



# Low Latency Queueing with Priority Percentage Support

---

This feature module describes the Low Latency Queueing with Priority Percentage Support feature and includes the following sections:

- Feature Overview, page 1
- Supported Platforms, page 3
- Supported Standards, MIBs, and RFCs, page 4
- Configuration Tasks, page 4
- Configuration Examples, page 5
- Command Reference, page 6

## Feature Overview

This feature allows you to configure bandwidth as a percentage within low latency queueing (LLQ). Specifically, you can designate a percentage of the bandwidth to be allocated to an entity (such as a physical interface, a shaped ATM permanent virtual circuit (PVC), or a shaped Frame Relay PVC) to which a policy map is attached. Traffic associated with the policy map will then be given priority treatment.

This feature also allows you to specify the percentage of bandwidth to be allocated to non-priority traffic classes.

This feature modifies two existing commands—**bandwidth** and **priority**—and this feature provides additional functionality to the way that bandwidth can be allocated using these two commands.

## Changes to the **bandwidth** Command

This feature adds a new keyword to the **bandwidth** command—**remaining percent**. The feature also changes the functionality of the existing **percent** keyword. These changes result in the following commands for bandwidth: **bandwidth percent** and **bandwidth remaining percent**.

The **bandwidth percent** command configures bandwidth as an absolute percentage of the total bandwidth on the interface.

The **bandwidth remaining percent** command allows you to allocate bandwidth as a relative percentage of the total bandwidth available on the interface. This command allows you to specify the relative percentage of the bandwidth to be allocated to the classes of traffic. For instance, you can specify that 30 percent of the available bandwidth be allocated to class1, and 60 percent of the bandwidth be allocated to class2. Essentially, you are specifying the ratio of the bandwidth to be allocated to the traffic class. In this case, the ratio is 1 to 2 (30 percent allocated to class1 and 60 percent allocated to class2). The sum of the numbers used to indicate this ratio cannot exceed 100 percent. This way, you need not know the total amount of bandwidth available, just the relative percentage you want to allocate for each traffic class.

Each traffic class gets a minimum bandwidth as a relative percentage of the remaining bandwidth. The remaining bandwidth is the bandwidth available after the priority queue, if present, is given its required bandwidth, and after any Resource Reservation Protocol (RSVP) flows are given their requested bandwidth.

Because this is a relative bandwidth allocation, the packets for the traffic classes are given a proportionate weight only, and no admission control is performed to determine whether any bandwidth (in kbps) is actually available. The only error checking that is performed is to ensure that the total bandwidth percentages for the classes do not exceed 100 percent.

For more information about how this feature defines and calculates bandwidth, see the “How These Commands Calculate Bandwidth” section of this document. For the **bandwidth command** syntax description and usage guidelines, see the “Command Reference” section of this document.

## Changes to the priority Command

This feature also adds the **percent** keyword to the **priority** command. The **priority percent** command indicates that the bandwidth will be allocated as a percentage of the total bandwidth of the interface. You can then specify the percentage (that is, a number from 1 to 100) to be allocated by using the *percentage* argument with the **priority percent** command.

Unlike the **bandwidth** command, the **priority** command provides a strict priority to the traffic class, which ensures low latency to high priority traffic classes.

For more information about how this feature defines and calculates bandwidth, see the “How These Commands Calculate Bandwidth” section of this document. For the **priority command** syntax description and usage guidelines, see the “Command Reference” section of this document.

## How These Commands Calculate Bandwidth

When the **bandwidth** and **priority** commands calculate the total amount of bandwidth available on an entity, the following guidelines are invoked:

- If the entity is a physical interface, the total bandwidth is the bandwidth on the physical interface.
- If the entity is a shaped ATM PVC, the total bandwidth is calculated as follows:
  - For a variable bit rate (VBR) VC, the average shaping rate is used in the calculation.
  - For an available bit rate (ABR) VC, the minimum shaping rate is used in the calculation.
- If the entity is a shaped Frame Relay PVC, the total bandwidth is calculated as follows:
  - If a minimum acceptable committed information rate (minCIR) is not configured, the CIR divided by two is used in the calculation.
  - If a minimum acceptable CIR is configured, the minCIR setting is used in the calculation.

For more information on bandwidth allocation, refer to the chapter “Congestion Management Overview” in the *Cisco IOS Quality of Service Solutions Configuration Guide*, Release 12.2.

