the switch model from the listing.)

GVRP Does Not Require a Common VLAN

Delete the note at the top of page 9-78 in the *Management and Configuration Guide.* GVRP does not require a common VLAN (VID) connecting all of the GVRP-aware devices in the network to carry GVRP packets.

Incomplete Information on Saving Configuration Changes

Using the CLI to make a configuration change to the running-config file, then going to the Menu interface and making another configuration change, and then executing the Menu interface **Save** command saves all of your changes to the startup-config file. (At this point, the startup-config file and the running-config file will have identical configurations, and will contain all of the changes that you made in both interfaces.)

The second paragraph of the Note on page C-6 in the *Management and Configuration Guide* states that "*Using the Save command in the menu interface will not save a change made to the running config by the CLI*." This statement is true where you:

1. Make configuration changes in the CLI
2. Move to the Menu interface, but make no configuration changes while using the Menu interface.
3. Execute the **Save** command in a Menu interface screen.

However, the statement is not true if you make a configuration change in the Menu interface before going to step 3, above. See also "Switch Memory Operation" in the *Release Notes for Software Release F.02.xx for the HP Procurve Series 2500 Switches*, Edition 1, January 2001 (p/n: 5969-2371), available on the HP Procurve website at:

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

(Click on **technical support**, then **manuals** and select the switch model from the listing.)

Update to Information on Duplicate MAC Addresses Across VLANs

On page 9-75 of the *Management and Configuration Guide* , the following information replaces the text in the fourth bullet from the top and the Note:

Duplicate MAC addresses on different VLANs are not supported and can cause VLAN operating problems. These duplicates are possible and common in situations involving Sun workstations with multiple network interface cards, with DECnet routers, the Procurve routing switches (9304M, 9308M, and 6308M-SX), and with certain Hewlett-Packard routers using OS versions earlier than A.09.70 where any of the following are enabled: IPX, IP Host-Only, STP, XNS, DECnet, and possibly others. When in doubt, ask your router vendor under what conditions, if any, the router uses the same MAC address on more than one interface. Regarding the HP Procurve routing switches, see the FAQ "Q8: What is the recommended way to connect multiple VLANs between a routing switch and a layer 2 switch?" in the *Release Notes for Software Release F.02.xx for the HP Procurve Series 2500 Switches*, Edition 1, January 2001 (p/n: 5969-2371), available on the HP Procurve website at:

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

(Click on **technical support**, then **manuals** and select the switch model from the listing.)

Note

Duplicate MAC addresses are likely to occur in VLAN environments where XNS and DECnet are used. For this reason, using VLANs in XNS and DECnet environments is not currently supported.

On page 11-10 of the *Management and Configuration Guide*, under "Duplicate MAC Addresses Across VLANs", the text suggests that duplicate MAC addresses on separate VLANs can cause VLAN operating problems. However, duplicate MAC addresses on different VLANs may cause operating problems that have no apparent connection to VLAN operation. Thus, in the paragraph under "Duplicate MAC Addresses Across VLANs", delete the word "VLAN" from the first sentence. That is, the sentence should be: "Duplicate MAC addresses on different VLANs are not supported and can cause operating problems."

Incorrect Command Listing for Viewing Configuration Files

On page C-4 of the *Management and Configuration Guide*, under "How To Use the CLI To View the Current Configuration Files", the **show startup config** command is incorrect. Use the following "**show**" methods for listing configuration files:

- **show config** : Displays the startup-config file.
- **show config run** : Displays the running-config file.

(The **write terminal** command also displays the running-config file.)

The **show config**, **show config run**, and **write terminal** commands list the following configuration data:

- Daylight Time Rule setting
- Hostname (system name)
- SNMP server community name and status
- The default VLAN and its IP address setting
- Any other configuration settings that differ from the switch's factory-default configuration.

Incorrect Information for Restoring the Factory-Default Configuration

The text on page 11-20 in the Management and Configuration Guide implies that the **erase startup-configuration** command for restoring the factory-default configuration clears any usernames and passwords configured in the switch. The only method for simultaneously resetting the switch to the factory-default configuration *and* removing any usernames and passwords configured in the switch is to use the Clear/Reset button combination described under "Clear/Reset: Resetting to the Factory-Default Configuration" at the bottom of page 11-20.

