10

Port Status and Basic Configuration

Contents

Overview

This chapter describes how to view the current port configuration and how to configure ports to non-default settings, including

- Enable/Disable
- Mode (speed and duplex)
- Flow Control
- Broadcast Limit
- Auto-MDIX
- Jumbo Packets on the Series 2800 Switches
- QoS Pass-Through Mode for Series 2800 Switches
- Configuring Port-Based Priority for Incoming Packets on the 4100gl and 6108 Switches
- Using Friendly (Optional) Port Names

Viewing Port Status and Configuring Port Parameters

Port Status and Configuration Features

Feature	Default	Menu	CLI	Web
viewing port status	n/a	page 10-6	page 10-7	page 10-17
configuring ports	See Table 10-1 on pages 10-4 and 10-5.	page 10-7	page 10-10	page 10-17

Note On Connecting Transceivers to Fixed-Configuration Devices

If the switch either fails to show a link between an installed transceiver and another device, or demonstrates errors or other unexpected behavior on the link, check the port configuration on both devices for a speed and/or duplex (mode) mismatch. To check the mode setting for a port on the switch, use either the Port Status screen in the menu interface (page 10-6) or **show interfaces brief** in the CLI (page 10-7).

Table 10-1. Status and Parameters for Each Port Type

Status or Parameter	Description
Enabled	**Yes** (default): The port is ready for a network connection. **No:** The port will not operate, even if properly connected in a network. Use this setting, for example, if the port needs to be shut down for diagnostic purposes or while you are making topology changes.
Status (read-only)	**Up**: The port senses a linkbeat. **Down**: The port is not enabled, has no cables connected, or is experiencing a network error. For troubleshooting information, see the installation manual you received with the switch. See also chapter 11, "Troubleshooting" (in this manual).
Mode	The port's speed and duplex (data transfer operation) setting. 10/100Base-T ports: • Auto (default): Senses speed and negotiates with the port at the other end of the link for data transfer operation (half-duplex or full-duplex). **Note:** Ensure that the device attached to the port is configured for the same setting that you select here. If "Auto" is used, the device to which the port connects must operate in compliance with the IEEE 802.3u "Auto Negotiation" standard for 100Base-T networks. If the other device does not comply with the 802.3u standard, or is not set to Auto, then the port configuration on the switch must be manually set to match the port configuration on the other device. To see what the switch negotiates for the Auto setting, use the CLI **show interfaces** command or the " **3. Port Status"** option under "**1. Status and Counters"** in the menu interface. • Auto-10: Allows the port to negotiate between half-duplex (HDx) and full-duplex (FDx) while keeping speed at 10 Mbps. Also negotiates flow control (enabled or disabled). HP recommends Auto-10 for links between 10/100 autosensing ports connected with Cat 3 cabling. (Cat 5 cabling is required for 100 Mbps links.). • 10HDx:10 Mbps, Half-Duplex • 10FDx: 10 Mbps, Full-Duplex • 100HDx: 100 Mbps, Half-Duplex • 100FDx: 100 Mbps, Full-Duplex
	100FX ports: • 100HDx: 100 Mbps, Half-Duplex • 100FDx (default): 100 Mbps, Full-Duplex

Status or Parameter	Description
Mode (***Continued***)	10/100/1000Base-T: • Auto-10: Allows the port to negotiate between half-duplex (HDx) and full-duplex (FDx) while keeping speed at 10 Mbps. Also negotiates flow control (enabled or disabled). HP recommends Auto-10 for links between 10/100 autosensing ports connected with Cat 3 cabling. (Cat 5 cabling is required for 100 Mbps links.). • 10HDx: 10 Mbps, Half-Duplex • 10FDx: 10 Mbps, Full-Duplex • Auto (default): Senses speed and negotiates with the port at the other end of the link for port operation (MDI-X or MDI). To see what the switch negotiates for the Auto setting, use the CLI **show interfaces brief** command or the " **3. Port Status"** option under "**1. Status and Counters"** in the menu interface. • Auto-100: Uses 100 Mbps and negotiates with the port at the other end of the link for other port operation features. • Auto-1000: Uses 1000 Mbps and negotiates with the port at the other end of the link for other port operation features. • 100Hdx: Uses 100 Mbps, half-duplex. • 100Fdx: Uses 100 Mbps, Full-Duplex **Port Mode Notes:** Ensure that the device attached to the port is configured for the same setting that you select here. If using "Auto", the device to which the port connects must also be using "Auto" and operate in compliance with the IEEE 802.3ab "Auto Negotiation" standard for 1000Base-T networks.
	Gigabit fiber-optic ports (Gigabit-SX, Gigabit-LX, and Gigabit-LH): • 1000FDx: 1000 Mbps (1 Gbps), Full Duplex only • Auto (default): The port operates at 1000FDx and auto-negotiates flow control with the device connected to the port.
Auto-MDIX (2600, 2600-PWR, and 2800 Only)	The switch supports Auto-MDIX on 10Mb, 100Mb, and 1 Gb T/TX (copper) ports. (Fiber ports and 10-gigabit ports do not use this feature.) • **Automdix:** Configures the port for automatic detection of the cable type (straight-through or crossover). • **MDI:** Configures the port for connecting to a PC or other MDI device with a crossover cable. • **MDIX:** Configures the port for connecting to a switch, hub, or other MDI-X device with a straight-through cable.
Flow Control	• Disabled (default): The port does not generate flow control packets, and drops any flow control packets it receives. • Enabled: The port uses 802.3x Link Layer Flow Control, generates flow control packets, and processes received flow control packets. With the port mode set to **Auto** (the default) and Flow Control enabled, the switch negotiates Flow Control on the indicated port. If the port mode is not set to Auto, or if Flow Control is disabled on the port, then Flow Control is not used.
Group (menu) or Trunk Group (CLI)	Menu Interface: Specifies the static trunk group, if any, to which a port belongs. CLI: Appears in the **show lacp** command output to show the LACP trunk, if any, to which a port belongs. **Note:** An LACP trunk requires a full-duplex link. In most cases, HP recommends that you leave the port Mode setting at Auto (the default). Refer to "Trunk Group Operation Using LACP" on page 12-18. For more on port trunking, see Chapter 12, "Port Trunking" .

Status or Parameter	Description
Type	This parameter appears in the CLI **show trunk** listing and, for a port in a trunk group, specifies the type of trunk group. The default Type is passive LACP, which can be displayed by using the CLI **show lacp** command. For more on port trunking, see "Port Trunking" on page Chapter 12, "Port Trunking" .
Broadcast Limit	Specifies the percentage of the theoretical maximum network bandwidth that can be used for broadcast and multicast traffic. Any broadcast or multicast traffic exceeding that limit will be dropped. Zero (0) means the feature is disabled. **Series 2600 Switches, Series 2600-PWR Switches, Series 4100gl Switches, and the Switch 6108:** The broadcast-limit command operates at the global configuration context level to set the broadcast limit for all ports on the switch. **Series 2800 Switches:** The broadcast-limit command operates at the port context level to set the broadcast limit on a per-port basis.

Menu: Viewing Port Status and Configuring Port Parameters

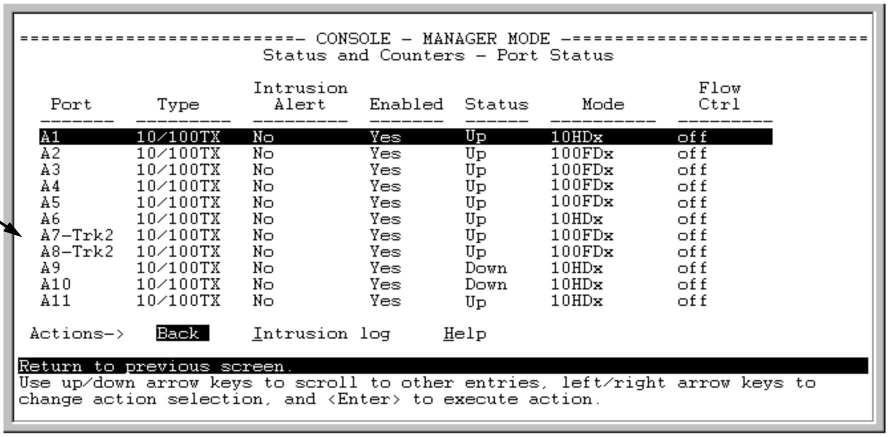
From the menu interface, you can configure and view all port parameter settings and view all port status indicators.

Using the Menu To View Port Status. The menu interface displays the status for ports and (if configured) a trunk group.

From the Main Menu, select:

Status and Counters. . .

Port Status



```
=========================- CONSOLE - MANAGER MODE -============================
                        Status and Counters - Port Status

                       Intrusion                                     Flow
  Port       Type        Alert      Enabled  Status     Mode          Ctrl
 -------   ---------   ---------   -------  ------   ----------   ---------
 A1        10/100TX    No          Yes      Up       10HDx        off
 A2        10/100TX    No          Yes      Up       100FDx       off
 A3        10/100TX    No          Yes      Up       100FDx       off
 A4        10/100TX    No          Yes      Up       100FDx       off
 A5        10/100TX    No          Yes      Up       100FDx       off
 A6        10/100TX    No          Yes      Up       10HDx        off
 A7-Trk2   10/100TX    No          Yes      Up       100FDx       off
 A8-Trk2   10/100TX    No          Yes      Up       100FDx       off
 A9        10/100TX    No          Yes      Down     10HDx        off
 A10       10/100TX    No          Yes      Down     10HDx        off
 A11       10/100TX    No          Yes      Up       10HDx        off

Actions->  Back     Intrusion log     Help

Return to previous screen.
Use up/down arrow keys to scroll to other entries, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

In this example, ports A7 and A8 have previously been configured as a trunk group.

Figure 10-1. Example of the Port Status Screen

Using the Menu To Configure Ports.

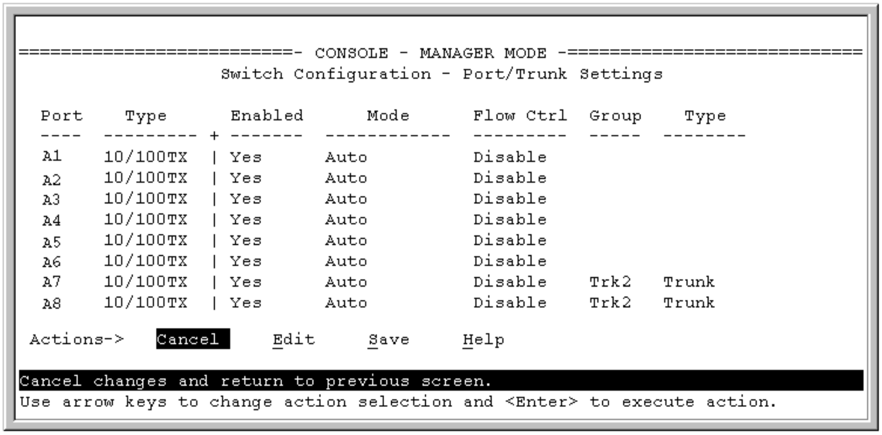
Note

The menu interface uses the same screen for configuring both individual ports and port trunk groups. For information on port trunk groups, see Chapter 12, "Port Trunking" .

1. From the Main Menu, Select:

   2. Switch Configuration...

   2. Port/Trunk Settings



```
==========================- CONSOLE - MANAGER MODE -============================
                    Switch Configuration - Port/Trunk Settings

  Port    Type      Enabled      Mode       Flow Ctrl  Group    Type
  ----  --------- + -------  ------------  ---------  -----  --------
  A1    10/100TX  | Yes      Auto          Disable
  A2    10/100TX  | Yes      Auto          Disable
  A3    10/100TX  | Yes      Auto          Disable
  A4    10/100TX  | Yes      Auto          Disable
  A5    10/100TX  | Yes      Auto          Disable
  A6    10/100TX  | Yes      Auto          Disable
  A7    10/100TX  | Yes      Auto          Disable    Trk2   Trunk
  A8    10/100TX  | Yes      Auto          Disable    Trk2   Trunk

 Actions->   Cancel     Edit     Save     Help

Cancel changes and return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```

Figure 10-2. Example of Port/Trunk Settings with a Trunk Group Configured

2. Press **[E]** (for **Edit**). The cursor moves to the **Enabled** field for the first port.
3. Refer to the online help provided with this screen for further information on configuration options for these features.
4. When you have finished making changes to the above parameters, press **[Enter]**, then press **[S]** (for **Save**).