## Benefits

This feature allows the Cisco IOS software to accommodate networks with a large number of interfaces, all with differing bandwidths. This feature is especially useful when all of those interfaces with differing bandwidths need to be associated with a policy map that allocates proportional bandwidths to multiple classes.

Additionally, configuring bandwidth in percentages is most useful when the underlying link bandwidth is unknown or the relative class bandwidth distributions are known. For interfaces that have adaptive shaping rates (such as available bit rate (ABR) virtual circuits), CBWFQ can be configured by configuring class bandwidths in percentages.

## Restrictions

### Dropping Excess Traffic

If the incoming high priority traffic exceeds the bandwidth percentage calculated by the **priority percent** command, and there is congestion in the network, the excess traffic is dropped. This is identical to the behavior demonstrated when the **priority** command uses bandwidth in kbps. In both cases, if the high priority traffic exceeds the bandwidth, and there is congestion in the network, excess traffic is dropped.

### Exceeding the Configured Bandwidth Percentage Calculated by the **bandwidth percent** and **priority percent** Commands

By default, when the **bandwidth percent** and **priority percent** commands are used to allocate bandwidth, the sum of the bandwidth percentage allocated to the high priority traffic and the bandwidth percentage allocated to the non-priority traffic cannot exceed 75 percent of the total bandwidth available on the interface.

The remaining 25 percent of the total bandwidth available on the interface is kept in reserve for the unclassified traffic and routing traffic, if any, and proportionally divided among the defined traffic classes. To override the 75 percent limitation, use the **max-reserved bandwidth** command in interface configuration mode.



Note

The **max-reserved bandwidth** command is intended for use on main interfaces only; it has no effect on virtual circuits (VCs) or ATM permanent virtual circuits (PVCs).

## Supported Platforms

- Cisco 1000 series
- Cisco 1600 series
- Cisco 1700 series
- Cisco 2600 series
- Cisco 3600 series
- Cisco MC3810

- Cisco 4500 series
- Cisco 5300 series
- Cisco 7100 series
- Cisco 7200 series

## Supported Standards, MIBs, and RFCs

### Standards

No new or modified standards are supported by this feature.

### MIBs

No new or modified MIBs are supported by this feature.

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB web site on Cisco.com at <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>.

### RFCs

No new or modified RFCs are supported by this feature.

## Configuration Tasks

See the following sections for configuration tasks for the Low Latency Queueing with Priority Percentage Support feature. Each task in the list is identified as either optional or required:

- Specifying the Bandwidth Percentage (Required)
- Verifying the Bandwidth Percentage (Optional)

## Specifying the Bandwidth Percentage

To specify the bandwidth percentage, use the following commands beginning in global configuration mode:

	Command	Purpose
Step 1	<code>Router(config-if)# <b>policy-map</b> <i>policy-map</i></code>	Specifies the name of the policy map to be created or modified. Enters policy-map configuration mode.
Step 2	<code>Router(config-pmap)# <b>class</b> <i>class-name</i></code>	Specifies the class so that you can configure or modify its policy. Enters policy-map class configuration mode.
Step 3	<code>Router(config-pmap-c)# <b>priority</b> {<i>bandwidth-kbps</i>   <b>percent</b> <i>percentage</i>} [<i>burst</i>]</code>	Gives priority to a class of traffic belonging to the policy map.
Step 4	<code>Router(config-pmap-c)# <b>bandwidth</b> {<i>bandwidth-kbps</i>   <b>remaining percent</b> <i>percentage</i>   <b>percent</b> <i>percentage</i>}</code>	Specifies the bandwidth for a class of traffic belonging to the policy map.

## Verifying the Bandwidth Percentage

To display the contents of a policy map and to verify that the percentage has been configured as specified, use the following commands in EXEC mode, as needed:

Command	Purpose
Router# <code>show policy-map policy-map</code>	Displays the configuration of all classes comprising the specified policy map.
Router# <code>show policy-map policy-map class class-name</code>	Displays the configuration of the specified class of the specified policy map.
Router# <code>show policy-map interface interface-name</code>	Displays the configuration of all classes configured for all policy maps on the specified interface.



### Note

The counters displayed for classes configured with **bandwidth** or **priority** after using the **show policy-map interface** command are updated only if congestion is present on the interface.