New and Corrected Information on Primary VLAN Usage

The second bulleted item on page 9-54 incorrectly states that "The switch reads DHCP responses on the primary VLAN instead of on the default VLAN." The switch reads DHCP (and Bootp) responses received on all VLANs. The restriction is that the switch only honors default gateway addresses, TimeP server addresses, and IP TTL values learned from DHCP or Bootp packets received on the primary VLAN.

Also on page 9-54, add the following item to the bulleted list:

- When TimeP is enabled and configured for DHCP operation, the switch learns of TimeP servers from DHCP and Bootp packets received on the primary VLAN.

Misleading Statement About VLANs

On page 9-56 in the Management and Configuration Guide, the last sentence in item 1 implies that by default the switch is configured for eight VLANs. The sentence should read as follows:

"By default, VLAN support is enabled to support up to eight VLANs, and the switch is configured for one VLAN (the default VLAN). By changing the Maximum VLANs to support parameter, you can configure up to 29 VLANS."

Software Fixes

Release F.01.07 was the first software release for the HP Procurve Series 2500 switches.

Release F.01.08

Fixed in release F.01.08:

- **100/1000-T transceiver —** When using this 100/1000-T transceiver and negotiating to 100 Mbps, the port may report that it is operating at 100 full duplex, when it is actually operating at 100 half duplex.
- **Web-Browser Interface —** The product label in the web-browser display for the Switch 2512 is incorrectly displayed as **Switch 2524**.

Release F.01.09 (Beta Release Only)

Fixed in release F.01.09:

- **Console/Management —** A console and management (SNMP, telnet, etc.) hang may occur when an illegal MAC address is detected on a port configured with a port security action of "send-disable".

Release F.01.10

Fixed in release F.01.10:

- **Port Security —** The switch does not send an alarm upon a port security violation when the port security learn-mode is "continuous" and the action is "send-alarm".
- **Port Security —** If the configuration is not saved (i.e., **write mem**) before the switch is rebooted, the learned addresses are not saved.
- **Port Security —** A port that has been disabled due to a security violation does not remain disabled after the switch is rebooted.

Release F.02.02

This release adds the following new features:

- TACACS+
- CDP (Cisco® Discovery Protocol)
- SNTP
- Improved IGMP capabilities

For details about the above enhancements, refer to the *Release Notes for Software Release F.02.xx for the HP Procurve Series 2500 Switches*, Edition 1, January 2001 (p/n 5969-2371), available on the HP Procurve website at:

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

(Click on **technical support**, then **manuals**, and select the switch model from the listing.)

Note

The startup-config file saved under version F.02.02 is NOT backward-compatible with previous software versions. HP recommends that you save a copy of the pre-02.02 startup-config file BEFORE UPGRADING to F.02.02 or greater, in case there is ever a need to revert back to pre-02.02 software. Instructions for saving a copy of the startup-config file are found in the "Transferring Switch Configurations" section of Appendix A in the *Management and Configuration Guide* available for the switch.

Fixed in release F.02.02:

- **100/1000-T Transceiver —** After switch is rebooted, the port counters contain an incorrect large value.
- **100/1000-T Transceiver —** If the transceiver speed-senses from 1000 Mbps to 100 Mbps (or the reverse), the port incorrectly stays at the previous speed (i.e., speed mismatch) while the switch incorrectly shows linkbeat for that port. [Fix is to have the switch not establish linkbeat. The switch must be rebooted in order to establish linkbeat after the transceiver speed-senses from 1000 Mbps to 100 Mbps or vice versa.]
- **ARP —** If switch's gateway is the same as its own IP address, switch cannot ping off-net and "show arp" output does not include gateway, after pinging the configured gateway.
- **CLI —** The output of the **show help** command from the operator level context lists commands that are unavailable due to insufficient privileges and the output of the **show interface config** command does not properly align the trunk designations within the **Port** column.
- **Config —** When a config is reloaded that was saved off from a switch,it does not match the config offloaded as follows:
  a. SNMP community parameter **unrestricted** is changed to **(null)**.
  b. **forbid** commands are added to the VLAN configuration.
- **Console —** If an active port is configured as disabled and, while the port is disabled its trunk membership is changed, the switch console becomes inaccessible.
- **Fault-Finder —** The fault-finder configuration as reported by **show config** or **write term** does not correctly display the type of alarm.
- **IP —** The **IP Config** parameter changes from **DHCP/Bootp** to **Manual** on the default VLAN when trying to add a new VLAN address that is the same (i.e., duplicate) as the DHCP-acquired IP address of the default VLAN. [Fix is: error message is generated when the user attempts to configure a duplicate IP address.]

