Quality of Service Commands

This chapter describes the Cisco NX-OS quality of service (QoS) commands available on Cisco Nexus 3000 Series switches.

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(3)U1(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.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

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
5.0(3)U2(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
switch(config-pmap)# class ClassMapA
swtich(config-pmap-c)
```

This example shows how to configure a class map for a control plane policy map and insert it before an existing class map:

```
switch# configure terminal
switch(config)# policy-map type control-plane copp-system-policy
switch(config-pmap)# class classMapB insert-before copp-stftp
switch(config-pmap-c)#
```

This example shows how to delete a class map from a control plane policy map:

```
switch# configure terminal
switch(config)# policy-map type control-plane copp-system-policy
switch(config-pmap)# no class ClassMapA
```

```
switch(config-pmap)#
```

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

Qos policy map configuration
Qos policy map in switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

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

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
QoS policy map in switch profile configuration mode

Command History

Release	Modification
5.0(3)U2(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
Policy map type network-qos in switch profile configuration mode

Command History

Release	Modification
7.0(3)I2(1)	The switch prompt has changed.
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

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)#
```

This example shows how to add a reference to a class map in a network-qos 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 network-qos sp-nwpolicy
switch(config-sync-sp-pmap-nq)# class type network-qos sp-nwpolicy-class
```

```
switch(config-sync-sp-pmap-nq-c)#
```

This example shows the new switch prompt after entering this command:

```
switch(config)# policy-map type network-qos policy1
switch(config-pmap-nqos)# class type network-qos class-default
switch(config-pmap-nqos-c)#
```

Related Commands

Command	Description
mtu	Enables jumbo frames on a traffic class.
set cos	Assigns a CoS value for a class of traffic.
show class-map type network-qos	Displays type network-qos class maps.
show policy-map	Displays policy maps.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

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
5.0(3)U1(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.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

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
Switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

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)#
```

Related Commands

Command	Description
description	Adds a summary purpose for the class map.
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.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

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

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

no 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

Command History

Release	Modification
5.0(3)U2(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 ClassMapA
switch(config-cmap)#
```

This example shows how to delete a control plane class map:

```
switch# configure terminal
switch(config)# no class-map type control-plane ClassMapA
switch(config)#
```

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
Switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

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
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.

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

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
Switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

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 remove a queuing class map:

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

Related Commands

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

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
5.0(3)U2(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# show policy-map interface control-plane
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.

clear qos statistics

To clear the quality of service (QoS) statistics, use the **clear qos statistics** command.

clear qos statistics

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to clear all the QoS statistics:

```
switch# clear qos statistics
switch#
```

Related Commands

Command	Description
show queuing interface	Displays the queuing information on interfaces.

congestion-control random-detect

To configure weighted random early detection (WRED), use the **congestion-control random-detect** command. To remove the WRED configuration, use the **no** form of this command.

congestion-control random-detect

no congestion-control random-detect

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Policy-map type network-qos configuration mode
Policy-map type network-qos in switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

Usage Guidelines

WRED is useful on any output interface where you expect to have congestion.

This command does not require a license.

Examples

This example shows how to configure congestion control:

```
switch# configure terminal
switch(config)# policy-map type network-qos my_policy
switch(config-pmap-nq)# class type network-qos my_cnqos
switch(config-pmap-nq-c)# congestion-control random-detect
switch(config-pmap-nq-c)#
```

This example shows how to configure an ECN 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 network-qos sp-nwpolicy
switch(config-sync-sp-pmap-nq)# class type network-qos sp-nwpolicy-class
switch(config-sync-sp-pmap-nq-c)# congestion-control random-detect
switch(config-sync-sp-pmap-nq-c)#
```

Related Commands

Command	Description
class type network-qos	References a type network-qos class map in a policy map.
congestion-control random-detect ecn	Configures an explicit congestion notification (ECN).
show policy-map	Displays all policy maps.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

congestion-control random-detect ecn

To configure an explicit congestion notification (ECN), use the **congestion-control random-detect ecn** command. To remove the ECN configuration, use the **no** form of this command.

congestion-control random-detect ecn

no congestion-control random-detect ecn

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Policy-map type network-qos configuration mode
Policy-map type network-qos in switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

Usage Guidelines

ECN marks packets, instead of dropping them, when the average queue length exceeds a specific threshold.

This command does not require a license.

Examples

This example shows how to configure an ECN:

```
switch# configure terminal
switch(config)# policy-map type network-qos my_policy
switch(config-pmap-nq)# class type network-qos my_cnqos
switch(config-pmap-nq-c)# congestion-control random-detect ecn
switch(config-pmap-nq-c)#
```

This example shows how to configure an ECN 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 network-qos sp-nwpolicy
switch(config-sync-sp-pmap-nq)# class type network-qos sp-nwpolicy-class
switch(config-sync-sp-pmap-nq-c)# congestion-control random-detect ecn
switch(config-sync-sp-pmap-nq-c)#
```

Related Commands

Command	Description
class type network-qos	References a type network-qos class map in a policy map.
congestion-control random-detect	Configures weighted random early detection (WRED).
show policy-map	Displays all policy maps.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

congestion-control random-detect forward-nonecn

To allow non-ECN-capable traffic to bypass WRED thresholds and grow until the egress queue-limit and tail drops use the **congestion-control random-detect forward-nonecn** command.

congestion-control random-detect forward-nonecn

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
6.0(2)U6(7)	This command was introduced.

Usage Guidelines

This command is intended to be used with a WRED+ECN configuration and when the intention is to avoid WRED drops of non-ECN-capable traffic. This command is not supported on the Cisco Nexus 3500 Series Switches but is supported on all other Cisco Nexus 3000 Series Switches.

Examples

This example shows how the command is used on the switch:

```
switch(config)# congestion-control random-detect forward-nonecn
```

Related Commands

Command	Description
congestion-control random-detect ecn	Configures an explicit congestion notification (ECN).

congestion-control random-detect global-buffer

To configure the global threshold for ECN, use the **congestion-control random-detect global-buffer** command. To remove the configuration, use the **no** form of this command.

congestion-control random-detect global-buffer *min-threshold* [**bytes | kbytes | mbytes | packets**] **maximum-threshold** *max-threshold* [**bytes | kbytes | mbytes | packets**]

no congestion-control random-detect global-buffer *min-threshold* [**bytes | kbytes | mbytes | packets**] **maximum-threshold** *max-threshold* [**bytes | kbytes | mbytes | packets**]

Syntax Description

min-threshold	Minimum threshold. Valid values are from 0 to 50000.
packets	(Optional) Specifies that thresholds are in packets.
bytes	(Optional) Specifies that thresholds are in bytes.
kbytes	(Optional) Specifies that thresholds are in kilobytes.
mbytes	(Optional) Specifies that thresholds are in megabytes.
max-threshold	Maximum threshold. Valid values are from 0 to 50000.

Command Default

None

Command Modes

Policy-map type network-qos configuration mode

Command History

Release	Modification
5.0(3)U4(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure congestion control global buffer:

```
switch# configure terminal
switch(config)# policy-map type network-qos my_policy
switch(config-pmap-nq-c)# congestion-control random-detect global-buffer minimum-threshold
1000 bytes minimum-threshold 1000 bytes
switch(config)#
```

Related Commands

Command	Description
class type network-qos	References a type network-qos class map in a policy map.
congestion-control random-detect ecn	Configures an explicit congestion notification (ECN).

Command	Description
show policy-map	Displays all policy maps.
random-detect	Configures weighted random early detection (WRED).

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
5.0(3)U2(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.

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, qos, queuing) configuration mode
Policy map (type network qos, qos, queuing) configuration mode
Class map in switch profile configuration mode
Policy map in switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

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

hardware profile pfc mmu buffer-reservation

To reserve a percentage of shared buffers for PFC traffic, use the hardware profile pfc mmu buffer-reservation command.

hardware profile pfc mmu buffer-reservation *percentage*

Syntax Description

percentage	Percentage of shared pool buffers to be reserved.

Command Default

5 percent

Command Modes

Global configuration mode.

Command History

Release	Modification
6.0(2)U2(1)	This command was introduced.

Examples

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

```
switch# configure terminal
switch(config)# hardware profile pfc mmu buffer-reservation 50
switch(config-cmap-qos)#
```

Usage Guidelines

When you run this command, there will be system-wide traffic disruption on all ports.

Configure this buffer reservation percentage before enabling PFC on the interfaces. If you do not have PFC-enabled interfaces, using the default reservation is recommended.

Related Commands

Command	Description
priority-flow-control mode	Sets the PFC mode for the selected interface.

ip dscp (ERSPAN)

To configure the differentiated services 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 settings, 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
5.0(3)U2(2)	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 setting, 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
5.0(3)U2(2)	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.

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

QoS class-map configuration mode
Control plane class-map configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in control plane class maps.

Usage Guidelines

You must create the IP ACLs before you reference them in this command.

You can associate only one ACL with a class-map of type control-plane.

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

This example shows how to create a control plane class map that matches characteristics of the ACL copp-system-acl-snmp:

```
switch# configure terminal
switch(config)# class-map type control-plane match-any copp-snmp
switch(config-cmap)# match access-group name copp-system-acl-snmp
switch(config-cmap)#
```

This example shows how to remove an access group from a control plane class map:

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

```
switch(config-cmap)# no match access-group name copp-system-acl-snmp
switch(config-cmap)#
```

Related Commands

Command	Description
class-map type control-plane	Creates or specifies a control plane class map and enters class map configuration mode.
show class-map	Displays class maps.
show class-map type control-plane	Displays configuration information for control plane 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
5.0(3)U1(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 type qos match-any class_acl
switch(config-cmap-qos)# match cos 5-7
switch(config-cmap-qos)#
```

Related Commands

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

match dscp

To identify specific differentiated services code point (DSCP) values 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
5.0(3)U1(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
cs2	CS2 (precedence 2) dscp (010000)—decimal value 16

Table 1 Standard DSCP Values (continued)

DSCP Value	Description
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 type qos my_test
switch(config-cmap-qos)# match dscp af21
switch(config-cmap-qos)#
```

Related Commands

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

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
5.0(3)U1(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 type qos my_test
switch(config-cmap-qos)# match ip rtp 2300
switch(config-cmap-qos)#
```

Related Commands

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

match precedence

To configure a class map to use the precedence value in the type of service (ToS) byte field of the IP header 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
5.0(3)U1(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
switch(config-cmap-qos)#
```

Related Commands

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

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 qos-group *qos-group-list*

no match qos-group *qos-group-list*

qos-group-list	Specified Qos group value or list of QoS group values specified in bytes. The valid values are from 1 to 7.

Command Default

None

Command Modes

Class map type network-qos configuration
Class map type queuing configuration
Class map in switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(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.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

mtu (ERSPAN)

To set the maximum transmission unit (MTU) size for 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

No truncation is enabled.

Command Modes

ERSPAN session configuration mode

Command History

Release	Modification
5.0(3)U2(2)	This command was introduced.

Usage Guidelines

ERSPAN packets that are 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)# 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). Valid values are 1500 to 9216.

Command Default

Default MTU value is 1500.

Command Modes

Policy map type network-qos class configuration
Policy map type network-qos class in switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

Usage Guidelines

You can specify the MTU value for either a single Layer 3 interface or a range of Layer 3 interfaces. When you change the Layer 3 interface MTU value to the Jumbo MTU value (1500 bytes or greater), you must also change the network QoS MTU value to 1500 bytes or greater. The device generates a syslog message to inform you of this requirement.

The MTU value you configure is determined by the MTU value configured on the class-default class map.

Note Make sure you configure the same MTU value on all class maps 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)#
```

This example shows how to set an MTU value for a class in a network-qos 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 network-qos sp-nwpolicy
switch(config-sync-sp-pmap-nq)# class type network-qos sp-nwpolicy-class
switch(config-sync-sp-pmap-nq-c)# mtu 3000
switch(config-sync-sp-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.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.
system qos	Configures a system policy.

pause buffer-size

To specify the buffer threshold settings for pause and resume, use the **pause buffer-size** command. To remove the buffer threshold settings for pause and resume, use the **no** form of this command.

pause buffer-size *buffer-size* **pause-threshold** *xoff-size* **resume-threshold** *xon-size*

no pause 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 27456-158080.
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 12480-77376
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 0-64896

Command Default

None

Command Modes

Policy map type queuing class configuration mode

Command History

Release	Modification
6.0(2)U2(1)	This command was introduced.

Usage Guidelines

Use this command to configure the buffer size and threshold values.

Examples

This example shows how to configure the buffer size:

```
switch# configure terminal
switch(config-pmap-que)# policy-map type queuing p1
switch(config-pmap-que)# class type queuing c1
switch(config-pmap-c-que)# pause buffer-size 39936 pause-threshold 24960 resume-threshold
12480
```

Related Commands

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

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

no pause no-drop

SyntaxDescription

This command has no arguments or keywords.

Command Default

By default, pause no-drop is off.

Command Modes

Policy map type network-qos class configuration

Command History

Release	Modification
6.0(2)U2(1)	This command was introduced.

Usage Guidelines

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# configure terminal
switch(config)# class-map type network-qos m1
switch(config-cmap-nq)# match qos-group 2
switch(config-cmap-nq)# exit
switch(config)# policy-map type network-qos p1
switch(config-pmap-nq)# class type network-qos m1
switch(config-pmap-nq-c)# pause no-drop
```

Related Commands

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

pause priority-group

To map no-drop class traffic to a priority group, use the **pause priority-group** command.

pause priority-group *priority group number*

Syntax Description

priority group number	Ingress priority group to which the traffic is mapped and pause limits are applied. The values range from 0 to 5.

Command Default

None

Command Modes

Policy map type queuing class configuration mode

Command History

Release	Modification
6.0(2)U2(1)	This command was introduced.

Usage Guidelines

By default, the system maps the priority groups. Use this command only if you want to change these mappings.

Examples

This example shows how to map no-drop traffic classes to priority groups:

```
switch# configure terminal
switch(config-pmap-que)# policy-map type queuing p1
switch(config-pmap-que)# class type queuing c1
switch(config-pmap-c-que)# pause priority-group 1
```

Related Commands

Command	Description
show policy-map	Displays policy maps.

police (policy map)

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

police {*rate* | **pps** *rate*}

Syntax Description

rate	Average rate in packets per second (pps). The range is from 0 to 20,000.
pps	(Optional) Specifies units for traffic rates in packets per second.

Command Default

100 pps

Command Modes

Control plane policy map configuration mode

Command History

Release	Modification
5.0(3)U2(1)	This command was introduced.

Usage Guidelines

The PPS Credit Limit (PCL), which is the aggregate of packets per second (pps) rates of all classes in the policy, cannot exceed 22,800 packets per second for a control plane policy map. If you exceed this limit, the configuration is rejected and you will see the following error message:

```
ERROR: Police config. failed
```

When you see this error message, do one of the following:

- Configure a traffic policing class with a lesser pps value.
- Reconfigure the traffic policing values in the existing classes of the policy map to reduce the total number of packets per second for the policy map.

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
switch(config-pmap)# class ClassMapA
switch(config-pmap-c)# police pps 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
5.0(3)U2(1)	This command was introduced.

Usage Guidelines

In Cisco Nexus 3000 Series switches, 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. You can, however, add or remove classes to or from the default 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
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
Switch profile configuration mode

Command History

Release	Modification
7.0(3)I2(1)	The prompt on entering **policy map type network-qos** has changed.
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

Usage Guidelines

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

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)
```

This example shows how to create or modify a network-qos 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 network-qos sp-nwpolicy
switch(config-sync-sp-pmap-nq)#
```

This example shows the new prompt after entering **policy-map type network-qos**:

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

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.
set qos-group	Assigns a QoS group identifier for a class of traffic.
show policy-map	Displays policy maps.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

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
Switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	QoS policy map is supported in a switch profile.

Usage Guidelines

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

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.
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.

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

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
Switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Queuing policy map is supported in a switch profile.

Usage Guidelines

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

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.

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

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
5.0(3)U1(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).

You can configure a strict priority queue for only one traffic class.

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

priority level

To assign a strict priority level to a traffic class in a policy map for the Cisco Nexus 3100 Series switches, use the **priority level** command. To remove the mapping, use the **no** form of this command.

priority level *strict-priority level*

no priority level *strict-priority level*

Syntax Description

strict-priority level	Specifies the strict-priority level. These levels can range from 1 to 3, where 1 is the highest and 3 is the lowest priority.

Command Default

None

Command Modes

Policy map type queuing class configuration

Command History

Release	Modification
6.0(2)U2(1)	This command was introduced.

Usage Guidelines

When you configure a strict priority level for a traffic class in a policy map, the priority class receives preference over other class queues. A queue with priority level 1 is serviced before a queue with priority level 2 or 3.

Note You can use this command only on Cisco Nexus 3100 Series switches.

Examples

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

```
switch(config)# policy-map type queuing p1
switch(config-pmap-que)# class type queuing q3
switch(config-pmap-c-que)# priority level 2
switch(config-pmap-c-que)#
```

Related Commands

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

priority-flow-control mode

To set the priority-flow-control (PFC) mode for the selected interface, use the **priority-flow-control mode** 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
6.0(2)U2(1)	This command was introduced.

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
show interface priority-flow-control	Displays the priority flow control details for a specified interface.

queue-limit

To set queue limits on ingress priority group and egress queues, use the **queue-limit** command. To remove a queue limit, use the **no** form of this command.

queue-limit *queue-size* [**dynamic** *dynamic threshold*]

no queue-limit *queue-size* [**dynamic** *dynamic threshold*]

Syntax Description

queue-size	Queue size threshold (in bytes). The range is from 0 to 9437184.
dynamic threshold	Index used to calculate the queue's threshold size based on the number of free cells available.

Command Default

None

Command Modes

Policy map type queuing class configuration mode

Command History

Release	Modification
6.0(2)U2(1)	This command was introduced.

Usage Guidelines

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

Examples

This example shows how to set a dynamic queue limit:

```
switch# configure terminal
switch(config-pmap-que)# policy-map type queuing p1
switch(config-pmap-que)# class type queuing c1
switch(config-pmap-c-que)# queue-limit dynamic 4
```

This example shows how to set a static queue limit:

```
switch# configure terminal
switch(config-pmap-que)# policy-map type queuing p1
switch(config-pmap-que)# class type queuing c1
switch(config-pmap-c-que)# queue-limit 12764
```

Related Commands

Command	Description
show policy-map	Displays policy maps.

random-detect

To configure weighted random early detection (WRED) or explicit congestion notification (ECN) on both ingress and egress queues by setting aggregate minimum and maximum packet drop or mark threshold default values for a specific class of service, use the **random-detect** command. To remove a WRED configuration, use the **no** form of this command.

random-detect minimum-threshold *min-threshold* [**bytes | kbytes | mbytes | packets**] **maximum-threshold** *max-threshold* [**bytes | kbytes | mbytes | packets**] **drop-probability** drop probability **weight** weight **cap-average**

no random-detect minimum-threshold *min-threshold* [**bytes | kbytes | mbytes | packets**] **maximum-threshold** *max-threshold* [**bytes | kbytes | mbytes | packets**] **drop-probability** drop probability value **weight** weight **cap-average**

Syntax Description

minimum-threshold	Specifies the minimum threshold.
min-threshold	Minimum threshold. Valid values are from 1 to 52428800.
packets	(Optional) Specifies that thresholds are in packets.
bytes	(Optional) Specifies that thresholds are in bytes.
kbytes	(Optional) Specifies that thresholds are in kilobytes.
mbytes	(Optional) Specifies that thresholds are in megabytes.
maximum-threshold	Specifies the maximum threshold.
max-threshold	Maximum threshold. Valid values are from 1 to 52428800.
drop-probability value	Specifies the probability that frames will be dropped when the average queue size is between the minimum queue length and maximum queue size. This ranges from 1 to 100.
weight	Derives the actual queue size from the current queue size. This ranges from 0 to 15.
cap-average	Replaces the average queue size with the current queue size if the average queue size is greater than the current queue size.

Command Modes

Policy map type queuing class configuration

Command History

Release	Modification
6.0(2)U2(1)	The **drop-probability**, **weight** and **cap-average** keywords were introduced.
5.0(3)U4(1)	This command was introduced.

Usage Guidelines

The minimum and maximum threshold units must match.

The system drops packets that exceed the minimum threshold at an increasing rate as the maximum threshold is reached. By default, the units are in packets,

You cannot configure WRED on ingress on the 10-Gigabit Ethernet ports.

This command does not require a license.

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)#
```

Examples

This example shows how to configure ECN threshold on a per class basis:

```
switch(config)# class-map type queuing my_class-map
switch(config-cmap-que)# match qos-group 1
switch(config-cmap-que)# exit
switch(config)# policy-map type network-qos my_policy-map
switch(config-pmap-c-que)# random-detect minimum-threshold 4 kbytes maximum-threshold 4
kbytes drop-probability 12 weight 10 cap-average
switch(config)#
```

Related Commands

Command	Description
congestion-control random-detect global buffer	Configures congestion control for WRED globally.
show policy-map	Displays policy maps and statistics.

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

No service policy is specified.

Command Modes

Control-plane configuration mode

Command History

Release	Modification
5.0(3)U2(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.

Examples

This example shows how to attach a control-plane policy map to the control plane:

```
switch# configure terminal
switch(config)# ip access-list ipv4-acl-telnet
switch(config-acl)# permit tcp 10.23.0.0/16 10.176.0.0/16
switch(config-acl)# exit
switch(config)# class-map type control-plane telnet-class
switch(config-cmap)# match access-group name ipv4-acl-telnet
switch(config-cmap)# exit
switch(config)# policy-map type control-plane copp-system-policy
switch(config-pmap)# class telnet-class
switch(config-pmap-c)# police pps 1000
switch(config-pmap-c)# exit
switch(config-pmap)# exit
switch(config)# control-plane
switch(config-cp)# service-policy input copp-system-policy
switch(config-cp)# exit
switch(config)#
```

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 (policy-map class)

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

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.

Usage Guidelines

You can attach 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 the policy type qos.

Examples

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)#
```

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 (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
Switch profile system QoS configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Suppport for this command was introduced in switch profiles.

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 output my_input_q_policy
switch(config-sys-qos)#
```

Related Commands

Command	Description
show policy-map	Displays policy maps.
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 cos** 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
Policy map type network-qos class in switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

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)#
```

This example shows how to assign a CoS value for a class of traffic in a network-qos 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 network-qos sp-nwpolicy
switch(config-sync-sp-pmap-nq)# class type network-qos sp-nwpolicy-class
switch(config-sync-sp-pmap-nq-c)# set cos 3
```

```
switch(config-sync-sp-pmap-nq-c)#
```

Related Commands

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

set dscp

To assign a Differentiated Services Code Point (DSCP) value for a traffic class in a type qos policy map, 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 mode
QoS policy map in switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support was added to set DSCP value in a switch profile.

Usage Guidelines

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, 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. 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, you would use qos-group *x*, where *x* is any value from 1 to 7.

Note You cannot set the DSCP packet header field 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 Table 1.

If you set the values for more than two IP header fields, 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 correctly and create the specified QoS groups, make sure that you attach the QoS policy map to a system policy, 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 the QoS group 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)#
```

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

```
switch# configure sync
switch(config-sync)# switch-profile s5010
switch(config-sync-sp)# policy-map type qos sp_pm_qos
switch(config-sync-sp-pmap-qos)# class type qos sp_cl_qos
switch(config-sync-sp-pmap-c-qos)# set dscp cs6
switch(config-sync-sp-pmap-c-qos)# set qos-group 1
switch(config-sync-sp-pmap-c-qos)# exit
switch(config-sync-sp-pmap-qos)# exit
switch(config-sync-sp)# system qos
switch(config-sync-sp-sys-qos)# service-policy type qos input my_policy
switch(config-sync-sp-sys-qos)# exit
switch(config-sync-sp)# class-map type network-qos nqos_class
switch(config-sync-sp-cmap-nq)# match qos-group 2
switch(config-sync-sp-cmap-nq)# exit
switch(config-sync-sp)# policy-map type network-qos nqos_policy
switch(config-sync-sp-pmap-nq)# class type network-qos nqos_class
switch(config-sync-sp-pmap-nq-c)# exit
switch(config-sync-sp-pmap-nq)# exit
switch(config-sync-sp)# system qos
switch(config-sync-sp-sys-qos)# service-policy type network-qos nqos_policy
switch(config-sync-sp-sys-qos)# exit
switch(config-sync-sp)#
```

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

set precedence

To set the precedence value in an IP header for a class of traffic in a type qos policy map, 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
Policy map type qos in switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support was added to set IP precedence values in a switch profile.

Usage Guidelines

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, 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, you would use qos-group *x*, where *x* is any value from 1 to 7.

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 correctly and create the specified QoS groups, make sure that you attach the QoS policy map to a system policy, 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 the QoS group 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 1
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 1
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)#
```

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

```
switch# configure sync
switch(config-sync)# switch-profile s5010
switch(config-sync-sp)# policy-map type qos sp_pm_qos
switch(config-sync-sp-pmap-qos)# class type qos sp_cl_qos
switch(config-sync-sp-pmap-c-qos)# set precedence 3
switch(config-sync-sp-pmap-c-qos)# set qos-group 5
switch(config-sync-sp-pmap-c-qos)# exit
switch(config-sync-sp-pmap-qos)# exit
switch(config-sync-sp)# system qos
switch(config-sync-sp-sys-qos)# service-policy type qos input my_policy
switch(config-sync-sp-sys-qos)# exit
switch(config-sync-sp)# class-map type network-qos nqos_class
switch(config-sync-sp-cmap-nq)# match qos-group 5
switch(config-sync-sp-cmap-nq)# exit
switch(config-sync-sp)# policy-map type network-qos nqos_policy
switch(config-sync-sp-pmap-nq)# class type network-qos nqos_class
switch(config-sync-sp-pmap-nq-c)# exit
switch(config-sync-sp-pmap-nq)# exit
switch(config-sync-sp)# system qos
switch(config-sync-sp-sys-qos)# service-policy type network-qos nqos_policy
switch(config-sync-sp-sys-qos)# exit
switch(config-sync-sp)#
```

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

set qos-group

To assign the qulaity of service (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 1 to 7.

Command Default

None

Command Modes

Policy map type qos class configuration
Policy map type qos in switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support was added to set QoS groups in a switch profile.