CLI: Viewing Port Status and Configuring Port Parameters

Port Status and Configuration Commands

show interfaces brief	below
show interfaces config	page 10-9
interface	page 10-10
show spanning tree	page 10-10

From the CLI, you can configure and view all port parameter settings and view all port status indicators.

Using the CLI To View Port Status

Use the following commands to display port status and configuration:

- **show interfaces brief**: Lists the full status and configuration for all ports on the switch.
- **show interface config**: Lists a subset of the data shown by the **show interfaces** command (above); that is, only the enabled/disabled, mode, and flow control status for all ports on the switch.

Syntax: show interfaces [brief | config]

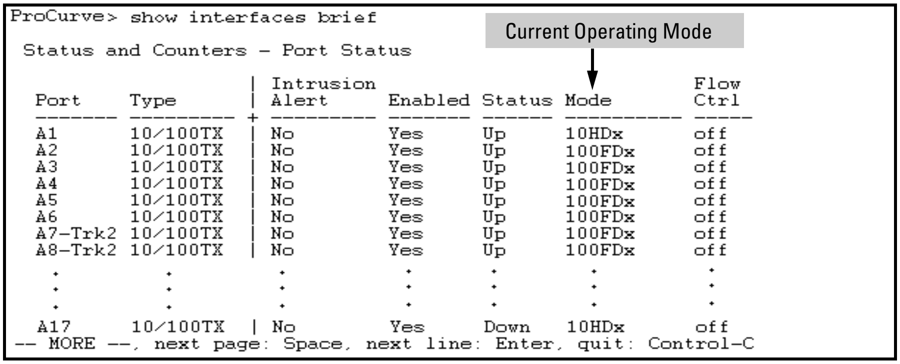
These two commands display the information listed in table 10-2, below.

Table 10-2. Comparing the "Show Interfaces" Command Options*

Feature	Show Interfaces Brief	Show Interfaces Config
Port Number and Type	Yes	Yes
Enabled Y/N	Yes	Yes
Flow Control	Yes	Yes
Status Up/Down	Yes	No
Mode (Operating)	Yes	No
Intrusion Alert	Yes	No
Mode (Configured)	No	Yes
MDIX Mode (2600, 2600-PWR, and 2800)	Operating	Configured

* There is also the **show interfaces [[e] < *port-number* >]** option, which displays port statistics. Refer to "Viewing Port and Trunk Group Statistics and Flow Control Status" on page B-10.

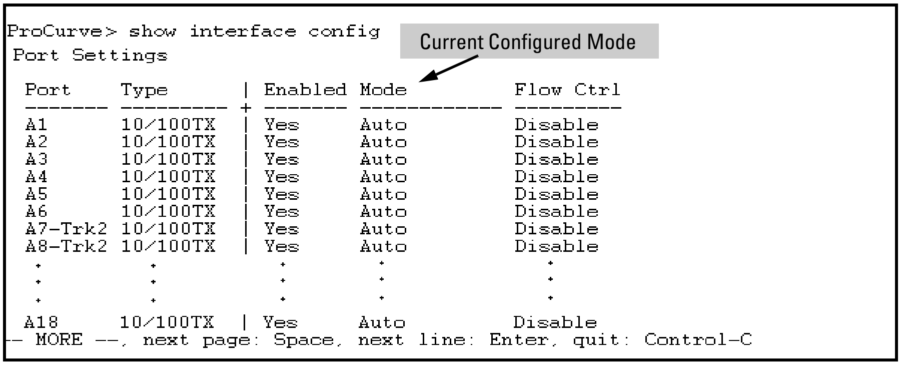
The figures 10-3 through 10-6 list examples of the output of the above two commands for the same port configuration on two different switches.



```
ProCurve> show interfaces brief

 Status and Counters - Port Status

                    | Intrusion                           Flow
  Port     Type     | Alert     Enabled Status Mode       Ctrl
  ------- --------- + --------- ------- ------ ---------- -----
  A1      10/100TX  | No        Yes     Up     10HDx      off
  A2      10/100TX  | No        Yes     Up     100FDx     off
  A3      10/100TX  | No        Yes     Up     100FDx     off
  A4      10/100TX  | No        Yes     Up     100FDx     off
  A5      10/100TX  | No        Yes     Up     100FDx     off
  A6      10/100TX  | No        Yes     Up     100FDx     off
  A7-Trk2 10/100TX  | No        Yes     Up     100FDx     off
  A8-Trk2 10/100TX  | No        Yes     Up     100FDx     off
   .        .         .          .       .       .         .
   .        .         .          .       .       .         .
   .        .         .          .       .       .         .
  A17     10/100TX  | No        Yes     Down   10HDx      off
-- MORE --, next page: Space, next line: Enter, quit: Control-C
```

Current Operating Mode

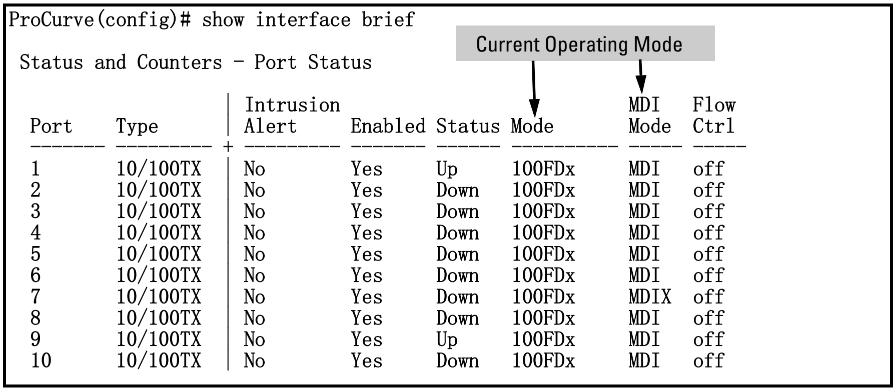
Figure 10-3. Example Show Interface Command Listing, 4100gl Switch



```
ProCurve> show interface config
 Port Settings

  Port    Type      | Enabled Mode         Flow Ctrl
  ------- --------- + ------- ------------ ---------
  A1      10/100TX  | Yes     Auto         Disable
  A2      10/100TX  | Yes     Auto         Disable
  A3      10/100TX  | Yes     Auto         Disable
  A4      10/100TX  | Yes     Auto         Disable
  A5      10/100TX  | Yes     Auto         Disable
  A6      10/100TX  | Yes     Auto         Disable
  A7-Trk2 10/100TX  | Yes     Auto         Disable
  A8-Trk2 10/100TX  | Yes     Auto         Disable
  .         .          .       .              .
  .         .          .       .              .
  .         .          .       .              .
  A18     10/100TX  | Yes     Auto         Disable
-- MORE --, next page: Space, next line: Enter, quit: Control-C
```

Current Configured Mode

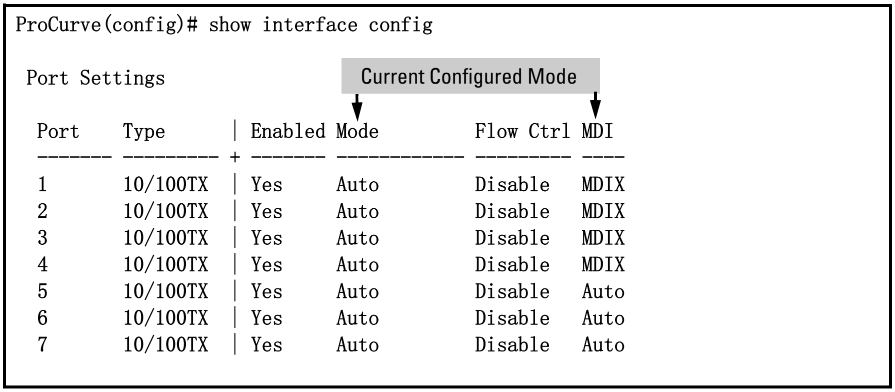
Figure 10-4. Example Show Interface Config Command Listing, 4100gl Switch



```
ProCurve(config)# show interface brief

 Status and Counters - Port Status

                  | Intrusion                           MDI   Flow
  Port    Type    | Alert     Enabled Status Mode       Mode  Ctrl
  ------- --------- + --------- ------- ------ ---------- ----- -----
  1       10/100TX | No        Yes     Up     100FDx     MDI   off
  2       10/100TX | No        Yes     Down   100FDx     MDI   off
  3       10/100TX | No        Yes     Down   100FDx     MDI   off
  4       10/100TX | No        Yes     Down   100FDx     MDI   off
  5       10/100TX | No        Yes     Down   100FDx     MDI   off
  6       10/100TX | No        Yes     Down   100FDx     MDI   off
  7       10/100TX | No        Yes     Down   100FDx     MDIX  off
  8       10/100TX | No        Yes     Down   100FDx     MDI   off
  9       10/100TX | No        Yes     Up     100FDx     MDI   off
  10      10/100TX | No        Yes     Down   100FDx     MDI   off
```

Current Operating Mode

Figure 10-5. Example Show Interface Brief Command Listing, 2600 Switch



```
ProCurve(config)# show interface config

 Port Settings

  Port    Type      | Enabled Mode         Flow Ctrl MDI
  ------- --------- + ------- ------------ --------- ----
  1       10/100TX  | Yes     Auto         Disable   MDIX
  2       10/100TX  | Yes     Auto         Disable   MDIX
  3       10/100TX  | Yes     Auto         Disable   MDIX
  4       10/100TX  | Yes     Auto         Disable   MDIX
  5       10/100TX  | Yes     Auto         Disable   Auto
  6       10/100TX  | Yes     Auto         Disable   Auto
  7       10/100TX  | Yes     Auto         Disable   Auto
```

Current Configured Mode

Figure 10-6. Example Show Interface Config Command Listing, 2600 Switch

Displaying Spanning Tree Configuration Details

To view detailed statistics on spanning tree operation for different ports on the Series 2600 and 2800 switches, use the **show spanning-tree** command.

Syntax: show spanning-tree <*port-list*> detail

Lists 802.1D and 802.1w port operating statistics for all ports, or those specified.

