

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.

Port Status and Basic Configuration

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- 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