Usage Guidelines

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

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_policy1
switch(config-pmap-qos)# class traffic_class2
switch(config-pmap-c-qos)# set qos-group 3
switch(config-pmap-c-qos)#
```

This example shows how to assign a QoS group identifier to a QoS policy in a switch profile:

```
switch# configure sync
switch(config-sync)# switch-profile s5010
switch(config-sync-sp)# policy-map type qos sp_pm_qos
switch(config-sync-sp-pmap-qos)# class type qos sp_cl_qos
switch(config-sync-sp-pmap-c-qos)# set qos-group 2
switch(config-sync-sp-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.
show running-config ipqos	Displays the QoS running configuration.
show startup-config ipqos	Displays the QoS configuration stored in the startup file.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

shape

To control the traffic going out an interface in order to match its flow to the speed of the remote target interface, use the **shape** command.

shape {**kbps | mbps | gbps**} *burst size* **min** *minimum bandwidth*

Syntax Description

kbps	Specifies Kilobytes per second.
mbps	Specifies Megabytes per second
gbps	Specifies Gigabytes per second
burst size	Specifies the threshold value as Kilobytes per second, Megabytes per second, or Gigabytes per second.
minimum bandwidth	Specifies the guranteed minimum bandwidth for this queue.

Command Default

None

Command Modes

Policy map queue configuration mode

Command History

Release	Modification
6.0(2)U2(1)	The min keyword was added
5.0(3)U5(1d)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

The following example shows how to configuring shaping using 30000000 kbps:

```
switch# configuration terminal
switch(config)# policy-map type queuing pqu
switch(config-pmap-que)# class type queuing cqu
switch(config-pmap-c-que)# shape kbps 30000000 min 18000000
switch(config-pmap-que)# exit
switch(config)# copy running-config startup-config
```

Related Commands

Command	Description
show queuing interface slot/port	Displays the queuing information configured the specified interface.
show interface *slot/port*	Shows the aggregated output traffic rate on all egress queues of the specified interface.

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
5.0(3)U2(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 ClassMapA
      match access-grp name copp-system-acl-snmp

    class-map type control-plane match-any classMapA
      match access-grp name copp-system-acl-telnet

    class-map type control-plane match-any copp-icmp
      match access-grp name copp-system-acl-icmp

    class-map type control-plane match-any copp-ntp
      match access-grp name copp-system-acl-ntp

    class-map type control-plane match-any copp-s-arp

    class-map type control-plane match-any copp-s-bpdu

    class-map type control-plane match-any copp-s-dai

    class-map type control-plane match-any copp-s-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
7.0(3)I2(1)	The command output was updated.
5.0(3)U1(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# show class-map type network-qos

    class-map type network-qos cn1
      match qos-group 1

    class-map type network-qos cn2
      match qos-group 2

    class-map type network-qos cn3
      match qos-group 3

    class-map type network-qos cn4
      match qos-group 4

    class-map type network-qos cn5
      match qos-group 5

    class-map type network-qos cn6
      match qos-group 6

    class-map type network-qos cn7
      match qos-group 7

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

switch#
```

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

```
switch# show class-map


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

    class-map type qos match-all cqos1
      match cos 1

    class-map type qos match-all cqos6
      match cos 6

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


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

    class-map type queuing cqu1
      match qos-group 1

    class-map type queuing cqu6
      match qos-group 6

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



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

    class-map type network-qos cnq1
      match qos-group 1

    class-map type network-qos cnq6
      match qos-group 6

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

switch#
```

Starting with Release 7.0(3)I2(1), the output of the **show class-map type network-qos** command has been updated to display all type network-qos class maps:

```
switch# show class-map type network-qos
class-map type network-qos cnq1
match qos-group 1
class-map type network-qos cnq6
match qos-group 6
class-map type network-qos class-default
match qos-group 0
```

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
7.0(3)I2(1)	The command output was updated.
5.0(3)U1(1)	This command was introduced.

Examples

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

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


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

    class-map type qos match-all cq1
      match cos 1

    class-map type qos match-all cq2
      match cos 2

    class-map type qos match-all cq3
      match cos 3

    class-map type qos match-all cq4
      match cos 4

    class-map type qos match-all cq5
      match cos 5

    class-map type qos match-all cq6
      match cos 6

    class-map type qos match-all c1_acl
<--Output truncated-->
switch#
```

Starting with Release 7.0(3)I2(1), the output of the **show class-map type qos** command has been updated as follows:

```
switch# show class-map type qos
Type qos class-maps
===================
class-map type qos match-all cqos1
match cos 1
class-map type qos match-all cqos6
match cos 6
class-map type qos match-any class-default
match any
```

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
5.0(3)U1(1)	This command was introduced.

Examples

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

```
switch(config)# show class-map type queuing


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

    class-map type queuing q1
      match qos-group 1

    class-map type queuing q2
      match qos-group 2

    class-map type queuing q3
      match qos-group 3

    class-map type queuing q4
      match qos-group 4

    class-map type queuing q5
      match qos-group 5

    class-map type queuing q6
      match qos-group 6

    class-map type queuing q7
      match qos-group 7

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

switch(config)#
```

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
5.0(3)U2(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-map type control-plane ClassMapA
Last Config Operation Timestamp: 06:15:21 UTC Aug 23 2011
Last Config Operation Status: Success
Policy-map attached to the control-plane: copp-system-policy

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 priority-flow-control

To display the priority flow control details for all interfaces or a specific interface, use the **show interface priority-flow-control** command.

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

Syntax Description

ethernet *slot/port*	(Optional) Specifies the Ethernet interface and its slot number and port number.
detail	(Optional) Displays the priority flow control details for each priority level.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
7.0(3)I2(1)	The command output was updated.
6.0(2)U2(1)	This command was introduced.

Examples

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

```
switch(config)# show interface ethernet 1/24 priority-flow-control
================================================================
Port               Mode Oper(VL bmap)  RxPPP      TxPPP
================================================================

Ethernet1/24       Auto Off           0          0
```

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

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

Ethernet1/15       Auto Off           0          0
Ethernet1/15       Auto Off           0          0
Ethernet1/15       Auto Off           0          0
Ethernet1/15       Auto Off           0          0
Ethernet1/24       Auto Off           0          0
Ethernet1/25       Auto Off           0          0
Ethernet1/27       Auto Off           0          0
Ethernet1/32       On   On  (8)       0          0
```

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

```
switch(config)# show interface ethernet 1/24 priority-flow-control detail
```

```
Ethernet1/24:
    Admin Mode: Auto
    Oper Mode: Off
    VL bitmap:
    Total Rx PFC Frames: 0
    Total Tx PFC Frames: 0

-------------------------------------------------------------------------------------------
---------------------------
        |  Priority0  |  Priority1  |  Priority2  |  Priority3  |  Priority4  |  Priority5
|  Priority6  |  Priority7  |

-------------------------------------------------------------------------------------------
---------------------------
    Rx  |0            |0            |0            |0            |0            |0
|0            |0

-------------------------------------------------------------------------------------------
---------------------------
    Tx  |0            |0            |0            |0            |0            |0
|0            |0
```

Starting with Release 7.0(3)I2(1), the output of the **show interface priority-flow-control** and **show interface priority-flow-control detail** commands has been updated:

```
switch(config)# show interface priority-flow-control
slot 1
=======
============================================================
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 Auto Off 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
```

show interface priority-flow-control detail

```
switch(config)# show interface priority-flow-control detail
Ethernet1/1
Admin Mode: Auto
Oper Mode: Off
VL bitmap:
Total Rx PFC Frames: 0
Total Tx PFC Frames: 0
-------------------------------------------------------------------------------------------
---------------------------
| Priority0 | Priority1 | Priority2 | Priority3 | Priority4 | Priority5 | Priority6 |
Priority7 |.
-------------------------------------------------------------------------------------------
---------------------------
Rx |0 |0 |0 |0 |0 |0 |0 |0
-------------------------------------------------------------------------------------------
---------------------------
Tx |0 |0 |0 |0 |0 |0 |0 |0
```

Related Commands

Command	Description
priority-flow-control	Sets the PFC mode for the selected interface.

show interface untagged-cos

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

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
5.0(3)U1(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-channel10
port-channel100
port-channel200
port-channel234
port-channel300
port-channel400
Ethernet1/1
Ethernet1/2
Ethernet1/3
Ethernet1/4
Ethernet1/5
<--Output trunctaed-->
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
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced for control-plane policy maps.
7.0(3)I2(1)	The command output was updated.

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 all configured policy maps on a switch that runs Cisco NX-OS Release 5.0(3)U1(1):

```
switch# show policy-map


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

  policy-map type qos pqos
    class type qos cqos1
      set qos-group 1
    class type qos cqos6
      set qos-group 6
    class type qos class-default
      set qos-group 0
  policy-map type qos default-in-policy
    class type qos class-default
      set qos-group 0
```

```
  Type queuing policy-maps
  ========================

  policy-map type queuing pqu
    class type queuing cqu1
      bandwidth percent 10
    class type queuing cqu6
      bandwidth percent 20
    class type queuing class-default
      bandwidth percent 70
  policy-map type queuing default-out-policy
    class type queuing class-default
      bandwidth percent 100


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

  policy-map type network-qos pnqos
    class type network-qos cnq1
      mtu 1500
      set cos 4
    class type network-qos cnq6
      mtu 1500
      set cos 5
      congestion-control random-detect ecn
    class type network-qos class-default
      mtu 9216
  policy-map type network-qos default-nq-policy
    class type network-qos class-default
      mtu 1500

switch#
```

This example shows how to display a named network-qos policy map on a switch that runs Cisco NX-OS Release 5.0(3)U1(1):

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

This example shows how to display all configured policy maps on a switch that runs Cisco NX-OS Release 5.0(3)U2(1):