You can also use this command to view spanning tree parameters on a static trunk (see page 12-9). For information on how to configure spanning tree, see the chapter on "Spanning-Tree Operation" in the *Advanced Traffic Management Guide.*

Using the CLI To Configure Ports

You can configure one or more of the following port parameters. For details on each option, see Table 10-1 on page 10-4.

Syntax: [no] interface <[ethernet] port-list>
disable | enable
speed-duplex
<10-half |100-half | 10-full | 100-full | 1000-full | auto |
auto-10 | auto-100 | auto-1000 >
flow-control

Note that in the above syntax you can substitute an "**int**" for "**interface**" and an "**e**" for "**ethernet**"; that is **int e <*port-list*>**.

For example, to configure ports C1 through C3 and port C6 for 100 Mbps full-duplex, you would enter these commands:

```
ProCurve(config)# int e c1-c3,c6  speed-duplex 100-full
```

Similarly, to configure a single port with the settings in the above command, you could either enter the same command with only the one port identified, or go to the *context level* for that port and then enter the command. For example, to enter the context level for port C6 and then configure that port for 100FDx:

```
ProCurve(config)# int e c6
ProCurve(eth-C6)# speed-duplex 100-full
```

If port C8 was disabled, and you wanted to enable it and configure it for 100FDx with flow-control active, you could do so with either of the following command sets.

- These commands enable and configure port C8 from the config level:
  ```
  ProCurve(config)# int e c8 enable
  ProCurve(config)# int e c8 speed-duplex 100-full
  ProCurve(config)# int e c8 flow-control
  ```
- These commands select the context level for port C8 and then apply all of the configuration commands to port C8:
  ```
  ProCurve(config)# int e c8
  ProCurve(eth-C8)# enable
  ProCurve(eth-C8)# speed-duplex 100-full
  ProCurve(eth-C8)# flow-control
  ```

Using the CLI To Configure a Broadcast Limit

The Series 2800 Switches use per-port broadcast-limit settings. The Switch 6108, Series 2600, Series 2600-PWR, and Series 4100GL Switches use a single broadcast-limit setting for all ports on the switch.

Broadcast Limit on the Switch 6108, Series 2600, Series 2600-PWR, and Series 4100gl Switches. This command operates at the global configuration level to configure one global instance of the broadcast limit for all ports on the switch. To implement the command you must also execute **write-memory** and reboot the switch.

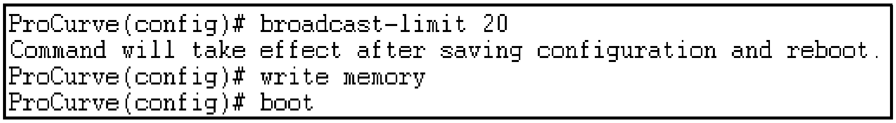
Note

You must execute **write memory** and reboot the switch to implement the new broadcast-limit setting. Even though the broadcast-limit setting appears in the **show running** output and (after **write memory**) in the startup-config output, the switch does not implement the new setting until rebooted.

Syntax: broadcast-limit < 0 . . 99 >

Configures the theoretical maximum bandwidth percentage that can be used on the switch ports for incoming broadcasts. The switch drops any broadcast or multicast traffic exceeding that limit. Zero (0) disables the feature.

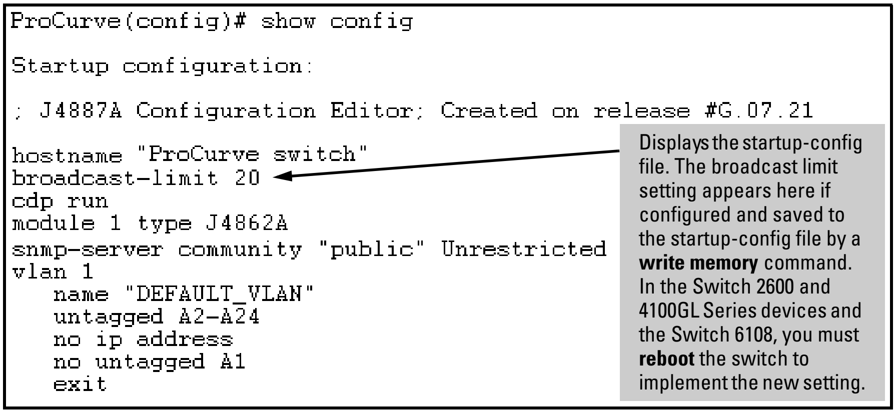
For example, to configure a broadcast limit of 20% for all ports on the switch:



```
ProCurve(config)# broadcast-limit 20
Command will take effect after saving configuration and reboot.
ProCurve(config)# write memory
ProCurve(config)# boot
```

Figure 10-7. Example of Configuring a Global Broadcast Limit

To display the current broadcast limit setting, use either **show config** or **show running**:



```
ProCurve(config)# show config

Startup configuration:

; J4887A Configuration Editor; Created on release #G.07.21

hostname "ProCurve switch"
broadcast-limit 20
cdp run
module 1 type J4862A
snmp-server community "public" Unrestricted
vlan 1
   name "DEFAULT_VLAN"
   untagged A2-A24
   no ip address
   no untagged A1
   exit
```

Displays the startup-config file. The broadcast limit setting appears here if configured and saved to the startup-config file by a **write memory** command. In the Switch 2600 and 4100GL Series devices and the Switch 6108, you must **reboot** the switch to implement the new setting.

Figure 10-8. Example of Displaying a Broadcast-Limit Setting

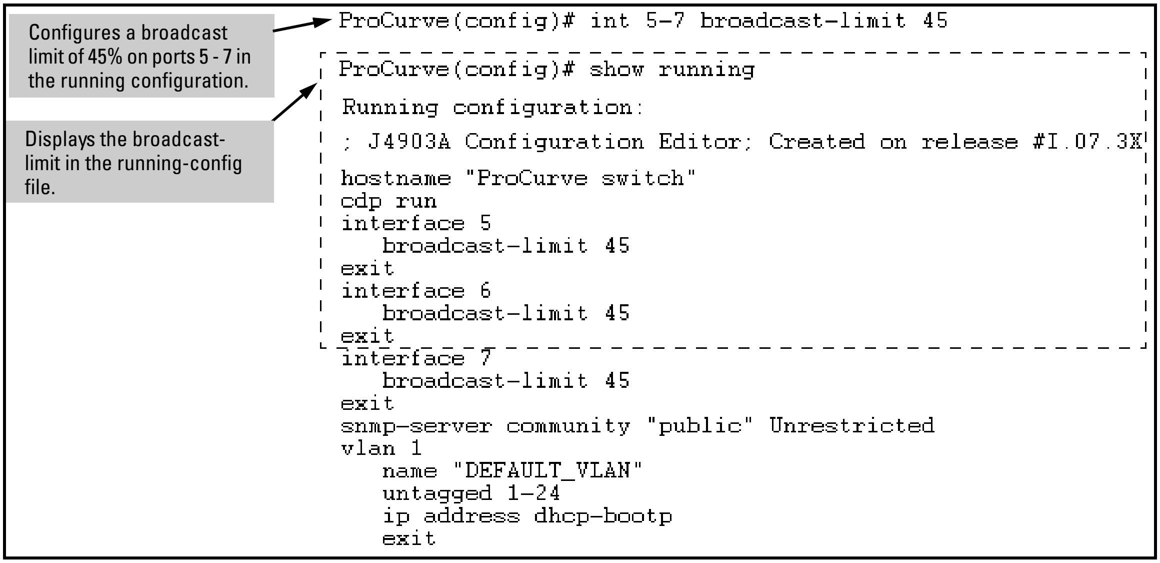
Using show running displays a similar output for the running-config file. Refer to the **Note** on page 10-11.

Broadcast Limit on the Series 2800 Switches. On the Series 2800 Switches, this command operates at the port context level to configure an individual instance of the broadcast limit for the ports included in a given context. The switch implements the new broadcast limit immediately in the running-config file. (Rebooting is not necessary.) Use **write-memory** to save the configuration to the startup-config file.

Syntax: interface < port-list > broadcast-limit < 0 - 99 >

Configures the theoretical maximum bandwidth percentage that can be used on the specified switch port(s) for broadcasts and multicasts. The switch drops any broadcast or multicast traffic exceeding that limit. Zero (0) disables the feature on the specified port(s).

For example, to configure a broadcast limit of 45% on ports 1 - 10 in a Series 2800 Switch:



Configures a broadcast limit of 45% on ports 5 - 7 in the running configuration.

Displays the broadcast-limit in the running-config file.

```
ProCurve(config)# int 5-7 broadcast-limit 45

ProCurve(config)# show running

Running configuration:

; J4903A Configuration Editor; Created on release #I.07.3X

hostname "ProCurve switch"
cdp run
interface 5
   broadcast-limit 45
exit
interface 6
   broadcast-limit 45
exit
interface 7
   broadcast-limit 45
exit
snmp-server community "public" Unrestricted
vlan 1
   name "DEFAULT_VLAN"
   untagged 1-24
   ip address dhcp-bootp
   exit
```

Figure 10-1. Configuring and Displaying a Per-Port Broadcast Limit on Switch 2800 Series Device

Configuring HP Auto-MDIX

Copper ports on the switch can automatically detect the type of cable configuration (MDI or MDI-X) on a connected device and adjust to operate appropriately.

This means you can use a "straight-through" twisted-pair cable or a "crossover" twisted-pair cable for any of the connections—the port makes the necessary adjustments to accommodate either one for correct operation. The following port types on your switch support the IEEE 802.3ab standard, which includes the "Auto MDI/MDI-X" feature:

ProCurve Series 2600 Switch	ProCurve Series 2800 Switch	ProCurve Switch Series 4100gl	ProCurve 6108 Switch
10/100-TX ports	10/100/1000-T ports	10/100-TX gl module ports	10/100/1000-T ports
10/100/1000-T ports		100/1000-T gl module ports	
		10/100/1000-T gl module ports	

Using the above ports:

- If you connect a copper port using a straight-through cable to a port on another switch or hub that uses MDI-X ports, the switch port automatically operates as an MDI port.
- If you connect a copper port using a straight-through cable to a port on an end node, such as a server or PC, that uses MDI ports, the switch port automatically operates as an MDI-X port.

HP Auto-MDIX was developed for auto-negotiating devices, and was shared with the IEEE for the development of the IEEE 802.3ab standard. HP Auto-MDIX and the IEEE 802.3ab Auto MDI/MID-X feature are completely compatible. Additionally, HP Auto-MDIX supports operation in forced speed and duplex modes.

If you want more information on this subject please refer to the *IEEE 802.3ab Standard Reference*.

For more information on MDI-X, refer to the appendix titled "Switch Ports and Network Cables" in the *Installation and Getting Started Guide* for your switch.

Manual Auto-MDIX Override on the Series 2600/2600-PWR and 2800 Switches

This feature is supported only on the Series 2600, 2600-PWR, and 2800 Switches. If you require control over the MDI/MDI-X feature you can set the switch to either of two non-default modes:

- Manual MDI
- Manual MDI-X

Table 10-1 shows the cabling requirements for the MDI/MDI-X settings.

