



Modular QoS CLI (MQC) Unconditional Packet Discard

Feature History

Release	Modification
12.2(13)T	This feature was introduced.

Supported Platforms

For platforms supported in Cisco IOS Release 12.2(13)T, consult Cisco Feature Navigator.

This document describes the Modular QoS CLI (MQC) Unconditional Packet Discard feature in Cisco IOS Release 12.2(13)T. It includes the following sections:

- [Feature Overview, page 1](#)
- [Supported Platforms, page 2](#)
- [Supported Standards, MIBs, and RFCs, page 3](#)
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Feature Overview

The Modular QoS CLI (MQC) Unconditional Packet Discard feature allows customers to classify traffic matching certain criteria and then configure the system to unconditionally discard any packets matching that criteria. The Modular QoS CLI (MQC) Unconditional Packet Discard feature is configured using the Modular Quality of Service Command-Line Interface (MQC) feature. For more information about the MQC feature, see the “[Applying QoS Features Using the MQC](#)” module.

Packets are unconditionally discarded by using the new **drop** command within the MQC. For more information about the **drop** command, see the [Cisco IOS Quality of Service Solutions Command Reference](#).



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Benefits

Enhanced System Utilization

This feature allows you to discard (drop), without any further system processing, the packets of a particular class. This function is very useful when you want to discard all the packets for nonessential applications (for instance, Internet browsing applications or unauthorized video applications) and allocate system resources to more essential applications. This feature allows the user to discard those nonessential packets and simultaneously obtain the bit and drop rate statistics for that particular class and the traffic within that class. The statistics are gathered through the CISCO-CLASS-BASED-QOS-MIB.

Restrictions

Packets are unconditionally discarded by configuring the drop action inside a traffic class (inside of a policy map). This drop action is accomplished with the new **drop** command. Note the following restrictions for configuring the drop action within a traffic class:

- The discarding action is the only action that can be configured in a traffic class. That is, no other actions can be configured in the traffic class.
- When a traffic class is configured with the **drop** command, a “child” (nested) policy cannot be configured for this specific traffic class through the **service policy** command.
- The discarding action cannot be configured for the default class known as the class-default class.

Related Features and Technologies

- Modular quality of service command-line interface (MQC)

Related Documents

- [“Applying QoS Features Using the MQC”](#) module
- [“Classifying Network Traffic”](#) module
- [“Marking Network Traffic”](#) module
- [Cisco IOS Quality of Service Solutions Command Reference](#)

Supported Platforms

Determining Platform Support Through Cisco Feature Navigator

Cisco IOS software is packaged in feature sets that are supported on specific platforms. To obtain updated information about platform support for this feature, access Cisco Feature Navigator. Cisco Feature Navigator dynamically updates the list of supported platforms as new platform support is added for the feature.

Cisco Feature Navigator is a web-based tool that enables you to determine which Cisco IOS software images support a specific set of features and which features are supported in a specific Cisco IOS image. You can search by feature or release. In the release section, you can compare releases side by side to display both the features unique to each software release and the features that releases have in common.

To access Cisco Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions at <http://www.cisco.com/register>.

Cisco Feature Navigator is updated regularly when major Cisco IOS software releases and technology releases occur. For the most current information, go to the Cisco Feature Navigator home page at the following URL:

<http://www.cisco.com/go/fn>

Availability of Cisco IOS Software Images

Platform support for particular Cisco IOS software releases is dependent on the availability of the software images for those platforms. Software images for some platforms may be deferred, delayed, or changed without prior notice. For updated information about platform support and availability of software images for each Cisco IOS software release, refer to the online release notes or, if supported, Cisco Feature Navigator.

Supported Standards, MIBs, and RFCs

Standards

None

MIBs

- CISCO-CLASS-BASED-QOS-MIB
- CISCO-CLASS-BASED-QOS-CAPABILITY-MIB

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:

<http://tools.cisco.com/ITDIT/MIBS/servlet/index>

If Cisco MIB Locator does not support the MIB information that you need, you can also obtain a list of supported MIBs and download MIBs from the Cisco MIBs page at the following URL:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

To access Cisco MIB Locator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at this URL:

<http://www.cisco.com/register>

RFCs

None

Configuration Tasks

See the following sections for configuration tasks for the Modular QoS CLI (MQC) Unconditional Packet Discard feature. Each task in the list is identified as either required or optional.

- [Configuring the Class Map](#) (required)
- [Creating a Policy Map](#) (required)
- [Attaching the Policy Map to an Interface or a VC](#) (required)
- [Verifying the Discard Action Configuration in the Traffic Class](#) (optional)

Configuring the Class Map

To configure a class map to discard packets belonging to a specific class, use the following commands beginning in global configuration mode:

	Command	Purpose
Step 1	Router (config) # class-map <i>class-map-name</i>	Specifies the name of the class map to be created. If match-all or match-any is not specified, traffic must match all the match criteria to be classified as part of the traffic class. Enters class-map configuration mode.
Step 2	Router (config-cmap) # match access-group { <i>access-group</i> name <i>access-group-name</i> }	Specifies that traffic matching the specified access group will be placed in the map class created above. This command provides just an example of the match criterion you can specify. For more information about the additional match criteria available, see the “Applying QoS Features Using the MQC” module.
Step 3	Router (config-cmap) # exit	Exits from the configuration mode.

