Cisco Nexus 5500 Series NX-OS QoS Command Reference

Cisco NX-OS Releases 7.x

First Published: January 27, 2014

Cisco Systems, Inc.
www.cisco.com

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco website at www.cisco.com/go/offices.

Text Part Number: OL-30880-01

Cisco Nexus 5500 Series NX-OS QoS Command Reference

New and Changed Information

This chapter provides release-specific information for each new and changed feature in the *Cisco Nexus 5500 Series NX-OS QoS Command Reference*. The latest version of this document is available at the following Cisco website:

http://www.cisco.com/en/US/products/ps9670/prod_command_reference_list.html

To check for additional information about this Cisco NX-OS Release, see the *Cisco Nexus 5500 Series NX-OS Release Notes, Release 7.x* available at the following Cisco website:

http://www.cisco.com/en/US/products/ps9670/prod_release_notes_list.html

Preface

This preface describes the audience, organization, and conventions of the *Cisco Nexus 5500 Series NX-OS QoS Command Reference*. It also provides information on how to obtain related documentation.

This preface includes the following sections:

Audience

This publication is for experienced users who configure and maintain Cisco NX-OS devices.

Document Conventions

Command descriptions use these conventions:

Convention	Description
boldface font	Commands and keywords are in boldface.
italic font	Arguments for which you supply values are in italics.
[ ]	Elements in square brackets are optional.
{x | y | z}	Alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Screen examples use these conventions:

`screen font`	Terminal sessions and information that the switch displays are in screen font.
`boldface screen font`	Information you must enter is in boldface screen font.

italic screen font	Arguments for which you supply values are in italic screen font.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

This document uses the following conventions:

Note Means reader *take note*. Notes contain helpful suggestions or references to material not covered in the manual.

Caution Means reader *be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Related Documentation

Documentation for Cisco Nexus 5000 Series Switches and Cisco Nexus 2000 Series Fabric Extenders is available at the following URL:

http://www.cisco.com/en/US/products/ps9670/tsd_products_support_series_home.html

The documentation set includes the following types of documents:

- Licensing Information Guide
- Release Notes
- Installation and Upgrade Guides
- Configuration Guides
- Configuration Examples and TechNotes
- Programming Guides
- Operations Guides
- Error and System Message Guides
- Field Notices
- Security Advisories, Responses and Notices
- Troubleshooting Guide
- Command References
- MIB Reference Guide

Documentation Feedback

To provide technical feedback on this document or to report an error or ommission, please send your comments to nexus5k-docfeedback@cisco.com. We appreciate your feedback.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Subscribe to the *What's New in Cisco Product Documentation* as an RSS feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service. Cisco currently supports RSS Version 2.0.

B Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with B.

bandwidth (QoS)

To allocate a minimum percentage of the interface bandwidth to a queue and configure the bandwidth on both ingress and egress queues, use the **bandwidth** command. To remove a bandwidth configuration, use the **no** form of this command.

bandwidth percent *percent*

no bandwidth percent *percent*

Syntax Description

percent	Specifies the percentage of bandwidth of the underlying link rate.
percent	Percent value. The range is from 0 to 100.

Command Default

Default bandwidth rate is kbps.

Command Modes

Policy map type queuing class configuration

Command History

Release	Modification
5.0(2)N1(1)	This command was introduced.

Examples

This example shows how to set the bandwidth for the specified queue:

```
switch(config)# policy-map type queuing my_policy1
switch(config-pmap-que)# class type queuing 1p7q4t-out-pq1
switch(config-pmap-c-que)# bandwidth percent 25
switch(config-pmap-c-que)#
```

This example shows how to remove the bandwidth for the specified queue:

```
switch(config)# policy-map type queuing my_policy1
switch(config-pmap-que)# class type queuing 1p7q4t-out-pq1
switch(config-pmap-c-que)# no bandwidth percent 25
switch(config-pmap-c-que)#
```

Related Commands

Command	Description
show class-map	Displays class maps.
show policy-map	Displays policy maps.

C Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with C.

class (control plane policy map)

To specify a control plane class map for a control plane policy map, use the **class** command. To delete a control plane class map from a control plane policy map, use the **no** form of this command.

class {*class-map-name* [**insert-before** *class-map-name2*]}

no class *class-map-name*

Syntax Description

class-map-name	Name of the class map. The name is alphanumeric, case sensitive, and has a maximum of 64 characters.
insert-before *class-map-name2*	(Optional) Inserts the control plane class map ahead of another control plane class map for the control plane policy map. The class map name is alphanumeric, case sensitive, and has a maximum of 64 characters.

Command Default

None

Command Modes

Control plane policy map configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You must create the control plane class maps before you reference them in this command.

This command does not require a license.

Examples

This example shows how to configure a class map for a control plane policy map:

```
switch# configure terminal
switch(config)# policy-map type control-plane copp-system-policy-customized
switch(config-pmap)# class copp-system-class-dhcp
swtich(config-pmap-c)# police cir 300 bc 1500
```

Related Commands

Command	Description
class-map type control-plane	Creates or configures a control plane class map.
police (policy map)	Configures policing for a class map in a control plane policy map.
policy-map type control-plane	Specifies a control plane policy map and enters policy map configuration mode.
show policy-map type control-plane	Displays configuration information for control plane policy maps.

class (policy map type qos)

To add a reference to an existing qos class map in a policy map and enter the class mode, use the **class** command. To remove a class from the policy map, use the **no** form of this command.

class [**type qos**] *class-map-name*

no class *class-map-name*

Syntax Description

type qos	(Optional) Specifies the component type, which is qos for this class. By default, the type is qos.
class-map-name	Reference to a class map. The class map name can be a maximum of 40 characters. The name is case sensitive and can only contain alphabetic characters, numbers, hyphens, and underscores.

Command Default

None

Command Modes

Policy map type qos configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Policy actions in the first class that matches the traffic type are performed.

By default, the class-default class of type qos is created under every policy map of type qos in the system and it is mapped to the QoS group 0. You cannot change this mapping.

You cannot remove the class-default of type qos. If you attempt to delete the class-default class, the switch returns an error message.

Examples

This example shows how to add a reference to a qos class map at the end of a policy map:

```
switch(config)# policy-map my_policy1
switch(config-pmap-qos)# class traffic_class2
switch(config-pmap-c-qos)#
```

This example shows how to remove a class map reference in a policy map:

```
switch(config)# policy-map my_policy1
switch(config-pmap-qos)# no class traffic_class1
switch(config-pmap-qos)#
```

Related Commands

Command	Description
set dscp	Assigns a DSCP value to the traffic class.
set precedence	Assigns a IP precedence to the traffic class.
set qos-group	Assigns a QoS group to the traffic class.
show class-map type qos	Displays type qos class maps.
show policy-map	Displays policy maps.

class class-default

To add a reference to the system default class that does not match any traffic class, use the **class class-default** command. To remove the system default class from the policy map, use the **no** form of this command.

class class-default

no class class-default

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

QoS policy map configuration mode
Control-plane policy map configuration mode
QoS policy map in switch profile configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Traffic that fails to match any class is assigned to a default class of traffic called class-default. You cannot delete this class.

Examples

This example shows how to add a reference to the system default class at the end of a policy map in a switch profile:

```
switch# configure sync
Enter configuration commands, one per line. End with CNTL/Z.
switch(config-sync)# switch-profile s5010
Switch-Profile started, Profile ID is 1
switch(config-sync-sp)# policy-map type qos my_policy1
switch(config-sync-sp-pmap-qos)# class class-default
switch(config-sync-sp-pmap-c-qos)#
```

Related Commands

Command	Description
set dscp	Sets the DSCP value for the QoS traffic.
set precedence	Sets the IP precedence value for the QoS traffic.
set qos-group	Assigns a QoS group identifier for a class of traffic.
show policy-map	Displays policy maps.

Command	Description
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

class type network-qos

To add a reference to an existing network QoS class map in a policy map and enter the class mode, use the **class type network-qos** command. To remove a class from the policy map, use the **no** form of this command.

class type network-qos *class-map-name*

no class type network-qos *class-map-name*

Syntax Description

class-map-name	Reference to a network QoS class map. The class map name can be a maximum of 40 characters. The name is case sensitive and can only contain alphabetic characters, numbers, hyphens, and underscores.

Command Default

None

Command Modes

Policy map type network-qos configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Policy actions in the first class that matches the traffic type are performed.

Examples

This example shows how to add a reference to a class map in a type network-qos policy map:

```
switch(config)# policy-map type network-qos nqos_policy
switch(config-pmap-nq)# class type network-qos nqos_class
switch(config-pmap-nq-c)#
```

This example shows how to remove a class map reference in a type network-qos policy map:

```
switch(config)# policy-map type network-qos nqos_policy
switch(config-pmap-nq)# no class type network-qos nqos_class
switch(config-pmap-nq)#
```

Related Commands

Command	Description
mtu	Enables jumbo frames on a traffic class.
multicast-optimize	Enables a class to send multiple packets.
pause no-drop	Enables CBFC pause characteristics on a traffic class.
queue-limit	Configures queue limits for the traffic class.
set cos	Assigns a CoS value for a class of traffic.

Command	Description
show class-map type network-qos	Displays type network-qos class maps.
show policy-map	Displays policy maps.

class type queuing

To add a reference to an existing queuing class map in a policy map and enter the class mode, use the **class type queuing** command. To remove a class from the policy map, use the **no** form of this command.

class type queuing *class-map-name*

no class type queuing *class-map-name*

Syntax Description

class-map-name	Reference to a queuing class map. The class map name can be a maximum of 40 characters. The name is case sensitive and can only contain alphabetic characters, numbers, hyphens, and underscores.

Command Default

None

Command Modes

Policy map type queuing configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Policy actions in the first class that matches the traffic type are performed.

Examples

This example shows how to add a reference to a class map in a type queuing policy map:

```
switch(config)# policy-map type queuing my_policy1
switch(config-pmap-que)# class type queuing 1p7q4t-out-q3
switch(config-pmap-c-que)#
```

This example shows how to remove a class map reference in a type queuing policy map:

```
switch(config)# policy-map type queuing my_policy1
switch(config-pmap-que)# no class type queuing 1p7q4t-out-q3
switch(config-pmap-que)#
```

Related Commands

Command	Description
show class-map type queuing	Displays the type queuing class maps.
show policy-map	Displays policy maps.

class-map

To create or modify a class map and enter the class-map configuration mode, use the **class-map** command. To remove a class map, use the **no** form of this command.

class-map [**type qos**] [**match-all** | **match-any**] *class-map-name*

no class-map [**type qos**] [**match-all** | **match-any**] *class-map-name*

Syntax Description

type qos	(Optional) Specifies the component type qos for the class map. By default, the class map type is qos.
match-all	Specifies that if the packet matches all the criteria configured for this class map with the **match** command, then this class map is applied to the packet.
match-any	Specifies that if the packet matches any of the criteria configured for this class map with the **match** command, then this class map is applied to the packet. This is the default action if match-all is not specified.
class-map-name	Name assigned to the QoS class map. The name can be a maximum of 40 characters. The name is case sensitive and can only contain alphanumeric characters, hyphens, and underscores. The name class-default is reserved.

Command Default

type—qos

match-all

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can define a class map for each class of traffic to be used in QoS policies.

If the packet matches any of the criteria configured for this class map with the **match** command, then this class map is applied to the packet. If no execution strategy is specified (match-any or match-all), then the default value of match-any is applied to the traffic class.

Examples

This example shows how to create or modify a qos class map:

```
switch(config)# class-map my_class1
switch(config-cmap-qos)#
```

This example shows how to create a qos class map to match all traffic packets:

```
switch(config)# class-map type qos match-all my_class2
switch(config-cmap-qos)#
```

This example shows how to remove a qos class map:

```
switch(config)# no class-map my_class1
switch(config)#
```

This example shows the error message that appears when you attempt to remove a class-fcoe class map:

```
switch(config)# no class-map class-fcoe
ERROR: Reserved class-map(s) cannot be deleted/modified

switch(config)#
```

Related Commands

Command	Description
description	Adds a summary purpose for the class map.
feature fcoe	Enables FCoE on the switch.
match	Configures traffic class criteria.
policy-map type qos	Creates or modifies a qos policy map.
service-policy	Attaches a policy map to an interface or system policy.
show class-map type qos	Displays qos class maps.

class-map type control-plane

To create or specify a control plane class map and enter class map configuration mode, use the **class-map type control-plane** command.

class-map type control-plane [**match-any**] *class-map-name*

Syntax Description

match-any	(Optional) Specifies to match any match conditions in the class map.
class-map-name	Name of the class map. The name is alphanumeric and case-sensitive. The maximum length is 64 characters.

Command Default

match-any

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You cannot use match-any or class-default as names for control plane class maps.

You can delete only dynamic class-maps of type control-plane. You cannot delete static class-maps of type control-plane.

This command does not require a license.

Examples

This example shows how to specify a control plane class map and enter class map configuration mode:

```
switch# configure terminal
switch(config)# class-map type control-plane match-any copp-system-class-arp
switch(config-cmap)#
```

Related Commands

Command	Description
match access-group	Matches traffic with a specified access control list (ACL) group.
show class-map type control-plane	Displays control plane policy map configuration information.

class-map type network-qos

To create or modify a class map that defines a network QoS class of traffic and enter the class-map configuration mode, use the **class-map type network-qos** command. To remove a class map, use the **no** form of this command.

class-map type network-qos *class_map_name*

no class-map type network-qos *class_map_name*

Syntax Description

class-map-name	Name assigned to the class map. The name class-default is reserved. The name can be a maximum of 40 characters. The name is case sensitive and can only contain alphanumeric characters, hyphens, and underscores.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Class maps of type network qos support only the **match qos-group** command. If a traffic packet matches any of the criteria configured for this class map with the **match** command, then this class map is applied to the packet. By default, traffic is filtered using the implicit match-any option.

Examples

This example shows how to create or modify a network qos class map named my_class1:

```
switch(config)# class-map type network-qos my_class1
switch(config-cmap-nq)#
```

This example shows how to remove a network qos class map:

```
switch(config)# no class-map my_class1
switch(config)#
```

Related Commands

Command	Description
feature fcoe	Enables FCoE on a switch.
match qos-group	Defines a traffic class that matches the QoS group values.
show class-map type network-qos	Displays network qos class maps configured in the system.

class-map type queuing

To create or modify a class map that defines a queuing class of traffic and enter the class-map configuration mode, use the **class-map type queuing** command. To remove the queuing class map, use the **no** form of this command.

class-map type queuing *class_map_name*

no class-map type queuing *class_map_name*

Syntax Description

class-map-name	Name assigned to the class map or a system-defined queuing class map name. The name class-default is reserved. The name can be a maximum of 40 characters. The name is case sensitive and can only contain alphanumeric characters, hyphens, and underscores.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

If you modify the queuing type class maps, the configuration for all ports of the specified port type also changes.

