C Commands

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

class (control plane policy map)

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

class *class-map-name*

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.

Command Default

None

Command Modes

Control plane policy map configuration

Command History

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

Usage Guidelines

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

This command does not require a license.

Examples

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

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

Related Commands

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

class (policy map type qos)

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

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

no class *class-map-name*

Syntax Description

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

Command Default

None

Command Modes

Policy map type qos configuration

Command History

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

Usage Guidelines

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

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

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

Examples

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

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

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

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

Related Commands

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

class class-default

To add a reference to the system default class that does not match any traffic class, use the **class class-default** command.

class class-default

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

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

Command History

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

Usage Guidelines

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

Examples

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

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

Related Commands

Command	Description
set dscp	Sets the DSCP value for the QoS traffic.
set precedence	Sets the IP precedence value for the QoS traffic.
set qos-group	Assigns a QoS group identifier for a class of traffic.
show policy-map	Displays policy maps.
show switch-profile	Displays information about the switch profile and the configuration revision.
switch-profile	Creates or configures a switch profile.

class type network-qos

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

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

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

Syntax Description

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

Command Default

None

Command Modes

Policy map type network-qos configuration

Command History

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

Usage Guidelines

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

Examples

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

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

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

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

Related Commands

Command	Description
mtu	Enables jumbo frames on a traffic class.
pause no-drop	Enables Class-based Flow Control (CBFC) pause characteristics on a traffic class.
queue-limit	Configures queue limits for the traffic class.
set cos	Assigns a CoS value for a class of traffic.

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

class type queuing

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

class type queuing *class-map-name*

no class type queuing *class-map-name*

Syntax Description

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

Command Default

None

Command Modes

Policy map type queuing configuration

Command History

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

Usage Guidelines

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

Examples

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

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

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

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

Related Commands

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

class-map

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

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

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

Syntax Description

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

Command Default

type—qos

match-all

Command Modes

Global configuration mode

Command History

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

Usage Guidelines

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

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

Examples

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

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

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

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

This example shows how to remove a qos class map:

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

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

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

switch(config)#
```

Related Commands

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

class-map type control-plane

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

Command History

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

Usage Guidelines

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

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

This command does not require a license.

Examples

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

```
switch# configure terminal
switch(config)# class-map type control-plane copp-system-class-dhcp
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 copp-system-class-dhcp
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

Command History

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

Usage Guidelines

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

Examples

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

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

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

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

Related Commands

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

class-map type queuing

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

class-map type queuing *class_map_name*

no class-map type queuing *class_map_name*

Syntax Description

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

Command Default

None

Command Modes

Global configuration mode

Command History

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

Usage Guidelines

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

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

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

Examples

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

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

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

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

This example shows how to remove a queuing class map:

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

Related Commands

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

clear burst counters

To clear the micro-burst counters, use the **clear burst counters** command.

clear burst-counters [interface {all | ethernet *interface***}] {both | egrees | ingress }**

Syntax Description

interface	(Optional) Clears interface burst counters.
all	Clears burst counters for all interfaces.
ethernet interface	Clears burst counters for the specified ethernet interface only.
ingress	Specifies that the configuration applies to ingress ports only.
egress	Specifies that the configuration applies to egress ports only.
both	Specifies that the configuration applies to both ingress and egress ports.

Command Default

None.

Command Modes

All

Command History

Release	Modification
7.0(0)N1(1)	This command was introduced.

Usage Guidelines

When the **burst threshold** command is used to enable micro-burst detection on a port, any activity that occurs on the port and that meets the specified criteria, is identified as a micro-burst and the appropriate burst counters are incremented. To clear the burst counters, you use the **clear burst counters** command.

Examples

This example shows how to clear all burst counters for an ethernet interface:

```
switch# clear burst counters interface ethernet 1/1 both
switch#
```

Related Commands

Command	Description
burst threshold	Configures micro-burst threshold values for an interface.
burst maximum	Configures the maximum number of bursts allowed within a time interval before generating an interrupt.
show interface burst-counters	Displays burst counter information.

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

Usage Guidelines

This command does not require a license.

Examples

This example shows how to clear the CoPP statistics:

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

Related Commands

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

clear hardware profile latency monitor

To clear switch latency monitoring statistics for egress and ingress port pairs, use the **clear hardware profile latency monitor** command.

clear hardware profile latency monitor {all | interface ethernet *egress-interface-slot/port* **interface ethernet** *ingress-interface-slot/port***}**

Syntax Description

all	Clears the statistics for all egress and ingress port pairs in the system.
interface	Clears the statistics for the specified interface.
ethernet *egress-interface-slot/port*	Specifies a single egress Ethernet interface and its slot number and port number. The *slot* number is from 1 to 255. The *port* number is from 1 to 128.
ethernet *ingress-interface-slot/port*	Specifies a single ingress Ethernet interface and its slot number and port number. The *slot* number is from 1 to 255. The *port* number is from 1 to 128.

Command Default

None

Command Modes

Any configuration mode

Command History

Release	Modification
7.0(0)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

If you reload the card or a module is powered on, you must use the **clear hardware profile latency monitor all** command to clear the switch latency monitoring statistics.

Examples

The following example shows how to clear all switch latency monitoring statistics:

```
switch# clear hardware profile latency monitor interface all
```

The following example shows how to clear switch latency monitoring configuration and statistics information for the specified egress and ingress port pairs:

```
switch# clear hardware profile latency monitor interface ethernet 1/1 interface ethernet
1/2
```

Related Commands

Command	Description
clear hardware profile latency monitor	Clears switch latency monitoring statistics.
hardware profile latency monitor base	Specifies the histogram base value to construct switch latency monitoring histograms.
packet latency interface	Enables switch latency histogram monitoring.
show hardware profile latency monitor	Displays switch latency statistics for egress and ingress port pairs.

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

Usage Guidelines

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

Examples

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

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

Related Commands

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