



## P Commands

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# pause

To configure no-drop per class of service (CoS), use the **pause** command. To remove the no-drop configuration, use the **no** form of this command.

**pause**

**no pause**

**Syntax Description** This command has no arguments or keywords.

**Command Default** no pause

**Command Modes** Class-map type 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 no-drop CoS:

```
switch# configure terminal
switch(config)# class-map type network-qos match-any eth
switch(config-cmap-nqos)# match cos 0,5-7
switch(config)# class-map type network-qos match-any fc1
switch(config-cmap-nqos)# match protocol fcoe
switch(config-cmap-nqos)# match cos 3
Switch(config)# class-map type network-qos match-any fc2
Switch(config-cmap-nqos)# match cos 1,2,4
switch(config)# policy-map type network-qos my_template
switch(config-pmap-nqos)# class type network-qos eth
switch(config-pmap-nqos-c)# pause
switch(config-pmap-nqos-c)#
```

## Related Commands

Command	Description
<b>congestion-control</b>	Configures congestion control in a network qos policy.
<b>mtu</b>	Configures the maximum transmission unit (MTU) size in a network qos policy.
<b>priority</b>	Marks the priority level in a traffic queue.



## police (QoS)

To configure policing of the data rates for a particular class of traffic, use the **police** command. To remove a policing configuration, use the **no** form of this command.

```
police [cir] {cir-value [bps|kbps|mbps|gbps]| percent percent} [[bc] bc-value [bytes|kbytes|mbytes|ms|us]]] [pir] {pir-value [bps|kbps|mbps|gbps]| percent percent} [[be] be-value [bytes|kbytes|mbytes|ms|us]]] [conform {transmit|set-prec-transmit precedence-value|set-dscp-transmit dscp-value|set-cos-transmit cos-val|set-discard-class-transmit discard-class-value|set-qos-transmit qos-group-value}|exceed {drop|set dscp dscp table cir-markdown-map}] [violate {drop|set dscp dscp table pir-markdown-map}]
```

```
no police [cir] {cir-value [bps|kbps|mbps|gbps]| percent percent} [[bc] bc-value [bytes|kbytes|mbytes|ms|us]]] [pir] {pir-value [bps|kbps|mbps|gbps]| percent percent} [[be] be-value [bytes|kbytes|mbytes|ms|us]]] [conform {transmit|set-prec-transmit precedence-value|set-dscp-transmit dscp-value|set-cos-transmit cos-val|set-discard-class-transmit discard-class-value|set-qos-transmit qos-group-value}|exceed {drop|set dscp dscp table cir-markdown-map}] [violate {drop|set dscp dscp table pir-markdown-map}]
```

### Syntax Description

<b>cir</b>	(Optional) Sets the committed information rate as a bit rate or a percentage of the link rate.
<i>cir-value</i>	Committed information rate. The range of values is from 1 to 80000000000; the range of policing values that are mathematically significant is 8000 to 80 Gbps.
<b>bps</b>	(Optional) Specifies the units of bits per second.
<b>kbps</b>	(Optional) Specifies the units of kilobits per second.
<b>mbps</b>	(Optional) Specifies the units of megabits per second.
<b>gbps</b>	(Optional) Specifies the units of gigabits per second.
<b>percent</b>	Specifies the percentage of the related parameter.
<i>percent</i>	Specifies percent. Valid values are from 1 to 100.
<b>bc</b>	Sets the committed burst rate, which is how much the cir can be exceeded, either as a bit rate or an amount of time at cir.
<i>bc-value</i>	Committed burst rate. Valid values are from 1 to 536870912. The default value is 200.
<b>bytes</b>	(Optional) Specifies the units of bytes per second.
<b>kbytes</b>	(Optional) Specifies the units of kilobytes per second.