```
switch# show policy-map


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

  policy-map type qos mix
    class type qos ip-rtp-2000-3000
      set qos-group 2
      set dscp 20
    class type qos ip-rtp-4000-5000
      set qos-group 3
      set prec 5
    class type qos cos-prec
      set qos-group 4
      set dscp 25
    class type qos class-default
      set qos-group 0
:
<--snip-->
:
  Type queuing policy-maps
```

```
  ========================

  policy-map type queuing qqq
    class type queuing q1
      bandwidth percent 10
      priority
    class type queuing q2
      bandwidth percent 10
    class type queuing q3
      bandwidth percent 10
    class type queuing q4
      bandwidth percent 20
    class type queuing q5
      bandwidth percent 20
    class type queuing q6
      bandwidth percent 10
    class type queuing q7
      bandwidth percent 10
    class type queuing class-default
      bandwidth percent 10
  policy-map type queuing default-out-policy
    class type queuing class-default
      bandwidth percent 100


  Type control-plane policy-maps
  ==============================

  policy-map type control-plane copp-system-policy
    class copp-s-default
      police pps 400
    class copp-s-l2switched
      police pps 200
    class copp-s-ping
      police pps 100
    class copp-telnet
      police pps 500
    class copp-ssh
      police pps 500
<--Output truncated-->
switch#
```

Starting with Release 7.0(3)I2(1), the output of the **show policy-map** command has been updated as follows:

```
switch# show policy-map

Type qos policy-maps
====================
policy-map type qos pqos
class type qos cqos1
set qos-group 1
class type qos cqos6
set qos-group 6
class type qos class-default
set qos-group 0
policy-map type qos default-in-policy
class type qos class-default
set qos-group 0
Type queuing policy-maps
========================
policy-map type queuing default-in-policy
class type queuing class-default
bandwidth percent 100
```

```
policy-map type queuing default-out-policy
class type queuing class-default
bandwidth percent 100
Type network-qos policy-maps
============================
policy-map type network-qos pnqos
class type network-qos cnq1
mtu 2200
pause no-drop
class type network-qos cnq6
mtu 2200
pause no-drop
congestion-control random-detect ecn
class type network-qos class-default
mtu 9216
policy-map type network-qos default-nq-policy
class type network-qos class-default
mtu 1500
```

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/port* | **port-channel** *channel-number*] [**input** | **output**] [**type** {**qos** | **queuing**}]

Syntax Description

ethernet	(Optional) Displays policy maps assigned to Ethernet interfaces.
slot/port	Ethernet interface slot number and port number. The slot number is from 1 to 255, and the port number is from 1 to 128.
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
7.0(3)I2(1)	The command output was updated.
5.0(3)U1(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# show policy-map interface ethernet 1/1


Global statistics status :   disabled

Ethernet1/1

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

    Class-map (qos):   cqos1 (match-all)
      Match: cos 1
```

```
      set qos-group 1

    Class-map (qos):   cqos6 (match-all)
      Match: cos 6
      set qos-group 6

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

  Service-policy (queuing) output:   pqu
    policy statistics status:   disabled
<--Output truncated-->
switch#
```

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

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


Global statistics status :   disabled

Ethernet1/1

  Service-policy (qos) input:   default-in-policy
    policy statistics status:   disabled

    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

Ethernet1/1

  Service-policy (queuing) output:   default-out-policy
    policy statistics status:   disabled

    Class-map (queuing):   class-default (match-any)
      Match: qos-group 0
      bandwidth percent 100

switch#
```

Starting with Release 7.0(3)I2(1), the output of the **show policy-map interface** command has been updated as follows:

```
switch# show policy-map interface ethernet 1/1
Global statistics status : enabled
Ethernet1/1
Service-policy (qos) input: pqos
Class-map (qos): cqos1 (match-all)
Match: cos 1
set qos-group 1
Class-map (qos): cqos6 (match-all)
Match: cos 6
set qos-group 6
```

```
Class-map (qos): class-default (match-any)
Match: any
set qos-group 0
Service-policy (queuing) input: default-in-policy
SNMP Policy Index: 301989889
Class-map (queuing): class-default (match-any)
bandwidth percent 100
queue dropped pkts : 0
queue depth in bytes : 0
Service-policy (queuing) output: default-out-policy
SNMP Policy Index: 301989893
Class-map (queuing): class-default (match-any)
bandwidth percent 100
queue dropped pkts : 0
queue depth in bytes : 0
```

Related Commands

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

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
5.0(3)U1(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/VLAN [Status]:INP QOS       OUT QOS       INP QUE       OUT QUE
================================================================================
Ethernet1/1     [Active]:default-in-po                              default-out-p

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

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

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

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

<--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 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
5.0(3)U2(1)	This command was introduced.

Examples

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

```
switch(config)# show policy-map interface control-plane
control Plane

  service-policy  input: copp-system-policy

    class-map copp-s-default (match-any)
      police pps 400
        OutPackets    0
        DropPackets   0
    class-map copp-s-l2switched (match-any)
      police pps 200
        OutPackets    0
        DropPackets   0
    class-map copp-s-ping (match-any)
      match access-grp name copp-system-acl-ping
      police pps 100
        OutPackets    0
        DropPackets   0
    class-map copp-telnet (match-any)
      match access-grp name copp-system-acl-telnet
      police pps 500
        OutPackets    0
        DropPackets   0
<--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
5.0(3)U1(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 pnqos
    class type network-qos cnq1      match qos-group 1

      mtu 1500
      set cos 4
    class type network-qos cnq6      match qos-group 6

      mtu 1500
      set cos 5
      congestion-control random-detect ecn
    class type network-qos class-default      match qos-group 0

      mtu 9216
```

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

    Class-map (qos):   cqos1 (match-all)
      Match: cos 1
      set qos-group 1

    Class-map (qos):   cqos6 (match-all)
      Match: cos 6
      set qos-group 6

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

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

    Class-map (queuing):   cqu1 (match-any)
      Match: qos-group 1
      bandwidth percent 10

    Class-map (queuing):   cqu6 (match-any)
      Match: qos-group 6
      bandwidth percent 20

    Class-map (queuing):   class-default (match-any)
      Match: qos-group 0
      bandwidth percent 70

switch#
```

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

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

Starting with Release 7.0(3)I2(1), the output of the **show policy-map system** command has been updated as follows:

```
switch# show policy-map system

Type network-qos policy-maps
============================
policy-map type network-qos default-nq-policy
class type network-qos class-default
match qos-group 0
mtu 1500
Service-policy (qos) input: pqos
Class-map (qos): cqos1 (match-all)
0 packets 0 bytes
5 minute offered rate 0 bps
Aggregate forwarded :
0 packets
Match: cos 1
set qos-group 1
Class-map (qos): cqos6 (match-all)
0 packets 0 bytes
5 minute offered rate 0 bps
Aggregate forwarded :
0 packets
Match: cos 6
set qos-group 6
Class-map (qos): class-default (match-any)
0 packets 0 bytes
```

```
5 minute offered rate 0 bps
Aggregate forwarded :
0 packets
Match: any
0 packets
set qos-group 0
Service-policy (queuing) input: default-in-policy
policy statistics status: disabled (current status: disabled)
Class-map (queuing): class-default (match-any)
bandwidth percent 100
Service-policy (queuing) output: default-out-policy
policy statistics status: disabled (current status: disabled)
Class-map (queuing): class-default (match-any)
bandwidth percent 100
```

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
5.0(3)U2(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
    class copp-s-default
      police pps 400
    class copp-s-l2switched
      police pps 200
    class copp-s-ping
      police pps 100
    class copp-telnet
      police pps 500
    class copp-ssh
      police pps 500
    class copp-snmp
      police pps 500
    class copp-ntp
      police pps 100
<--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 queuing

To display the queuing information configured for all interfaces, use the **show queuing** command.

show queuing

Syntax Description

This command has no arguments or keywords.

Command Default

Displays the queuing information for all interfaces, including the control traffic queue statistics.

Command Modes

EXEC mode

Command History

Release	Modification
7.0(3)I2(1)	The command output was updated.
6.0(2)U4(1)	This command was introduced.