You cannot delete the system-defined queuing class map names.

Class maps of type queuing support only the **match qos-group** command. If a traffic packet matches any of the criteria configured for this class map with the **match** command, then this class map is applied to the packet. By default, traffic is filtered using the implicit match-any option.

Examples

This example shows how to create or modify a queuing class map:

```
switch(config)# class-map type queuing my_class1
switch(config-cmap-que)#
```

This example shows how to modify a system-defined queuing class map named class-default:

```
switch(config)# class-map type queuing match-any class-default
switch(config-cmap-que)#
```

This example shows how to remove a queuing class map:

```
switch(config)# no class-map type queuing my_class1
switch(config)#
```

Related Commands

Command	Description
feature fcoe	Enables FCoE on the switch.
match qos-group	Configures a traffic class that matches the QoS group values.
show class-map type queuing	Displays queuing class maps configured in the system.

clear copp statistics

To clear Control Plane Policing (CoPP) statistics, use the **clear copp statistics** command.

clear copp statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Any configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to clear the CoPP statistics:

```
switch# clear copp statistics
switch#
```

Related Commands

Command	Description
class-map type control-plane	Configures a control plane class map.
show policy-map interface control-plane	Displays the CoPP statistics for interfaces.

control-plane

To enter control-plane configuration mode, which allows users to associate attributes that are associated with the control plane of the device, use the **control-plane** command.

control-plane

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

After you use the **control-plane** command, you can associate a service policy to police all traffic that is destined to the control plane.

Examples

This example shows how to enter the control plane configuration mode:

```
switch# configure terminal
switch(config)# control-plane
switch(config-cp)#
```

Related Commands

Command	Description
service-policy (control-plane)	Attaches a policy map to a control plane for aggregate control plane services.
show policy-map type control-plane	Displays the configuration of a class or all classes for the policy map of a control plane.

D Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with D.

description

To add a description to a class map, policy map, or table map, use the **description** command. To remove the description, use the **no** form of this command.

description *text*

no description *text*

Syntax Description

text	Description for the class map, policy map, or table map. The description can be a maximum of 200 alphanumeric characters.

Command Default

None

Command Modes

Class map type network qos configuration
Class map type qos configuration
Class map type queuing configuration
Policy map type network qos configuration
Policy map type qos configuration
Policy map type queuing configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to add a description to a qos class map:

```
switch(config)# class-map my_class1
switch(config-cmap-qos)# description This class map filters packets that matches an ACL
switch(config-cmap-qos)#
```

Related Commands

Command	Description
class-map	Creates or modifies a class map.
policy-map	Creates or modifies a policy map.
show class-map	Displays class maps.
show policy-map	Displays policy maps.

F Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with F.

flowcontrol

To enable IEEE 802.3x link-level flow control for the selected interface, use the **flowcontrol** command.

flowcontrol [**receive** {**on** | **off**}] [**send** {**on** | **off**}]

Syntax Description

receive	(Optional) Sets flow control in the receive direction.
off	Disables flow control traffic on an interface.
on	Enables flow control traffic on an interface.
send	(Optional) Sets flow control in the send direction.

Command Default

None

Command Modes

Interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can use this command on the following interfaces:

- Layer 2 interface
- Layer 3 interface

Note Use the **no switchport** command to configure an interface as a Layer 3 interface.

Examples

This example shows how to enable flow control for traffic received on an interface:

```
switch# configure terminal
switch(config)# interface ethernet 1/2
switch(config-if)# flowcontrol receive on
```

Related Commands

Command	Description
no switchport	Configures an interface as a Layer 3 routed interface.
priority-flow-control	Sets the PFC mode for the selected interface.
show interface flowcontrol	Displays the detailed listing of the flow control settings on all interfaces.

H Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with H.

hardware multicast disable-slow-port-pruning

To disable slow port pruning on multicast packets, use the **hardware multicast disable-slow-port-pruning** command. To enable show port pruning, use the **no** form of this command.

hardware multicast disable-slow-port-pruning

no hardware multicast disable-slow-port-pruning

Syntax Description

This command has no arguments or keywords.

Command Default

Enabled

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Note This command is applicable to only Cisco Nexus 5548 switches.

Examples

This example shows how to disable slow port pruning for multicast packets on a switch:

```
switch(config)# hardware multicast disable-slow-port-pruning
switch(config)#
```

Related Commands

Command	Description
hardware unicast voq-limit	Enables the VOQ limit.
show running-config	Displays the running configuration on a switch.

hardware profile tcam feature interface-qos limit

To configure the QoS TCAM limit, use the **hardware profile tcam feature interface-qos limit** command.

hardware profile tcam feature interface-qos limit *tcam-size*

Syntax Description

tcam-size	Interface QoS TCAM limit. The TCAM size can be from 7- 446 entries.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

No interface policy entry should be present after the interface_qos limit in the QoS region of any TCAM.

Examples

This example shows how to set the interface QoS TCAM limit to 20 entries:

```
switch(config)# configue terminal
switch(config)# hardware profile tcam feature interface-qos limit 20
switch(config)# show hardware profile tcam feature qos
Feature                   Limit
--------------------------------------------------------------------------------
Interface                 20
vlan-qos + global-qos     428

switch(config)# copy running-config startup-config
```

Related Commands

Command	Description
show hardware profile tcam feature qos	Displays the limits of the QoS TCAMs.

hardware unicast voq-limit

To enable the virtual output queuing (VOQ) limit for unicast traffic on a switch, use the **hardware unicast voq-limit** command. To disable the VOQ limit, use the **no** form of this command.

hardware unicast voq-limit

no hardware unicast voq-limit

Syntax Description

This command has no arguments or keywords.

Command Default

Disabled

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Note This command is applicable to only Cisco Nexus 5548 switches.

To alleviate congestion and blocking, you can use virtual output queuing (VOQ) to prevent one blocked receiver from affecting traffic that is being sent to other noncongested receivers (head-of-line blocking).

Examples

This example shows how to enable the VOQ limits for unicast packets on a switch:

```
switch(config)# hardware unicast voq-limit
switch(config)#
```

Related Commands

Command	Description
hardware multicast disable-slow-port-pruning	Disables slow port pruning on the switch.
show running-config	Displays the running configuration on a switch.

I Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with I.

ip dscp (ERSPAN)

To configure the differentiated dervices code point (DSCP) value of the packets in the Encapsulated Remote Switched Port Analyzer (ERSPAN) traffic, use the **ip dscp** command. To revert to the default value, use the **no** form of this command.

ip dscp *dscp_value*

no ip dscp *dscp_value*

Syntax Description

dscp_value	DSCP value of the packets in the ERSPAN traffic. The range is from 0 to 63.

Command Default

0

Command Modes

ERSPAN session configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the DSCP value of the packets in the ESRSPAN traffic:

```
switch# configure terminal
switch(config)# monitor session 1 type erspan-source
switch(config-erspan-src)# ip dscp 10
switch(config-erspan-src)#
```

Related Commands

Command	Description
ip prec	Configures the IP precedence value of the ERSPAN traffic.
ip ttl	Configures the IP time-to-live (TTL) value of the ERSPAN traffic.
monitor-session	Enters the monitor configuration mode for configuring an ERSPAN session for analyzing traffic between ports.

ip ttl (ERSPAN)

To configure the IP time-to-live (TTL) value of the Encapsulated Remote Switched Port Analyzer (ERSPAN) traffic, use the **ip ttl** command. To revert to the default configuration, use the **no** form of this command.

ip ttl *ttl_value*

no ip ttl *ttl_value*

Syntax Description

ttl_value	IP TTL value of the ERSPAN traffic. The range is from 1 to 255.

Command Default

255

Command Modes

ERSPAN session configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the IP TTL value of the ESRSPAN source:

```
switch# configure terminal
switch(config)# monitor session 1 type erspan-source
switch(config-erspan-src)# ip ttl 30
switch(config-erspan-src)#

This example shows how to remove the IP TTL value from the ESRSPAN source:
switch# configure terminal
switch(config)# monitor session 1 type erspan-source
switch(config-erspan-src)# no ip ttl 30
switch(config-erspan-src)#
```

Related Commands

Command	Description
ip dscp	Configures the DSCP value of the packets in the ERSPAN traffic.
monitor-session	Enters the monitor configuration mode for configuring an ERSPAN session for analyzing traffic between ports.

M Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with M.

match access-group

To identify a specified access control list (ACL) group as a match criteria for a class map, use the **match access-group** command. To remove an ACL match criteria from a class map, use the **no** form of this command.

match access-group name *acl-name*

no match access-group name *acl-name*

Syntax Description

name *acl-name*	Matches on the characteristics in the ACL name specified.

Command Default

None

Command Modes

Class-map type qos configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Note The **permit** and **deny** ACL keywords do not affect the matching of packets.

Examples

This example shows how to create a qos class map that matches characteristics of the ACL my_acl:

```
switch(config)# class-map class_acl
switch(config-cmap-qos)# match access-group name my_acl
```

Related Commands

Command	Description
show class-map	Displays class maps.

match cos

To define the class of traffic using the class of service (CoS) value in a type qos class map, use the **match cos** command. To remove the match on the CoS value, use the **no** form of this command.

match [**not**] **cos** *cos-list*

no match [**not**] **cos** *cos-list*

Syntax Description

not	(Optional) Negates the specified match result.
cos-list	Specified CoS value or list of specified CoS values. Valid values are from 0 to 7.

Command Default

None

Command Modes

Class-map type qos configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

To specify a list of values, use one of the following options:

- Specify a range of values separated by a dash
- Specify a noncontiguous list of values separated by commas

Note Only class maps of type qos support the optional **not** keyword form of this command. Class maps of type queuing do not support the **not** keyword.

Examples

This example shows how to match on the CoS value for a type qos class map:

```
switch(config)# class-map class_acl
switch(config-cmap-qos)# match cos 5-7
```

Related Commands

Command	Description
show class-map	Displays class maps.

match dscp

To identify specific differentiated services code point (DSCP) values in the DiffServ field of the IP Header (either IPv4 or IPv6) as a match criteria, use the **match dscp** command. To remove specified DSCP values as a match criteria, use the **no** form of this command.

match [**not**] **dscp** *dscp-list*

no match [**not**] **dscp** *dscp-list*

Syntax Description

not	(Optional) Negates the specified match result.
dscp-list	Specified DSCP value or list of DSCP values. See Table 1 for a list of valid DSCP values.

Command Default

None

Command Modes

Class-map type qos configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

The standard DSCP values are shown in Table 1.

Table 1 Standard DSCP Values

DSCP Value	Description
af11	AF11 dscp (001010)—decimal value 10
af12	AF12 dscp (001100)—decimal value 12
af13	AF13 dscp (001110)—decimal value 14
af21	AF21 dscp (010010)—decimal value 18
af22	AF22 dscp (010100)—decimal value 20
af23	AF23 dscp (010110)—decimal value 22
af31	AF31 dscp (011010)—decimal value 26
af32	AF40 dscp (011100)—decimal value 28
af33	AF33 dscp (011110)—decimal value 30
af41	AF41 dscp (100010)—decimal value 34
af42	AF42 dscp (100100)—decimal value 36
af43	AF43 dscp (100110)—decimal value 38
cs1	CS1 (precedence 1) dscp (001000)—decimal value 8

Table 1 Standard DSCP Values (continued)

DSCP Value	Description
cs2	CS2 (precedence 2) dscp (010000)—decimal value 16
cs3	CS3 (precedence 3) dscp (011000)—decimal value 24
cs4	CS4 (precedence 4) dscp (100000)—decimal value 32
cs5	CS5 (precedence 5) dscp (101000)—decimal value 40
cs6	CS6 (precedence 6) dscp (110000)—decimal value 48
cs7	CS7 (precedence 7) dscp (111000)—decimal value 56
default	Default dscp (000000)—decimal value 0
ef	EF dscp (101110)—decimal value 46

To specify a list of values, use one of the following options:

- Specify a range of values separated by a dash
- Specify a noncontiguous list of values separated by commas

Examples

This example shows how to match on DSCP value af21:

```
switch(config)# class-map my_test
switch(config-cmap-qos)# match dscp af21
```

Related Commands

Command	Description
show class-map	Displays class maps.

match ip rtp

To configure a class map to use the Real-Time Protocol (RTP) port as a match criteria, use the **match ip rtp** command. To remove the RTP port as a match criteria, use the **no** form of this command.

match [**not**] **ip rtp** *port-list*

no match [**not**] **ip rtp** *port-list*

Syntax Description

not	(Optional) Negates the specified match result.
port-list	Specified UDP port or list of UDP ports that are using RTP. Valid values range from 2000 to 65535.

Command Default

None

Command Modes

Class-map type qos configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

To specify a list of values, use one of the following options:

- Specify a range of values separated by a dash
- Specify a noncontiguous list of values separated by commas

Examples

This example shows how to match on a port using RTP:

```
switch(config)# class-map my_test
switch(config-cmap-qos)# match ip rtp 2300
```

Related Commands

Command	Description
show class-map	Displays class maps.

match precedence

To configure a class map to use the precedence value in the type of service (ToS) byte field of the IP header (either IPv4 or IPv6) as a match criteria, use the **match precedence** command. To remove the precedence values as a match criteria, use the **no** form of this command.

match [**not**] **precedence** *precedence-list*

no match [**not**] **precedence** *precedence-list*

Syntax Description

not	(Optional) Negates the specified match result.
precedence-list	Specified IP precedence value or list of IP precedence values specified in bytes. Valid values are shown in Table 2.

Command Default

None

Command Modes

Class-map type qos configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

See Table 2 for a list of precedence values.

Table 2 Precedence Values

Precedence Value	Description
0-7	IP precedence value
critical	Critical precedence (5)
flash	Flash precedence (3)
flash-override	Flash override precedence (4)
immediate	Immediate precedence (2)
internet	Internetwork control precedence (6)
network	Network control precedence (7)
priority	Priority precedence (1)
routine	Routine precedence (0)

To specify a list of values, use one of the following options:

- Specify a range of values separated by a dash
- Specify a noncontiguous list of values separated by commas

Examples

This example shows how to match on an IP precedence value:

```
switch(config)# class-map my_test
switch(config-cmap-qos)# match precedence 7
```

Related Commands

Command	Description
show class-map	Displays class maps.

match protocol

To configure a class map to use a specific protocol as a match criterion, use the **match protocol** command. To remove the specified protocol as a match criteria, use the **no** form of this command.

match [**not**] **protocol** *protocol-name*

no match [**not**] **protocol** *protocol-name*

Syntax Description

not	(Optional) Negates the specified match result.
protocol-name	Specified protocol name. Valid values are shown in Table 3.

