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CHAPTER 4

Cisco Nexus 5000 Series Quality of Service Commands

This chapter describes the Cisco NX-OS quality of service commands available on Cisco Nexus 5000 Series switches.

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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 *class-map-name*

no class-map *class-map-name*

Syntax Description	<i>class-map-name</i> Name assigned to the class map. The name class default is reserved.
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Command Default	None.
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Command Modes	Global configuration.
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Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.

Usage Guidelines	You can define a class map for each class of traffic to be used in QoS policies. No license required for this command.
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Examples	This example shows how to create or modify a class map: <pre>switch(config)# class-map my_class1 switch(config-cmap)#</pre> This example shows how to remove a class map: <pre>switch(config)# no class-map my_class1 switch(config)#</pre>
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Related Commands	Command	Description
	policy-map	Creates or modifies a policy map.
	show class-map	Displays class maps.

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match cos

To define a traffic class based on the Class of Service (CoS) value in the 802.1Q, use the **match cos** command. To remove the **match cos** configuration, use the no form of this command.

match cos *multi-range-cos-values*

no match cos *multi-range-cos-values*

Syntax Description	<i>multi-range-cos-values</i> Specifies a list of multiple ranges of Class of Service (CoS) values. Values can range from 1 to 7.
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Command Default	None.
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Command Modes	Class-map configuration.
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Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.

Usage Guidelines	You can create a traffic class based on CoS values in the 802.1Q or ISL header. No license required for this command.
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Examples	This example shows how to create a match on CoS:
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```
switch(config)# class-map class_cos
switch(config-cmap)# match cos 2, 5-6
```

This example shows how to remove the match on CoS:

```
switch(config)# class-map class_cos
switch(config-cmap)# no match cos 2, 5-6
```

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

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policy-map

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

```
policy-map name

no policy-map name
```

Syntax Description	name	Name assigned to the policy map.
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Command Default	None.
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Command Modes	Global configuration.
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Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.

Usage Guidelines

You can create a policy map based on class maps to define QoS actions to perform on packets.

You can configure the class in a policy-map and apply parameters. This example shows the parameters you can apply:

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

switch(config-pmap)# ?
class Policy Criteria
switch(config-pmap)# class class1
switch(config-pmap-c)# ?
bandwidth Specify bandwidth for the class
mtu        Configure the system class MTU
pause      Configure pause behavior
priority    Configure traffic class priority
```

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

No license required for this command.

Examples

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

```
switch(config)# policy-map my_policy1
switch(config-pmap)# class class1
switch(config-pmap-c)# mtu 9216
```

This example shows how to remove a policy map:

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

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Related Commands	Command	Description
	class-map	Creates or modifies a table map.
	service-policy	Attaches a policy map to an interface.
	show policy-map	Displays policy maps.

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service-policy

To associate the system class policy-map to the service policy for the system, use the **service-policy** command.

```
service-policy [policy-map-name]

no service-policy
```

To associate the system class policy-map to the interface, use the **service-policy** command.

```
service-policy output [policy-map-name]

no service-policy output
```

Syntax Description	<i>policy-map-name</i>	Name of the policy map to attach to this interface or system policy. Only one policy map can be attached to the input and one to the output of a given interface.
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Command Default	No QoS policies are active on an interface until the service-policy command is entered.
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Command Modes	Interface configuration System qos
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Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.

Usage Guidelines	No license required for the command.
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Examples This example shows how to attach policy maps to to use as the service policy for the system.:

```
switch# configure terminal
switch(config)# mtu 9216
switch(config)# system qos
switch(config-sys-qos)# service-policy policy_map1
```

The following example shows how to attach a policy map to an interface:

```
switch(config)# class-map best-effort-drop-class
switch(config-cmap)# match cos 5
switch(config)# policy-map policy_map1
switch(config-pmap)# class best-effort-drop-class
switch(config-pmap-c)# mtu 9216
switch(config)# interface eth1/1
switch(config-if)# service-policy output policy_map1
```

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

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system jumbomtu

To define the upper bound of any MTU in the system, use the **system jumbomtu** command.

system jumbomtu [value]

Syntax Description	<i>value</i> The jumbomtu value. The range is 2240-9216.	
Command Default	9216 bytes	
Command Modes	Global configuration	
Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.
Usage Guidelines	No license required for this command.	
Examples	This example shows how to define the upper bound of any MTU in the system: <pre>switch(config)# system jumbomtu 9216</pre>	

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system qos

To configure system policy or set multicast-cos option, use the **system qos** command.

system qos

Syntax Description

None.