## Configuration Examples

This section provides the following configuration examples:

- Specifying the Bandwidth Percentage
- Mixing the Units of Bandwidth for Non-Priority Traffic

### Specifying the Bandwidth Percentage

The following example uses the **priority percent** command to specify a bandwidth percentage of 10 percent for the class called `voice-percent`. Then the **bandwidth remaining percent** command is used to specify a bandwidth percentage of 30 percent for the class called `data1`, and a bandwidth percentage of 20 percent for the class called `data2`:

```
policy-map policy1
  class voice-percent
    priority percent 10
  class data1
    bandwidth remaining percent 30
  class data2
    bandwidth remaining percent 20
```

As a result of this configuration, 10 percent of the interface bandwidth is guaranteed for the class called `voice-percent`. The classes called `data1` and `data2` get 30 percent and 20 percent of the remaining bandwidth, respectively.

## Mixing the Units of Bandwidth for Non-Priority Traffic

If a particular unit (that is, kbps or percentages) is used when specifying the bandwidth for a specific class of non-priority traffic, the same bandwidth unit must be used when specifying the bandwidth for the other non-priority classes in that policy map. The bandwidth units within the same policy map must be identical. However, the unit for the **priority** command in the priority class can be different from the bandwidth unit of the non-priority class. The same configuration can contain multiple policy maps, however, which in turn can use different bandwidth units.

The following sample configuration contains three policy maps—policy1, policy2, and policy3. In the policy map called policy1 and the policy map called policy2, the bandwidth is specified by percentage. However, in the policy map called policy3, bandwidth is specified in kbps.

```
policy-map policy1
  class voice-percent
    priority percent 10
  class data1
    bandwidth percent 30
  class data2
    bandwidth percent 20
policy-map policy2
  class voice-percent
    priority percent 10
  class data1
    bandwidth remaining percent 30
  class data2
    bandwidth remaining percent 20
policy-map policy3
  class voice-percent
    priority percent 500
  class data1
    bandwidth 30
  class data2
    bandwidth 20
```

## Command Reference

This section documents modified commands. All other commands used with this feature are documented in the *Cisco IOS Quality of Service Solutions Command Reference*, Release 12.2.

- **bandwidth (policy-map class)**
- **priority**

## bandwidth (policy-map class)

To specify or modify the bandwidth allocated for a class belonging to a policy map, use the **bandwidth** command in policy-map class configuration mode. To remove the bandwidth specified for a class, use the **no** form of this command.

**bandwidth** { *bandwidth-kbps* | **remaining percent** *percentage* | **percent** *percentage* }

**no bandwidth** { *bandwidth-kbps* | **remaining percent** *percentage* | **percent** *percentage* }

### Syntax Description

<i>bandwidth-kbps</i>	Amount of bandwidth, in number of kbps, to be assigned to the class. The amount of bandwidth varies according to the interface and platform in use.
<b>remaining percent</b>	Amount of guaranteed bandwidth, based on a relative percent of available bandwidth.
<i>percentage</i>	Used in conjunction with the <b>remaining percent</b> keyword, a percentage. The percentage can be a number from 1 to 100.
<b>percent</b>	Amount of guaranteed bandwidth, based on an absolute percent of available bandwidth.
<i>percentage</i>	Used in conjunction with the <b>percent</b> keyword, the percentage of the total available bandwidth to be set aside for the priority class. The percentage can be a number from 1 to 100.

### Defaults

This command has no default behavior or values.

### Command Modes

Policy-map class configuration

### Command History

Release	Modification
12.0(5)T	This command was introduced.
12.0(5)XE	This command was incorporated into Cisco IOS Release 12.0(5)XE. Support for Versatile Interface Processor (VIP)-enabled Cisco 7500 series routers was added.
12.0(7)T	The <b>percent</b> keyword was added.
12.1(5)T	This command was integrated into Cisco IOS Release 12.1(5)T. Support for VIP-enabled Cisco 7500 series routers was added.
12.2(2)T	The <b>remaining percent</b> keyword was added.

### Usage Guidelines

You should use the **bandwidth** command when you configure a policy map for a class defined by the **class-map** command. The **bandwidth** command specifies the bandwidth for traffic in that class. Class-based weighted fair queueing (CBWFQ) derives the weight for packets belonging to the class from the bandwidth allocated to the class. CBWFQ then uses the weight to ensure that the queue for the class is serviced fairly.