Table 10-1. Cable Types for Auto and Manual MDI/MDI-X Settings

	MDI/MDI-X Device Type	
Setting	**PC or Other MDI Device Type**	**Switch, Hub, or Other MDI-X Device**
Manual MDI	Crossover Cable	Straight-Through Cable
Manual MDI-X	Straight-Through Cable	Crossover Cable
Auto-MDI-X (The Default)	Either Crossover or Straight-Through Cable	

The Auto-MDIX features apply only to copper port switches using twisted-pair copper Ethernet cables.

Syntax: interface < *port-list* > mdix-mode < automdix | mdi | mdix >

automdix *is the automatic, default setting. This configures the port for automatic detection of the cable (either straight-through or crossover).*

mdi *is the manual mode setting that configures the port for connecting to either a PC or other MDI device with a crossover cable, or to a switch, hub, or other MDI-X device with a straight-through cable.*

mdix *is the manual mode setting that configures the port for connecting to either a switch, hub, or other MDI-X device with a crossover cable, or to a PC or other MDI device with a straight-through cable.*

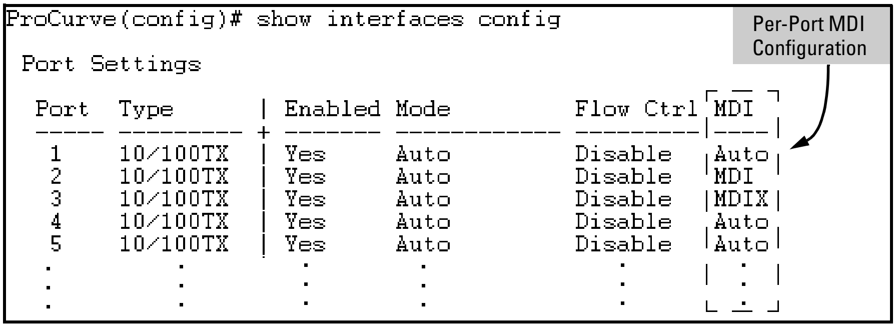
Syntax: show interfaces config

Lists the current per-port Auto/MDI/MDI-X configuration.

Syntax: show interfaces brief

Where a port is linked to another device, this command lists the MDI mode the port is currently using. In the case of ports configured for **Auto** (**auto-mdix**), *the MDI mode appears as either* **MDI** *or* **MDIX**, *depending upon which option the port has negotiated with the device on the other end of the link. In the case of ports configured for* **MDI** *or* **MDIX**, *the mode listed in this display matches the configured setting. If the link to another device was up, but has gone down, this command shows the last operating MDI mode the port was using. If a port on a given switch has not detected a link to another device since the last reboot, this command lists the MDI mode to which the port is currently configured.*

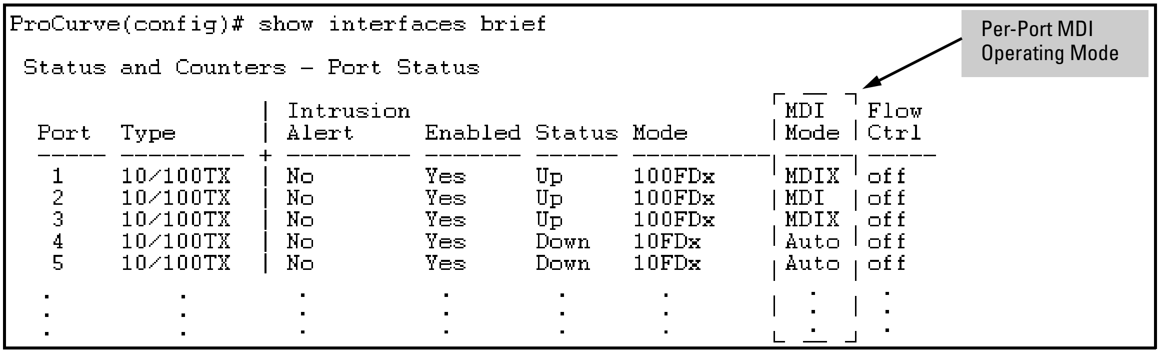
For example, **show interfaces config** displays the following data when port 1 is configured for **auto-mdix**, port 2 is configured for **mdi**, and port 3 is configured for **mdix**.



```
ProCurve(config)# show interfaces config

 Port Settings

  Port  Type      | Enabled Mode         Flow Ctrl MDI
  ----- --------- + ------- ------------ --------- ----
  1     10/100TX  | Yes     Auto         Disable   Auto
  2     10/100TX  | Yes     Auto         Disable   MDI
  3     10/100TX  | Yes     Auto         Disable   MDIX
  4     10/100TX  | Yes     Auto         Disable   Auto
  5     10/100TX  | Yes     Auto         Disable   Auto
  .        .         .       .              .       .
  .        .         .       .              .       .
  .        .         .       .              .       .
```

Per-Port MDI Configuration

Figure 10-2. Example of Displaying the Current MDI Configuration



```
ProCurve(config)# show interfaces brief

 Status and Counters - Port Status

                  | Intrusion                                MDI   Flow
  Port  Type      | Alert     Enabled Status Mode            Mode  Ctrl
  ----- --------- + --------- ------- ------ ----------      ----- -----
  1     10/100TX  | No        Yes     Up     100FDx          MDIX  off
  2     10/100TX  | No        Yes     Up     100FDx          MDI   off
  3     10/100TX  | No        Yes     Up     100FDx          MDIX  off
  4     10/100TX  | No        Yes     Down   10FDx           Auto  off
  5     10/100TX  | No        Yes     Down   10FDx           Auto  off

 .         .         .         .       .       .              .     .
 .         .         .         .       .       .              .     .
 .         .         .         .       .       .              .     .
```

Per-Port MDI Operating Mode

Figure 10-3. Example of Displaying the Current MDI Operating Mode

Note

Port Response to Switch Software Updates

- Series 2600/2600-PWR Switch software updated from H_07.*XX* or earlier
- Series 2800 Switch software updated from I_07.*XX* or earlier

1. Copper ports in auto-negotiation still default to **auto-mdix** mode.
2. Copper ports in forced speed/duplex default to **mdix** mode.

The default is **auto-mdix**. If the switch is reset to the factory defaults, these ports are configured as **auto-mdix**. Use the following CLI command to change the setting for individual ports:

interface < *port-list* > mdix-mode < automdix | mdi | mdix >

Web: Viewing Port Status and Configuring Port Parameters

In the web browser interface:

1. Click on the **Configuration** tab.
2. Click on **Port Configuration**.
3. Select the ports you want to modify and click on **Modify Selected Ports**.
4. After you make the desired changes, click on **Apply Settings**.

Note that the web browser interface displays an existing port trunk group. However, to configure a port trunk group, you must use the CLI or the menu interface. For more on this topic, see Chapter 12, "Port Trunking" .

Jumbo Packets on the Series 2800 Switches

This section applies only to the ProCurve Series 2800 switches.

Feature	Default	Menu	CLI	Web
display VLAN jumbo status	n/a	—	10-20	—
configure jumbo VLANs	Disabled	—	10-22	—

The *Maximum Transmission Unit* (MTU) is the maximum size IP packet the switch can receive for Layer 2 packets inbound on a port. The switch drops any inbound packets larger than the MTU allowed on the port. On ports operating at 10 Mbps or 100 Mbps, the MTU is fixed at 1522 bytes. However, ports operating at 1 Gbps or 10 Gbps speeds accept forward packets of up to 9220 bytes (including four bytes for a VLAN tag) when configured for jumbo traffic. In the 2800 switches you can enable inbound jumbo packets on a per-VLAN basis. That is, on a VLAN configured for jumbo traffic, all ports belonging to that VLAN and *operating* at 1 Gbps or 10 Gbps allow inbound jumbo packets of up to 9220 bytes. (Regardless of the mode configured on a given jumbo-enabled port, if the port is operating at only 10 Mbps or 100 Mbps, only packets that do not exceed 1522 bytes are allowed inbound on that port.)

Terminology

Jumbo Packet: On the Series 2800 switches, an IP packet exceeding 1522 bytes in size. The maximum Jumbo packet size is 9220 bytes. (This size includes 4 bytes for the VLAN tag.)

Jumbo VLAN: A VLAN configured to allow inbound jumbo traffic. All ports belonging to a jumbo and operating at 1 Gbps or higher can receive jumbo packets from external devices.

MTU (*Maximum Transmission Unit)*: This is the maximum-size IP packet the switch can receive for Layer 2 packets inbound on a port. The switch allows jumbo packets of up to 9220 bytes.

Standard MTU: On the Series 2800 switches, an IP packet of 1522 bytes in size. (This size includes 4 bytes for the VLAN tag.)

Operating Rules

- **Required Port Speed:** The Series 2800 switches allow inbound and outbound jumbo packets on ports operating at speeds of 1 gigabit or higher. At lower port speeds, only standard (1522-byte or smaller) packets are allowed, regardless of the jumbo configuration.
- **Flow Control:** Disable flow control (the default setting) on any ports or trunks through which you want to transmit or receive jumbo packets. Leaving flow control enabled on a port can cause a high rate of jumbo drops to occur on the port.
- **GVRP Operation:** A VLAN enabled for jumbo traffic cannot be used to create a dynamic VLAN. A port belonging to a statically configured, jumbo-enabled VLAN cannot join a dynamic VLAN.
- **Port Adds and Moves:** If you add a port to a VLAN that is already configured for jumbo traffic, the switch enables that port to receive jumbo traffic. If you remove a port from a jumbo-enabled VLAN, the switch disables jumbo traffic capability on the port only if the port is not currently a member of another jumbo-enabled VLAN. This same operation applies to port trunks.
- **Jumbo Traffic Sources:** A port belonging to a jumbo-enabled VLAN can receive inbound jumbo packets through any VLAN to which it belongs, including non-jumbo VLANs. For example, if VLAN 10 (without jumbos enabled) and VLAN 20 (with jumbos enabled) are both configured on a switch, and port 1 belongs to both VLANs, then port 1 can receive jumbo

traffic from devices on either VLAN. For a method to allow only some ports in a VLAN to receive jumbo traffic, refer to “Operating Notes for Jumbo Traffic-Handling” on page 10-22.

Configuring Jumbo Packet Operation

Command	Page
show vlans	10-20
show vlans ports < port-list >	10-21
show vlans < vid >	10-22
jumbo	10-22

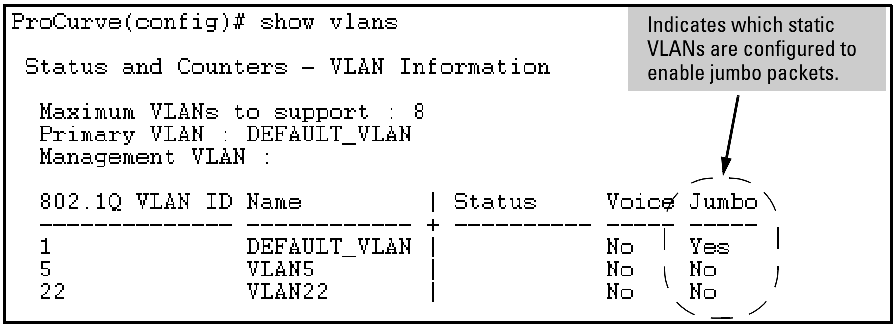
Overview

1. Determine the VLAN membership of the ports or trunks through which you want the switch to accept inbound jumbo traffic. For operation with GVRP enabled, refer to the GVRP topic under “Operating Rules”, above.
2. Ensure that the ports through which you want the switch to receive jumbo packets are operating at least at gigabit speed. (Check the **Mode** field in the output for the **show interfaces brief *< port-list >*** command.)
3. Use the **jumbo** command to enable jumbo packets on one or more VLANs statically configured in the switch. (All ports belonging to a jumbo-enabled VLAN can receive jumbo packets.
4. Execute **write memory** to save your configuration changes to the startup-config file.