Command Default

None

Command Modes

Class-map type qos configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

The list of valid protocol names is shown in Table 3.

Table 3 Protocol Names

Argument	Description
arp	Address Resolution Protocol (ARP)
clns_es	CLNS End Systems
clns_is	CLNS Intermediate System
dhcp	Dynamic Host Configuration (DHCP)
ldp	Label Distribution Protocol (LDP)
netbios	NetBIOS Extended User Interface (NetBEUI)

To specify more than one protocol, enter the command more than once with the desired protocol value each time.

Examples

This example shows how to match on a specified protocol:

```
switch(config)# class-map my_test
switch(config-cmap-qos)# match protocol ldp
```

Related Commands

Command	Description
show class-map	Displays class maps.

match qos-group

To configure a class map to use a specific QoS group value as a match criterion, use the **match qos-group** command. To remove the specified protocol as a match criteria, use the **no** form of this command.

match [**not**] **qos-group** *qos-group-list*

no match [**not**] **qos-group** *qos-group-list*

Syntax Description

not	(Optional) Negates the specified match result.
qos-group-list	Specified Qos group value or list of QoS group values specified in bytes. Valid values are from 2 to 5.

Command Default

None

Command Modes

Class map type network-qos configuration
Class map type queuing configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

The QoS group is an internal label and is not part of the packet payload or any packet header. The QoS group values have no mathematical significance. For example, a QoS group value of 2 is not greater than 1; the values are used only to internally differentiate QoS groups. As such, this value has local significance only.

You match on the QoS group only in egress policies because its value is undefined until you set it in an ingress policy.

To specify a list of values, use one of the following options:

- Specify a range of values separated by a dash
- Specify a noncontiguous list of values separated by commas

Examples

This example shows how to match on a specified QoS group value:

```
switch(config)# class-map type queuing my_test
switch(config-cmap-qos)# match qos-group 6
switch(config-cmap-qos)#
```

Related Commands

Command	Description
class-map type network-qos	Creates or modifies a network qos class map.
class-map type queuing	Creates or modifies a queuing class map.
show class-map	Displays class maps.

mtu (ERSPAN)

To set the maximum transmission unit (MTU) size for Encapsulated Remote Switched Port Analyzer (ERSPAN) packets in a monitor session, use the **mtu** command. To remove the configured MTU, use the **no** form of this command.

mtu *mtu-value*

no mtu *mtu-value*

Syntax Description

mtu-value	Maximum allowable MTU for ERSPAN packets in a monitor session. The range is from 64 to 1518 bytes.

Command Default

Default is no truncation enabled.

Command Modes

ERSPAN session configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

ERSPAN packets larger than the specified allowable size for the monitor session are truncated.

This command does not require a license.

Examples

This example shows how to set an MTU value for an ERSPAN session:

```
switch# configure terminal
switch(config)# monitor session 1 type erspan-source
switch(config-erspan-src)# erspan-id 100
switch(config-erspan-src)# mtu 100
switch(config-erspan-src)#
```

Related Commands

Command	Description
monitor session	Configures a SPAN or ERSPAN session.
show monitor session	Displays the SPAN or ERSPAN session configuration.

mtu (interface)

To configure the maximum transmission unit (MTU) size for Layer 2 and Layer 3 Ethernet interfaces, use the **mtu** command. To remove the configured MTU, use the **no** form of this command.

mtu *mtu-value*

no mtu *mtu-value*

Syntax Description

mtu-value	MTU value for the class of service (CoS). The range is from 64 to 9216.1500 to 9216.

Command Default

Default MTU value is 1500. For FCoE cos 3, the default is 2158.

Command Modes

Policy map type network-qos class configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can configure an MTU for each virtual link in the system.

Examples

This example shows how to set an MTU value for a class in a type network-qos policy map:

```
switch(config)# class-map type network-qos my_class1
switch(config-cmap-nq)# match qos-group 1
switch(config-cmap-nq)# exit
switch(config)# policy-map type network-qos my_policy1
switch(config-pmap-nq)# class type network-qos my_class1
switch(config-pmap-nq-c)# mtu 5000
switch(config-pmap-nq-c)#
```

Related Commands

Command	Description
service-policy	Attaches a policy map to an interface or system policy.
show class-map	Displays class maps.
show policy-map	Displays policy maps.
system qos	Configures a system policy.

multicast-optimize

To optimize a class to send multiple packets, use the **multicast-optimize** command.

multicast-optimize

no multicast-optimize

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Policy map type network-qos class configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Multicast traffic in a class will be served by all available multicast queues.

Only one class in a policy map can be configured for multicast optimization.

Note On a Cisco Nexus 5548 switch, multicast optimization is enabled by default on the class-default class. You must remove it from the class-default class before enabling it on a user-defined class.

Examples

This example shows how to enable optimized multicast for a traffic class:

```
switch(config)# policy-map type network-qos my_queue
switch(config-pmap-nq)# class type network-qos nqos_class
switch(config-pmap-nq-c)# multicast-optimize
switch(config-pmap-nq-c)#
```

This example shows how to remove the multicast optimization from a traffic class:

```
switch(config)# policy-map type network-qos my_queue
switch(config-pmap-nq)# class type network-qos nqos_class
switch(config-pmap-nq-c)# no multicast-optimize
switch(config-pmap-nq-c)#
```

Related Commands

Command	Description
show policy-map	Displays the policy maps.

P Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with P.

pause no-drop

To enable Class Based Flow Control (CBFC) pause characteristics on a class referenced in a type network-qos policy map, use the **pause** command. To disable the CBFC pause characteristics on a class, use the **no** form of this command.

pause no-drop [**pfc-cos** *pfc-cos-list*]

no pause no-drop [**pfc-cos** *pfc-cos-list*]

Syntax Description

pfc-cos	(Optional) Specifies the CoS values to assert priority flow control (PFC) on.
pfc-cos-list	PFC CoS list. The range is from 0 to 7. Use a comma (,) to separate multiple values, or a hyphen (-) to specify a range of values; for example, 0, 2, 3, or 2-5.

Command Default

By default, pause no-drop is off.

Command Modes

Policy map type network-qos class configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Ethernet interfaces use priority flow control (PFC) to provide lossless service to no-drop system classes. PFC implements pause frames on a per-class basis and uses the IEEE 802.1p CoS value to identify the classes that require lossless service.

You can configure PFC CoS only for traffic classes that match a criteria other than the CoS value (match cos).

Examples

This example shows how to enable pause no-drop on a class referenced in a type network-qos policy map:

```
switch(config)# class-map type network-qos my_class1
switch(config-cmap-nq)# match qos-group 2
switch(config-cmap-nq)# exit
switch(config)# policy-map type network-qos my_policy1
switch(config-pmap-nq)# class type network-qos my_class1
switch(config-pmap-nq-c)# pause no-drop
switch(config-pmap-nq-c)#
```

Related Commands

Command	Description
show class-map type network-qos	Displays type network-qos class maps.
show policy-map	Displays policy maps.

pause no-drop buffer-size

To enable Class Based Flow Control (CBFC) pause characteristics on a class referenced in a type network-qos policy map and configure the ingress buffer size for the no-drop class, use the **pause no drop buffer-size** command. To disable the CBFC pause characteristics on a class and reset the buffer, use the **no** form of this command.

pause no-drop buffer-size *buffer-size* **pause-threshold** *xoff-size* **resume-threshold** *xon-size*

no pause no-drop buffer-size *buffer-size* **pause-threshold** *xoff-size* **resume-threshold** *xon-size*

Syntax Description

buffer-size	Buffer size for ingress traffic, in bytes. Valid values are from 10240 to 490880. **Note** On a Cisco Nexus 5020 switch, you can configure a maximum buffer size of 143680 bytes. On a Cisco Nexus 5548 switch, you can configure a maximum buffer size of 152000 bytes.
pause-threshold	Specifies the buffer limit at which the port pauses the peer.
xoff-size	Buffer limit for pausing, in bytes. Valid values are from 0 to 490880. **Note** On a Cisco Nexus 5020 switch, you can configure a maximum pause threshold value of 58860 bytes. On a Cisco Nexus 5548 switch you can configure a maximum pause threshold value of 103360 bytes.
resume-threshold	Specifies the buffer limit at which the port resumes the peer.
xon-size	Buffer limit at which to resume, in bytes. Valid values are from 0 to 490880. **Note** On a Cisco Nexus 5020 switch, you can configure a maximum resume threshold value of 38400 bytes. On a Cisco Nexus 5548 switch you can configure a maximum resume threshold value of 83520 bytes.

Command Default

By default, pause no-drop is on.

Command Modes

Policy map type network-qos class configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Use this command to configure the buffer size and threshold values for a no-drop class. You configure the buffer size to support lossless Ethernet over a link distance of 3000 meters (9843 feet). The switch software rejects the policy if enough buffer resources are not available to support the policy.

When you configure the buffer size, ensure the following:

- The buffer size must be greater than the pause threshold value, and the pause threshold value must be greater than the resume threshold value. Otherwise, the following message appears:

  ```
  ERROR: buffer-size can't be less then pause/resume-threshold
  ```

  The minimum difference between the pause threshold value and the resume threshold value must be 20480 bytes on a Cisco Nexus 5020 switch and 19840 bytes on a Cisco Nexus 5548 switch. Otherwise, you see the following message on a Cisco Nexus 5020 switch:

  ```
  Warning: The recommended difference between pause  and resume threshold is 20480 bytes
  ```

  You see the following message on a Cisco Nexus 5548 switch:

  ```
  Warning: The recommended difference between pause  and resume threshold is 19840 bytes
  ```

- The pause threshold value must be greater than the resume threshold value. Otherwise, the following message appears:

  ```
  ERROR: pause-threshold can't be less then resume-threshold
  ```

Examples

This example shows how to enable pause no-drop on a class referenced in a type network-qos policy map:

```
switch(config)# class-map type network-qos my_class1
switch(config-cmap-nq)# match qos-group 2
switch(config-cmap-nq)# exit
switch(config)# policy-map type network-qos my_policy1
switch(config-pmap-nq)# class type network-qos my_class1
switch(config-pmap-nq-c)# pause no-drop
switch(config-pmap-nq-c)#
```

This example shows how to set the no-drop buffer size for 3000 metres on a class referenced in a type network-qos policy map on a Cisco Nexus 5000 Series switch:

```
switch(config)# policy-map type network-qos pu-buffer
switch(config-pmap-nq)# class type network-qos cu1
switch(config-pmap-nq-c)# pause no-drop buffer-size 143680 pause-threshold 58860
resume-threshold 38400
switch(config-pmap-nq-c)#
```

This example shows how to set the no-drop buffer size for 3000 metres on a class referenced in a type network-qos policy map on a Cisco Nexus 5548 switch:

```
switch(config-pmap-nq)# policy-map type network-qos policy-test
switch(config-pmap-nq)# class type network-qos cu1-ta1
switch(config-pmap-nq-c)# pause no-drop buffer-size 152000 pause-threshold 103360
resume-threshold 83520
switch(config-pmap-nq-c)#
```

Related Commands

Command	Description
show class-map type network-qos	Displays type network-qos class maps.
show policy-map	Displays policy maps.

police (config-pmap-c-qos)

To configure traffic policing for a class map in a policy map, use the **police** command.

police [**cir**] {*committed-rate* [*data-rate*] | **percent** *cir-link-percent*} [**bc**] {*committed-burst-rate*}] [**conform** {**transmit**} [**violate** {**drop**}]]]

no police [**cir**] {*committed-rate* [*data-rate*] | **percent** *cir-link-percent*} [**bc**] {*committed-burst-rate*}] [**conform** {**transmit**} [**violate** {**drop**}]]]

Syntax Description

cir	(Optional) Specifies the committed information rate, or desired bandwidth, specified as a bit rate or a percentage of the link rate.
committed-rate	Valid values are from 1 to 80000000000.
data-rate	Valid values are: • bps (default) • kbps • mbps • Gbps
percent	Specifies the rate as a percentage of the interface data rate.
cir-link-percent	Percentage of the interface data rate. Valid values are from 1 to 100.
bc	(Optional) Indication of how much the committed information rate can be exceeded, either as a bit rate or an amount of time at the committed information rate. The default value is 200 milliseconds of traffic at the configured rate.
committed-burst-rate	Valid values of *committed-burst-rate* are: • bytes - Bytes • kbytes - 1000 bytes • mbytes - 1,000,000 bytes • ms - milliseconds • us - microseconds The valid range is 1 to 536,870,912. **Note** The Gigabit per second (Gbps) rate is not supported for this parameter.
comform	(Optional) Specifies a comform action to take if the traffic data rate is within bounds. The default action is **transmit**.
transmit	Transmits the packet. This is available only when the packet conforms to the parameters.
violate	(Optional) Specifies the action to take if the traffic data rate violates the configured rate values. The default action is **drop**.
drop	Drops the packet. This is available only when the packet exceeds or violates the parameters.

Command Default None

Command Modes Policy map class configuration (config-pmap-c-qos)

SupportedUserRoles network-admin

Command History

Release	History
6.0(2)N1(1)	This command was introduced.

Usage Guidelines You must create the class map before you reference it in this command.

Examples This example shows how to set a committed information rate (**cir**) to 80 mbps and **bc** as 20 mbytes.

```
switch# configure terminal
switch(config)# policy-map pmap-test1
switch(config-pmap-qos)# class class-test1
switch(config-pmap-c-qos)# police cir 80 mbps bc 20 mbytes conform transmit violate drop
```

This example shows how to set the committed information rate (**cir**) as 10-percent of the interface rate and **bc** as 20 mbytes.

```
switch# configure terminal
switch(config)# policy-map pmap-test1
switch(config-pmap-qos)# class class-test1
switch(config-pmap-c-qos)# police cir percent 10 bc 20 mbytes conform transmit violate
drop
```

Related Commands

Command	Description
show policy-map	Displays a policy map.

police (policy map)

To configure traffic policing for a class map in a control plane policy map, use the **police** command.

police {*rate* | **cir** *rate*}

Syntax Description

rate	Average rate in packets per second (pps). The range is from 0 to 20480.
cir	Specifies the Committed Information Rate (CIR), in Kbps.