<b>mbytes</b>	(Optional) Specifies the units of megabytes per second.
<b>ms</b>	(Optional) Specifies the units of milliseconds.
<b>us</b>	(Optional) Specifies the units of microseconds.
<b>pir</b>	Sets the peak information rate.
<i>pir-value</i>	Peak information rate. Valid values are from 1 to 8000000000; the range of policing values that are mathematically significant is 8000 to 80 Gbps.
<b>be</b>	Specifies the extended burst rate. Valid values are from 1 to 536870912.
<i>be-value</i>	Extended burst rate. If the bc value is not specified, the default is 200 milliseconds of traffic at the configured rate. The default data rate units are bytes.
<b>conform</b>	Sets the action to take when the data rate is within bounds.
<b>transmit</b>	Specifies the action of transmitting packets.
<b>set-prec-transmit</b> <i>precedence-value</i>	Sets the IP precedence field to the specified value and transmits the packet. Valid values are from 0 to 7.
<b>set-dscp-transmit</b> <i>dscp-value</i>	Sets the Differentiated Service Code Point (DSCP) field to the specified value and transmits the packet.
<b>set-cos-transmit</b> <i>cos-val</i>	Sets the class of service (CoS) field to the specified value and transmits the packet. Valid values are from 0 to 7.
<b>set-discard-class-transmit</b> <i>discard-class-value</i>	Sets the discard class field to the specified value and transmits the packet. Valid values are from 0 to 63.
<b>set-qos-transmit</b> <i>qos-group-value</i>	Sets the qos group field to the specified value and transmits the packet. Valid values are from 1 to 126.
<b>exceed</b>	Sets the action to take when the data rate is exceeded. The default is drop.
<b>drop</b>	Specifies the action of dropping packets.
<b>set dscp dscp table cir-markdown-map</b>	Sets the DSCP field to the corresponding value in the system-defined table map and transmits the packet.

<b>violate</b>	Sets the action to take when the data rate violates the configured rate values. The default is drop.
<b>set dscp dscp table pir-markdown-map</b>	Sets the DSCP field to the corresponding value in the system-defined table map and transmits the packet.

**Command Default**

bc default value is 200 milliseconds of traffic at the configured rate. The default data rate units are bytes.

be default value is 200 milliseconds of traffic at the configured rate. The default data rate units are bytes.

exceed default action is drop.

violate default action is drop.

**Command Modes**

Policy map type qos class configuration

**Command History**

Release	Modification
4.0	This command was introduced.

**Usage Guidelines**

This command does not require a license.

**Examples**

This example shows a 1-rate, 2-color policer that transmits if the data rate is within 200 milliseconds of traffic at 256000 bps and marks the DSCP value based on the system-defined table map pir-markdown-map if the data rate is violated:

```
switch(config)# policy-map my_policy1
switch(config-pmap-qos)# class default-class
switch(config-pmap-c-qos)# police cir 256000 conform transmit violate drop
switch(config-pmap-c-qos)#
```

This example shows a 1-rate, 3-color policer that transmits if the data rate is within 200 milliseconds of traffic at 256000 bps, marks DSCP based on the system-defined table map cir-markdown-map if the data rate is within 300 milliseconds of traffic at 256000 bps, and drops packets otherwise (pir must equal cir):

```
switch(config)# policy-map my_policy1
switch(config-pmap-qos)# class default-class
switch(config-pmap-c-qos)# police cir 256000 pir 256000 conform transmit exceed set dscp
dscp table cir-markdown-map violate drop
switch(config-pmap-c-qos)#
```

This example shows a 2-rate, 3-color policer that transmits and sets CoS to 5 if the data rate is within 200 milliseconds of traffic at 256000 bps, marks DSCP based on the system-defined table map cir-markdown-map if the data rate exceeds 200 milliseconds of traffic at 512 bps, and drops packets otherwise:

```
switch(config)# policy-map my_policy1
switch(config-pmap-qos)# class default-class
switch(config-pmap-c-qos)# police cir 256000 pir 512000 conform set-cos-transmit 5 exceed
```

```
set dscp dscp table cir-markdown-map violate drop
switch(config-pmap-c-qos)#
```

**Related Commands**

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

# police aggregate

To apply an aggregate policer to a particular class of traffic across multiple interfaces, use the **police aggregate** command. To remove an aggregate policer configuration, use the **no** form of this command.

**police aggregate** *policer-name*

**no police aggregate** *policer-name*

## Syntax Description

<i>policer-name</i>	Name of a shared aggregate policer to use.
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## Command Default

None

## Command Modes

Policy map type qos class configuration

## Command History

Release	Modification
4.0	This command was introduced.