Examples

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

```
switch# show queuing
Egress queuing for Ethernet1/1 [Interface]
------------------------------------------------------------------
QoS-Group# Bandwidth% PrioLevel                Shape
                                    Min          Max         Units
------------------------------------------------------------------
      0            10         -          0          0               -
      1            10         -          0          0               -
      2            10         -          0          0               -
      3            10         1          0          0               -
      4            10         -          0          0               -
      5            10         2          0          0               -
      6            10         -          0          0               -
      7            10         -          0          0               -
      9             0         -          0          0               -
+----------------------------------------------------------------+
|                             QOS GROUP 0                        |
+----------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+----------------------------------------------------------------+
|         Tx Pkts|               0|               0
|         Tx Byts|               0|               0
|    Dropped Pkts|               0|               0
|    Dropped Byts|               0|               0
+----------------------------------------------------------------+
|                             QOS GROUP 1                        |
+----------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+----------------------------------------------------------------+
|         Tx Pkts|               0|               0
|         Tx Byts|               0|               0
|    Dropped Pkts|               0|               0
```

```
|    Dropped Byts|               0|               0
+---------------------------------------------------------------------+
|                             QOS GROUP 2                             |
+---------------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+---------------------------------------------------------------------+
|         Tx Pkts|               0|               0
|         Tx Byts|               0|               0
|    Dropped Pkts|               0|               0
|    Dropped Byts|               0|               0
+---------------------------------------------------------------------+
|                             QOS GROUP 3                             |
+---------------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+---------------------------------------------------------------------+
|         Tx Pkts|               0|               0
|         Tx Byts|               0|               0
|    Dropped Pkts|               0|               0
|    Dropped Byts|               0|               0
+---------------------------------------------------------------------+
|                             QOS GROUP 4                             |
+---------------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+---------------------------------------------------------------------+
|         Tx Pkts|               0|               0
|         Tx Byts|               0|               0
|    Dropped Pkts|               0|               0
|    Dropped Byts|               0|               0
+---------------------------------------------------------------------+
|                             QOS GROUP 5                             |
+---------------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+---------------------------------------------------------------------+
|         Tx Pkts|               0|               0
|         Tx Byts|               0|               0
|    Dropped Pkts|               0|               0
|    Dropped Byts|               0|               0
+---------------------------------------------------------------------+
|                             QOS GROUP 6                             |
+---------------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+---------------------------------------------------------------------+
|         Tx Pkts|               0|               0
|         Tx Byts|               0|               0
|    Dropped Pkts|               0|               0
|    Dropped Byts|               0|               0
+---------------------------------------------------------------------+
|                             QOS GROUP 7                             |
+---------------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+---------------------------------------------------------------------+
|         Tx Pkts|               0|               0
|         Tx Byts|               0|               0
|    Dropped Pkts|               0|               0
|    Dropped Byts|               0|               0
+---------------------------------------------------------------------+
|                          CONTROL QOS GROUP 9                        |
+---------------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+---------------------------------------------------------------------+
|         Tx Pkts|            1901|               0
|         Tx Byts|          145235|               0
|    Dropped Pkts|               0|               0
|    Dropped Byts|               0|               0
```

```
+-------------------------------------------------+
Port Egress Statistics
-------------------------------------------------
WRED Drop Pkts                0


...

Egress queuing for Ethernet1/4 [Interface]
------------------------------------------------------------------
QoS-Group# Bandwidth% PrioLevel                Shape
                                    Min          Max        Units
------------------------------------------------------------------
      0           100         -          0          0               -
      9             0         -          0          0               -
+-----------------------------------------------------------------+
|                             QOS GROUP 0                         |
+-----------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+-----------------------------------------------------------------+
|         Tx Pkts|               0|               0
|         Tx Byts|               0|               0
|    Dropped Pkts|               0|               0
|    Dropped Byts|               0|               0
+-----------------------------------------------------------------+
|                             CONTROL QOS GROUP 9                 |
+-----------------------------------------------------------------+
|                |  Unicast       |  Multicast     |
+-----------------------------------------------------------------+
|         Tx Pkts|            8634|               0
|         Tx Byts|         1218248|               0
|    Dropped Pkts|               0|               0
|    Dropped Byts|               0|               0
+-------------------------------------------------+
Port Egress Statistics
-------------------------------------------------
WRED Drop Pkts                0
```

Starting with Release 7.0(3)I2(1), the output of the **show queuing** command has been updated:

```
swtch# show queuing
slot 1
=======
Egress Queuing for Ethernet1/1 System
------------------------------------------------------------------------------
QoS-Group# Bandwidth% PrioLevel Shape QLimit
Min Max Units
------------------------------------------------------------------------------
0 100 - - - - 7(D)
------------------------------------------------------------------
|. QOS GROUP 0 |.
------------------------------------------------------------------
|. |. Unicast |. OOBFC Unicast |. Multicast |.
------------------------------------------------------------------
|. Tx Pkts |. 0|. 0|. 0|.
|. Tx Byts |. 0|. 0|. 0|.
|. Dropped Pkts |. 0|. 0|. 0|.
|. Dropped Byts |. 0|. 0|. 0|.
|. Q Depth Byts |. 0|. 0|. 0|.
------------------------------------------------------------------
|. QOS GROUP 1 |.
------------------------------------------------------------------
|. |. Unicast |. OOBFC Unicast |. Multicast |.
------------------------------------------------------------------
```

```
|. Tx Pkts |. 0|. 0|. 0|.
|. Tx Byts |. 0|. 0|. 0|.
|. Dropped Pkts |. 0|. 0|. 0|.
|. Dropped Byts |. 0|. 0|. 0|.
|. Q Depth Byts |. 0|. 0|. 0|.
-------------------------------------------------------------------
|. QOS GROUP 2 |.
-------------------------------------------------------------------
|. |. Unicast |. OOBFC Unicast |. Multicast |.
-------------------------------------------------------------------
|. Tx Pkts |. 0|. 0|. 0|.
|. Tx Byts |. 0|. 0|. 0|.
|. Dropped Pkts |. 0|. 0|. 0|.
|. Dropped Byts |. 0|. 0|. 0|.
|. Q Depth Byts |. 0|. 0|. 0|.
-------------------------------------------------------------------
|. QOS GROUP 3 |.
-------------------------------------------------------------------
|. |. Unicast |. OOBFC Unicast |. Multicast |.
-------------------------------------------------------------------
|. Tx Pkts |. 0|. 0|. 0|.
|. Tx Byts |. 0|. 0|. 0|.
|. Dropped Pkts |. 0|. 0|. 0|.
|. Dropped Byts |. 0|. 0|. 0|.
|. Q Depth Byts |. 0|. 0|. 0|.
-------------------------------------------------------------------
|. QOS GROUP 4 |.
-------------------------------------------------------------------
|. |. Unicast |. OOBFC Unicast |. Multicast |.
-------------------------------------------------------------------
|. Tx Pkts |. 0|. 0|. 0|.
|. Tx Byts |. 0|. 0|. 0|.
|. Dropped Pkts |. 0|. 0|. 0|.
|. Dropped Byts |. 0|. 0|. 0|.
|. Q Depth Byts |. 0|. 0|. 0|.
-------------------------------------------------------------------
|. QOS GROUP 5 |.
-------------------------------------------------------------------
|. |. Unicast |. OOBFC Unicast |. Multicast |.
-------------------------------------------------------------------
|. Tx Pkts |. 0|. 0|. 0|.
|. Tx Byts |. 0|. 0|. 0|.
|. Dropped Pkts |. 0|. 0|. 0|.
|. Dropped Byts |. 0|. 0|. 0|.
|. Q Depth Byts |. 0|. 0|. 0|.
-------------------------------------------------------------------
|. QOS GROUP 6 |.
-------------------------------------------------------------------
|. |. Unicast |. OOBFC Unicast |. Multicast |.
-------------------------------------------------------------------
|. Tx Pkts |. 0|. 0|. 0|.
|. Tx Byts |. 0|. 0|. 0|.
|. Dropped Pkts |. 0|. 0|. 0|.
|. Dropped Byts |. 0|. 0|. 0|.
|. Q Depth Byts |. 0|. 0|. 0|.
-------------------------------------------------------------------
|. QOS GROUP 7 |.
-------------------------------------------------------------------
|. |. Unicast |. OOBFC Unicast |. Multicast |.
-------------------------------------------------------------------
|. Tx Pkts |. 0|. 0|. 0|.
|. Tx Byts |. 0|. 0|. 0|.
|. Dropped Pkts |. 0|. 0|. 0|.
|. Dropped Byts |. 0|. 0|. 0|.
```

```
|. Q Depth Byts |. 0|. 0|. 0|.
------------------------------------------------------------------
|. CONTROL QOS GROUP |.
------------------------------------------------------------------
|. |. Unicast |. OOBFC Unicast |. Multicast |.
------------------------------------------------------------------
|. Tx Pkts |. 0|. 0|. 0|.
|. Tx Byts |. 0|. 0|. 0|.
|. Dropped Pkts |. 0|. 0|. 0|.
|. Dropped Byts |. 0|. 0|. 0|.
|. Q Depth Byts |. 0|. 0|. 0|.
------------------------------------------------------------------
|. SPAN QOS GROUP |.
------------------------------------------------------------------
|. |. Unicast |. OOBFC Unicast |. Multicast |.
------------------------------------------------------------------
|. Tx Pkts |. 0|. 0|. 0|.
|. Tx Byts |. 0|. 0|. 0|.
|. Dropped Pkts |. 0|. 0|. 0|.
|. Dropped Byts |. 0|. 0|. 0|.
|. Q Depth Byts |. 0|. 0|. 0|.
------------------------------------------------------------------
Port Egress Statistics
------------------------------------------------------
WRED Drop Pkts 0
Ingress Queuing for Ethernet1/1
------------------------------------------------------------------
QoS-Group# Pause QLimit
Buff Size Pause Th Resume Th
------------------------------------------------------------------
7 - - - 11884912(S)
6 - - - 11884912(S)
5 - - - 11884912(S)
4 - - - 11884912(S)
3 - - - 11884912(S)
2 - - - 11884912(S)
1 - - - 11884912(S)
0 - - - 11884912(S)
Port Ingress Statistics
------------------------------------------------------
Ingress MMU Drop Pkts 0
Ingress MMU Drop Bytes 0
PFC Statistics
------------------------------------------------------------------------------
TxPPP: 0, RxPPP: 0
------------------------------------------------------------------------------
COS QOS Group PG TxPause TxCount RxPause RxCount
0 - 7 Inactive 0 Inactive 0
1 - 7 Inactive 0 Inactive 0
2 - 7 Inactive 0 Inactive 0
3 - 7 Inactive 0 Inactive 0
4 - 7 Inactive 0 Inactive 0
5 - 7 Inactive 0 Inactive 0
6 - 7 Inactive 0 Inactive 0
7 - 7 Inactive 0 Inactive 0
------------------------------------------------------------------
```

Usage Guidelines

The output for this command includes shaper configuration information for each class, the control queue Tx and drop statistics for each port, and WRED drop packet counts. You can also display the output in xml format by using the **show queuing | xml** command.