Besides specifying the amount of bandwidth in kbps, you can specify bandwidth as a percentage of either the available bandwidth or the total bandwidth. During periods of congestion, the classes are serviced in proportion to their configured bandwidth percentages. Available bandwidth is equal to the interface bandwidth minus the sum of all bandwidths reserved by the Resource Reservation Protocol (RSVP) feature, the IP RTP Priority feature, and the Low Latency Queueing (LLQ) feature. For a definition of total bandwidth and how it is calculated, see the “How These Commands Calculate Bandwidth” section earlier in this document.

**Note**

It is important to remember that when the **bandwidth remaining percent** command is configured, hard bandwidth guarantees may not be provided and only relative bandwidths are assured. That is, class bandwidths are always proportional to the specified percentages of the interface bandwidth. When the link bandwidth is fixed, class bandwidth guarantees are in proportion to the configured percentages. If the link bandwidth is unknown or variable, class bandwidth guarantees in kbps cannot be computed.

The following restrictions apply to the **bandwidth** command:

- The amount of bandwidth configured should be large enough to also accommodate Layer 2 overhead.
- A policy map can have all the class bandwidths specified in kbps or all the class bandwidths specified in percentages but not a mix of both in the same class. However, the unit for the **priority** command in the priority class can be different from the bandwidth unit of the nonpriority class.
- When the **bandwidth percent** command is configured, and a policy map containing class policy configurations is attached to the interface to stipulate the service policy for that interface, available bandwidth is assessed. If a policy map cannot be attached to a particular interface because of insufficient interface bandwidth, the policy is removed from all interfaces to which it was successfully attached. This restriction does not apply to the **bandwidth remaining percent** command.

For more information on bandwidth allocation, refer to the chapter “Congestion Management Overview” in the *Cisco IOS Quality of Service Solutions Configuration Guide*, Release 12.2.

**Examples****CBWFQ Bandwidth Guarantee Example**

The following example illustrates how bandwidth is guaranteed when only CBWFQ is configured:

```
! The following commands create a policy map with two classes:
policy-map policy1
  class class1
    bandwidth percent 50
  exit

  class class2
    bandwidth percent 25
  exit
end

!The following commands attach the policy to interface s3/2:
interface s3/2
  service output policy1
end
```

The following output from the **show policy-map** command shows the configuration for the policy map called policy1:

```
Router# show policy-map policy1

Policy Map policy1
Class class1
  Weighted Fair Queueing
    Bandwidth 50 (%) Max Threshold 64 (packets)
Class class2
  Weighted Fair Queueing
    Bandwidth 25 (%) Max Threshold 64 (packets)
```

The output from the **show policy-map interface** command shows that 50 percent of the interface bandwidth is guaranteed for the class called class1, and 25 percent is guaranteed for the class called class2. The output displays the amount of bandwidth as both a percentage and a number of kbps.

```
Router# show policy-map interface s3/2

Serial3/2

Service-policy output:policy1

Class-map:class1 (match-all)
  0 packets, 0 bytes
  5 minute offered rate 0 bps, drop rate 0 bps
  Match:none
  Weighted Fair Queueing
    Output Queue:Conversation 265
    Bandwidth 50 (%)
    Bandwidth 772 (kbps) Max Threshold 64 (packets)
    (pkts matched/bytes matched) 0/0
    (depth/total drops/no-buffer drops) 0/0/0

Class-map:class2 (match-all)
  0 packets, 0 bytes
  5 minute offered rate 0 bps, drop rate 0 bps
  Match:none
  Weighted Fair Queueing
    Output Queue:Conversation 266
    Bandwidth 25 (%)
    Bandwidth 386 (kbps) Max Threshold 64 (packets)
    (pkts matched/bytes matched) 0/0
    (depth/total drops/no-buffer drops) 0/0/0

Class-map:class-default (match-any)
  0 packets, 0 bytes
  5 minute offered rate 0 bps, drop rate 0 bps
  Match:any
```

In this example, interface s3/2 has a total bandwidth of 1544 kbps. During periods of congestion, 50 percent (or 772 kbps) of the bandwidth is guaranteed to the class called class1, and 25 percent (or 386 kbps) of the link bandwidth is guaranteed to the class called class2.