## Usage Guidelines

Shared policers can only be applied to interfaces on the same module.



### Note

For information about configuring a shared policer, see the [qos shared-policer](#) command.

This command does not require a license.

## Examples

This example shows how to configure a shared policer for the class-default class of traffic:

```
switch(config)# policy-map my_policy1
switch(config-pmap-qos)# class default-class
switch(config-pmap-c-qos)# police aggregate my_aggregate_policer
switch(config-pmap-c-qos)#
```

This example shows how to remove the configuration of a shared policer from the class-default class of traffic:

```
switch(config)# policy-map my_policy1
switch(config-pmap-qos)# class default-class
switch(config-pmap-c-qos)# no police aggregate my_aggregate_policer
switch(config-pmap-c-qos)#
```



**Related Commands**

<b>Command</b>	<b>Description</b>
<b>qos shared-policer</b>	Configures simultaneous policing across multiple interfaces for a specified class of traffic.
<b>show policy-map</b>	Displays policy maps and statistics.

## policy-map type network-qos

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

**policy-map type network-qos** *pmap-name-nq* [**template 8e**| **6e**| **7e**| **4e**| **8e-4q4q**]

**no policy-map type network-qos** *pmap-name-nq* [**template 8e**| **6e**| **7e**| **4e**| **8e-4q4q**]

### Syntax Description

<b>template</b>	Specifies the template type.
<b>8e</b>	Specifies the 4e template.
<b>6e</b>	Specifies the 6e template.
<b>7e</b>	Specifies the 7e template.
<b>4e</b>	Specifies the 4e template.
<b>8e-4q4q</b>	Specifies the 8e-4q4q template.

### Command Default

qos

### Command Modes

Global configuration

### Command History

Release	Modification
6.1(3)	Added a template option.
5.1(1)	This command was introduced.

### Usage Guidelines

- Creates user-defined network-qos policy-map <pmap-name-nq> with the given template-type
- The properties of 8e template and 8e-4q4q template network-qos policy-maps are same. Thus this command explicitly says the type of the template
- If the template type is not mentioned then it will be considered as 8e or 7e or 6e or 4e based on the number of drop CoS and no-drop CoS

This command does not require a license.

## Examples

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

```
switch# configure terminal
switch(config)# policy-map type network-qos my_template
switch(config-pmap-nqos)#
```

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

```
switch# configure terminal
switch(config)# no policy-map type network-qos my_template
```

This example shows how to configure a policy map of the type network qos with template type as 8e-4q4q:

```
switch # configure terminal
switch(config)# policy-map type network-qos my-8e-4q4q-nq template 8e-4q4q
switch(config-pmap-nqos)#
```

## Related Commands

Command	Description
<b>service-policy</b>	Attaches a policy map to an interface.
<b>show policy-map</b>	Displays policy maps and statistics.

# policy-map type qos

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

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

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

## Syntax Description

<b>match-first</b>	(Optional) Specifies the policies associated with the first class that matches the packet characteristics are executed. This is the default action if this option is not specified.  <b>Note</b> Because this is the default action, you do not need to enter this variable; it is there to ensure compatibility with other systems.
<i>qos-policy-map-name</i>	Name assigned to a type qos policy map.

## 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

## Command History

Release	Modification
4.0	This command was introduced.

## Usage Guidelines

Use the [service-policy](#) command to assign policy maps to interfaces.

This command does not require a license.

## 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**

<b>Command</b>	<b>Description</b>
<b>service-policy</b>	Attaches a policy map to an interface.
<b>show policy-map</b>	Displays policy maps and statistics.

## 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** [**match-first**] {*queuing-policy-map-name*| **que-dynamic**}

**no policy-map type queuing** [**match-first**] {*queuing-policy-map-name*| **que-dynamic**}

### Syntax Description

<b>match-first</b>	(Optional) Specifies the policies associated with the first class that matches the packet characteristics are executed. This is the default action if this option is not specified.  <b>Note</b> Because this is the default action, you do not need to enter this variable; it is there to ensure compatibility with other systems.
<i>queuing-policy-map-name</i>	Name assigned to a type queuing policy map.
<b>que-dynamic</b>	Specifies already configured policy maps.