Viewing the Current Jumbo Configuration

Syntax: show vlans

Lists the static VLANs configured on the switch and includes a **Jumbo** *column to indicate which VLANs are configured to support inbound jumbo traffic. All ports belonging to a jumbo-enabled VLAN can receive jumbo traffic. (For more information refer to "Operating Notes for Jumbo Traffic-Handling" on page 10-22.) See figure 10-4, below.*



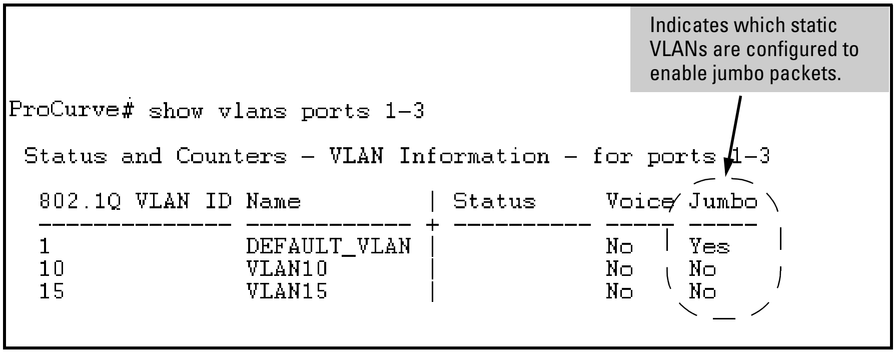
```
ProCurve(config)# show vlans

 Status and Counters - VLAN Information

  Maximum VLANs to support : 8
  Primary VLAN : DEFAULT_VLAN
  Management VLAN :

  802.1Q VLAN ID Name         | Status     Voice Jumbo
  -------------- ------------ + ---------- ----- -----
  1              DEFAULT_VLAN |            No    Yes
  5              VLAN5        |            No    No
  22             VLAN22       |            No    No
```

Indicates which static VLANs are configured to enable jumbo packets.

Figure 10-4. Example Listing of Static VLANs To Show Jumbo Status Per VLAN

Syntax: show vlans ports < *port-list* >

Lists the static VLANs to which the specified port(s) belong, including the **Jumbo** *column to indicate which VLANs are configured to support jumbo traffic. Entering only one port in <* port-list *> results in a list of all VLANs to which that port belongs. Entering multiple ports in <* port-list *> results in a superset list that includes the VLAN memberships of all ports in the list, even though the individual ports in the list may belong to different subsets of the complete VLAN listing. For example, if port 1 belongs to VLAN 1, port 2 belongs to VLAN 10, and port 3 belongs to VLAN 15, then executing this command with a <* port-list *> of* **1-3** *results in a listing of all three VLANs, even though none of the ports belong to all three VLANS. (Refer to figure 10-5.)*



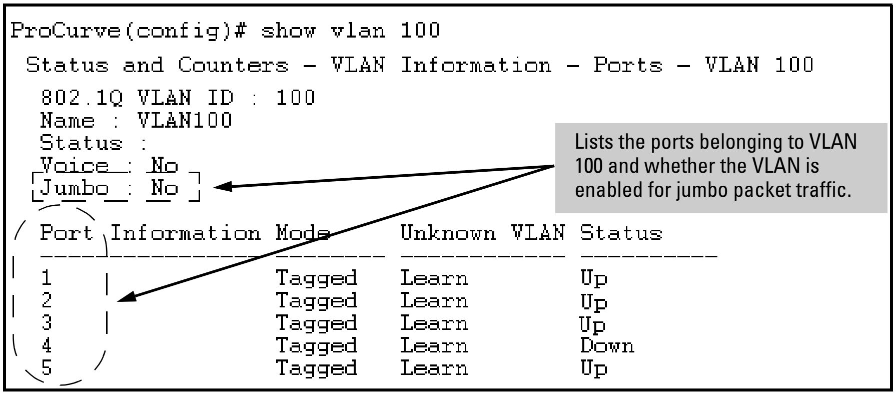
```
ProCurve# show vlans ports 1-3

 Status and Counters - VLAN Information - for ports 1-3

  802.1Q VLAN ID Name         | Status     Voice Jumbo
  -------------- ------------ + ---------- ----- -----
  1              DEFAULT_VLAN |            No    Yes
  10             VLAN10       |            No    No
  15             VLAN15       |            No    No
```

Indicates which static VLANs are configured to enable jumbo packets.

Figure 10-5. Example of Listing the VLAN Memberships for a Range of Ports

Syntax: show vlans < *vid* >

This command shows port membership and jumbo configuration for the specified < vid *>.*



```
ProCurve(config)# show vlan 100
 Status and Counters - VLAN Information - Ports - VLAN 100
  802.1Q VLAN ID : 100
  Name : VLAN100
  Status :
  Voice : No
  Jumbo : No

  Port Information Mode     Unknown VLAN Status
  ---------------- -------- ------------ ----------
  1                Tagged   Learn        Up
  2                Tagged   Learn        Up
  3                Tagged   Learn        Up
  4                Tagged   Learn        Down
  5                Tagged   Learn        Up
```

Lists the ports belonging to VLAN 100 and whether the VLAN is enabled for jumbo packet traffic.

Figure 10-6. Example of Listing the Port Membership and Jumbo Status for a VLAN

Enabling or Disabling Jumbo Traffic on a VLAN

Syntax: vlan < *vid* > jumbo
[no] vlan < *vid* > jumbo

Configures the specified VLAN to allow jumbo packets on all ports on the switch that belong to that VLAN. If the VLAN is not already configured on the switch, **vlan <** ***vid*** **> jumbo** *also creates the VLAN. Note that a port belonging to one jumbo VLAN can receive jumbo packets through any other VLAN statically configured on the switch, regardless of whether the other VLAN is enabled for jumbo packets. The* **[no]** *form of the command disables inbound jumbo traffic on all ports in the specified VLAN that do not also belong to another VLAN that is enabled for jumbo traffic. In a VLAN context, the command forms are* **jumbo** *and* **no jumbo**. *(Default: Jumbos disabled on the specified VLAN.)*

Operating Notes for Jumbo Traffic-Handling

- ProCurve does not recommend configuring a voice VLAN to accept jumbo packets. Voice VLAN packets are typically small, and allowing a voice VLAN to accept jumbo packet traffic can degrade the voice transmission performance.
- You can configure the default, primary, and/or (if configured) the management VLAN to accept jumbo packets on all ports belonging to the VLAN.
- When the switch applies the default MTU (1522-bytes) to a VLAN, all ports in the VLAN can receive incoming packets of up to 1522 bytes in length. When the switch applies the jumbo MTU (9220 bytes) to a VLAN, all ports in that VLAN can receive incoming packets of up to 9220 bytes in length. A port receiving packets exceeding the applicable MTU drops such packets, causing the switch to generate an Event Log message and increment the “Giant Rx” counter (displayed by **show interfaces <** ***port-list*** **>**).
- The switch does not allow flow control and jumbo packet capability to co-exist on a port. Attempting to configure both on the same port generates an error message in the CLI and sends a similar message to the Event Log.
- The default MTU on the Series 2800 switches is 1522 bytes (including 4 bytes for the VLAN tag). The jumbo MTU is 9220 bytes (including 4 bytes for the VLAN tag).

- When a port is not a member of any jumbo-enabled VLAN, it drops all jumbo traffic. If the port is receiving "excessive" inbound jumbo traffic, the port generates an Event Log message to notify you of this condition. This same condition generates a Fault-Finder message in the Alert log of the switch's web browser interface, and also increments the switch's "Giant Rx" counter.
- If you do not want all ports in a given VLAN to accept jumbo packets, you can consider creating one or more jumbo VLANs with a membership comprised of only the ports you want to receive jumbo traffic. Because a port belonging to one jumbo-enabled VLAN can receive jumbo packets through any VLAN to which it belongs, this method enables you to include both jumbo-enabled and non-jumbo ports within the same VLAN. For example, suppose you wanted to allow inbound jumbo packets only on ports 6, 7, 12, and 13. However, these ports are spread across VLAN 100 and VLAN 200, and also share these VLANs with other ports you want excluded from jumbo traffic. A solution is to create a third VLAN with the sole purpose of enabling jumbo traffic on the desired ports, while leaving the other ports on the switch disabled for jumbo traffic. That is:

	VLAN 100	VLAN 200	VLAN 300
Ports	6-10	11-15	6, 7, 12, and 13
Jumbo-Enabled?	No	No	Yes

  If there are security concerns with grouping the ports as shown for VLAN 300, you can either use source-port filtering to block unwanted traffic paths or create separate jumbo VLANs, one for ports 6 and 7, and another for ports 12 and 13.
- **Outbound Jumbo Traffic.** Any port operating at 1 Gbps or higher can transmit outbound jumbo packets through any VLAN, regardless of the jumbo configuration. The VLAN is not required to be jumbo-enabled, and the port is not required to belong to any other, jumbo enabled VLANs. This can occur in situations where a non-jumbo VLAN includes some ports that do not belong to another, jumbo-enabled VLAN and some ports that do belong to another, jumbo-enabled VLAN. In this case, ports capable of receiving jumbo packets can forward them to the ports in the VLAN that do not have jumbo capability.

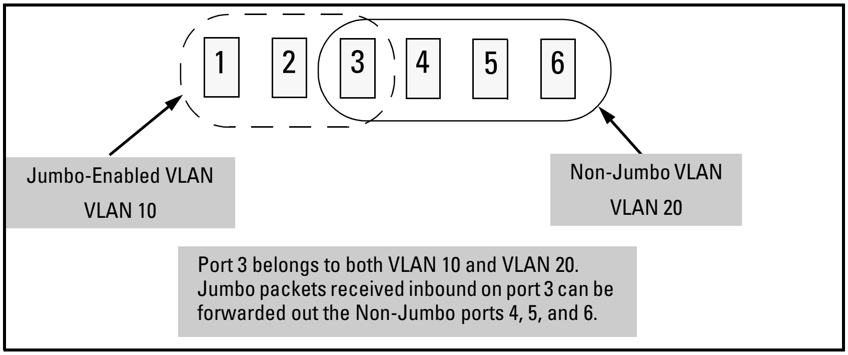

1
2
3
4
5
6
Jumbo-Enabled VLAN
VLAN 10
Non-Jumbo VLAN
VLAN 20
Port 3 belongs to both VLAN 10 and VLAN 20. Jumbo packets received inbound on port 3 can be forwarded out the Non-Jumbo ports 4, 5, and 6.