### CBWFQ and LLQ Bandwidth Allocation Example

The following output from the **show policy-map** command shows the configuration for a policy map called p1:

```
Router# show policy-map p1

Policy Map p1
  Class voice
    Weighted Fair Queueing
      Strict Priority
      Bandwidth 500 (kbps) Burst 12500 (Bytes)
  Class class1
    Weighted Fair Queueing
      Bandwidth remaining 50 (%) Max Threshold 64 (packets)
  Class class2
    Weighted Fair Queueing
      Bandwidth remaining 25 (%) Max Threshold 64 (packets)
```

The following output from the **show policy-map interface** command on serial interface 3/2 shows that 500 kbps of bandwidth is guaranteed for the class called voice1. The classes called class1 and class2 receive 50 percent and 25 percent of the remaining bandwidth, respectively. Any unallocated bandwidth is divided proportionally among class1, class2, and any best-effort traffic classes.



#### Note

Note that in this sample output (unlike many of the others earlier in this section) the bandwidth is displayed only as a percentage. Bandwidth expressed as a number of kbps is not displayed because the **bandwidth remaining percent** keyword was used with the **bandwidth** command. The **bandwidth remaining percent** keyword allows you to allocate bandwidth as a relative percentage of the total bandwidth available on the interface.

```
Router# show policy-map interface s3/2

Serial3/2

Service-policy output:p1

Class-map:voice (match-all)
  0 packets, 0 bytes
  5 minute offered rate 0 bps, drop rate 0 bps
  Match:ip precedence 5
  Weighted Fair Queueing
    Strict Priority
    Output Queue:Conversation 264
    Bandwidth 500 (kbps) Burst 12500 (Bytes)
    (pkts matched/bytes matched) 0/0
    (total drops/bytes drops) 0/0

Class-map:class1 (match-all)
  0 packets, 0 bytes
  5 minute offered rate 0 bps, drop rate 0 bps
  Match:none
  Weighted Fair Queueing
    Output Queue:Conversation 265
    Bandwidth remaining 50 (%) Max Threshold 64 (packets)
    (pkts matched/bytes matched) 0/0
    (depth/total drops/no-buffer drops) 0/0/0
```

```

Class-map:class2 (match-all)
  0 packets, 0 bytes
  5 minute offered rate 0 bps, drop rate 0 bps
  Match:none
  Weighted Fair Queueing
  Output Queue:Conversation 266
  Bandwidth remaining 25 (%) Max Threshold 64 (packets)
  (pkts matched/bytes matched) 0/0
  (depth/total drops/no-buffer drops) 0/0/0

Class-map:class-default (match-any)
  0 packets, 0 bytes
  5 minute offered rate 0 bps, drop rate 0 bps
  Match:any

```

**Related Commands**

Command	Description
<b>class (policy-map)</b>	Specifies the name of the class whose policy you want to create or change, and the default class (commonly known as the class-default class) before you configure its policy.
<b>class class-default</b>	Specifies the default class whose bandwidth is to be configured or modified.
<b>class-map</b>	Creates a class map to be used for matching packets to a specified class.
<b>max-reserved-bandwidth</b>	Changes the percent of interface bandwidth allocated for CBWFQ, LLQ, and IP RTP Priority.
<b>policy-map</b>	Creates or modifies a policy map that can be attached to one or more interfaces to specify a service policy.
<b>queue-limit</b>	Specifies or modifies the maximum number of packets the queue can hold for a class policy configured in a policy map.
<b>random-detect (interface)</b>	Enables WRED or DWRED.
<b>random-detect exponential-weighting-constant</b>	Configures the WRED and DWRED exponential weight factor for the average queue size calculation.
<b>random-detect precedence</b>	Configures WRED and DWRED parameters for a particular IP precedence.
<b>show policy-map</b>	Displays the contents of a policy map, including the priority setting of a various policy maps.
<b>show policy-map interface</b>	Displays the contents of a policy map, including the priority setting of a specific interface or PVC.

# priority

To give priority to a class of traffic belonging to a policy map, use the **priority** command in policy-map class configuration mode. To remove a previously specified priority for a class, use the **no** form of this command.