Command Default

None

Command Modes

Control plane policy map configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure traffic policing in a control plane policy map with the average rate at 200 packets per second:

```
switch# configure terminal
switch(config)# policy-map type control-plane copp-system-policy-customized
switch(config-pmap)# class ClassMapA
switch(config-pmap-c)# police 200
switch(config-pmap-c)#
```

Related Commands

Command	Description
class (policy map)	Specifies a control plane class map for a control plane policy map and enters policy map class configuration mode.
show policy-map type control-plane	Displays configuration information for control plane policy maps.

policy-map type control-plane

To enter the control plane policy map configuration mode, use the **policy-map type control-plane** command.

policy-map type control-plane *policy-map-name*

Syntax Description

policy-map-name	Name of the default control plane policy map. The name is alphanumeric, case sensitive, and has a maximum of 64 characters.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

In Cisco Nexus devices, you cannot create a user-defined Control Plane Policing (CoPP) policy map. The switch software includes a default control plane policy map, copp-system-policy-default, and one customized policy map, copp-system-policy-customized. You cannot add or remove classes from the default control-plane policy map. You can, however, add or remove classes to or from the copp-system-policy-customized control-plane policy map.

If you attempt to create a control plane policy with a name other than the default, you will see the following error message:

```
ERROR: Policy-map create failed
```

This command does not require a license.

Examples

This example shows how to enter the control plane policy map configuration mode:

```
switch# configure terminal
switch(config)# policy-map type control-plane copp-system-policy-customized
switch(config-pmap)#
```

This example shows the error message that appears when you create a control plane policy map other than the default control plane policy map:

```
switch# configure terminal
switch(config)# policy-map type control-plane PolicyMapA
ERROR: Policy-map create failed
switch(config)#
```

Related Commands

Command	Description
show policy-map type control-plane	Displays configuration information for control plane policy maps.

policy-map type network-qos

To create or modify a policy map and enter the policy map type network-qos configuration mode, use the **policy-map type network-qos** command. To remove a policy map, use the **no** form of this command.

policy-map type network-qos *policy-map-name*

no policy-map type network-qos *policy-map-name*

Syntax Description

policy-map-name	Name assigned to a type network-qos policy map. The name can be a maximum of 40 alphanumeric characters.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Use the **service-policy** command to assign policy maps to interfaces.

On a Cisco Nexus 5548 switch, the switch software does not automatically attach the class-fcoe class map to a policy map. You can manually add the class-fcoe class to a policy map. On all other Cisco Nexus 5000 Series switches, this class is, by default, included in a policy map. On a Cisco Nexus 5548 switch, you can remove the class-fcoe class from a policy map.

You can configure the qos-group of a class-fcoe class map on a Cisco Nexus 5548 switch using the **set qos-group** command. The default qos-group value is 1.

Examples

This example shows how to create or modify a type network-qos policy map:

```
switch(config)# policy-map type network-qos my_policy1
switch(config-pmap-nq)#
```

This example shows how to remove a type network-qos policy map:

```
switch(config)# no policy-map type network-qos my_policy1
switch(config)
```

Related Commands

Command	Description
class type network-qos	References a type network-qos class map in a policy map.
description	Adds a description to a class map or policy map.
feature fcoe	Enables FCoE on the switch.

Command	Description
set qos-group	Assigns a QoS group identifier for a class of traffic.
show policy-map	Displays policy maps.

policy-map (type qos)

To create or modify a policy map and enter the policy map type qos configuration mode, use the **policy-map** command. To remove a QoS policy map, use the **no** form of this command.

policy-map [**type qos**] *qos-policy-map-name*

no policy-map [**type qos**] *qos-policy-map-name*

Syntax Description

type qos	(Optional) Specifies the type qos policy map.
qos-policy-map-name	Name assigned to a type qos policy map. The name can be a maximum of 40 alphanumeric characters.

Command Default

The software enters the policy map type qos configuration mode if you enter the **policy-map** command without specifying a type.

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Use the **service-policy** command to assign policy maps to interfaces.

On a Cisco Nexus 5548 switch, the switch software does not automatically attach the class-fcoe class map to a policy map. You can manually add the class-fcoe class to a policy map. On all other Cisco Nexus 5000 Series switches, this class is, by default, included in a policy map. On a Cisco Nexus 5548 switch, you can remove the class-fcoe class from a policy map.

You can configure the qos-group of a class-fcoe class map on a Cisco Nexus 5548 switch using the **set qos-group** command. The default qos-group value is 1.

Examples

This example shows how to create or modify a type qos policy map:

```
switch(config)# policy-map my_policy1
switch(config-pmap-qos)#
```

This example shows how to remove a type qos policy map:

```
switch(config)# no policy-map my_policy1
```

Related Commands

Command	Description
class-map type qos	Configures a qos class map.
feature fcoe	Enables FCoE features on the switch.

Command	Description
service-policy	Attaches a policy map to an interface.
set dscp	Sets the DSCP value for the QoS traffic.
set precedence	Sets the IP precedence value for the QoS traffic.
set qos-group	Assigns a QoS group identifier for a class of traffic.
show policy-map	Displays policy maps.

policy-map type queuing

To create or modify a policy map and enter the policy map type queuing configuration mode, use the **policy-map type queuing** command. To remove a policy map, use the **no** form of this command.

policy-map type queuing *queuing-policy-map-name*

no policy-map type queuing *queuing-policy-map-name*

Syntax Description

queuing-policy-map-name	Name assigned to a type queuing policy map. The name can be a maximum of 40 alphanumeric characters.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Use the **service-policy** command to assign policy maps to interfaces.

On a Cisco Nexus 5548 switch, the switch software does not automatically attach the class-fcoe class map to a policy map. You can manually add the class-fcoe class to a policy map. On all other Cisco Nexus 5000 Series switches, this class is, by default, included in a policy map. On a Cisco Nexus 5548 switch, you can remove the class-fcoe class from a policy map.

You can configure the following on a class-fcoe class map:

- Bandwidth

  The bandwidth value must be greater than zero (0).

- qos-group (on a Cisco Nexus 5548 switch)

Note On a Cisco Nexus 5548 switch, the default qos-group value is 1.

Examples

This example shows how to create or modify a queuing policy map:

```
switch(config)# policy-map type queuing my_policy1
switch(config-pmap-que)# class type queuing my_class1
switch(config-pmap-c-que)# bandwidth percent 75
switch(config-pmap-c-que)# exit
switch(config-pmap-que)#
```

This example shows how to remove a type queuing policy map:

```
switch(config)# no policy-map type queuing my_policy1
```

```
switch(config)#
```

Related Commands

Command	Description
bandwidth	Configures the interface bandwidth.
service-policy	Attaches a policy map to an interface.
set qos-group	Assigns a QoS group identifier for a class of traffic.
show policy-map	Displays policy maps.

priority

To assign a priority to a traffic class in a policy map, use the **priority** command. To remove the mapping, use the **no** form of this command.

priority

no priority

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Policy map type queuing class configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

When you configure a strict priority queue for a traffic class in a policy map, the priority class receives preference over other class queues. This queue is serviced before all other queues except queue zero (which carries control traffic, not data traffic).

Examples

This example shows how to map the traffic class to a strict priority queue:

```
switch(config)# policy-map type queuing my_policy1
switch(config-pmap-que)# class type queuing 8q2t-in-q4
switch(config-pmap-c-que)# priority
switch(config-pmap-que)#
```

Related Commands

Command	Description
show policy-map	Displays the policy maps.

priority-flow-control

To set the priority-flow-control (PFC) mode for the selected interface, use the **priority-flow-control** command.

priority-flow-control mode {**auto** | **on** | **off**}

no priority-flow-control mode {**auto** | **on** | **off**}

Syntax Description

auto	Negotiates PFC capability.
on	Force-enables PFC.
off	Force-disables PFC.

Command Default

Auto

Command Modes

Interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can use this command on the following interfaces:

- Layer 2 interface
- Layer 3 interface

Note Use the **no switchport** command to configure an interface as a Layer 3 interface.

Examples

This example shows how to force-enable PFC on an interface:

```
switch# configure terminal
switch(config)# interface ethernet 1/2
switch(config-if)# priority-flow-control mode on
switch(config-if)#
```

This example shows how to force-disable PFC on an interface:

```
switch# configure terminal
switch(config)# interface ethernet 1/5
switch(config-if)# priority-flow-control mode off
switch(config-if)#
```

Related Commands

Command	Description
flowcontrol	Sets link-level flow control for the selected interface.
no switchport	Configures an interface as a Layer 3 routed interface.
show interface flowcontrol	Displays the detailed listing of the flow control settings on all interfaces.
show interface priority-flow-control	Displays the priority flow control details for a specified interface.

Q Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with Q.

queue-limit

To configure tail drop by setting queue limits on both ingress and egress queues, use the **queue-limit** command. To remove a queue limit, use the **no** form of this command.

queue-limit *queue-size* **bytes**

no queue-limit *queue-size* **bytes**

Syntax Description

queue-size	Queue size threshold (in bytes). The range is from 20480 to 204800. For the Cisco Nexus 5548 switch, the range is from 20480 to 426880 bytes.

Command Default

None

Command Modes

Policy map type network-qos class configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can use this command to specify or modify the maximum number of packets the queue can hold for a class policy configured in a policy map. The system drops packets that exceed the configured queue-size threshold.

You can use this command only for network-qos class maps that do not have “pause” configured.

Examples

This example shows how to assign a queue limit to a policy map network-qos class:

```
switch(config)# policy-map type network-qos my_queue
switch(config-pmap-nq)# class type network-qos nqos_class
switch(config-pmap-nq-c)# queue-limit 20480 bytes
switch(config-pmap-nq-c)#
```

This example shows how to remove a queue limit from a policy map queuing class:

```
switch(config)# policy-map type network-qos my_queue
switch(config-pmap-nq)# class type network-qos nqos_class
switch(config-pmap-nq-c)# no queue-limit 20480 bytes
switch(config-pmap-nq-c)#
```

Related Commands

Command	Description
pause no-drop	Enables pause characteristics on a class referenced in a type network-qos policy map.
show policy-map	Displays policy maps.

S Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with S.

service-policy

To attach a policy map to an interface, use the **service-policy** command. To remove a service-policy from an interface, use the **no** form of this command.

service-policy {**input** | **type** {**qos input** | **queuing** {**input** | **output**}}} *policy-map-name*

no service-policy {**input** | **type** {**qos input** | **queuing** {**input** | **output**}}} *policy-map-name*

Syntax Description

input	Applies this policy map to packets coming into this interface.
type	Specifies whether the policy map is of type qos or queuing.
qos	Specifies a policy map of type qos.
queuing	Specifies a policy map of type queuing.
output	Applies this policy map to packets going out of this interface.
policy-map-name	Name of the policy map to attach to this interface. Only one policy map can be attached to the input and one to the output of a given interface for each of the policy type qos and queuing. The policy map name can be a maximum of 40 alphanumeric characters.

Command Default

None

Command Modes

Interface configuration mode
Subinterface configuration mode
Vlan configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can attach one ingress and one egress type queuing policy map to an interface of type port, and port channel. Only one policy map can be attached to the input of a given interface for each of the policy type qos and queuing.

Beginning with Cisco NX-OS Release 5.0(3)N1(1), you can use this command on a Layer 3 routed interface or subinterfaces.

Examples

This example shows how to attach a queuing policy map to the ingress packets of a Layer 2 port interface:

```
switch# configure terminal
switch(config)# interface ethernet 2/1
switch(config-if)# service-policy type queuing input my_input_q_policy
switch(config-if)#
```

This example shows how to attach qos type policy maps to the incoming packets of a Layer 2 interface:

```
switch# configure terminal
switch(config)# system qos
switch(config-sys-qos)# service-policy type qos input my_policy1
switch(config-sys-qos)#
```

This example shows how to attach a qos type policy map named set-dscp to the incoming packets of a Layer 2 interface:

```
switch# configure terminal
switch(config)# policy-map type qos set-dscp
switch(config-pmap-qos)# class class-0
switch(config-pmap-c-qos)# set dscp ef
switch(config-pmap-c-qos)# exit
switch(config-pmap-qos)# class class-1-2
switch(config-pmap-c-qos)# set precedence 4
switch(config-pmap-c-qos)# exit
switch(config-pmap-qos)# exit
switch(config)# interface ethernet 2/1
switch(config-if)# service-policy type qos input set-dscp
switch(config-if)#
```

This example shows how to attach a queuing policy map to a Layer 3 interface:

```
switch# configure terminal
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# service-policy type queuing input my_input_q_policy
switch(config-if)#
```

Related Commands

Command	Description
no switchport	Configures an interface as a Layer 3 routed interface.
show policy-map interface brief	Displays all interfaces and VLANs with attached service policies in a brief format.
system qos	Configures a system policy.

service-policy (control-plane)

To attach a policy map to a control plane for aggregate control plane services, use the **service-policy** command.

service-policy input *policy-map-name*

Syntax Description

input	Applies the specified service policy to packets that are entering the control plane.
policy-map-name	Name of the control plane policy map to be attached. The name can be a maximum of 64 alphanumeric characters.

Command Default

None

Command Modes

Control-plane configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

After using the **control-plane** command, you should use the **service-policy** command to configure a quality of service (QoS) policy. This policy is attached to the control plane interface for aggregate control plane services, which can control the number or rate of packets that are going to the process level.

Related Commands

Command	Description
control-plane	Enters control-plane configuration mode.
policy-map type control-plane	Creates or modifies a control plane policy map.
show policy-map control-plane	Displays the configuration of a class or all classes for the policy map of a control plane.

service-policy (system qos)

To attach a policy map to a system policy, use the **service-policy** command. To remove a service policy from a system policy, use the **no** form of this command.

service-policy {**input** | **type** {**network-qos** | **qos input** | **queuing** {**input** | **output**}}}
policy-map-name

no service-policy {**input** | **type** {**network-qos** | **qos input** | **queuing** {**input** | **output**}}}
policy-map-name

Syntax Description

input	Applies this policy map to packets coming into this interface.
type	Specifies whether the policy map is of type network-qos, qos, or queuing.
network-qos	Specifies a policy map of type network-qos.
qos	Specifies a policy map of type qos.
queuing	Specifies a policy map of type queuing.
output	Applies this policy map to packets going out of this interface.
policy-map-name	Name of the policy map to attach to this interface. The policy map name can be a maximum of 40 alphanumeric characters.