- **LACP —** Resolves several issues with LACP, including: conversation on a trunk may momentarily fail if a trunk member port goes down, difficulty accessing the MIB, configuration issues, port priority issues, problems with dynamic negotiation, and switch crashes with messages similar to:

  ```
  -> Software Exception at woody_dev.c: 450 in AdMgrCtrl
  -> ppmgr_setDefaultPriority: invalid port number
  ```

  and

  ```
  -> Software exception at woody_pktDriver.c:317 -- in 'eDrvPoll'
  -> ERROR: ASIC buffer return failure
  ```

- **Link —** The switch exhibits intermittent link behavior when connected to some 3C905B 3Com NICs.
- **Monitor Port —** If a user attempts to monitor the monitoring port the switch displays a meaningless error message.
- **Ping —** The switch replies to pings with a source address of 127.1.1.1, which is a loopback address.
- **Port Security —** Static addresses are saved to startup-config without the user executing a **write memory** command. [Fix is: static addresses will only be saved to startup-config by executing the **write memory** command.]
- **SNMP —** For ports with no transceiver present, any SNMP sets to the **hpSwitchPortTable** fail and an SNMP get of **hpSwitchPortType**, **hpSwitchStpPortType**, or **hpSwitchIgmpPortType2** returns an illegal value of zero (0).
- **Stack Management —** Resolves several issues with Procurve Stack Management via the web-browser interface, including problems with stacking configuration screen, Stack Member port counters, and not being able to add a candidate to a stack.
- **STP —** Resolves several issues with STP, including problems with an SNMP set and get of the **dot1dStpPortEnable** MIB variable, setting STP parameters via SNMP disables Spanning Tree, and a switch crash with a message similar to:

  -> Software exception at stp_ctrl.c:154 -- in 'mStpCtrl'

- **TFTP/XMODEM —** The switch's event log is not properly formatted when captured via TFTP or XMODEM using the **copy** command.
- **VLAN —** After creating several VLANs, the default value for all ports in one VLAN is **forbid** and this value cannot be changed.

Release F.02.03

Fixed in release F.02.03:

- **Stack Management —** Cannot access member switches via SNMPv2c.

Release F.02.04 (Beta Release Only)

The switch's CDP packets have been modified to better interoperate with older Cisco IOS versions. Certain legal CDP packets sent from the Procurve switch could result in Cisco routers, running older IOS versions, to crash.

Note

The Procurve switch's CDP packets are legal both before and after this modification.

Fixed in release F.02.04:

- **Buffer Leak —** A message buffer leak occurs when the switch receives a TACACS+ 'DISC' character.
- **CDP —** The switch sends the wrong MAC address for itself in CDP packets.
- **Console/TELNET —** The switch console may hang, or TELNET session may become inaccessible, if either of the following conditions occur:
  - While using TELNET, if the inactivity timer ends the session, subsequent attempts to re-establish the TELNET session may result in the user's login failing at the login prompt.
  - If a console session is ended due to inactivity timer expiration, the user is not able to establish another console session.
- **Continuous Reboot —** The switch continuously reboots upon downloading a configuration file containing a IP configuration (from DHCP or BootP).
- **Crash —** The switch may crash with a message similar to:

  ```
  -> Software exception at infTrunks.c:264 in 'mAdMgrCtrl'.
  ```

  This crash may occur if both the following conditions exist:
  - All ports of a dynamic trunk are off-line (for example, disconnected); and
  - The trunk is a member of the default VLAN.
- **Crash —** At very high levels of traffic, the switch may crash with a message similar to:

  ```
  -> Software exception at xcvr_util.c:1387 -- in 'mPmSlvCtrl'
  ```
- **DHCP —** The DHCP address of the TimeP Server is not displayed in the output of the **show ip** CLI command or in the IP configuration menu screen.
- **IGMP —** If there are several IGMP groups in several VLANs, the switch may delete IGMP multicast groups from its table, resulting in flooded multicasts.