**priority** { *bandwidth-kbps* | **percent** *percentage* } [*burst*]

**no priority** { *bandwidth-kbps* | **percent** *percentage* } [*burst*]

## Syntax Description

<i>bandwidth-kbps</i>	Guaranteed allowed bandwidth, in kbps, for the priority traffic. Beyond the guaranteed bandwidth, the priority traffic will be dropped in the event of congestion to ensure that the nonpriority traffic is not starved.
<b>percent</b>	Specifies that the amount of guaranteed bandwidth will be specified by the percent of available bandwidth.
<i>percentage</i>	Used in conjunction with the <b>percent</b> keyword, specifies the percentage of the total available bandwidth to be set aside for the priority class. The percentage can be a number from 1 to 100.
<i>burst</i>	(Optional) Specifies the burst size in bytes. The burst size configures the network to accommodate temporary bursts of traffic. The default burst value, which is computed as 200 milliseconds of traffic at the configured bandwidth rate, is used when the burst argument is not specified. The range of the burst is from 32 to 2,000,000 bytes.

## Defaults

This command has no default behavior or values.

## Command Modes

Policy-map class configuration

## Command History

Release	Modification
12.0(7)T	This command was introduced.
12.0(5)XE5	This command was introduced for the Versatile Interface Processor (VIP) as part of the Distributed Low Latency Queueing (Low Latency Queueing for the VIP) feature.
12.0(9)S	This command was introduced for the VIP as part of the Distributed Low Latency Queueing (Low Latency Queueing for the VIP) feature.
12.1(2)E	The <i>burst</i> argument was added.
12.1(3)T	The <i>burst</i> argument was added.
12.1(5)T	This command was introduced for the VIP as part of the Distributed Low Latency Queueing (Low Latency Queueing for the VIP) feature.
12.2(2)T	The <b>percent</b> keyword and the <i>percentage</i> argument were added.

---

**Usage Guidelines**

This command configures low latency queueing (LLQ), providing strict priority queueing (PQ) for class-based weighted fair queueing (CBWFQ). Strict PQ allows delay-sensitive data such as voice to be dequeued and sent before packets in other queues are dequeued.

The **priority** command allows you to set up classes based on a variety of criteria (not just User Datagram Ports (UDP) ports) and assign priority to them, and is available for use on serial interfaces and ATM permanent virtual circuits (PVCs). A similar command, the **ip rtp priority** command, allows you to stipulate priority flows based only on UDP port numbers and is not available for ATM PVCs.

When the device is not congested, the priority class traffic is allowed to exceed its allocated bandwidth. When the device is congested, the priority class traffic above the allocated bandwidth is discarded.

The **bandwidth** and **priority** commands cannot be used in the same class, within the same policy map. These commands can be used together in the same policy map, however.

Within a policy map, you can give one or more classes priority status. When multiple classes within a single policy map are configured as priority classes, all traffic from these classes is queued to the same, single, priority queue.

When the policy map containing class policy configurations is attached to the interface to stipulate the service policy for that interface, available bandwidth is assessed. If a policy map cannot be attached to a particular interface because of insufficient interface bandwidth, then the policy is removed from all interfaces to which it was successfully attached.

For more information on bandwidth allocation, refer to the chapter “Congestion Management Overview” in the *Cisco IOS Quality of Service Solutions Configuration Guide*, Release 12.2.

---

**Examples**

The following example configures PQ with a guaranteed bandwidth of 50 kbps and a one-time allowable burst size of 60 bytes for the policy map called policy1:

```
router(config)# policy-map policy1
router(config-pmap)# class voice
router(config-pmap-c)# priority 50 60
```

In the following example, 10 percent of the available bandwidth is reserved for the class called voice on interfaces to which the policy map called policy1 has been attached:

```
router(config)# policy-map policy1
router(config-pmap)# class voice
router(config-pmap-c)# priority percent 10
```

Related Commands	Command	Description
	<b>bandwidth</b>	Specifies or modifies the bandwidth allocated for a class belonging to a policy map.
	<b>ip rtp priority</b>	Reserves a strict priority queue for a set of RTP packet flows belonging to a range of UDP destination ports.
	<b>ip rtp reserve</b>	Reserves a special queue for a set of RTP packet flows belonging to a range of UDP destination ports.
	<b>max-reserved-bandwidth</b>	Changes the percent of interface bandwidth allocated for CBWFQ, LLQ, and IP RTP Priority.
	<b>show interfaces fair-queue</b>	Displays information and statistics about WFQ for a VIP-based interface.
	<b>show policy-map</b>	Displays the contents of a policy map, including the priority setting of a various policy maps.
	<b>show policy-map interface</b>	Displays the contents of a policy map, including the priority setting of a specific interface or PVC.
	<b>show queue</b>	Displays the contents of packets inside a queue for a particular interface or VC.