Command Default

None

Command Modes

System QoS configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to attach a queuing policy map to the system policy:

```
switch# configure terminal
switch(config)# system qos
switch(config-sys-qos)# service-policy type queuing input my_input_q_policy
switch(config-sys-qos)#
```

Related Commands

Command	Description
show policy-map	Displays policy maps.
system qos	Configures a system policy.

service-policy (virtual Ethernet interface)

To attach a policy map to a virtual Ethernet interface, use the **service-policy** command. To remove a service policy from a virtual Ethernet interface, use the **no** form of this command.

service-policy {**input** | **type** {**qos input** | **queuing** {**input** | **output**}}} *policy-map-name*

no service-policy {**input** | **type** {**qos input** | **queuing** {**input** | **output**}}} *policy-map-name*

Syntax Description

input	Applies this policy map to packets coming into this virtual interface.
type	Specifies the policy map of type qos.
qos	Specifies a policy map of type qos.
queuing	Specifies a policy map of type queuing.
input	Applies the policy map to packets coming into this interface.
output	Applies the policy map to packets going out of this interface.
policy-map-name	Name of the policy map to attach to this interface. Only one policy map can be attached to the input of a given interface for the policy type qos. The policy map name can be a maximum of 40 alphanumeric characters.

Command Default

None

Command Modes

Virtual Ethernet interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can attach one ingress and one egress type queuing policy map to an interface of type port and port channel. Only one policy map can be attached to the input of a given interface for each of the policy type qos and queuing.

Note For more information on using service policies, see the *Cisco Nexus 5000 Series NX-OS Quality of Service Configuration Guide*.

Examples

This example shows how to attach a qos policy map to the ingress packets of a virtual Ethernet interface:

```
switch# configure terminal
switch(config)# interface vethernet 12
switch(config-if)# service-policy type qos input my_veth_policy
switch(config-if)#
```

This example shows how to attach a queuing policy that is configured for traffic shaping to the incoming packets of a virtual Ethernet interface:

```
switch(config)# policy-map type queuing p2
switch(config-pmap-que)# class type queuing class-default
switch(config-pmap-c-que)# shape 30 kbps 3000
switch(config-pmap-c-que)# exit
switch(config-pmap-que)# exit
switch(config)# interface vethernet 1
switch(config-if)# service-policy type queuing input p2
switch(config-if)#
```

Related Commands

Command	Description
interface vethernet	Configures a virtual Ethernet interface.
policy-map type queuing	Configures a queuing policy map.
show policy-map interface brief	Displays all interfaces and VLANs with attached service policies in a brief format.
system qos	Configures a system policy.

set cos (policy map type network-qos)

To assign a class of service (CoS) value for a class of traffic in a type network-qos policy map, use the **set** command. To remove the assigned value from the class, use the **no** form of this command.

set cos *cos-value*

no set cos *cos-value*

Syntax Description

cos-value	CoS value to assign for this class of traffic. The range is from 0 to 7.

Command Default

None

Command Modes

Policy map type network-qos class configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can use this command only on type network-qos policies that are attached to egress ports.

Examples

This example shows how to assign a CoS value for a class of traffic in a type network-qos policy map:

```
switch(config)# policy-map type network-qos my_policy1
switch(config-pmap-nq)# class type network-qos traffic_class2
switch(config-pmap-nq-c)# set cos 3
switch(config-pmap-nq-c)#
```

This example shows how to remove the assignment of CoS for a class of traffic in a type network-qos policy map:

```
switch(config)# policy-map type network-qos my_policy1
switch(config-pmap-nq)# class type network-qos traffic_class2
switch(config-pmap-nq-c)# no set cos 3
switch(config-pmap-nq-c)#
```

Related Commands

Command	Description
show policy-map	Displays policy maps.

set dscp

To assign a Differentiated Services Code Point (DSCP) value for a traffic class in a type qos policy map on a Cisco Nexus 5548 switch, use the **set dscp** command. To remove a previously set DSCP value, use the **no** form of this command.

set dscp *dscp-value*

no set dscp *dscp-value*

Syntax Description

dscp-value	DSCP value or parameter to assign for this class of traffic. Valid values are from 0 to 63. For a list of standard DSCP values, see Table 1.

Command Default

None

Command Modes

Policy map type qos configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Note This command is supported only on a Cisco Nexus 5548 switch.

Marking is a method that you use to modify the QoS fields of the incoming and outgoing packets.

You can set the value of standard QoS fields IP precedence, DSCP, and Class of Service (CoS), and internal labels that can be used in subsequent actions. Marking is used to identify the traffic type for use in policing, queuing, and scheduling traffic (only CoS is used in scheduling).

Use this command to classify the traffic based on the DSCP packet header field (either IPv4 or IPv6). When you set the DSCP value for a packet, make sure that you use a traffic class other than the class-default system class. For example, qos-group *x*, where *x* is any value from 1 to 5.

Note You cannot set the DSCP packet header field (either IPv4 or IPv6) if the traffic is in the class-default system class (qos-group 0).

You can set the DSCP value in the six most significant bits of the DiffServ field of the IP header to a specified value. You can enter numeric values from 0 to 63, as well as the standard DSCP values shown in Table 1.

If you set the values for more than two IP header fields (either IPv4 or IPv6), an error similar to the following appears:

```
ERROR: Only 2 sets out of qos-group/cos/dscp/precedence/discard-class are allowed. Please
remove other set action before applying this one.
```

Note You can set DSCP or IP precedence but you cannot set both values because they modify the same field in the IP packet.

After you set the DSCP value, for the QoS policy map to work correct and create the specified QoS groups, make sure that you attach the QoS policy map to a system policy, then define a network-qos policy map and attach it to the system policy. Make sure that the QoS group of the QoS policy map matches that of the of the network-qos policy.

Examples

This example shows how to set the DSCP value for a QoS policy:

```
switch(config)# policy-map type qos my_policy
switch(config-pmap-qos)# class type qos my_class
switch(config-pmap-c-qos)# set dscp cs6
switch(config-pmap-c-qos)# set qos-group 2
switch(config-pmap-c-qos)# exit
switch(config-pmap-qos)# exit
switch(config)# system qos
switch(config-sys-qos)# service-policy type qos input my_policy
switch(config-sys-qos)# exit
switch(config)# class-map type network-qos nqos_class
switch(config-cmap-nq)# match qos-group 2
switch(config-cmap-nq)# exit
switch(config)# policy-map type network-qos nqos_policy
switch(config-pmap-nq)# class type network-qos nqos_class
switch(config-pmap-nq-c)# exit
switch(config-pmap-nq)# exit
switch(config)# system qos
switch(config-sys-qos)# service-policy type network-qos nqos_policy
switch(config-sys-qos)# exit
switch(config)#
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration to the startup configuration file.
show policy-map type qos	Displays the QoS policy maps.
show running-config ipqos	Displays the QoS running configuration.

set precedence

To set the precedence value in an IP header (either IPv4 or IPv6) for a class of traffic in a type qos policy map on a Cisco Nexus 5548 switch, use the **set precedence** command. To leave the precedence value unchanged for the class, use the **no** form of this command.

set precedence *precedence-value*

no set precedence *precedence-value*

Syntax Description

precedence-value	IP precedence value to assign for this class of traffic. Valid values are from 0 to 7. For a list of standard precedence values, see Table 2.

Command Default

None

Command Modes

Policy map type qos configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Note This command is supported only on a Cisco Nexus 5548 switch.

Marking is a method that you use to modify the QoS fields of the incoming and outgoing packets.

You can set the value of standard QoS fields IP precedence, DSCP, and Class of Service (CoS), and internal labels that can be used in subsequent actions. Marking is used to identify the traffic type for use in policing, queuing, and scheduling traffic (only CoS is used in scheduling).

Use this command to classify the traffic based on the IP precedence packet header field. When you set the IP precedence value for a packet, make sure that you use a traffic class other than the class-default system class. For example, qos-group *x*, where *x* is any value from 1 to 5.

Note You cannot set the IP precedence packet header field if the traffic is in the class-default system class (qos-group 0).

If you set the values for more than two IP header fields, you see the following error message:

```
ERROR: Only 2 sets out of qos-group/cos/dscp/precedence/discard-class are allowed. Please
remove other set action before applying this one.
```

Note You can set DSCP or IP precedence but you cannot set both values because they modify the same field in the IP packet.

After you set the IP precedence value, for the QoS policy map to work correct and create the specified QoS groups, make sure that you attach the QoS policy map to a system policy, then define a network-qos policy map and attach it to the system policy. Make sure that the QoS group of the QoS policy map matches that of the of the network-qos policy.

Examples

This example shows how to set the IP precedence value for a QoS policy:

```
switch(config)# policy-map type qos my_policy
switch(config-pmap-qos)# class type qos my_class
switch(config-pmap-c-qos)# set precedence 5
switch(config-pmap-c-qos)# set qos-group 2
switch(config-pmap-c-qos)# exit
switch(config-pmap-qos)# exit
switch(config)# system qos
switch(config-sys-qos)# service-policy type qos input my_policy
switch(config-sys-qos)# exit
switch(config)# class-map type network-qos nqos_class
switch(config-cmap-nq)# match qos-group 2
switch(config-cmap-nq)# exit
switch(config)# policy-map type network-qos nqos_policy
switch(config-pmap-nq)# class type network-qos nqos_class
switch(config-pmap-nq-c)# exit
switch(config-pmap-nq)# exit
switch(config)# system qos
switch(config-sys-qos)# service-policy type network-qos nqos_policy
switch(config-sys-qos)# exit
switch(config)#
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration to the startup configuration file.
show policy-map type qos	Displays the QoS policy maps.
show running-config ipqos	Displays the QoS running configuration.
show startup-config ipqos	Displays the QoS configuration stored in the startup file.

set qos-group

To assign the QoS group identifier for a class of traffic in a type qos policy map, use the **set qos-group** command. To remove the assigned value from the class, use the **no** form of this command.

set qos-group *qos-group-value*

no set qos-group *qos-group-value*

Syntax Description

qos-group-value	QoS group value to assign for this class of traffic. The range is from 2 to 5 for a Cisco Nexus 5020 switch, 1 to 5 for a Cisco Nexus 5548 switch, and 0 to 5 for all other Cisco Nexus 5000 Series switches. **Note** On a Cisco Nexus 5548 switch, the default is 1.

Command Default

1 on a Cisco Nexus 5548 switch.

Command Modes

Policy map type qos class configuration

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can set the QoS group identifier value only in ingress policies. You can set a maximum of 5 QoS groups in ingress policies.

If you set the values for more than two IP header fields in a policy map class, an error message similar to the following appears:

```
ERROR: Only 2 sets out of qos-group/cos/dscp/precedence/discard-class are allowed. Please
remove other set action before applying this one.
```

Examples

This example shows how to assign a QoS group identifier for a class of traffic in a type qos policy map :

```
switch(config)# policy-map my_policy
switch(config-pmap-qos)# class my_class
switch(config-pmap-c-qos)# set qos-group 3
switch(config-pmap-c-qos)#
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration to the startup configuration file.
show policy-map type qos	Displays the QoS policy maps.

Command	Description
show running-config ipqos	Displays the QoS running configuration.
show startup-config ipqos	Displays the QoS configuration stored in the startup file.

shape (virtual Ethernet interface)

To configure shaping on an egress queue to impose a maximum rate on it, use the **shape** command. To remove a shaping configuration, use the **no** form of this command.

shape *target-rate* {**kbps** | **mbps** | **gbps**} *burst-size*

no shape *target-rate* {**kbps** | **mbps** | **gbps**} *burst-size*

Syntax Description

target-rate	Traffic rate. The range is from 1 to 10,000,000,000.
kbps	Specifies the units of 1000 bits per second.
mbps	Specifies the units of megabits per second.
gbps	Specifies the units of gigabits per second.
burst-size	Burst size in bytes. The range is from 1500 to 65535.

Command Default

None

Command Modes

Policy map type queuing class configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Traffic shaping is supported only on virtual Ethernet interfaces.

Shaping rate limits the traffic with a specified rate. You can configure shaping only in the ingress direction. All traffic on the virtual Ethernet interface is rate limited to the given shaping rate.

Note If you configure shaping, you cannot configure **priority** in the same policy map.

This command does not require a license.

Examples

This example shows how to configure shaping on a queuing policy map and apply the policy to a virtual Ethernet interface:

```
switch# configure terminal
switch(config)# policy-map type queuing p2
switch(config-pmap-que)# class type queuing class-default
switch(config-pmap-c-que)# shape 30 kbps 3000
switch(config-pmap-c-que)# exit
switch(config-pmap-que)# exit
switch(config)# interface vethernet 1
switch(config-if)# service-policy type queuing input p2
switch(config-if)#
```

Related Commands

Command	Description
service-policy (virtual Ethernet interface)	Applies a policy map to a virtual Ethernet interface.
show policy-map	Displays the policy map information.

system jumbomtu

To define the upper bound of any maximum transmission unit (MTU) in the system, use the **system jumbomtu** command.

system jumbomtu [**value**]

Syntax Description

value	Jumbomtu value. The range is from 2158 to 9216.

Command Default

9216 bytes

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to define the upper bound of any MTU in the system:

```
switch(config)# system jumbomtu 9216
switch(config)#
```

Related Commands

Command	Description
show interface	Displays the jumbo MTU frames sent and received on the specified interface.

system qos

To configure a system policy, use the **system qos** command.

system qos

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to configure a system qos to apply a queuing policy to all interfaces in the system:

```
switch(config)# system qos
switch(config-sys-qos)#
```

Related Commands

Command	Description
service-policy	Associates the system class policy-map to the service policy for the system.

Show Commands

This chapter describes the Cisco NX-OS quality of service (QoS) **show** commands.

show class-map type control-plane

To display control plane class map information, use the **show class-map type control-plane** command.

show class-map type control-plane [*class-map-name*]

Syntax Description

class-map-name	(Optional) Name of the control plane class map. The name is alphanumeric and case sensitive. The maximum length is 64 characters.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display control plane class map information:

```
switch# show class-map type control-plane

    class-map type control-plane match-any copp-system-class-arp
      match protocol arp

    class-map type control-plane match-any copp-system-class-bgp
      match protocol bgp

    class-map type control-plane match-any copp-system-class-bridging
      match protocol bridging

    class-map type control-plane match-any copp-system-class-cdp
      match protocol cdp

    class-map type control-plane match-any copp-system-class-default
      match protocol default

<--Output truncated-->
switch#
```

Related Commands

Command	Description
class-map type control-plane	Creates or configures a control plane class map.

show class-map type network-qos

To display type network-qos class maps, use the **show class-map type network-qos** command.

show class-map type network-qos [*class-map-name*]

Syntax Description

class-map-name	Name of the class map. The name can be a maximum of 40 alphanumeric characters.

Command Default

Displays all type network-qos class maps if no class map name is specified.

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

If you do not specify the type, the command displays all the class maps configured in the system.

Examples

This example shows how to display all type network-qos class maps:

```
switch(config)# show class-map type network-qos


  Type network-qos class-maps
  ===========================

    class-map type network-qos s1
      match qos-group 2

    class-map type network-qos s2
      match qos-group 3

    class-map type network-qos s3
      match qos-group 4

    class-map type network-qos s4
      match qos-group 5

    class-map type network-qos cu1
      match qos-group 2

    class-map type network-qos cu2
      match qos-group 3

    class-map type network-qos cu3
      match qos-group 4

    class-map type network-qos cu4
```

```
    match qos-group 5

  class-map type network-qos new
    match qos-group 2

  class-map type network-qos class7
    match qos-group 5

  class-map type network-qos class-0
    match qos-group 2

  class-map type network-qos ip-based
    match qos-group 5

  class-map type network-qos class-1-2
    match qos-group 3

  class-map type network-qos class-4-7
    match qos-group 4

  class-map type network-qos cos-based
    match qos-group 2

  class-map type network-qos class-fcoe
    match qos-group 1

  class-map type network-qos class-flood
    match qos-group 2

  class-map type network-qos cos-based-3
    match qos-group 3

  class-map type network-qos cos-based-4
    match qos-group 4

  class-map type network-qos class-default
    match qos-group 0

  class-map type network-qos class-multicast

  class-map type network-qos class-ip-multicast
    match qos-group 5


switch(config)#
```

Related Commands

Command	Description
class-map	Creates or modifies a class map.

show class-map type qos

To display type qos class maps, use the **show class-map type qos** command.

show class-map type qos [*class-map-name*]

Syntax Description

class-map-name	Named class map. The name *class-default* is reserved. The name can be a maximum of 40 alphanumeric characters.

Command Default

Displays all type qos class maps if no class map name is specified.

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display a specific class map:

```
switch# show class-map type qos class-4-6


  Type qos class-maps
  ===================

    class-map type qos class-4-6
      match cos 5

switch#
```

This example shows how to display all type qos class maps:

```
switch# show class-map type qos


  Type qos class-maps
  ===================

    class-map type qos match-any class-fcoe
      match cos 3

    class-map type qos match-any class-default
      match any

    class-map type qos match-any class-all-flood
      match all flood

    class-map type qos match-any class-ip-multicast
      match ip multicast

switch#
```

Related Commands

Command	Description
class-map	Creates or modifies a class map.

show class-map type queuing

To display type queuing class maps, use the **show class-map type queuing** command.

show class-map type queuing [*class-map-name*]

Syntax Description

class-map-name	Named class map. The name can be a maximum of 40 alphanumeric characters.

Command Default

Displays all type queuing class maps if no class map name is specified.

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display all type queuing class maps:

```
switch# show class-map type queuing


  Type queuing class-maps
  =======================

    class-map type queuing class-fcoe
      match qos-group 1

    class-map type queuing class-default
      match qos-group 0

    class-map type queuing class-all-flood
      match qos-group 2

    class-map type queuing class-ip-multicast
      match qos-group 2

switch#
```

Related Commands

Command	Description
class-map	Creates or modifies a class map.

show copp status

To display the Control Plane Policing (CoPP) configuration status, use the **show copp status** command.

show copp status

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Any configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display the CoPP configuration status information:

```
switch# show copp status
Last Config Operation: class class-default
Last Config Operation Timestamp: 05:06:14 UTC Jan  1 2009
Last Config Operation Status: Success
Policy-map attached to the control-plane: copp-system-policy-default

switch#
```

Related Commands

Command	Description
clear copp statistics	Clears the CoPP statistics.
show running-config copp	Displays CoPP configuration information in the running configuration.

show interface flowcontrol

To display the detailed listing of the flow control settings on all interfaces, use the **show interface flowcontrol** command.

show interface flowcontrol [**module** *number*]

Syntax Description

module *number*	(Optional) Displays flow control settings on all interfaces on a specified module. The module *number* range is from 1 to 3.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can use this command to display the flow control information for the following interfaces:

- Layer 2 interface
- Layer 3 interface

Note Use the **no switchport** command to configure an interface as a Layer 3 interface, and then use the **flowcontrol** command to configure flow control for the interface.

Examples

This example shows how to display the flow control settings on all interfaces on a switch:

```
switch# show interface flowcontrol

--------------------------------------------------------------------------------
Port       Send FlowControl  Receive FlowControl  RxPause TxPause
           admin    oper     admin    oper
--------------------------------------------------------------------------------
Eth1/1       off      off      off      off         0                 0

Eth1/2       off      off      off      off         0                 0

Eth1/3       off      off      off      off         0                 0

Eth1/4       off      off      off      off         0                 0

Eth1/5       off      off      off      off         0                 0

Eth1/6       off      off      off      off         0                 0

Eth1/7       off      off      off      off         0                 0
```

```
Eth1/8       off      off      off      off         0                 0

Eth1/9       off      off      off      off         0                 0

Eth1/10      off      off      off      off         0                 0

Eth1/11      off      off      off      off         0                 0

--More--
switch#
```

show hardware profile tcam feature qos

To display the the limits of the QoS TCAMs, use the **show hardware profile tcam feature-qos** command.

show hardware profile tcam feature qos *tcam-size*

Syntax Description

tcam-size	Interface QoS TCAM limit. The *tcam-size* can be from 7- 446 entries.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

No interface policy entry should be present after the interface_qos limit in the QoS region of any TCAM.

Examples

This example shows how to set the interface QoS TCAM limit to 20 entries:

```
switch(config)# configue terminal
switch(config)# hardware profile tcam feature interface-qos limit 20
switch(config)# show hardware profile tcam feature qos
Feature                   Limit
--------------------------------------------------------------------------------
Interface                 20
vlan-qos + global-qos     428

switch(config)# copy running-config startup-config
```

Related Commands

Command	Description
hardware profile tcam feature interface-qos limit	Configures the QoS TCAM limit

show interface priority-flow-control

To display the priority flow control details for a specified interface, use the **show interface priority-flow-control** command.

show interface [**ethernet** *slot/*[*QSFP-module/*]*port*] **priority-flow-control**

Syntax Description

ethernet *slot/*[*QSFP-module/*]*port*	(Optional) Specifies the Ethernet interface and its slot number and port number. The slot number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The port number is from 1 to 128. **Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM).

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
6.0(2)N1(1)	Support for the QSFP+ GEM was added.
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can use this command to display the priority flow control information for the following interfaces:

- Layer 2 interface
- Layer 3 interface

Note Use the **no switchport** command to configure an interface as a Layer 3 interface, and then use the **flowcontrol** command to configure flow control for the interface.

If you do not specify an interface, the **show interface priority-flow-control** command will display the priority flow control information for all interfaces (Layer 2, Layer 3).

Examples

This example shows how to display the priority flow control details for a specified interface:

```
switch# show interface ethernet 1/2 priority-flow-control
============================================================
Port               Mode Oper(VL bmap)  RxPPP      TxPPP
============================================================

Ethernet1/2        Auto On  (9)       4088353    1890
switch#
```

The interface specified is Ethernet 1/2, the PFC mode is set to negotiate PFC capability, the operation is on, and packets transmitted is 1890.

This example shows how to display the priority flow control information for a specified Layer 3 interface:

```
switch# show interface ethernet 1/5 priority-flow-control
============================================================
Port               Mode Oper(VL bmap)  RxPPP      TxPPP
============================================================

Ethernet1/5        On   On  (0)       0          0
switch#
```

This example shows how to display the priority flow control information for all interfaces:

```
switch# show interface priority-flow-control
============================================================
Port               Mode Oper(VL bmap)  RxPPP      TxPPP
============================================================

Ethernet1/1        Auto Off           0          0
Ethernet1/2        Auto Off           0          0
Ethernet1/3        Auto Off           0          0
Ethernet1/4        Auto Off           0          0
Ethernet1/5        On   On  (0)       0          0
Ethernet1/6        Auto Off           0          0
Ethernet1/7        Auto Off           0          0
Ethernet1/8        Auto Off           0          0
Ethernet1/9        Auto Off           0          0
Ethernet1/10       Auto Off           0          0
Ethernet1/11       Auto Off           0          0
Ethernet1/12       Auto Off           0          0
Ethernet1/13       Auto Off           0          0
Ethernet1/14       Auto Off           0          0
Ethernet1/15       Auto Off           0          0
Ethernet1/16       Auto Off           0          0
Ethernet1/17       Auto Off           0          0
Ethernet1/18       Auto Off           0          0
Ethernet1/19       Auto Off           0          0
Ethernet1/20       Auto Off           0          0
Ethernet1/21       Auto Off           0          0
Ethernet1/22       Auto Off           0          0
Ethernet1/23       Auto Off           0          0
Ethernet1/24       Auto Off           0          0
Ethernet1/25       Auto Off           0          0
Ethernet1/26       Auto Off           0          0
Ethernet1/27       Auto Off           0          0
Ethernet1/28       Auto Off           0          0
Ethernet1/29       Auto Off           0          0
Ethernet1/30       Auto Off           0          0
Ethernet1/31       Auto Off           0          0
Ethernet1/32       Auto Off           0          0
Ethernet3/1        Auto Off           0          0
Ethernet3/2        Auto Off           0          0
Ethernet3/3        Auto Off           0          0
Ethernet3/4        Auto Off           0          0
Ethernet3/5        Auto Off           0          0
Ethernet3/6        Auto Off           0          0
Ethernet3/7        Auto Off           0          0
Ethernet3/8        Auto Off           0          0
Ethernet3/9        Auto Off           0          0
Ethernet3/10       Auto Off           0          0
Ethernet3/11       Auto Off           0          0
```

```
Ethernet3/12       Auto Off           0          0
Ethernet3/13       Auto Off           0          0
Ethernet3/14       Auto Off           0          0
Ethernet3/15       Auto Off           0          0
Ethernet3/16       Auto Off           0          0
Ethernet3/17       Auto Off           0          0
Ethernet3/18       Auto Off           0          0
Ethernet3/19       Auto Off           0          0
Ethernet3/20       Auto Off           0          0
Ethernet3/21       Auto Off           0          0
Ethernet3/22       Auto Off           0          0
Ethernet3/23       Auto Off           0          0
Ethernet3/24       Auto Off           0          0
Ethernet3/25       Auto Off           0          0
Ethernet3/26       Auto Off           0          0
Ethernet3/27       Auto Off           0          0
Ethernet3/28       Auto Off           0          0
Ethernet3/29       Auto Off           0          0
Ethernet3/30       Auto Off           0          0
Ethernet3/31       Auto Off           0          0
Ethernet3/32       Auto Off           0          0
Ethernet100/1/1    Auto Off           0          0
Ethernet100/1/2    Auto Off           0          0
Ethernet100/1/3    Auto Off           0          0
Ethernet100/1/4    Auto Off           0          0
Ethernet100/1/5    Auto Off           0          0
Ethernet100/1/6    Auto Off           0          0
Ethernet100/1/7    Auto Off           0          0
Ethernet100/1/8    Auto Off           0          0
Ethernet100/1/9    Auto Off           0          0
Ethernet100/1/10   Auto Off           0          0
Ethernet100/1/11   Auto Off           0          0
Ethernet100/1/12   Auto Off           0          0
Ethernet100/1/13   Auto Off           0          0
Ethernet100/1/14   Auto Off           0          0
Ethernet100/1/15   Auto Off           0          0
Ethernet100/1/16   Auto Off           0          0
switch#
```

Related Commands

Command	Description
no switchport	Configures a Layer 3 routed interface.
priority-flow-control	Sets the PFC mode for the selected interface.

show interface untagged-cos

To display the untagged class of service (CoS) values for a specified interface, use the **show interface untagged-cos** command.

show interface untagged-cos [**module** *module_no*]

Syntax Description

module	(Optional) Displays the interfaces on this module of the switch chassis.
module_no	Module number in the switch chassis. The range is from 1 to 18.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display the untagged CoS values for interfaces:

```
switch# show interface untagged-cos
================================

Interface      Untagged-CoS
================================

port-channel1
port-channel3  2
port-channel5  5
port-channel6
port-channel12
port-channel15
port-channel20
port-channel24
port-channel25
port-channel33
port-channel41
port-channel44
--More--
switch#
```

This example shows how to display the untagged CoS values for all interfaces (Layer 2, Layer 3):

```
switch# show interface untagged-cos
S3(config-if)# show int untagged-cos
================================

Interface      Untagged-CoS
================================

port-channel100
```

```
port-channel127
port-channel128
Ethernet1/1
Ethernet1/2
Ethernet1/3
Ethernet1/4
Ethernet1/5  3
Ethernet1/6
Ethernet1/7
Ethernet1/8
Ethernet1/9
Ethernet1/10
Ethernet1/11
Ethernet1/12
:
<--snip-->
Ethernet3/31
Ethernet3/32
Ethernet100/1/1
Ethernet100/1/2
<--Output truncated-->
switch#
```

Related Commands

Command	Description
untagged cos	Sets a CoS value for untagged Ethernet frames.

show policy-map

To display policy maps, use the **show policy-map** command.

show policy-map [**type** {**network-qos** | **qos** | **queuing**}] [*policy-map-name*]

Syntax Description

type	(Optional) Specifies the component type to display.
network-qos	Displays policy maps of type network-qos.
qos	Displays policy maps of type qos only.
queuing	Displays policy maps of type queuing only.
policy-map-name	(Optional) Named policy map. The name can be a maximum of 40 alphanumeric characters.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

When you enter the **show policy-map** command with no arguments or keywords, the system also displays the Control Plane Policing (CoPP) information.

Examples

This example shows how to display a named network-qos policy map:

```
switch# show policy-map type network-qos my_pnq


  Type network-qos policy-maps
  ============================

  policy-map type network-qos my_pnq
    class type network-qos cl_nq
      multicast-optimize
      queue-limit 20480 bytes
      mtu 1500
    class type network-qos class-fcoe
      pause no-drop
      mtu 2158
    class type network-qos class-default
      mtu 1500
switch#
```

Related Commands

Command	Description
policy-map	Creates or modifies a policy map.

show policy-map interface

To display the service policy maps configured on the interfaces, use the **show policy-map interface** command.

show policy-map interface [**ethernet** *slot/*[*QSFP-module/*]*port* | **port-channel** *channel-number*] [**input** | **output**] [**type** {**qos** | **queuing**}]

Syntax Description

ethernet	(Optional) Displays policy maps assigned to Ethernet interfaces.
slot/[*QSFP-module/*]*port*	Ethernet interface slot number and port number. The slot number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The port number is from 1 to 128. **Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM).
port-channel	(Optional) Displays policy maps assigned to EtherChannels.
channel-number	EtherChannel number. The number is from 1 to 4096.
input	(Optional) Displays policy maps assigned to input traffic only.
output	(Optional) Displays policy maps assigned to output traffic only.
type	(Optional) Specifies the component type to display.
qos	Displays policy maps of type qos only.
queuing	Displays policy maps of type queuing only.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Statistics are on by default.

Examples

This example shows how to display policy maps assigned to a specified interface:

```
switch(config)# show policy-map interface ethernet 2/10
```

This example shows how to display QoS policy maps assigned to a specified interface:

```
switch# show policy-map interface ethernet 3/1 type qos


Global statistics status :   disabled

Ethernet3/1
```

```
  Service-policy (qos) input:   s
    policy statistics status:   disabled

    Class-map (qos):   s1 (match-any)
      Match: cos 0
      set qos-group 2

    Class-map (qos):   class-1-2 (match-any)
      Match: cos 1-2
      set qos-group 3

    Class-map (qos):   class-4-5 (match-any)
      Match: cos 4-5
      set qos-group 4

    Class-map (qos):   class-6 (match-any)
      Match: cos 6
      set qos-group 5

    Class-map (qos):   class-fcoe (match-any)
      Match: cos 3
      set qos-group 1

    Class-map (qos):   class-default (match-any)
      Match: any
      set qos-group 0

switch#
```

This example shows how to display the policy maps assigned to the output traffic of a specified interface:

```
switch# show policy-map interface ethernet 3/1 output


Global statistics status :   disabled

Ethernet3/1

  Service-policy (queuing) output:   pqe1
    policy statistics status:   disabled

    Class-map (queuing):   cqe1 (match-any)
      Match: qos-group 2
      bandwidth percent 20

    Class-map (queuing):   cqe2 (match-any)
      Match: qos-group 3
      priority

    Class-map (queuing):   cqe3 (match-any)
      Match: qos-group 4
      bandwidth percent 20

    Class-map (queuing):   cqe4 (match-any)
      Match: qos-group 5
      bandwidth percent 40

    Class-map (queuing):   class-fcoe (match-any)
      Match: qos-group 1
      bandwidth percent 10

    Class-map (queuing):   class-default (match-any)
      Match: qos-group 0
```

```
      bandwidth percent 5

switch#
```

This example shows how to display the policy maps assigned to the input traffic of a virtual Ethernet interface:

```
switch# show policy-map interface vethernet 10 input type queuing


Global statistics status :   disabled

Vethernet10

  Service-policy (queuing) input:   p2
    policy statistics status:   disabled

    Class-map (queuing):   class-default (match-any)
      Match: qos-group 0
      bandwidth percent 50
      shape 30 kbps

switch#
```

Related Commands

Command	Description
policy-map	Creates or modifies a policy map.
service-policy (virtual Ethernet interface)	Attaches a policy map to a virtual Ethernet interface.

show policy-map interface brief

To display policy maps applied to interfaces in a brief format, use the **show policy-map interface brief** command.

show policy-map interface brief

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display assigned policy maps in a brief format:

```
switch(config)# show policy-map interface brief


 Interface      [Status]:INP QOS        INP QUE       OUT QUE
====================================================================
port-channel1   [Active]:p1            pqe1          pqe1
port-channel3   [Active]:s             pqe1          pqe1
port-channel5   [Active]:s             pqe1          pqe1
port-channel6   [Active]:s             pqe1          pqe1
port-channel12  [Active]:p12           p12-in        p12-out
port-channel15  [Active]:s             pqe1          pqe1
port-channel20  [Active]:s             pqe1          pqe1
port-channel24  [Active]:p4            pqe1          pqe1
port-channel25  [Active]:p4            pqe1          pqe1
port-channel33  [Active]:s             pqe1          pqe1
port-channel41  [Active]:s             pqe1          pqe1
port-channel44  [Active]:s             pqe1          pqe1
port-channel48  [Active]:s             pqe1          pqe1
port-channel101 [Active]:s             pqe1          pqe1
port-channel102 [Active]:p4
port-channel103 [Active]:p4
port-channel104 [Active]:p4
port-channel105 [Active]:p4
port-channel106 [Active]:p4
port-channel107 [Active]:p4
--More--
switch(config)#
```

This example shows how to display assigned policy maps in a brief format:

```
switch# show policy-map interface brief
S3(config-if)# show policy-map interface brief
```

```
 Interface/VLAN [Status]:INP QOS       OUT QOS       INP QUE       OUT QUE
================================================================================
port-channel100 [Active]:default-in-po               default-in-po default-out-p

port-channel127 [Active]:default-in-po               default-in-po default-out-p

port-channel128 [Active]:default-in-po               default-in-po default-out-p

Ethernet1/1     [Active]:default-in-po               default-in-po default-out-p

Ethernet1/2     [Active]:default-in-po               default-in-po default-out-p

Ethernet1/3     [Active]:default-in-po               default-in-po default-out-p

Ethernet1/4     [Active]:default-in-po               default-in-po default-out-p

Ethernet1/5     [Active]:default-in-po               default-in-po default-out-p

Ethernet1/6     [Active]:default-in-po               default-in-po default-out-p

:
<Snip>
:
Ethernet3/31    [Active]:default-in-po               default-in-po default-out-p

Ethernet3/32    [Active]:default-in-po               default-in-po default-out-p

Ethernet100/1/1 [Active]:default-in-po               default-in-po default-out-p

Ethernet100/1/2 [Active]:default-in-po               default-in-po default-out-p

Ethernet100/1/3 [Active]:default-in-po               default-in-po default-out-p
<--Output truncated-->
switch#
```

Related Commands

Command	Description
policy-map	Creates or modifies a policy map.
show policy-map	Displays policy maps.

show policy-map interface control-plane

To display the control-plane policy maps applied to interfaces, use the **show policy-map interface control-plane** command.

show policy-map interface control-plane

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display assigned control-plane policy maps:

```
switch# show policy-map interface control-plane
control Plane

  service-policy  input: copp-system-policy-default

    class-map copp-system-class-igmp (match-any)
      match protocol igmp
      police cir 1024 kbps , bc 65535 bytes
        conformed 0 bytes; action: transmit
        violated 0 bytes; action: drop

    class-map copp-system-class-pim-hello (match-any)
      match protocol pim
      police cir 1024 kbps , bc 4800000 bytes
        conformed 0 bytes; action: transmit
        violated 0 bytes; action: drop

    class-map copp-system-class-bridging (match-any)
      match protocol bridging
      police cir 20000 kbps , bc 4800000 bytes
        conformed 0 bytes; action: transmit
        violated 0 bytes; action: drop

    class-map copp-system-class-arp (match-any)
      match protocol arp
<--Output truncated-->
switch(config)#
```

Related Commands

Command	Description
policy-map	Creates or modifies a policy map.
show policy-map	Displays policy maps.

show policy-map system

To display all active policy maps in the system, use the **show policy-map** system command.

show policy-map system [**type** {**network-qos** | **qos** [**input**] | **queuing** [**input** | **output**]}]

Syntax Description

type	(Optional) Specifies the component type to display.
network-qos	Displays policy maps of type network-qos only.
qos	Displays policy maps of type qos only.
input	(Optional) Displays policy maps assigned to input traffic.
queuing	Displays policy maps of type queuing only.
output	(Optional) Displays policy maps assigned to output traffic.

Command Default

All policy maps

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

If you do not specify a policy map type and name, the system displays all the active policy maps in the system.

Examples

This example shows how to display all active policy maps in the system:

```
switch# show policy-map system


  Type network-qos policy-maps
  ============================

  policy-map type network-qos s
    class type network-qos s2      match qos-group 3

      mtu 4000
    class type network-qos s1      match qos-group 2

      mtu 5000
      set cos 0
      multicast-optimize
      pause no-drop
    class type network-qos s3      match qos-group 4

      mtu 9216
    class type network-qos s4      match qos-group 5
```

```
    mtu 9216
  class type network-qos class-fcoe      match qos-group 1

    pause no-drop
    mtu 2158
  class type network-qos class-default      match qos-group 0

    mtu 1500


Service-policy (qos) input:   s
  policy statistics status:   disabled

  Class-map (qos):   s1 (match-any)
    Match: cos 0
    set qos-group 2

  Class-map (qos):   class-1-2 (match-any)
    Match: cos 1-2
    set qos-group 3

  Class-map (qos):   class-4-5 (match-any)
    Match: cos 4-5
    set qos-group 4

  Class-map (qos):   class-6 (match-any)
    Match: cos 6
    set qos-group 5

  Class-map (qos):   class-fcoe (match-any)
    Match: cos 3
    set qos-group 1

  Class-map (qos):   class-default (match-any)
    Match: any
    set qos-group 0

Service-policy (queuing) input:   pqe1
  policy statistics status:   disabled

  Class-map (queuing):   cqe1 (match-any)
    Match: qos-group 2
    bandwidth percent 20

  Class-map (queuing):   cqe2 (match-any)
    Match: qos-group 3
    priority

  Class-map (queuing):   cqe3 (match-any)
    Match: qos-group 4
    bandwidth percent 20

  Class-map (queuing):   cqe4 (match-any)
    Match: qos-group 5
    bandwidth percent 40

  Class-map (queuing):   class-fcoe (match-any)
    Match: qos-group 1
    bandwidth percent 10

  Class-map (queuing):   class-default (match-any)
    Match: qos-group 0
    bandwidth percent 5
```

```
  Service-policy (queuing) output:   pqe1
    policy statistics status:   disabled

    Class-map (queuing):   cqe1 (match-any)
      Match: qos-group 2
      bandwidth percent 20

    Class-map (queuing):   cqe2 (match-any)
      Match: qos-group 3
      priority

    Class-map (queuing):   cqe3 (match-any)
      Match: qos-group 4
      bandwidth percent 20

    Class-map (queuing):   cqe4 (match-any)
      Match: qos-group 5
      bandwidth percent 40

    Class-map (queuing):   class-fcoe (match-any)
      Match: qos-group 1
      bandwidth percent 10

    Class-map (queuing):   class-default (match-any)
      Match: qos-group 0
      bandwidth percent 5

switch#
```

This example shows how to display active network-qos policy maps in the system:

```
switch# show policy-map system type network-qos


  Type network-qos policy-maps
  ============================

  policy-map type network-qos s
    class type network-qos s2      match qos-group 3

      mtu 4000
    class type network-qos s1      match qos-group 2

      mtu 5000
      set cos 0
      multicast-optimize
      pause no-drop
    class type network-qos s3      match qos-group 4

      mtu 9216
    class type network-qos s4      match qos-group 5

      mtu 9216
    class type network-qos class-fcoe      match qos-group 1

      pause no-drop
      mtu 2158
    class type network-qos class-default      match qos-group 0

      mtu 1500
switch#
```

Related Commands

Command	Description
show policy-map	Displays all policy maps.

show policy-map type control-plane

To display control plane policy map information, use the **show policy-map type control-plane** command.

show policy-map type control-plane [**expand**] [**name** *policy-map-name*]

Syntax Description

expand	(Optional) Displays expanded control plane policy map information.
name *policy-map-name*	(Optional) Specifies the name of the control plane policy map. The name is case sensitive and can be a maximum of 64 alphanumeric characters.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display control plane policy map information:

```
switch# show policy-map type control-plane

  policy-map type control-plane copp-system-policy-customized
    class copp-system-class-igmp
      police cir 1024 kbps bc 65535 bytes
    class copp-system-class-pim-hello
      police cir 1024 kbps bc 4800000 bytes
    class copp-system-class-bridging
      police cir 20000 kbps bc 4800000 bytes
    class copp-system-class-arp
      police cir 1024 kbps bc 3600000 bytes
    class copp-system-class-dhcp
      police cir 1024 kbps bc 4800000 bytes
    class copp-system-class-mgmt
      police cir 12000 kbps bc 4800000 bytes
    class copp-system-class-lacp
      police cir 1024 kbps bc 4800000 bytes
    class copp-system-class-lldp
      police cir 2048 kbps bc 4800000 bytes
    class copp-system-class-udld
      police cir 2048 kbps bc 4800000 bytes
<--Output truncated-->
switch#
```

This example shows how to display control plane policy map information in expanded format:

```
switch# show policy-map type control-plane expand
```

Related Commands

Command	Description
policy-map type control-plane	Creates or configures a control plane policy map.

show policy-map vlan

To display VLAN policy maps, use the **show policy-map vlan** command.

show policy-map vlan [*vlan-number*]

Syntax Description

vlan-number	Displays the QoS policies configured on the specified VLAN.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You must configure the interface QoS limit and policy map before using the **show policy-map vlan** command. The TCAM must have enough free entries to configure the service policy on the VLAN.

Examples

This example shows how to display the QoS policies configured on the specified VLAN:

```
switch# show policy-map vlan 101


Service-policy (qos) input: vpq1
  ================================

policy status statistics: disabled
    class-map (qos): vcq2 (match-any)
      match: cos 2
      match: precedence 1
      set cos-group 2
     set prec 2

    class-map (qos): vcq4 (match-any)
      match: access-group ipacl1-vq
      match: prec 7
      set cos-group 4

    class-map (qos): vcq4 (match-any)
      match: cos 1
      set cos-group 3

    class-map (qos): vcq4 (match-any)
      match: any
      set cos-group 0
switch#
```

Related Commands

Command	Description
policy-map	Creates or modifies a policy map.

show queuing interface

To display the queuing information on interfaces, use the **show queuing interface** command.

show queuing interface [**ethernet** *slot*/[*QSFP-module/*]*port*]

Syntax Description

ethernet	(Optional) Specifies that queuing information to be displayed for an Ethernet interface.
slot	Slot number of the Ethernet interface. The range is from 1 to 255.
QSFP-module	The *QSFP-module* number is from 1 to 4. **Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM).
port	Port number of the Ethernet interface. The range is from 1 to 128.

Command Default

Displays the queuing information for all interfaces.

Command Modes

EXEC mode

Command History

Release	Modification
6.0(2)N1(1)	Support for the QSFP+ GEM was added.
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display the queuing information for all interfaces:

```
switch# show queuing interface
Ethernet1/1 queuing information:
  TX Queuing
    qos-group  sched-type  oper-bandwidth
        0       WRR             73
        1       WRR              0
        2       WRR              1
        3       WRR              6
        4       WRR             20
        5       priority         0

  RX Queuing
    qos-group 0
    q-size: 25600, HW MTU: 9280 (9216 configured)
    drop-type: drop, xon: 0, xoff: 160
    Statistics:
        Pkts received over the port             : 0
        Ucast pkts sent to the cross-bar        : 0
        Mcast pkts sent to the cross-bar        : 0
        Ucast pkts received from the cross-bar  : 0
        Pkts sent to the port                   : 0
        Pkts discarded on ingress               : 0
        Per-priority-pause status               : Rx (Inactive), Tx (Inactive)
```