Related Commands

Command	Description
show queuing interface	Displays the queuing information configured for interfaces.

show queuing interface

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

show queuing interface [**ethernet** *slot-no*/*port-no*]

Syntax Description

ethernet	(Optional) Specifies that queuing information to be displayed for an Ethernet interface.
slot-no	Slot number of the Ethernet interface. The range is from 1 to 255.
port-no	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
7.0(3)I2(1)	The command output was updated.
5.0(3)U1(1)	This command was introduced.

Examples

This example shows how to display the queuing information for a specific interface:

```
switch# show queuing interface ethernet 1/10
Ethernet1/10 queuing information:
  TX queuing
    qos-group  sched-type  oper-bandwidth
        0       WRR              0
        1       WRR             10
        2       WRR             90
        3       WRR              0
        4       WRR              0
        5       WRR              0
        6       WRR              0
        7       WRR              0

  RX queuing
    qos-group 0
    HW MTU: 9216 (9216 configured)
    drop-type: drop, xon: 0, xoff: 0
    Statistics:
        Ucast pkts sent over the port           : 0
        Ucast bytes sent over the port          : 0
        Mcast pkts sent over the port           : 2416
        Mcast bytes sent over the port          : 164288
        Ucast pkts dropped                      : 0
        Ucast bytes dropped                     : 0
        Mcast pkts dropped                      : 0
        Mcast bytes dropped                     : 0
<--Output truncated-->
switch#
```

Starting with Release 7.0(3)I2(1), the output of the **show queuing interface** command has been updated as shown below. Note that the output includes all queues whether or not policy has the queues enabled:

```
switch# show queuing interface ethernet 1/1
slot 1
=======
Egress Queuing for Ethernet1/1 System
------------------------------------------------------------------------------
QoS-Group# Bandwidth% PrioLevel Shape QLimit
Min Max Units
------------------------------------------------------------------------------
0 100 - - - - 7(D)
------------------------------------------------------------------
| QOS GROUP 0 |.
------------------------------------------------------------------
| | Unicast | OOBFC Unicast | Multicast |.
------------------------------------------------------------------
| Tx Pkts | 0| 0| 0|.
| Tx Byts | 0| 0| 0|.
| Dropped Pkts | 0| 0| 0|.
| Dropped Byts | 0| 0| 0|.
| Q Depth Byts | 0| 0| 0|.
------------------------------------------------------------------
| QOS GROUP 1 |.
------------------------------------------------------------------
| | Unicast | OOBFC Unicast | Multicast |.
------------------------------------------------------------------
| Tx Pkts | 0| 0| 0|.
| Tx Byts | 0| 0| 0|.
| Dropped Pkts | 0| 0| 0|.
| Dropped Byts | 0| 0| 0|.
| Q Depth Byts | 0| 0| 0|.
------------------------------------------------------------------
| QOS GROUP 2 |.
------------------------------------------------------------------
| | Unicast | OOBFC Unicast | Multicast |.
------------------------------------------------------------------
| Tx Pkts | 0| 0| 0|.
| Tx Byts | 0| 0| 0|.
| Dropped Pkts | 0| 0| 0|.
| Dropped Byts | 0| 0| 0|.
| Q Depth Byts | 0| 0| 0|.
------------------------------------------------------------------
| QOS GROUP 3 |.
------------------------------------------------------------------
| | Unicast | OOBFC Unicast | Multicast |.
------------------------------------------------------------------
| Tx Pkts | 0| 0| 0|.
| Tx Byts | 0| 0| 0|.
| Dropped Pkts | 0| 0| 0|.
| Dropped Byts | 0| 0| 0|.
| Q Depth Byts | 0| 0| 0|.
------------------------------------------------------------------
| QOS GROUP 4 |.
------------------------------------------------------------------
| | Unicast | OOBFC Unicast | Multicast |.
------------------------------------------------------------------
| Tx Pkts | 0| 0| 0|.
| Tx Byts | 0| 0| 0|.
| Dropped Pkts | 0| 0| 0|.
| Dropped Byts | 0| 0| 0|.
| Q Depth Byts | 0| 0| 0|.
------------------------------------------------------------------
```

```
| QOS GROUP 5 |.
------------------------------------------------------------------
| | Unicast | OOBFC Unicast | Multicast |.
------------------------------------------------------------------
| Tx Pkts | 0| 0| 0|.
| Tx Byts | 0| 0| 0|.
| Dropped Pkts | 0| 0| 0|.
| Dropped Byts | 0| 0| 0|.
| Q Depth Byts | 0| 0| 0|.
------------------------------------------------------------------
| QOS GROUP 6 |.
------------------------------------------------------------------
| | Unicast | OOBFC Unicast | Multicast |.
------------------------------------------------------------------
| Tx Pkts | 0| 0| 0|.
| Tx Byts | 0| 0| 0|.
| Dropped Pkts | 0| 0| 0|.
| Dropped Byts | 0| 0| 0|.
| Q Depth Byts | 0| 0| 0|.
------------------------------------------------------------------
| QOS GROUP 7 |.
------------------------------------------------------------------
| | Unicast | OOBFC Unicast | Multicast |.
------------------------------------------------------------------
| Tx Pkts | 0| 0| 0|.
| Tx Byts | 0| 0| 0|.
| Dropped Pkts | 0| 0| 0|.
| Dropped Byts | 0| 0| 0|.
| Q Depth Byts | 0| 0| 0|.
------------------------------------------------------------------
| CONTROL QOS GROUP |.
------------------------------------------------------------------
| | Unicast | OOBFC Unicast | Multicast |.
------------------------------------------------------------------
| Tx Pkts | 0| 0| 0|.
| Tx Byts | 0| 0| 0|.
| Dropped Pkts | 0| 0| 0|.
| Dropped Byts | 0| 0| 0|.
| Q Depth Byts | 0| 0| 0|.
------------------------------------------------------------------
| SPAN QOS GROUP |.
------------------------------------------------------------------
| | Unicast | OOBFC Unicast | Multicast |.
------------------------------------------------------------------
| Tx Pkts | 0| 0| 0|.
| Tx Byts | 0| 0| 0|.
| Dropped Pkts | 0| 0| 0|.
| Dropped Byts | 0| 0| 0|.
| Q Depth Byts | 0| 0| 0|.
------------------------------------------------------------------
Port Egress Statistics
-----------------------------------------------------
WRED Drop Pkts 0
Ingress Queuing for Ethernet1/1
------------------------------------------------------------------
QoS-Group# Pause QLimit
Buff Size Pause Th Resume Th
------------------------------------------------------------------
7 - - - 11884912(S)
6 - - - 11884912(S)
5 - - - 11884912(S)
4 - - - 11884912(S)
3 - - - 11884912(S)
2 - - - 11884912(S)
```

```
1 - - - 11884912(S)
0 - - - 11884912(S)
Port Ingress Statistics
------------------------------------------------------
Ingress MMU Drop Pkts 0
Ingress MMU Drop Bytes 0
PFC Statistics
------------------------------------------------------------------------------
TxPPP: 0, RxPPP: 0
------------------------------------------------------------------------------
COS QOS Group PG TxPause TxCount RxPause RxCount
0 - 7 Inactive 0 Inactive 0
1 - 7 Inactive 0 Inactive 0
2 - 7 Inactive 0 Inactive 0
3 - 7 Inactive 0 Inactive 0
4 - 7 Inactive 0 Inactive 0
5 - 7 Inactive 0 Inactive 0
6 - 7 Inactive 0 Inactive 0
7 - 7 Inactive 0 Inactive 0
------------------------------------------------------------------
```

Table 3 describes the significant fields shown in the display.

