



C Commands

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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| class-default} [insert-before [type qos] before-class-map-name]
no class {class-map-name| class-default}
```

Syntax Description

type qos	(Optional) Specifies the component type, which is qos for this class. By default, the type is qos.
<i>class-map-name</i>	Reference to a class map.
class-default	Specifies the reserved class name that matches all traffic not classified in other classes in a policy map.
insert-before <i>before-class-map-name</i>	(Optional) Specifies the position of this class in the policy. If not specified, the class is placed at the end of the classes in the policy. Policy actions in the first class that matches the traffic type are performed.

Command Default

None

Command Modes

Policy map type qos configuration

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

Policy actions in the first class that matches the traffic type are performed.
This command does not require a license.

Examples

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

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

This example shows how to add a reference to a class map before an existing class map reference in a policy map:

```
switch(config)# policy-map my_policy1
switch(config-pmap-qos)# class insert-before traffic_class2 traffic_class1
switch(config-pmap-c-qos)#
```

This example shows how to add a reference to the class-default class map in a policy map:

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

Related Commands

Command	Description
show class-map qos	Displays class maps.
show policy-map	Displays policy maps and statistics.

class type queuing (policy map 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

<i>class-map-name</i>	Reference to a system-defined class map. For a list of the system-defined type queuing class maps, see Table 1 .
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Command Default

None

Command Modes

policy map type queuing configuration

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

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

This command does not require a license.

Examples

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

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

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

```
switch(config)# policy-map type queuing my_policy1
switch(config-pmap-que)# class type queuing 8q2t-in-q4 insert-before type queuing 8q2t-in-q2
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 8q2t-in-q4
switch(config-pmap-c-que)#
```

Related Commands

Command	Description
show class-map queuing	Displays class maps.
show policy-map	Displays policy maps and statistics.

class-map type network-qos match-any

To configure a class map and enter the type network qos configuration mode, use the **class-map type network-qos** command. To remove the class map of the type network qos, use the **no** form of this command.

```
class-map type network-qos match-any {class-map-name} {c-nq-4e-drop| c-nq-4e-ndrop|
c-nq-4e-ndrop-fcoe| c-nq-6e-drop| c-nq-6e-ndrop| c-nq-6e-ndrop-fcoe| c-nq-7e-drop| c-nq-7e-ndrop-fcoe|
c-nq-8e| eth}
```

```
no class-map type network-qos match-any {class-map-name} {c-nq-4e-drop| c-nq-4e-ndrop|
c-nq-4e-ndrop-fcoe| c-nq-6e-drop| c-nq-6e-ndrop| c-nq-6e-ndrop-fcoe| c-nq-7e-drop| c-nq-7e-ndrop-fcoe|
c-nq-8e| eth}
```

Syntax Description

<i>class-map-name</i>	Class-map name. The policy map names can contain alphabetic, hyphen, or underscore characters, are case sensitive, and can be up to 40 characters.
c-nq-4e-drop	Specifies the default 4e drop class.
c-nq-4e-ndrop	Specifies the default 4e no-drop class.
c-nq-4e-ndrop-fcoe	Specifies the default 4e no-drop Fibre Channel over Ethernet (FCoE) class.
c-nq-6e-drop	Specifies the default 6e drop class.
c-nq-6e-ndrop	Specifies the default 6e no-drop class.
c-nq-6e-ndrop-fcoe	Specifies the default 6e no-drop FCoE class.
c-nq-7e-drop	Specifies the default 6e drop class.
c-nq-7e-ndrop-fcoe	Specifies the default 7e no-drop FCoE class.
c-nq-8e	Specifies the default 8e drop class.
eth	Specifies the class map name of the type network qos.

Command Default

type—qos

Command Modes

Global configuration

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the class map of the type network qos:

```
switch# configure terminal
switch(config)# class-map type network-qos match-any eth
switch(config)#
```

This example shows how to remove the class map of the type network qos:

```
switch# configure terminal
switch(config)# no class-map type network-qos match-any eth
switch(config)#
```

Related Commands

Command	Description
show class-map network-qos	Display type network-qos class maps.
match cos (class map type network-qos)	Defines the class of traffic in type network-qos class maps.

class-map

To create or modify a class map that defines a class of traffic 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-any*| *match-all*] *class-map-name*| **conform-color-in**| **conform-color-out**| **exceed-color-in**| **exceed-color-out**}

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

Syntax Description

type qos	(Optional) Specifies the component type qos for the class map. By default, the class map type is qos.
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.
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. This is the default action if match-any is not specified. Note This option does not work. The match criteria is always treated as <i>match-any</i> .
<i>class-map-name</i>	Name assigned to the class map. The name class-default is reserved.
conform-color-in	Specifies the type qos conform color class map in the input direction. This color-aware class map makes a policer color-aware for conform action.
conform-color-out	Specifies the type qos conform color class map in the output direction. This color-aware class map makes a policer color-aware for conform action.
exceed-color-in	Specifies the type qos exceed color class map in the input direction. This color-aware class map makes a policer color-aware for exceed action.
exceed-color-out	Specifies the type qos exceed color class map in the output direction. This color-aware class map makes a policer color-aware for exceed action.

Command Default

type—qos

Command Modes Global configuration

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

You cannot delete the system-defined queuing class map names. For more information about the **class-map** command, see the *Cisco Nexus 7000 Series NX-OS Quality of Service Configuration Guide, Release 5.0*.



Note

When you configure match all for a qos class map by entering the **class-map type qos match-all** command, the match-all option does not work. Instead, the match criteria is always treated as match any.

This command does not require a license.

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 remove a qos class map:

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

This example shows how to modify a qos color class map:

```
switch(config)# class-map conform-color-in
switch(config-color-map)#
```

Related Commands

Command	Description
show class-map qos	Displays class maps.

class-map type queuing match-any

To modify a type queuing class map and enter the class-map configuration mode, use the **class-map type queuing match-any** command.

class-map type queuing match-any {*queuing-class-map-name*| *WORD*}

Syntax Description

<i>queuing-class-map-name</i>	System-defined queuing class map name. For the list of system-defined queuing class maps, see Table 1 .
<i>WORD</i>	Hierarchical class-map name. It can be a string of 40 alphanumeric characters.

Command Default

None

Command Modes

Global configuration

Command History

Release	Modification
5.1(1)	Added the WORD argument.
4.0	This command was introduced.

Usage Guidelines

The argument *WORD* is supported only on the F-Series Modules.

When a non-8e template is active, it allows you to specify a hierarchical queuing (both ingress and egress) policy.

If the packet matches any of the criteria configured for this class map with the **match** command, this class map is applied to the packet. Class maps of type queuing support only this option.

Any modification made to the class maps type queuing changes the configuration for all ports of the specified port type on all VDCs.

You cannot delete system-defined queuing class map names. For more information on using the **class-map type queuing match-any** command, see the *Cisco Nexus 7000 Series NX-OS Quality of Service Configuration Guide, Release 5.0*.

This command does not require a license.

Examples

This example shows how to modify a queuing class map:

```
switch(config)# class-map type queuing match-any 2q4t-in-q1  
switch(config-cmap-que)#
```

Related Commands

Command	Description
show class-map queuing	Displays class maps.
match cos	Defines the class of traffic in type queuing class maps.

clear qos statistics

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

```
clear qos statistics [ {interface [ethernet type/slot| port-channel number] [vlan [vlan-id ]]} [input| output] [type {qos| queuing}] ]
```

Syntax Description

interface	(Optional) Specifies which interface to clear.
ethernet	(Optional) Specifies the statistics that are assigned to the Ethernet interface.
port-channel	(Optional) Specifies the statistics that are assigned to the port channel.
vlan <i>vlan-id</i>	(Optional) Specifies a VLAN to clear. Valid values are from 1 to 4094.
input	(Optional) Clears only input statistics.
output	(Optional) Clears only output statistics.
type	(Optional) Specifies the type of statistics to clear.
qos	Specifies to clear QoS statistics.
queuing	Specifies to clear queuing statistics.

Command Default None

Command Modes Any command mode

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

If you do not specify the interface or VLAN, the device clears the counters for all VLANs and interfaces. This command does not require a license.

Examples

This example shows how to clear all the QoS statistics:

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

This example shows how to clear all input QoS statistics for VLAN 1:

```
switch# clear qos statistics vlan 1 input
switch#
```

Related Commands

Command	Description
qos statistics	Enables or disables QoS statistics.
show qos statistics	Displays QoS statistics.

clear qos policies

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

clear qos policies

Syntax Description This command has no arguments or keywords.

Command Default None

Command Modes EXEC mode

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

Before you downgrade from Cisco NX-OS Release 5.2(x) or 5.1(x) or higher version to Cisco NX-OS Release 5.0(x) or an earlier release, remove all the user defined network-qos and queuing policies configured on F series modules. Use the clear qos policies command to remove the defaults for F series modules. An internal process failure can result if the QoS policies are not removed prior to the downgrade. Downgrade should be done after running this CLI command.

This command does not require a license.

Examples

This example shows how to clear the default qos policies:

```
switch# clear qos policies
This will clear up all default qos configs from all the VDCs, Are you sure you
want to continue(yes/no)? [no] y
switch#
```

clear qos policies 8e4q4q

To clear default 8e-4q4q template network-qos and queuing policies from all the VDCs, use the **clear qos policies 8e-4q4q** command.

clear qos policies 8e-4q4q

Syntax Description This command has no arguments or keywords.

Command Default VDC

Command Modes EXEC mode

Command History	Release	Modification
	6.1(3)	This command was introduced.

Usage Guidelines To make software downgrades non-disruptive from the version 6.1(3) and higher version to lower version, the following steps are required before the software downgrade:

- All the user defined and cloned 8e-4q4q template queuing policies should be detached manually from all the interfaces in each VDC.
- The default-nq-8e-4q4q-policy or the user defined or the cloned 8e-4q4q template network-qos policy should be detached from the system qos.
- All the user defined and cloned 8e-4q4q template network-qos policies should be removed manually from the default VDC.
- All the user defined 8e-4q4q template queuing policies should be removed manually from all the VDCs.
- Use the CLI command **clear qos policies 8e-4q4q** in default VDC to clear the default 8e-4q4q template policies. This command clears PPF (Portability Policy Format) nodes of 8e-4q4q template policies.
- After executing **clear qos policies 8e-4q4q** command, the user MUST do downgrade. Otherwise the behavior will be unexpected. This command does not require a license.



Note

Reloading a F series module will bring up the default 8e-4q4q template policies.

Examples

This example shows how to clear the 8e-4q4q template network-qos and queuing policies from all the VDC:

```
switch # configure terminal
switch# clear qos policies 8e-4q4q
```

clear qos policies 8e4q4q

```
This will clear up 8e-4q4q template configs from all the VDCs, Are you sure you
want to continue(yes/no)? [no] y
switch#
```

Related Commands

Command	Description
clear qos policies	Clears the default QoS policies.

congestion-control

To configure congestion control, use the **congestion-control** command. To remove the congestion control configuration, use the **no** form of this command.

congestion-control [**random-detect** **threshold** [**burst-optimized**| **mesh-optimized**]| **tail-drop** **threshold** [**burst-optimized**| **mesh-optimized**]]

no congestion-control [**random-detect** **threshold** [**burst-optimized**| **mesh-optimized**]| **tail-drop** **threshold** [**burst-optimized**| **mesh-optimized**]]

Syntax Description

random-detect	(Optional) Specifies the weighted random early detection (WRED).
threshold	Specifies the threshold for the optimized traffic.
burst-optimized	(Optional) Specifies the burst-optimized traffic.
mesh-optimized	(Optional) Specifies the mesh-optimized traffic.
tail-drop	(Optional) Specifies the tail-drop algorithm for queue management.

Command Default

None

Command Modes

Policy-map type network qos configuration

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

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_template
switch(config-pmap-nqos)# class type network-qos eth
switch(config-pmap-nqos-c)# congestion-control tail-drop threshold mesh-optimized
switch(config-pmap-nqos-c)#
```

This example shows how to configure congestion control:

```
switch# configure terminal
switch(config)# policy-map type network-qos my_template
switch(config-pmap-nqos)# class type network-qos eth
switch(config-pmap-nqos-c)# no congestion-control tail-drop threshold mesh-optimized
switch(config-pmap-nqos-c)#
```

Related Commands

Command	Description
mtu	Configures the maximum transmission unit (MTU) size in a network qos policy.
pause	Configure no-drop per CoS.
priority	Marks the priority level in a traffic queue.
shape	Configures the traffic rate for a given traffic profile.