```
  qos-group 1
  q-size: 76800, HW MTU: 2240 (2158 configured)
  drop-type: no-drop, xon: 128, xoff: 240
  Statistics:
      Pkts received over the port             : 0
      Ucast pkts sent to the cross-bar        : 0
      Mcast pkts sent to the cross-bar        : 0
      Ucast pkts received from the cross-bar  : 0
      Pkts sent to the port                   : 0
      Pkts discarded on ingress               : 0
      Per-priority-pause status               : Rx (Inactive), Tx (Inactive)

  qos-group 2
  q-size: 20480, HW MTU: 9280 (9216 configured)
  drop-type: drop, xon: 0, xoff: 128
  Statistics:
      Pkts received over the port             : 0
      Ucast pkts sent to the cross-bar        : 0
      Mcast pkts sent to the cross-bar        : 0
      Ucast pkts received from the cross-bar  : 0
      Pkts sent to the port                   : 0
      Pkts discarded on ingress               : 0
      Per-priority-pause status               : Rx (Inactive), Tx (Inactive)

  qos-group 3
  q-size: 20480, HW MTU: 9280 (9216 configured)
  drop-type: drop, xon: 0, xoff: 128
  Statistics:
      Pkts received over the port             : 0
      Ucast pkts sent to the cross-bar        : 0
      Mcast pkts sent to the cross-bar        : 0
      Ucast pkts received from the cross-bar  : 0
      Pkts sent to the port                   : 0
      Pkts discarded on ingress               : 0
      Per-priority-pause status               : Rx (Inactive), Tx (Inactive)

  qos-group 4
  q-size: 20480, HW MTU: 9280 (9216 configured)
  drop-type: drop, xon: 0, xoff: 128
  Statistics:
      Pkts received over the port             : 0
      Ucast pkts sent to the cross-bar        : 0
      Mcast pkts sent to the cross-bar        : 0
      Ucast pkts received from the cross-bar  : 0
      Pkts sent to the port                   : 0
      Pkts discarded on ingress               : 0
      Per-priority-pause status               : Rx (Inactive), Tx (Inactive)

  qos-group 5
  q-size: 81920, HW MTU: 9280 (9216 configured)
  drop-type: no-drop, xon: 128, xoff: 230
  Statistics:
      Pkts received over the port             : 0
      Ucast pkts sent to the cross-bar        : 0
      Mcast pkts sent to the cross-bar        : 0
      Ucast pkts received from the cross-bar  : 0
      Pkts sent to the port                   : 0
      Pkts discarded on ingress               : 0
      Per-priority-pause status               : Rx (Inactive), Tx (Inactive)

Total Multicast crossbar statistics:
  Mcast pkts received from the cross-bar      : 0
```

```
Ethernet1/2 queuing information:
  TX Queuing
    qos-group  sched-type  oper-bandwidth
        0       WRR             73
        1       WRR              0
        2       WRR              1
        3       WRR              6
        4       WRR             20
        5       priority         0
<---output truncated--->
switch#
```

This example shows how to display the queuing information on Ethernet interface 1/2:

```
switch# show queuing interface ethernet 1/2
Ethernet1/2 queuing information:
  TX Queuing
    qos-group  sched-type  oper-bandwidth
        0       WRR             73
        1       WRR              0
        2       WRR              1
        3       WRR              6
        4       WRR             20
        5       priority         0

  RX Queuing
    qos-group 0
    q-size: 25600, HW MTU: 9280 (9216 configured)
    drop-type: drop, xon: 0, xoff: 160
    Statistics:
        Pkts received over the port             : 0
        Ucast pkts sent to the cross-bar        : 0
        Mcast pkts sent to the cross-bar        : 0
        Ucast pkts received from the cross-bar  : 1851526994
        Pkts sent to the port                   : 1851527000
        Pkts discarded on ingress               : 0
        Per-priority-pause status               : Rx (Inactive), Tx (Inactive)

    qos-group 1
    q-size: 76800, HW MTU: 2240 (2158 configured)
    drop-type: no-drop, xon: 128, xoff: 240
    Statistics:
        Pkts received over the port             : 0
        Ucast pkts sent to the cross-bar        : 0
        Mcast pkts sent to the cross-bar        : 0
        Ucast pkts received from the cross-bar  : 0
        Pkts sent to the port                   : 0
        Pkts discarded on ingress               : 0
        Per-priority-pause status               : Rx (Inactive), Tx (Inactive)

    qos-group 2
    q-size: 20480, HW MTU: 9280 (9216 configured)
    drop-type: drop, xon: 0, xoff: 128
    Statistics:
        Pkts received over the port             : 0
        Ucast pkts sent to the cross-bar        : 0
        Mcast pkts sent to the cross-bar        : 0
        Ucast pkts received from the cross-bar  : 0
        Pkts sent to the port                   : 0
        Pkts discarded on ingress               : 0
        Per-priority-pause status               : Rx (Inactive), Tx (Inactive)

--More--
switch#
```

Table 1 describes the significant fields shown in the display.

Table 1 show queuing interface Field Descriptions

Field	Description
Ethernet ...	Ethernet interface information.
qoS-group	Information about QoS groups configured on the switch.
sched-type	Type of schedule.
WRR	Weighted round robin(WRR). Queue eight for scheduling.
Priority	Priority of the queue.
q-size	Queue size.
drop-type	Queue drop type can be either drop or no-drop.
MTU	Maximum transmit unit (MTU) for the queue.
Xon	Transmission on at this threshold.
Xoff	Transmission off at this threshold.

Related Commands

Command	Description
hardware buffer-threshold	Configures the hardware buffer threshold.
hardware queue-limit	Configures the hardware queue limit.
show fex	Displays all configured Fabric Extender chassis connected to the switch.

show running-config copp

To display Control Plane Policing (CoPP) configuration information in the running configuration, use the **show running-config copp** command.

show running-config copp [**all**]

Syntax Description

all	(Optional) Displays configured and default information.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display the configured CoPP information in the running configuration:

```
switch# show running-config copp
```

This example shows how to display the configured and default CoPP information in the running configuration:

```
switch# show running-config copp all
```

Related Commands

Command	Description
control-plane	Enters the control-plane configuration mode.
copy running-config startup-config	Copies the running configuration to the startup configuration file.
show startup-config aclmgr	Displays the ACL startup configuration.
show startup-config copp	Displays the CoPP configuration information in the startup configuration file.

show running-config ipqos

To display information about the running-system configuration for quality of service (QoS), use the **show running-config ipqos** command.

show running-config ipqos [**all**]

Syntax Description

all	(Optional) Displays configured and default information.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Use this command to view a list of default and configured class maps and policy maps and the policies attached to interfaces.

Examples

This example shows how to display QoS information:

```
switch# show running-config ipqos


!Command: show running-config ipqos
!Time: Thu Sep  9 06:26:49 2010

version 5.2(1)N1(1)
class-map type qos class-fcoe
  match cos 4
class-map type qos match-all 1
  match cos 1
class-map type qos match-all 2
  match cos 2
class-map type qos match-all 3
  match cos 3
class-map type qos match-all 4
class-map type qos match-any 5
  match cos 5,7
class-map type qos match-all arp
  match protocol dhcp
  match protocol arp
  match cos 3
class-map type qos match-all cos
  match cos 5
class-map type qos match-all dot
  match access-group name dot
class-map type qos match-all my_class
```

```
  match dscp 3
  match precedence 0
  match protocol dhcp
class-map type qos match-all new
  match protocol netbios
:
<snip>
class-map type queuing my_qclass
  match qos-group 3
class-map type queuing Video-Signalling
  match qos-group 4
class-map type queuing class-ip-multicast
  match qos-group 4
policy-map type qos 5
  class 5
    set qos-group 2
  class Video
    set qos-group 3
policy-map type qos my_policy
  class my_class
    set precedence 5
    set dscp 5
  class myQAll
    set precedence 3
    set dscp 48
:
<snip>
policy-map type network-qos my_policy1
  class type network-qos my_class1
    pause no-drop buffer-size 143680 pause-threshold 58860 resume-threshold 3840
  class type network-qos class-fcoe
    pause no-drop
    mtu 2158
  class type network-qos class-default
:
<snip>
system qos
  service-policy type qos input voice
  service-policy type network-qos Network
  service-policy type queuing output Queu
  service-policy type queuing input Queue

<--output truncated-->
switch#
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration to the startup configuration file.
show class-map	Displays information about class maps.
show policy-map	Displays information about policy maps.

show startup-config copp

To display the Control Plane Policing (CoPP) configuration information in the startup configuration, use the **show startup-config copp** command.

show startup-config copp

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display the CoPP information in the startup configuration:

```
switch# show startup-config copp
```

Related Commands

Command	Description
control-plane	Enters the control-plane configuration mode.
copy running-config startup-config	Copies the running configuration to the startup configuration file.
show running-config copp	Displays the CoPP configuration information in the running configuration.

show startup-config ipqos

To display quality of service (QoS) configuration information in the startup configuration, use the **show startup-config ipqos** command.

show startup-config ipqos [**all**]

Syntax Description

all	(Optional) Displays configured and default information.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display the QoS information in the startup configuration file:

```
switch# show startup-config ipqos

!Command: show startup-config ipqos
!Time: Thu Sep  9 07:42:33 2010
!Startup config saved at: Tue Sep  7 08:45:03 2010

version 5.0(2)N1(1)
class-map type qos class-fcoe
  match cos 4
class-map type qos match-all 1
  match cos 1
class-map type qos match-all 2
  match cos 2
class-map type qos match-all 3
  match cos 3
class-map type qos match-all 4
class-map type qos match-any 5
  match cos 5,7
class-map type qos match-all arp
  match protocol dhcp
  match protocol arp
  match cos 3
class-map type qos match-all cos
  match cos 5
class-map type qos match-all dot
  match access-group name dot
class-map type qos match-all new
  match protocol netbios
class-map type qos match-all rtp
  match ip rtp 2000-40000
class-map type qos match-all dscp
  match dscp 46
```

```
  match precedence 7
  match protocol arp
class-map type qos match-all Video
  match dscp 34
class-map type qos match-all Voice
  match dscp 40,46
class-map type qos match-all class1
  match ip rtp 2000
class-map type qos match-all class2
  match cos 1
class-map type qos match-all class3
  match protocol arp
class-map type qos match-all class4
  match protocol dhcp
class-map type qos match-all class5
  match protocol ldp
:
:
<--output truncated--

switch#
```

Related Commands

Command	Description
copy running-config startup-config	Copies the running configuration to the startup configuration file.
show class-map	Displays information about class maps.
show policy-map	Displays information about policy maps.

show wrr-queue cos-map

To display the mapped class of service (CoS) values to egress queues, use the **show wrr-queue cos-map** command.

show wrr-queue cos-map

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display the CoS values that are mapped to the egress queue:

```
switch# show wrr-queue cos-map
MCAST Queue ID           Cos Map
0                       0 1
1                       2
2                       3 4 5
3                       6 7
switch#
```

Related Commands

Command	Description
wrr-queue cos-map	Maps class of service (CoS) values to select one of the egress queues.

U Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with U.

untagged cos

To override the class of service (CoS) value for the selected interface, use the **untagged cos** command. To revert to the defaults, use the **no** form of this command.

untagged cos *cos-value*

no untagged cos *cos-value*

Syntax Description

cos-value	Class of service (CoS) value for untagged frames. Values can range from 1 to 7.

Command Default

None

Command Modes

Interface configuration mode
Subinterface configuration mode
Virtual Ethernet interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can use this command on the following interfaces:

- Layer 2 interface
- Layer 3 interface

Note Use the **no switchport** command to configure an interface as a Layer 3 interface.

- Virtual Ethernet interface

Note Use the **feature-set virtualization** command to enable the Cisco Adapter Fabric Extender (Adapter-FEX) on the switch. Use the **interface vethernet** command to configure a virtual Ethernet interface.

Ethernet frames received with no CoS value are given a CoS value of 0.

On a Cisco Nexus 5548 switch, you can configure a type qos policy map and untagged CoS on the same interface.

Examples

This example shows how to set the CoS value to 4 for untagged frames received on an interface:

```
switch# configure terminal
switch(config)# interface ethernet 1/2
```

```
switch(config-if)# untagged cos 4
```

This example shows how to set the CoS value to 3 for untagged frames received on a Layer 3 interface:

```
switch# configure terminal
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# untagged cos 3
switch(config-if)#
```

This example shows how to set the CoS value to 5 for untagged frames received on a virtual Ethernet interface:

```
switch# configure terminal
switch(config)# feature adapter-fex
Virtualization Plugin license checked out successfully
Virtualization Plugin extracted successfully
All Virtualization processes enabled successfully
switch(config)# interface vethernet 10
switch(config-if)# untagged cos 5
switch(config-if)#
```

Related Commands

Command	Description
feature-set virtualization	Enables the Cisco Virtual Machine features on the switch.
interface vethernet	Configures a virtual Ethernet interface.
match cos	Sets the CoS value to match for the selected class.
no switchport	Configures an interface as a Layer 3 routed interface.
show interface untagged-cos	Displays the untagged CoS values for interfaces.

W Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands that begin with W.

wrr-queue cos-map

To map assigned class of service (CoS) values to select one of the egress queues, use the **wrr-queue cos-map** command. To return the CoS map to the default setting, use the **no** form of this command.

wrr-queue cos-map *queue-id cos1 ... cos8*

no wrr-queue cos-map *queue-id cos1 ... cos8*

Syntax Description

queue-id	ID of the egress queue. The range is from 0 to 3.
cos1... cos8	CoS values that are mapped to select a queue. Enter up to eight CoS values. Separate each value with a space. The range is from 0 to 7.

Command Default

The defaults are as follows:

- Receive queue 0 and transmit queue 0: CoS 0 and 1.
- Receive queue 1 and transmit queue 1: CoS 2 and 3.
- Receive queue 2 and transmit queue 2: CoS 4 and 5.
- Receive queue 3 and transmit queue 3: CoS 6 and 7.

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Note This command is applicable only to Layer 3 multicast traffic.

You can use this command to distribute traffic into different queues, where each queue is configured with different weighted round robin (WRR) parameters.

You can configure a maximum of four multicast queues for Layer 3 multicast traffic. We recommend that you configure at least one class of service (CoS) value for each multicast queue.

Examples

This example shows how to map CoS values 0 and 1 to queue 1:

```
switch(config)# wrr-queue cos-map 1 0 1
switch(config)#
```

Related Commands

Command	Description
show wrr-queue cos-map	Displays the weighted round-robin (WRR) queue information.