Table 3 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.
MTU	Maximum transmit unit (MTU) for the queue.
drop-type	Queue drop type can be either drop or no-drop.
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 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
5.0(3)U2(1)	This command was introduced.
5.0(3)U2(2)	CoPP static class maps, copp-s-bfd and copp-s-ptp, 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 on a switch that runs Cisco NX-OS Release 5.0(3)U2(1):

```
switch# show running-config copp

!Command: show running-config copp
!Time: Tue Aug 23 06:32:48 2011

version 5.0(3)U2(1)
class-map type control-plane match-any ClassMapA
class-map type control-plane match-any copp-icmp
  match access-group name copp-system-acl-icmp
class-map type control-plane match-any copp-ntp
  match access-group name copp-system-acl-ntp
class-map type control-plane match-any copp-s-arp
class-map type control-plane match-any copp-s-bpdu
class-map type control-plane match-any copp-s-dai
class-map type control-plane match-any copp-s-default
class-map type control-plane match-any copp-s-dhcpreq
class-map type control-plane match-any copp-s-dhcpresp
class-map type control-plane match-any copp-s-eigrp
  match access-group name copp-system-acl-eigrp
class-map type control-plane match-any copp-s-igmp
<--Output truncated-->
switch#
```

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
7.0(3)I2(1)	The command output was updated.
5.0(3)U1(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: Mon Mar 15 08:24:12 2010

version 5.0(3)U1(1)
class-map type qos match-all cqos1
  match cos 1
class-map type qos match-all cqos6
  match cos 6
class-map type queuing cqu1
  match qos-group 1
class-map type queuing cqu6
  match qos-group 6
policy-map type qos pqos
  class cqos1
    set qos-group 1
  class cqos6
    set qos-group 6
policy-map type queuing pqu
  class type queuing cqu1
    bandwidth percent 10
  class type queuing cqu6
    bandwidth percent 20
<--Output truncated-->
```

```
switch#
```

Starting with Release 7.0(3)I2(1), the output of the **show running-configuration ipqos** command has been updated to view a list of default and configured class maps and policy maps and the policies attached to the interfaces:

```
switch# show running-configuration ipqos

version 7.0(3)I2(1)
class-map type network-qos cnq1
match qos-group 1
class-map type network-qos cnq6
match qos-group 6
class-map type network-qos class-default
match qos-group 0
policy-map type network-qos pnqos
class type network-qos cnq1
mtu 2200
pause no-drop
class type network-qos cnq6
mtu 2200
pause no-drop
congestion-control random-detect ecn
class type network-qos class-default
mtu 9216
class-map type qos match-all cqos1
match cos 1
class-map type qos match-all cqos6
match cos 6
class-map type qos match-any class-default
class-map type queuing class-default
match qos-group 0
policy-map type qos pqos
class cqos1
set qos-group 1
class cqos6
set qos-group 6
class class-default
set qos-group 0
policy-map type qos default-in-policy
class class-default
set qos-group 0
policy-map type queuing default-in-policy
bandwidth percent 100
policy-map type queuing default-out-policy
bandwidth percent 100
system qos
service-policy type qos input pqos
```

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
5.0(3)U2(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

!Command: show startup-config copp
!Time: Tue Aug 23 07:00:41 2011
!Startup config saved at: Sat Aug 20 04:58:59 2011

version 5.0(3)U2(1)
class-map type control-plane match-any copp-icmp
  match access-group name copp-system-acl-icmp
class-map type control-plane match-any copp-ntp
  match access-group name copp-system-acl-ntp
class-map type control-plane match-any copp-s-arp
class-map type control-plane match-any copp-s-bpdu
class-map type control-plane match-any copp-s-dai
class-map type control-plane match-any copp-s-default
class-map type control-plane match-any copp-s-dhcpreq
class-map type control-plane match-any copp-s-dhcpresp
class-map type control-plane match-any copp-s-eigrp
  match access-group name copp-system-acl-eigrp
class-map type control-plane match-any copp-s-igmp
  match access-group name copp-system-acl-igmp
class-map type control-plane match-any copp-s-ipmcmiss
<--output truncated-->
switch#
```

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
5.0(3)U1(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: Fri Jun  4 06:10:27 2010
!Startup config saved at: Thu Jun  3 18:13:44 2010

version 5.0(3)U1(1)
policy-map type network-qos jumbo
  class type network-qos class-default
    mtu 9216
system qos
  service-policy type network-qos jumbo


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 unicast-bandwidth

To display the weighted round robin (WRR) bandwidth information, use the **show wrr unicast-bandwidth** command.

show wrr unicast-bandwidth

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.

Examples

This example shows how to display the WRR bandwidth value:

```
switch# show wrr unicast-bandwidth
UCAST Bandwidth percent:         75
switch#
```

Related Commands

Command	Description
wrr unicast-bandwidth	Assigns a weighted round robin (WRR) bandwidth value for interfaces.

show wrr-queue qos-group-map

To display the mapped quality of service (QoS) values to egress queues, use the **show wrr-queue qos-group-map** command.

show wrr-queue qos-group-map

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.

Examples

This example shows how to display the QoS groups that are mapped to the egress queue:

```
switch# show wrr-queue qos-group-map
MCAST Queue ID           Qos-Group Map
0                       0 1
1                       2 3
2                       4 5
3                       6 7
switch#
```

Related Commands

Command	Description
wrr-queue qos-group-map	Maps quality of service (QoS) values to select one of the egress queues.

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 1500 to 9216.

Command Default

9216 bytes

Command Modes

Global configuration mode
Switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Suppport for this command was introduced in switch profiles.

Examples

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

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

This example shows how to define the upper bound of any MTU in a switch profile named s5010:

```
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)# system jumbomtu 3000
switch(config-sync-sp)#
```

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
Switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Suppport for this command was introduced in switch profiles.

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)#
```

This example shows how to configure a system qos in a switch profile named s5010:

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

Related Commands

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

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 0 to 7.

Command Default

None

Command Modes

Interface configuration mode
Subinterface configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.

Usage Guidelines

Ethernet frames received with no CoS value are given a CoS value of 0.

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)#
```

Related Commands

Command	Description
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.

wred-queue qos-group-map queue-only

Configures ECN on QoS group traffic based on the queue threshold, use the **wred-queue qos-group-map queue-only** command. To revert to the defaults, use the **no** form of this command.

wred-queue qos-group-map queue-only *queue-group*

no wred-queue qos-group-map queue-only *queue-group*

Syntax Description

queue-group	Specifies the queue group.

Command Default

None

Command Modes

Policy map type queuing class configuration

Command History

Release	Modification
5.0(3)U4(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Related Commands

Command	Description
congestion-control random-detect global buffer	Configures congestion control for WRED globally.
show policy-map	Displays policy maps and statistics.

wrr-queue qos-group-map

To map assigned quality of service (QoS) group values to select one of the egress queues, use the **wrr-queue qos-group-map** command. To return the QoS map to the default setting, use the **no** form of this command.

wrr-queue qos-group-map *queue-id qos1 ... qos8*

no wrr-queue qos-group-map *queue-id qos1 ... qos8*

Syntax Description

queue-id	ID of the egress queue. The range is from 0 to 3.
qos1... qos8	QoS group values that are mapped to select a queue. Enter up to eight QoS 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: QoS 0 and 1.
- Receive queue 1 and transmit queue 1: QoS 2 and 3.
- Receive queue 2 and transmit queue 2: QoS 4 and 5.
- Receive queue 3 and transmit queue 3: QoS 6 and 7.

Command Modes

Global configuration mode
Switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

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 quality of service (QoS) value for each multicast queue.

Examples

This example shows how to map QoS values 0 and 1 to queue 1:

```
switch(config)# wrr-queue qos-group-map 1 0 1
switch(config)#
```

This example shows how to map QoS values 0 and 1 to queue 1 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)# wrr-queue qos-group-map 1 0 1
switch(config-sync-sp)#
```

Related Commands

Command	Description
show switch-profile	Displays information about the switch profile and the configuration revision.
show wrr-queue qos-group-map	Displays the weighted round robin (WRR) queue information.
switch-profile	Creates or configures a switch profile.

wrr unicast-bandwidth

To assign weighted round robin (WRR) weights, as a percentage of the interface data rate, to the egress queues, use the **wrr unicast-bandwidth** command. To unassign the WRR bandwidth values, use the **no** form of this command.

wrr unicast-bandwidth *percentage-value*

no wrr unicast-bandwidth *percentage-value*

Syntax Description

percentage-value	Percentage of the bandwidth. The range is from 0 to 100.

Command Default

50

Command Modes

Global configuration mode
Interface configuration mode
Switch profile configuration mode

Command History

Release	Modification
5.0(3)U1(1)	This command was introduced.
5.0(3)U2(1)	Support for this command was introduced in switch profiles.

Usage Guidelines

Use this command to change the bandwidth alloted to unicast and multicast traffic on traffic congestion.

Examples

This example shows how to set the bandwidth to 75 percent for a specific interface:

```
switch# configure terminal
switch(config)# interface ethernet 1/5
switch(config-if)# wrr unicast-bandwidth 75
switch(config-if)#
```

This example shows how to set the bandwidth to 75 percent 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)# wrr unicast-bandwidth 75
switch(config-sync-sp)#
```

Related Commands

Command	Description
show switch-profile	Displays information about the switch profile and the configuration revision.
show wrr unicast-bandwidth	Displays the weighted round robin (WRR) bandwidth information.
switch-profile	Creates or configures a switch profile.