- **IGMP —** If there are several IGMP groups in several VLANs, and the switch is acting as Querier, the switch may stop sending IGMP Queries on some of its VLANs.
- **IGMP —** All Querier intervals on the switch will be cut in half if IGMP, after already being enabled, is disabled and then re-enabled.
- **IGMP —** The switch does not fully support 256 IGMP groups, as intended. For example, with 15 VLANs and 40 IGMP groups, the 40th group gets flooded.
- **LED —** The MAX mode LED does not turn on for port where Gigabit Stacking Transceiver is installed.
- **Memory Leak and Crash —** If the "Send Authentication Traps" trap receiver parameter on a Member switch is set to "Yes", it will cause a memory leak on the Stack Commander switch. The memory leak can eventually cause a crash. The specific details of the crash vary.
- **Port security —** Port security learn mode and the learned MAC addresses are not saved after the switch is rebooted.
- **Port Security —** With port security on, the switch does not remember learned static MAC addresses after reboot.
- **Stack Management —** The commander may hang (SNMP, ping, TELNET, etc.) and other CPU functions may stop when the switch is queried by management applications such as the WhatsUp Gold utility.
- **Stack Management —** If a commander has a CDP neighbor, the commander may run out of packet buffers and hang (SNMP, ping, TELNET, etc.).
- **TELNET —** If a TELNET session times out due to the inactivity timer expiring, then a subsequent TELNET session will freeze at the switch's copyright screen, before displaying "Press any key to continue". Note: This does not affect console sessions.
- **TELNET —** Unable to open new TELNET sessions due to switch not correctly closing previous TELNET sessions.
- **Web-browser interface —** Clicking the stack management close-up button does not show the 4108GL switch.

Release F.02.05 (Beta Release Only)

Added new Isolated Port Groups feature. Each switch port is configurable as any one of four types:

- Public
- Private
- Local
- Uplink

Note

Contact your local Customer Care Center before activating this feature to receive proper configuration instructions. Failure to configure this feature properly will result in unexpected connectivity problems.

Release F.02.06 (Beta Release Only)

Textual modifications made to the Isolated Port Groups feature.

Release F.02.07 (Beta Release Only)

This release adds two new features:

- Spanning Tree fast "uplink" mode
- **show tech** command (Captures information to help with troubleshooting.)

The above features are available on HP's Procurve website in release F.02.11. For more information, turn to "Enhancements in Release F.02.11" on page 8.

Fixed in F.02.07:

- **Bus Error —** The switch may crash with a bus error if its IP address is changed during a telnet session (originated from the switch).
- **Crash —** If the switch's DHCP-learned IP address is a duplicate with another node's IP address, the switch may crash with a message similar to:

```
-> software exception at alloc_free.c:432 -- in 'eDrvPoll'
-> buf_free: corrupted buffer.
```

- **Performance —** Slow performance and possible packet loss when switch was connected to Intel 10/100 NICs.
- **Performance —** Slow performance over 10 Mbit half-duplex links when switch is connected to various NICs such as 3COM 3C905B, 3COM 3C590C, D-Link DE-528, and Lantech PCI-NET/32T.
- **Transceiver hot-swap —** A transceiver hot-swap is falsely reported when the screws on a transceiver are tightened or loosened. The event log will report a message similar to:

```
I 01/01/90 00:00:19 ports: port 13: Xcvr Hot-Swap detected. Need
reboot.
```

- **XRMON —** Various XRMON counters display incorrect values. Possible symptoms include network management applications reporting a too high network utilization (TopTools may report "crossed octets").

Release F.02.08 (Beta Release Only)

Fixed in F.02.08:

- **Crash —** If a transceiver is repeatedly installed and removed, the switch may crash with a message similar to:

```
-> Software exception at woodyDma_recv.c:154 -- in 'eDrvPoll'
```

Release F.02.09

Fixed in F.02.09:

- **Configuration download —** Downloading a configuration file (via TFTP or Xmodem) sometimes failed to reboot the switch.
- **Isolated Port Groups —** Downloading a configuration file (via TFTP or Xmodem) containing port isolation commands may fail with error messages similar to:

```
line: 6. Error setting configuration tree.
Corrupted download file.
```

Release F.02.10

Fixed in release F.02.10:

- **LEDs/Port toggling —** The switch LEDs flash randomly on various ports (even ports that do not have cables attached) when a 100/1000-T transceiver is installed. Excessive port toggling may also occur on ports that have cables attached. These problems have been associated with network management applications such as TopTools.

Release F.02.11

Fixed in release F.02.11

- **Auto-TFTP —** If the switch's configuration file contains STP (i.e., STP is enabled), auto-tftp does not download a new OS.
- **Transceivers —** Removing and re-inserting both transceivers simultaneously many times with network cables attached and without an intervening reboot may cause the switch to crash with a message similar to:

```
-> Software exception in ISR at buffers.c:1627
```

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