### Command Default

None

### Command Modes

Global configuration

### Command History

Release	Modification
4.0	This command was introduced.
4.2(1)	The <b>que-dynamic</b> variable was added.

### Usage Guidelines

Use the [service-policy](#) command to assign policy maps to interfaces.  
This command does not require a license.

### 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) #
```

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
<b>service-policy</b>	Attaches a policy map to an interface.
<b>show policy-map</b>	Displays policy maps and statistics.

# policy-map type queuing

To configure the policy map of a type queuing and to enter the policy-map mode for a specified policy map, use the **policy-map-name** command. To remove a policy map use the **no** form of this command.

**policy-map queuing** [ *policy-map-name* ]

**no policy-map queuing** [ *policy-map-name* ]

## Syntax Description

<i>policy-map-name</i>	Policy map of a type queuing.  <b>Note</b> The policy map names can contain alphabetical, hyphen, or underscore characters, are case sensitive, and can be up to 40 characters.
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## Command Default

None

## Command Modes

Global configuration mode

## Command History

Release	Modification
6.2(2)	This command was introduced.

## Usage Guidelines

This command does not require a license.

## Examples

This example shows how to configure the policy map of a type queuing:

```
switch# configure terminal
switch(config)# policy-map type queuing test
switch(config-pmap-que)#
```

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

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

## Related Commands

Command	Description
<b>show policy-map type queuing [policy-map-name]</b>	Displays the queuing policy that you copied and renamed.





## priority (queuing)

To configure a single output queuing class as the priority queue, use the **priority** command. To remove the priority queue selection, use the **no** form of this command.

**priority** [*level priority-value*]

**no priority** [*level priority-value*]

### Syntax Description

*level priority-value*

(Optional) Specifies the priority level for an output queuing class. Only one priority level is supported. The priority value can only be 1.

### Command Default

The software distributes the bandwidth among the output queues, when you do not specify the priority.

### Command Modes

Policy map type queuing configuration

### Command History

Release	Modification
4.0	This command was introduced.

### Usage Guidelines

The priority level can only be 1.

Use the **bandwidth remaining** command to allocate the remaining bandwidth among the nonpriority output queues. By default, the software evenly distributes the remaining bandwidth among the nonpriority output queues.

You can also use the **police** command to explicitly configure the priority for specified classes of traffic.



#### Note

After you use this command in a specified policy map, you cannot use the **bandwidth** or **shape** command in the same policy map.

This command does not require a license.

### Examples

This example shows how to assign a priority queue:

```
switch(config)# policy-map type queuing match-first my_queue
switch(config-pmap-que)# class type queuing lp3q4t-out-pq1
switch(config-pmap-c-que)# priority level 1
switch(config-pmap-c-que)#
```

This example shows how to remove a priority queue:

```
switch(config)# policy-map type queuing match-first my_queue
switch(config-pmap-que)# class type queuing lp3q4t-out-pq1
switch(config-pmap-c-que)# no priority level 1
switch(config-pmap-c-que)#
```

#### Related Commands

Command	Description
<b>bandwidth remaining</b>	Configures the bandwidth remaining on the interface in a queue.
<b>police</b>	Configures policing for specified classes of traffic.
<b>show policy-map</b>	Displays policy maps and statistics.

# priority-flow-control mode

To configure priority flow control (PFC) on an interface, use the **priority-flow-control mode** command.

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

## Syntax Description

<b>auto</b>	Sets the PFC mode to automatic.
<b>off</b>	Sets the PFC mode to off.
<b>on</b>	Sets the PFC mode to on.

## Command Default

auto

## 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 set the PFC mode to on:

```
switch# configure terminal
switch(config)# interface ethernet 2/5
switch(config-if)# priority-flow-control mode on
switch(config-if)#
```

This example shows how to set the PFC mode to off:

```
switch# configure terminal
switch(config)# interface ethernet 2/5
switch(config-if)# priority-flow-control mode off
switch(config-if)#
```

## Related Commands

Command	Description
<b>show interface priority-flow-control</b>	Displays the status of priority flow control (PFC) on all interfaces.