Figure 10-7. Forwarding Jumbo Packets Through Non-Jumbo Ports

Jumbo packets can also be forwarded out non-jumbo ports when the jumbo packets received inbound on a jumbo-enabled VLAN are routed to another, non-jumbo VLAN for outbound transmission on ports that have no memberships in other, jumbo-capable VLANs. Where either of the above scenarios is a possibility, the downstream device must be configured to accept the jumbo traffic. Otherwise, this traffic will be dropped by the downstream device.

Troubleshooting

A VLAN is configured to allow jumbo packets, but one or more ports drops all inbound jumbo packets. The port may not be operating at 1 gigabit or higher. Regardless of a port's configuration, if it is actually operating at a speed lower than 1 gigabit, it drops inbound jumbo packets. For example, if a port is configured for **Auto** mode (**speed-duplex auto**), but has negotiated a 100 Mbps speed with the device at the other end of the link, then the port cannot receive inbound jumbo packets. To determine the actual operating speed of one or more ports, view the **Mode** field in the output for the following command:

show interfaces brief *< port-list >*

A non-jumbo port is generating "Excessive undersize/giant packets" messages in the Event Log. The 2800 switch can transmit outbound jumbo traffic on any port, regardless of whether the port belongs to a jumbo VLAN. In this case, another port in the same VLAN on the 2800 switch may be jumbo-enabled through membership in a different, jumbo-enabled VLAN, and may be forwarding jumbo packets received on the jumbo VLAN to non-jumbo ports. Refer to "Outbound Jumbo Traffic" on page 10-23.

QoS Pass-Through Mode on the Series 2800 and 4100gl Switches

QoS Pass-Through mode is designed to enhance the performance of line-rate traffic transfers through the Series 2800 and 4100gl switches. This feature should only be used in environments where Quality of Service (QoS) is not of major importance, but where lossless data transfers are key. This command disables any discrimination of QoS queues for traffic, consolidating packet buffer memory to provide line-rate flows with no loss of data.

General Operation

The port buffering design for the switch has been optimized for gigabit-to-gigabit traffic flows. For this reason, some flows from Gigabit-to-100Base or even 100Base-to-10Base may not perform as well as would be expected. The QoS Pass-Through mode enhancement can provide a significant performance improvement for high-bandwidth traffic flows through the switch, particularly when running traffic flows from 1000Base to either 100Base or 10Base connections.

QoS Pass-Through mode is OFF by default, and must be enabled via the “config” context of the CLI by entering the CLI command **qos-passthrough-mode**, followed by **write memory** and rebooting the switch.

QoS Pass-Through mode, when enabled, results in the following general changes to switch operation:

- Alters the switch's default outbound priority queue scheme from four queues (low, normal, medium, and high), to two queues (normal & high).
- Optimizes outbound port buffers for a two-queue scheme.
- All packets received with an 802.1p priority tag of 0 to 5 (low, normal, or medium priorities), or tagged by the switch's QOS feature, will be serviced by the (now larger) "normal" priority queue.
- All packets received with an 802.1p priority tag of 6 or 7 (high priority), or tagged by the switch's QoS feature, will be serviced by the "high" priority queue.
- High priority packets sourced by the switch itself, such as Spanning Tree packets, will be serviced in the "high" priority queue.

- Any 802.1p tagging on a received packet, or any tag added to a received frame by the switch via its QoS configuration, will be preserved as it is transmitted from the switch.

  NOTE: As stated earlier, use of this QoS-Passthrough-Mode feature generally assumes that QoS tagged packets are not being sent through the switch. The receipt of priority 6 or 7 packets may in fact suffer packet drops depending on the traffic load of non-priority 6 or 7 packets.

Priority Mapping With and Without QoS Pass-Through Mode

The switch supports 802.1p VLAN tagging, which is used in conjunction with the outbound port priority queues to prioritize outbound traffic.

An 802.1Q VLAN tagged packet carries an 802.1p priority setting (0-7). If the switch receives a tagged packet, it is placed into the appropriate queue based on the frame's 802.1p priority setting. The mapping with/without QoS Pass-Through Mode is as follows:

802.1p Priority Setting	Prioritization Queue Placement	
	Default QoS Setting	QoS Passthrough Mode
1	1 (low)	2 (normal)
2	1 (low)	2 (normal)
0 or Unspecified	2 (normal)	2 (normal)
3	2 (normal)	2 (normal)
4	3 (medium)	2 (normal)
5	3 (medium)	2 (normal)
6	4 (high)	4 (high)
7	4 (high)	4 (high)

How to enable/disable QoS Pass-Through Mode

QoS Pass-Through Mode is disabled by default, and is available only in I.07.52 and later switch software versions.

Syntax: [no] qos-passthrough-mode
write memory
reload

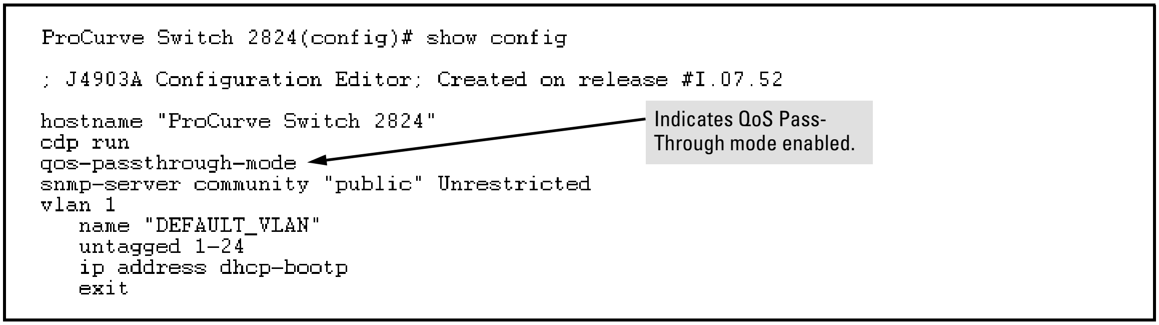
The above command sequence enables QoS pass-through mode. The **no** *form of the command sequence disables QoS pass-through mode. (Default: Disabled)*

For example:

```
ProCurve Switch 2824(config)# qos-passthrough-mode
Command will take effect after saving configuration and
reboot
ProCurve Switch 2824(config)# write memory
ProCurve Switch 2824(config)# reload
```

This command can be enabled and disabled only from the switch's CLI. QoS passthrough mode cannot be enabled or disabled through either the switch's menu or web browser interfaces.

Once enabled, this feature adds **qos-passthrough-mode** to the switch's startup-config file. For example, in an otherwise default configuration, executing **show config** lists the startup-config file (with QoS pass-through mode enabled) as follows:



```
ProCurve Switch 2824(config)# show config

; J4903A Configuration Editor; Created on release #I.07.52

hostname "ProCurve Switch 2824"
cdp run
qos-passthrough-mode
snmp-server community "public" Unrestricted
vlan 1
   name "DEFAULT_VLAN"
   untagged 1-24
   ip address dhcp-bootp
   exit
```

Indicates QoS Pass-Through mode enabled.

Figure 10-9. Example of the Startup-Config File Listing with QoS Pass-Through Mode Enabled

Configuring Port-Based Priority for Incoming Packets on the 4100gl and 6108 Switches

Feature	Default	Menu	CLI	Web
Assigning a priority level to traffic on the basis of incoming port	Disabled	n/a	page 10-31	n/a

When network congestion occurs, it is important to move traffic on the basis of relative importance. However, without prioritization:

- Traffic from less important sources can consume bandwidth and slow down or halt delivery of more important traffic.
- Most traffic from all ports is forwarded as normal priority, and competes for bandwidth with all other normal-priority traffic, regardless of its relative importance.

Traffic received in tagged VLAN packets carries a specific 802.1p priority level (0 - 7) that the switch recognizes and uses to assign packet priority at the outbound port. With the default port-based priority, the switch handles traffic received in untagged packets as “Normal” (priority level = 0).

You can assign a priority level to:

- Inbound, untagged VLAN packets
- Inbound, tagged VLAN packets having a priority level of 0 (zero)

(The switch does not alter the existing priority level of inbound, tagged VLAN packets carrying a priority level of 1-7.)

Thus, for example, high-priority tagged VLAN traffic received on a port retains its priority in the switch. However, you have the option of configuring the port to assign a priority level to untagged traffic and 0-priority tagged traffic the port receives.

The Role of 802.1Q VLAN Tagging

An 802.1Q-tagged VLAN packet carries the packet’s VLAN assignment and the 802.1p priority setting (0 - 7). (By contrast, an untagged packet does not have a tag and does not carry a priority setting.) Generally, the switch preserves and uses a packet’s priority setting to determine which outbound queue the packet belongs in on the outbound port. If the outbound port is a tagged member of the VLAN, the packet carries its priority setting to the next, downstream device. If the outbound port is not configured as a tagged member of the VLAN, then the tag is stripped from the packet, which then exits from the switch without a priority setting.

Outbound Port Queues and Packet Priority Settings

Ports on the ProCurve switches have the following outbound port queue structure:

Switch Model	Outbound Port Queues
Switch 6108	4
Series 5300xl Switch	4
Series 4100gl Switch	3
Series 3400cl Switch	
Series 2600, 2600-PWR Switch	4
Series 2800 Switch	4
Series 2500 Switch	2
Switches 1600M/2400M/2424M/4000M/8000M	2

As shown below, these port queues map to the eight priority settings specified in the 802.1p standard.

Table 10-3. Mapping Priority Settings to Device Queues

802.1p Priority Settings Used In Tagged VLAN Packets	Switches with 3 Outbound Port Queues	Queue Assignment in Downstream Devices With:		
		4 Queues	8 Queues	2 Queues
1 (low)	Low	Low	Low	Low
2 (low)	Low	Low	↓	
0 (normal priority)	Normal	Normal		
3	Normal	Normal		
4	High	Medium		High
5	High	Medium		
6	High	High		
7 (high priority)	High	High	High	

For example, suppose you have configured port A10 to assign a priority level of 1 (low):

- An untagged packet coming into the switch on port A10 and leaving the switch through any other port configured as a tagged VLAN member would leave the switch as a tagged packet with a priority level of 1.
- A tagged packet with an 802.1p priority setting of 0 (zero) coming into the switch on port A10 and leaving the switch through any other port configured as a tagged VLAN member would leave the switch as a tagged packet with a priority level of 1.
- A tagged packet with an 802.1p priority setting (1 - 7) coming into the switch on port A10 and leaving the switch through any other port configured as a tagged VLAN member would keep its original priority setting (regardless of the port-based priority setting on port A10).

Note

For a packet to carry a given 802.1p priority level from end-to-end in a network, the VLAN for the packet must be configured as tagged on all switch-to-switch links. Otherwise the tag is removed and the 802.1p priority is lost as the packet moves from one switch to the next.

Operating Rules for Port-Based Priority

These rules apply to the operation of port-based priority on the switch.

- In the switch's default configuration, port-based priority is configured as "0" (zero) for inbound traffic on all ports.
- On a given port, when port-based priority is configured as 0 - 7, an inbound, *untagged* packet adopts the specified priority and is sent to the corresponding outbound queue on the outbound port. (See table 10-3, "Mapping Priority Settings to Device Queues", on page 10-29.) If the outbound port is a tagged member of the applicable VLAN, then the packet carries a tag with that priority setting to the next downstream device.
- On a given port, when port-based priority is configured as 0 - 7, an inbound, *tagged* packet with a priority of 0 (zero) adopts the specified priority and is sent to the corresponding outbound queue on the outbound port. (See table 10-3, "Mapping Priority Settings to Device Queues", on page 10-29.) If the outbound port is a tagged member of the applicable VLAN, then the packet carries a tag with that priority setting to the next downstream device.

