P Commands

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

packet latency interface

To enable switch latency histogram monitoring and configure the monitoring mode, use the **packet latency interface** command in interface configuration mode. To disable switch latency monitoring use the **no** form of this command.

packet latency interface ethernet *ingress-interface-slot/port* **mode {linear step** *step-value* **| exponential step** *step-value* **| custom low-latency** *low-value* **high-latency** *high-value***}**

no packet latency interface ethernet *ingress-interface-slot/port*

Syntax Description

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.
mode	Specifies the switch latency monitoring mode.
linear	Specifies linear histogram mode as the monitoring mode.
step step-value	Specifies the step size to be incremented. Valid values are multiples of 8 in the range 8 to 131064 nanoseconds.
exponential	Speechifies exponential histogram as the monitoring mode.
custom	Specifies custom histogram as the monitoring mode.
low-latency *low-value*	The low latency value in nanoseconds. Valid values are multiples of 8 in the range 8 to 536870904.
high-latency *high-value*	The high latency value in nanoseconds. Valid values are multiples of 8 in the range 8 to 536870904.

Command Default

Instantaneous mode monitoring is enabled.

Command Modes

Interface configuration (config-if)#

Command History

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

Usage Guidelines

To configure the monitoring mode between an egress and ingress port pair, you must first enter interface configuration mode on the egress interface. Only one mode (instantaneous, linear, exponential, or custom) can be configured on a port pair at any time.

Note If switch latency monitoring mode is configured without a histogram base value, the system uses a default value of 0, and calculates the histogram buckets accordingly.

Examples

The following example shows how to configure various switch latency monitoring modes between the egress interface (ethernet 1/1) and three different ingress interfaces.

```
switch (config)# hardware profile latency monitor base 800
switch (config)# interface ethernet 1/1
switch (config-if)# packet latency interface ethernet 1/2 mode linear step 40
switch (config-if)# packet latency interface ethernet 1/3-4 mode exp step 40
switch (config-if)# packet latency interface ethernet 1/5 mode custom low 40 high 1200
```

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	Enables switch latency monitoring.
show hardware profile latency monitor	Displays switch latency statistics for egress and ingress port pairs.

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.
pfc-cos-list	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
6.0(2)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

buffer-size	Buffer size for ingress traffic, in bytes. Valid values are from 10240 to 490880. **Note** On a Cisco Nexus device, you can configure a maximum buffer size of 152000 bytes.
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 0 to 490880. **Note** On a Cisco Nexus device, you can configure a maximum pause threshold value of 103360 bytes.
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 to 490880. **Note** On a Cisco Nexus device 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
6.0(2)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 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 device:

```
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 (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

rate	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

Command Modes

Control plane policy map 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 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-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

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
6.0(2)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)#
```

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

Command History

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

Usage Guidelines

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

On a Cisco Nexus device, 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 device, 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 device 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

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

Command History

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

Usage Guidelines

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

On a Cisco Nexus device, 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 device, 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 device 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:

```
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.
feature fcoe	Enables FCoE features on the switch.

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

Usage Guidelines

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

On a Cisco Nexus device, 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 device, 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 device)

Note On a Cisco Nexus device, 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
```

```
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.

Command Default

None

Command Modes

Policy map type queuing class configuration

Command History

Release	Modification
6.0(2)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).

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.

priority (virtual Ethernet interface)

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

priority *veth-priority*

no priority

Syntax Description

veth-priority	Virtual Ethernet interface priority. The range is from 0 to 65535.

Command Default

None

Command Modes

Virtual Ethernet interface configuration mode

Command History

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

Usage Guidelines

Before you use this command, you must configure a virtual Ethernet interface by using the **interface vethernet** command.

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).

Examples

This example shows how to configure the priority for a virtual Ethernet interface:

```
switch(config)# interface vethernet 10
switch(config-if)# priority
switch(config-if)#
```

Related Commands

Command	Description
interface vethernet	Configures a virtual Ethernet interface.
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

Command Modes

Interface configuration mode

Command History

Release	Modification
6.0(2)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:

```
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.