



P Commands

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

pause no-drop

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

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

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

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

Command Default By default, pause no-drop is off.

Command Modes Policy map type network-qos class configuration

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

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

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

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

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

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

pause no-drop buffer-size

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

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

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

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

Command Default By default, pause no-drop is on.

Command Modes Policy map type network-qos class configuration

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

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

When you configure the buffer size, ensure the following:

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

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

The minimum difference between the pause threshold value and the resume threshold value must be 20480 bytes on a Cisco Nexus 5020 switch and 19840 bytes on a Cisco Nexus 5548 switch.

Otherwise, you see the following message on a Cisco Nexus 5020 switch:

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

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

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

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

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

Examples

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

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

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

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

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

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

Related Commands

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

police (config-pmap-c-qos)

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

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

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

Syntax Description

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

Command Default None

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

Supported User Roles network-admin

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

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

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

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

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

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

Related Commands	Command	Description
	show policy-map	Displays a policy map.

police (policy map)

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

```
police { rate | cir rate }
```

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

Command Default	None
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Command Modes	Control plane policy map configuration mode
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Command History	Release	Modification
	5.2(1)N1(1)	This command was introduced.

Usage Guidelines	This command does not require a license.
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Examples	This example shows how to configure traffic policing in a control plane policy map with the average rate at 200 packets per second:
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```
switch# configure terminal
switch(config)# policy-map type control-plane copp-system-policy-customized
switch(config-pmap)# class ClassMapA
switch(config-pmap-c)# police 200
switch(config-pmap-c)#
```

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

policy-map type control-plane

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

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

Syntax Description	<i>policy-map-name</i>	Name of the default control plane policy map. The name is alphanumeric, case sensitive, and has a maximum of 64 characters.
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Command Default	None
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Command Modes	Global configuration mode
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Command History	Release	Modification
	5.2(1)N1(1)	This command was introduced.

Usage Guidelines

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

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

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

This command does not require a license.

Examples

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

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

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

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

■ policy-map type control-plane

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

<i>policy-map-name</i>	Name assigned to a type network-qos policy map. The name can be a maximum of 40 alphanumeric characters.
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Command Default

None

Command Modes

Global configuration mode

Command History

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

Usage Guidelines

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

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

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

Examples

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

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

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

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

Related Commands

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

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

policy-map (type qos)

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

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

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

Syntax Description	<table> <tr> <td>type qos</td><td>(Optional) Specifies the type qos policy map.</td></tr> <tr> <td><i>qos-policy-map-name</i></td><td>Name assigned to a type qos policy map. The name can be a maximum of 40 alphanumeric characters.</td></tr> </table>	type qos	(Optional) Specifies the type qos policy map.	<i>qos-policy-map-name</i>	Name assigned to a type qos policy map. The name can be a maximum of 40 alphanumeric characters.		
type qos	(Optional) Specifies the type qos policy map.						
<i>qos-policy-map-name</i>	Name assigned to a type qos policy map. The name can be a maximum of 40 alphanumeric characters.						
Command Default	The software enters the policy map type qos configuration mode if you enter the policy-map command without specifying a type.						
Command Modes	Global configuration mode						
Command History	<table> <tr> <th>Release</th><th>Modification</th></tr> <tr> <td>5.2(1)N1(1)</td><td>This command was introduced.</td></tr> </table>	Release	Modification	5.2(1)N1(1)	This command was introduced.		
Release	Modification						
5.2(1)N1(1)	This command was introduced.						
Usage Guidelines	Use the service-policy command to assign policy maps to interfaces. On a Cisco Nexus 5548 switch, the switch software does not automatically attach the class-fcoe class map to a policy map. You can manually add the class-fcoe class to a policy map. On all other Cisco Nexus 5000 Series switches, this class is, by default, included in a policy map. On a Cisco Nexus 5548 switch, you can remove the class-fcoe class from a policy map. You can configure the qos-group of a class-fcoe class map on a Cisco Nexus 5548 switch using the set qos-group command. The default qos-group value is 1.						
Examples	This example shows how to create or modify a type qos policy map: <pre>switch(config)# policy-map my_policy1 switch(config-pmap-qos)#</pre> This example shows how to remove a type qos policy map: <pre>switch(config)# no policy-map my_policy1</pre>						
Related Commands	<table> <tr> <th>Command</th><th>Description</th></tr> <tr> <td>class-map type qos</td><td>Configures a qos class map.</td></tr> <tr> <td>feature fcoe</td><td>Enables FCoE features on the switch.</td></tr> </table>	Command	Description	class-map type qos	Configures a qos class map.	feature fcoe	Enables FCoE features on the switch.
Command	Description						
class-map type qos	Configures a qos class map.						
feature fcoe	Enables FCoE features on the switch.						

■ policy-map (type qos)

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

policy-map type queuing

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

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

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

Syntax Description

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

Command Default

None

Command Modes

Global configuration mode

Command History

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

Usage Guidelines

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

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

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

- Bandwidth
The bandwidth value must be greater than zero (0).
- qos-group (on a Cisco Nexus 5548 switch)



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

Examples

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

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

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

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

■ policy-map type queuing

```
switch(config)#
```

Related Commands

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

priority

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

priority

no priority

Syntax Description	This command has no arguments or keywords.
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Command Default	None
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Command Modes	Policy map type queuing class configuration
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Command History	Release	Modification
	5.2(1)N1(1)	This command was introduced.

Usage Guidelines	When you configure a strict priority queue for a traffic class in a policy map, the priority class receives preference over other class queues. This queue is serviced before all other queues except queue zero (which carries control traffic, not data traffic).
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Examples	This example shows how to map the traffic class to a strict priority queue:
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```
switch(config)# policy-map type queuing my_policy1
switch(config-pmap-que)# class type queuing 8q2t-in-q4
switch(config-pmap-c-que)# priority
switch(config-pmap-que)#
```

Related Commands	Command	Description
	show policy-map	Displays the policy maps.

priority-flow-control

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

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

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

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

Command Default	Auto
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Command Modes	Interface configuration mode
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Command History	Release	Modification
	5.2(1)N1(1)	This command was introduced.

Usage Guidelines	You can use this command on the following interfaces:
	• Layer 2 interface • Layer 3 interface



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

Examples	This example shows how to force-enable PFC on an interface:
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```
switch# configure terminal
switch(config)# interface ethernet 1/2
switch(config-if)# priority-flow-control mode on
switch(config-if)#
```

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

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

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