Creating a Policy Map

To create a policy map (also sometimes referred to as a service policy or a traffic policy), use the following commands beginning in global configuration mode.

A policy map can be created using the MQC feature. For more information about creating a policy map using the MQC feature, see the [“Applying QoS Features Using the MQC”](#) module.

	Command	Purpose
Step 1	Router (config)# policy-map <i>policy-name</i>	Specifies the name of the policy map to be created. Enters policy-map configuration mode.
Step 2	Router (config-pmap)# class <i>class-name</i>	Specifies the name of the traffic class configured earlier in the “Configuring the Class Map” section above. This traffic class is used to classify traffic to the policy map. Enters policy-map class configuration mode.

	Command	Purpose
Step 3	Router (config-pmap)# drop	Discards the packets in the specified traffic class.
Step 4	Router(config-cmap)# exit	Exits policy-map configuration mode.

Attaching the Policy Map to an Interface or a VC

To attach the policy map to an interface or a virtual circuit (VC), use the following commands beginning in global configuration mode:

	Command	Purpose
Step 1	Router(config)# interface <i>type number</i> [<i>name-tag</i>]	Configures the interface type and enters interface configuration mode.
Step 2	Router(config-if)# pvc [<i>name</i>] <i>vpi/vci</i> [ilmi qsaal smds]	(Optional) Creates or assigns a name to an ATM permanent virtual circuit (PVC), and specifies the encapsulation type on an ATM PVC. Enters ATM VC configuration mode (config-if-atm-vc). This step is required only if you are attaching the policy map to an ATM PVC.
Step 3	Router(config-if)# service-policy input <i>policy-map-name</i> or Router(config-if-atm-vc)# service-policy output <i>policy-map-name</i>	Specifies the name of the policy map to be attached to the input or output direction of an interface or VC. The policy map evaluates all traffic entering or leaving that interface or VC.
Step 4	Router(config-if)# exit	Exits interface configuration mode.

Verifying the Discard Action Configuration in the Traffic Class

To verify that the discard action has been configured in the traffic class and the policy map (and to display the number of packets discarded), use the following commands in EXEC or privileged EXEC mode, as needed:

Command	Purpose
Router# show policy-map	Displays the configuration of all classes for a specified service policy map or all classes for all existing policy maps.
Router# show policy-map interface <i>interface-name</i>	Displays the packet statistics of all classes that are configured for all service policies either on the specified interface or subinterface or on a specific PVC on the interface.

Configuration Examples

This section provides the following configuration examples:

- [Configuring the Discard Action Configuration in a Traffic Class Example](#)
- [Verifying the Discard Action Configuration in the Policy Map Example](#)

Configuring the Discard Action Configuration in a Traffic Class Example

In the following sample configuration, a traffic class called “class1” has been created and configured for use in a policy-map called “policy1.” The policy-map policy1 is attached to an output serial interface 2/0. All packets matching access-group 101 are placed in a class called “c1.” Packets belonging to this class are discarded.

```
Router(config)# class-map class1
Router(config-cmap)# match access-group 101
Router(config-cmap)# policy-map policy1
Router(config-pmap)# class c1
Router(config-pmap-c)# drop
Router(config-pmap-c)# interface s2/0
Router(config-if)# service-policy output policy1
Router(config-if)# exit
```

The following sample output of the **show policy-map** command displays the contents of the policy map called “policy1.” All the packets belonging to the class called “c1” are discarded.

```
Router# show policy-map policy1

Policy Map policy1
Class c1
drop
```

Verifying the Discard Action Configuration in the Policy Map Example

The following sample output of the **show policy-map interface** command displays the statistics for the Serial2/0 interface, to which a policy map called “policy1” is attached. The discard action has been specified for all the packets belonging to a class called “c1.” In this example, 32000 bps of traffic is sent (“offered”) to the class and all of them are dropped. Therefore, the drop rate shows 32000 bps.

```
Router# show policy-map interface Serial2/0

Serial2/0

Service-policy output: policy1

Class-map: c1 (match-all)
  10184 packets, 1056436 bytes
  5 minute offered rate 32000 bps, drop rate 32000 bps
Match: ip precedence 0
drop
```

Command Reference

The following commands are introduced or modified in the feature or features documented in this module. For information about these commands, see the *Cisco IOS Quality of Service Solutions Command Reference* at http://www.cisco.com/en/US/docs/ios/qos/command/reference/qos_book.html. For information about all Cisco IOS commands, use the Command Lookup Tool at <http://tools.cisco.com/Support/CLILookup> or a Cisco IOS master commands list.

New Commands

- **drop**

Modified Commands

- **show policy-map**
- **show policy-map interface**

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