



L2/L3 QoS Computations for Cisco 12000 Series Router Multiservice Engine Line Cards

Part Number OL-8686-01 (Rev. A0) November 16, 2007

Feature History

Release	Modification
12.0(32)S	This feature was introduced on the Cisco 12000 series router, multiservice engine line cards.

This feature module provides information on L2/L3 QoS Computations in the following sections:

- [L2/L3 QoS Computations Feature Overview](#)
- [Supported Platforms](#)
- [Supported Standards, MIBs, and RFCs](#)
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L2/L3 QoS Computations Feature Overview

The L2/L3 QoS Computations feature is available on all Cisco 12000 series router, multiservice engine Shared Port Adapters (SPAs) running Cisco IOS Release 12.0(32)S.

Previous to the Cisco IOS Release 12.0(32)S, Cisco 12000 series router, line cards used only the Layer 3 packet size to do computations for QoS features such as policing, shaping, and bandwidth.

In Cisco IOS Release 12.0(32)S, the L2/L3 QoS Computations feature provides the user with the option to choose whether to select the Layer 2 packet size for QoS computations or the Layer 3 packet size for QoS computations.

The Layer 2 packet size option is offered to accommodate some Service Level Agreements (SLAs) between service providers and their customers, which state that the Layer 2 packet size will be used in QoS computations, since the Layer 2 packet size indicates the actual size of the packet, including all header information.

The L2/L3 QoS Computations feature is configurable at runtime, using the **hw-module slot <slot_number> qos account layer2** CLI command.

The L2/L3 QoS Computations feature effects the entire line card; both ingress and egress on all lines. When the Layer 2 computations option is configured, the Layer 2 packet size is used for all QoS computations such as policing, shaping, and bandwidth.

Benefits

The Layer 2 packet size option satisfies Service Level Agreements (SLAs) between service providers and their customers, which state that the Layer 2 packet size is used in QoS computations.

The L2/L3 QoS Computation feature allows customer to choose either Layer 2 packet sizes or Layer 3 packet sized to do QoS computations.

Restrictions

Only one QoS computation scheme per slot is possible—either Layer 2 or Layer 3. All interfaces on a slot share the same QoS computation scheme.

Related Features and Technologies

Cisco IOS Quality of Service (QoS) Solutions for Cisco 12000 Series Routers

Related Documents

For further information on configuring Cisco 12000 series routers, refer to the following documents:

- *Cisco 12000 Series Router Configuration Guide for Cisco IOS*
- Installation and Configuration Guide for the specific router

Supported Platforms

The L2/L3 QoS Computations feature is supported on the following Cisco 12000 series router, Cisco 12000 SIP-400, Shared Port Adapters (SPAs):

- 2-port and 4-port T3/E3 Serial SPA
- 2-port and 4-port Channelized T3/DS0 SPA
- 1-port 10-Gigabit Ethernet SPA
- 5-port Gigabit Ethernet SPA
- 10-port Gigabit Ethernet SPA
- 1-port OC-192c/STM-64c POS/RPR SPA
- 8-port Fast Ethernet SPA
- 8-port Channelized T1/E1 Serial SPA
- Channelized STM-1/OC3

Supported Standards, MIBs, and RFCs

Standards

No new or modified standards are supported, and support for existing standards has not been modified.

MIBs

No new or modified MIBs are supported, and support for existing MIBs has not been modified.

RFCs

No new or modified RFCs are supported, and support for existing RFCs has not been modified.

Prerequisites

No prerequisites are required for this feature.

Configuration Tasks

See the following sections for configuration tasks for the L2/L3 QoS Computations feature.

- [Configuring Layer 2 QoS Computations—Optional](#)
- [Verifying and Monitoring L2/L3 QoS Computations—Optional](#)

Configuring Layer 2 QoS Computations—Optional

The Layer 2 QoS computations feature is selected as shown in the following procedure:

	Command	Purpose
Step 1	Router(config)# config t	Enter configuration mode.
Step 2	Router(config-if)# hw-module slot <slot_number> qos account layer2	Switch to Layer 2 QoS computations.
Step 3	Router(config-if)#	—

Verifying and Monitoring L2/L3 QoS Computations—Optional

Use the following show commands to verify, monitor, and troubleshoot the L2/L3 QoS Computations feature.

Command	Purpose
Router# show policy interface	Displays detailed policy mapping information.
Router# show class-map	Displays class-map information.
Router# show policy-map	Displays policy-map information.

Configuration Examples

This example shows how to configure Layer 2 QoS computations on slot 5.

```
Router(config)#config t
Router(config-if)#hw-module slot 5 qos account layer2
Router(config-if)#
```

Command Reference

No new or modified CLI commands were introduced for the L2/L3 QoS Computations feature in Cisco IOS Release 12.0(32)S.

Glossary

SPA	Shared port adapter. A SPA is a modular, platform-independent port adapter that inserts into a subslot of a compatible SIP carrier card to provide network connectivity and increased interface port density. The SPA provides the interface between the network and the SIP.
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