- On a given port, an inbound, *tagged* packet received on the port with a preset priority of 1 - 7 in its tag keeps that priority and is assigned an outbound queue on the basis of that priority (regardless of the port-based priority configured on the port). (Refer to table 10-3, "Mapping Priority Settings to Device Queues" on page 10-29.)
- If a packet leaves the switch through an outbound port configured as an untagged member of the packet's VLAN, then the packet leaves the switch without a VLAN tag and thus without an 802.1p priority setting.
- Trunked ports do not allow non-default (1 - 7) port-based priority settings. If you configure a non-default port-based priority value on a port and then add the port to a port trunk, then the port-based priority for that port is returned to the default "0".

Configuring and Viewing Port-Based Priority

This command enables or disables port-based priority on a per-port basis. You can either enter the command on the interface context level or include the interface in the command.

Syntax: interface <port #> qos priority < 1 .. 7 >

Configures a non-default port-based 802.1p priority for incoming, untagged packets or tagged packets arriving with a "0" priority on the designated ports, as described under "Operating Rules for Port-Based Priority", above.

interface <port #> qos priority 0

Returns a port-based priority setting to the default "0" for untagged packets received on the designated port(s). In this state the switch handles the untagged packets with "Normal" priority. (Refer to table 10-3 on page 10-29.)

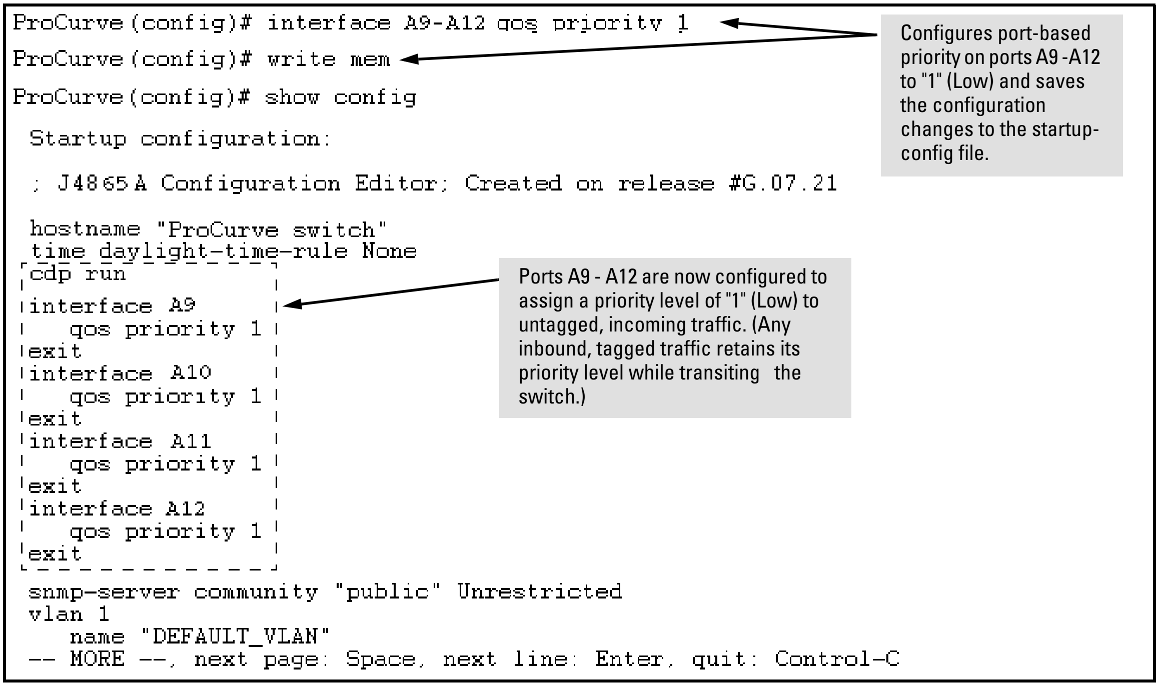
show running-config

Lists any non-default (1 - 7) port-based priority settings in the running-config file on a per-port basis. If the priority is set to the (default) "0", the setting is not included in the **show config** *listing.*

show config

Lists any non-default (1 - 7) port-based priority settings in the startup-config file on a per-port basis. If the priority is set to the (default) "0", the setting is not included in the **show config** *listing.*

For example, suppose you wanted to configure ports A10 -A12 on the switch to prioritize all untagged, inbound VLAN traffic as "Low" (priority level = 1; refer to table 10-3 on page 10-29).



```
ProCurve(config)# interface A9-A12 qos priority 1
ProCurve(config)# write mem
ProCurve(config)# show config

 Startup configuration:

 ; J4865A Configuration Editor; Created on release #G.07.21

 hostname "ProCurve switch"
 time daylight-time-rule None
 cdp run
 interface A9
    qos priority 1
 exit
 interface A10
    qos priority 1
 exit
 interface A11
    qos priority 1
 exit
 interface A12
    qos priority 1
 exit
 snmp-server community "public" Unrestricted
 vlan 1
    name "DEFAULT_VLAN"
 -- MORE --, next page: Space, next line: Enter, quit: Control-C
```

Configures port-based priority on ports A9 -A12 to "1" (Low) and saves the configuration changes to the startup-config file.

Ports A9 - A12 are now configured to assign a priority level of "1" (Low) to untagged, incoming traffic. (Any inbound, tagged traffic retains its priority level while transiting the switch.)

Figure 10-10. Example of Configuring Non-Default Prioritization on Untagged, Inbound Traffic

Messages Related to Prioritization

Message	Meaning
`< priority-level >: Unable to create.`	The port(s) on which you are trying to configure a qos priority may belong to a port trunk. Trunked ports cannot be configured for qos priority.

Troubleshooting Prioritization

Refer to “Prioritization Problems” on page C-9 in the "Troubleshooting" chapter.

Using Friendly (Optional) Port Names

Feature	Default	Menu	CLI	Web
Configure Friendly Port Names	Standard Port Numbering	n/a	page 34	n/a
Display Friendly Port Names	n/a	n/a	page 36	n/a

This feature enables you to assign alphanumeric port names of your choosing to augment automatically assigned numeric port names. This means you can configure meaningful port names to make it easier to identify the source of information listed by some **Show** commands. (Note that this feature *augments* port numbering, but *does not replace* it.)

Configuring and Operating Rules for Friendly Port Names

- At either the global or context configuration level you can assign a unique name to any port on the switch. You can also assign the same name to multiple ports.
- The friendly port names you configure appear in the output of the **show name [*port-list*]**, **show config**, and **show interface <*port-number*>** commands. They do not appear in the output of other show commands or in Menu interface screens. (See “Displaying Friendly Port Names with Other Port Data” on page 10-36.)
- Friendly port names are not a substitute for port numbers in CLI commands or Menu displays.
- Trunking ports together does not affect friendly naming for the individual ports. (If you want the same name for all ports in a trunk, you must individually assign the name to each port.)
- A friendly port name can have up to 64 contiguous alphanumeric characters.
- Blank spaces within friendly port names are not allowed, and if used, cause an **invalid input** error. (The switch interprets a blank space as a name terminator.)
- In a port listing, **not assigned** indicates that the port does not have a name assignment other than its fixed port number.

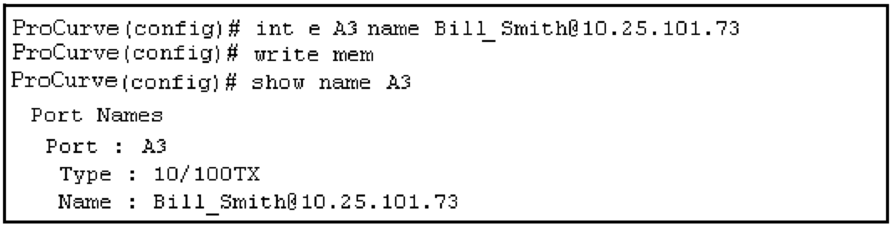
- To retain friendly port names across reboots, you must save the current running-configuration to the startup-config file after entering the friendly port names. (In the CLI, use the **write memory** command.)

Configuring Friendly Port Names

Syntax: interface <*port-list*> name <*port-name-string*>
Assigns a port name to port-list.

no interface <*port-list*> name
Deletes the port name from port-list.

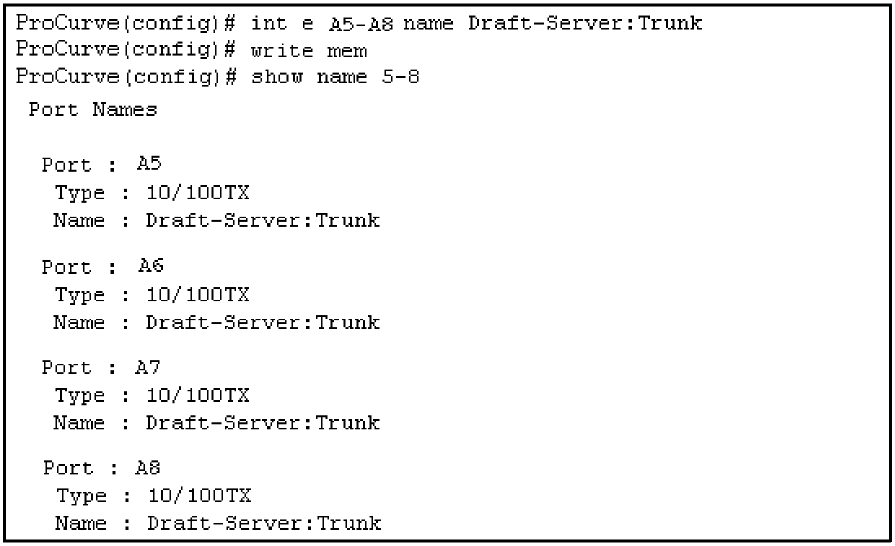
Configuring a Single Port Name. Suppose that you have connected port A3 on the switch to Bill Smith's workstation, and want to assign Bill's name and workstation IP address (10.25.101.73) as a port name for port A3:



```
ProCurve(config)# int e A3 name Bill_Smith@10.25.101.73
ProCurve(config)# write mem
ProCurve(config)# show name A3

 Port Names

  Port : A3
   Type : 10/100TX
   Name : Bill_Smith@10.25.101.73
```

Figure 10-11. Example of Configuring a Friendly Port Name

Configuring the Same Name for Multiple Ports. Suppose that you want to use ports A5 through A8 as a trunked link to a server used by a drafting group. In this case you might configure ports A5 through A8 with the name “Draft-Server:Trunk”.



```
ProCurve(config)# int e A5-A8 name Draft-Server:Trunk
ProCurve(config)# write mem
ProCurve(config)# show name 5-8
 Port Names

  Port :  A5
   Type : 10/100TX
   Name : Draft-Server:Trunk

  Port :  A6
   Type : 10/100TX
   Name : Draft-Server:Trunk

  Port : A7
   Type : 10/100TX
   Name : Draft-Server:Trunk

  Port : A8
   Type : 10/100TX
   Name : Draft-Server:Trunk
```

Figure 10-12. Example of Configuring One Friendly Port Name on Multiple Ports

Displaying Friendly Port Names with Other Port Data

You can display friendly port name data in the following combinations:

- **show name**: Displays a listing of port numbers with their corresponding friendly port names and also quickly shows you which ports do not have friendly name assignments. (**show name** data comes from the running-config file.)
- **show interface <*port-number*>**: Displays the friendly port name, if any, along with the traffic statistics for that port. (The friendly port name data comes from the running-config file.)
- **show config**: Includes friendly port names in the per-port data of the resulting configuration listing. (**show config** data comes from the startup-config file.)