Command Default

None.

Command Modes

Global configuration

Command History

Release	Modification
4.0(0)N1(1a)	This command was introduced.

Usage Guidelines

No license required for the command.

Examples

This example shows how to configure a system qos:

```
switch# configure terminal
switch(config)# system qos
switch(config-sys-qos)# service-policy policy-map1
```

Related Commands

Command	Description
service- policy	Associates the system class policy-map to the service policy for the system
set multicast-cos	Sets the Class of Service (CoS) value associated with the multicast system class.

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priority-flow-control

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

priority-flow-control mode {auto | on}

Syntax Description	auto	Negotiates PFC capability.
	on	Force-enables PFC.

Command Default	None.
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Command Modes	Global configuration.
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Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.

Usage Guidelines	No license required for the command.
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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

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show class-map

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

show class-map [*name*]

Syntax Description	<i>name</i> (Optional) Specifies the class map to display.	
Command Default	None.	
Command Modes	Global configuration.	
Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.
Usage Guidelines	You can display all class maps if a name is not specified. Otherwise, the class map specified is displayed. No license required for the command.	
Examples	This example shows how to display a class map: switch# show class-map my_class_map	
Related Commands	Command	Description
	class-map	Creates or modifies a class map.

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show policy-map

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

show policy-map [*name*]

Syntax Description	<i>name</i> (Optional) Specifies the policy-map name to display.	
Command Default	None.	
Command Modes	Global configuration.	
Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.
Usage Guidelines	You can display all policy maps if a name is not specified. Otherwise, the policy map specified is displayed.	
	No license required for this command.	
Examples	This example shows how to display a policy map:	
	switch# show policy-map my_policy_map	
Related Commands	Command	Description
	class-map	Creates or modifies a class map.
	policy-map	Creates or modifies a policy map.

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show system qos

To display system QoS information, use the **show system qos** command.

show system qos

Syntax Description	None.
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Command Default	None.
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Command Modes	Global configuration.
----------------------	-----------------------

Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.

Usage Guidelines	No license required for the command.
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Examples	This example shows how to display system QoS information: <pre>switch(config)# show system qos</pre>
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Related Commands	Command	Description
	system qos	Configures the system class QoS.

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show interface priority-flow-control

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

show interface [*name*] **priority-flow-control**

Syntax Description	<i>name</i> (Optional) Name of the interface.
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Command Default	None.
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Command Modes	Global configuration.
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Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.

Usage Guidelines	No license required for the command.
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Examples	This example shows how to display the priority flow control details for a specified interface:				
	switch(config)# show interface ethernet 1/1 priority-flow-control				

	Port	Mode	Oper	RxPPP	TxPPP

	Eth1/1	auto	off	0	0

The interface specified is Eth1/1, the PFC mode is set to negotiate PFC capability, the operation is off and packets transmitted is zero.

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

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show policy-map interface

To display the system policy configured on the system and per class statistics, use the **show policy-map interface** command.

show policy-map interface [*name*]

Syntax Description	<i>name</i> (Optional) Name of the interface.						
Command Default	None.						
Command Modes	Global configuration.						
Command History	<table><tr><th>Release</th><th>Modification</th></tr><tr><td>4.0(0)N1(1a)</td><td>This command was introduced.</td></tr></table>	Release	Modification	4.0(0)N1(1a)	This command was introduced.		
Release	Modification						
4.0(0)N1(1a)	This command was introduced.						
Usage Guidelines	This command provides per class statistics. No license required for the command.						
Examples	This example shows the per class pause statistics displayed for a default system class: <pre>switch(config)# show policy-map interface ethernet 3/1</pre>						
Related Commands	<table><tr><th>Command</th><th>Description</th></tr><tr><td>policy-map</td><td>Creates or modifies a policy map.</td></tr><tr><td>show policy-map</td><td>Displays policy maps.</td></tr></table>	Command	Description	policy-map	Creates or modifies a policy map.	show policy-map	Displays policy maps.
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■ show policy-map interface

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