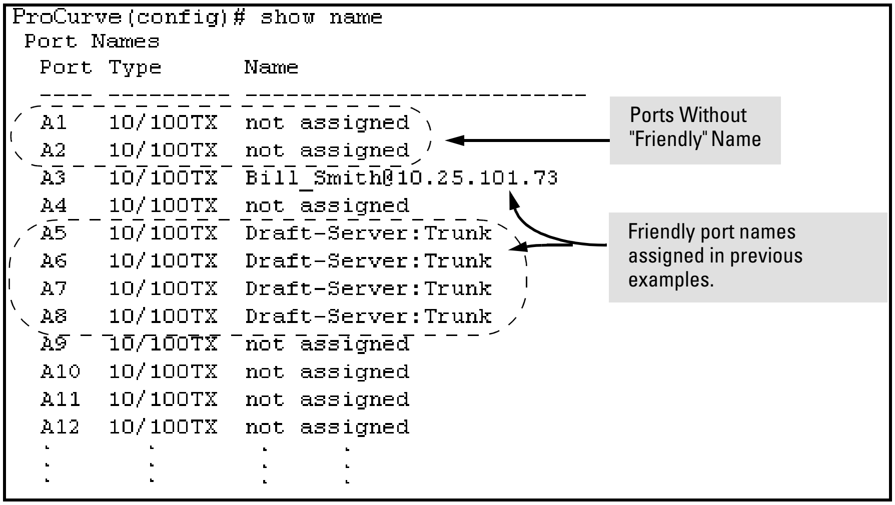
To List All Ports or Selected Ports with Their Friendly Port Names.

This command lists names assigned to a specific port.

Syntax: show name [*port-list*]

Lists the friendly port name with its corresponding port number and port type. The **show name** *command alone lists this data for all ports on the switch.*

For example:

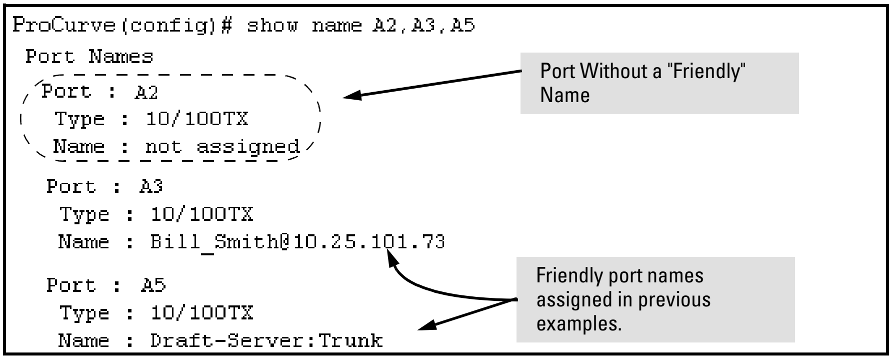


```
ProCurve(config)# show name
 Port Names
  Port Type      Name
  ---- --------- -------------------------
  A1   10/100TX  not assigned
  A2   10/100TX  not assigned
  A3   10/100TX  Bill_Smith@10.25.101.73
  A4   10/100TX  not assigned
  A5   10/100TX  Draft-Server:Trunk
  A6   10/100TX  Draft-Server:Trunk
  A7   10/100TX  Draft-Server:Trunk
  A8   10/100TX  Draft-Server:Trunk
  A9   10/100TX  not assigned
  A10  10/100TX  not assigned
  A11  10/100TX  not assigned
  A12  10/100TX  not assigned
  .    .          .     .
  .    .          .     .
  .    .          .     .
```

Ports Without "Friendly" Name

Friendly port names assigned in previous examples.

Figure 10-13. Example of Friendly Port Name Data for All Ports on the Switch



```
ProCurve(config)# show name A2,A3,A5
 Port Names
  Port : A2
   Type : 10/100TX
   Name : not assigned

   Port : A3
    Type : 10/100TX
    Name : Bill_Smith@10.25.101.73

   Port : A5
    Type : 10/100TX
    Name : Draft-Server:Trunk
```

Port Without a "Friendly" Name

Friendly port names assigned in previous examples.

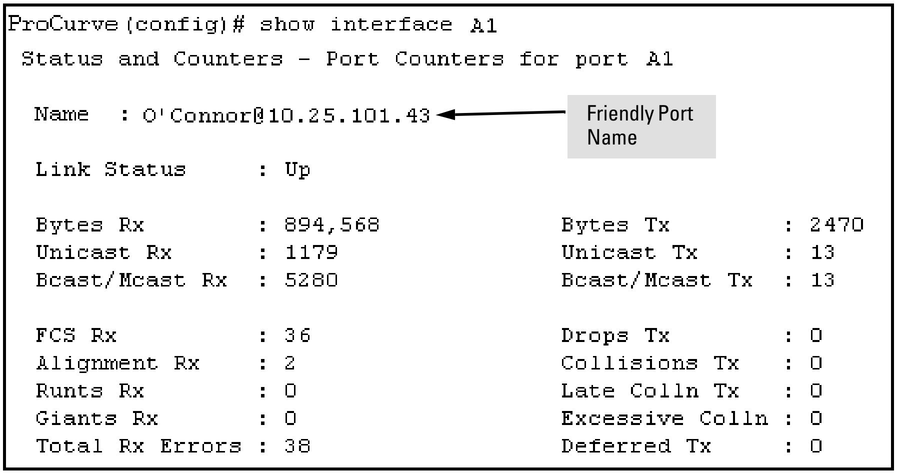
Figure 10-14. Example of Friendly Port Name Data for Specific Ports on the Switch

Including Friendly Port Names in Per-Port Statistics Listings. A friendly port name configured to a port is automatically included when you display the port’s statistics output.

Syntax: show interface <*port-number*>

Includes the friendly port name with the port’s traffic statistics listing.

For example, if you configure port A1 with the name “O’Connor_10.25.101.43”, the show interface output for this port appears similar to the following:



```
ProCurve(config)# show interface A1
 Status and Counters - Port Counters for port A1

  Name   : O'Connor@10.25.101.43

  Link Status     : Up

  Bytes Rx        : 894,568                Bytes Tx         : 2470
  Unicast Rx      : 1179                   Unicast Tx       : 13
  Bcast/Mcast Rx  : 5280                   Bcast/Mcast Tx   : 13

  FCS Rx          : 36                     Drops Tx         : 0
  Alignment Rx    : 2                      Collisions Tx    : 0
  Runts Rx        : 0                      Late Colln Tx    : 0
  Giants Rx       : 0                      Excessive Colln : 0
  Total Rx Errors : 38                     Deferred Tx      : 0
```

Friendly Port Name

Figure 10-15. Example of a Friendly Port Name in a Per-Port Statistics Listing

For a given port, if a friendly port name does not exist in the running-config file, the Name line in the above command output appears as:

```
Name  :  not assigned
```

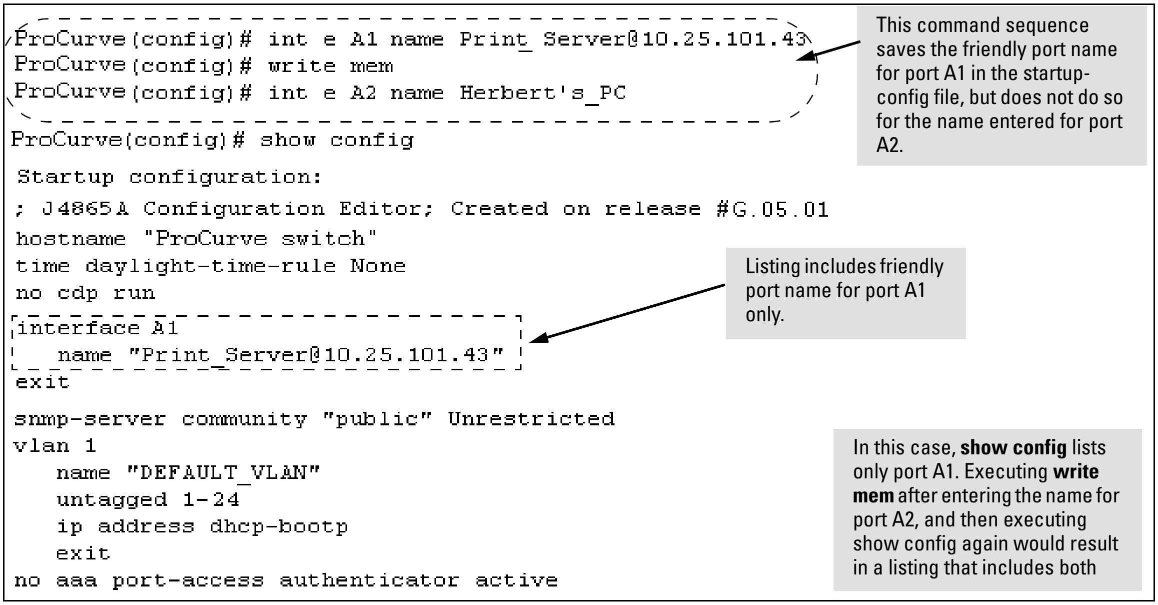
To Search the Configuration for Ports with Friendly Port Names.

This option tells you which friendly port names have been saved to the startup-config file. (**show config** does not include ports that have only default settings in the startup-config file.)

Syntax: show config

Includes friendly port names in a listing of all interfaces (ports) configured with non-default settings. Excludes ports that have neither a friendly port name nor any other non-default configuration settings.

For example, if you configure port A1 with a friendly port name:



```
ProCurve(config)# int e A1 name Print_Server@10.25.101.43
ProCurve(config)# write mem
ProCurve(config)# int e A2 name Herbert's_PC
ProCurve(config)# show config
 Startup configuration:
; J4865A Configuration Editor; Created on release #G.05.01
hostname "ProCurve switch"
time daylight-time-rule None
no cdp run
interface A1
   name "Print_Server@10.25.101.43"
exit
snmp-server community "public" Unrestricted
vlan 1
   name "DEFAULT_VLAN"
   untagged 1-24
   ip address dhcp-bootp
   exit
no aaa port-access authenticator active
```

This command sequence saves the friendly port name for port A1 in the startup-config file, but does not do so for the name entered for port A2.

Listing includes friendly port name for port A1 only.

In this case, **show config** lists only port A1. Executing **write mem** after entering the name for port A2, and then executing show config again would result in a listing that includes both

Figure 10-16. Example Listing of the Startup-Config File with a Friendly Port Name Configured (and Saved)