



## CHAPTER 40

# Configuring PFC QoS Statistics Data Export

This chapter describes how to configure PFC QoS statistics data export on Catalyst 6500 series switches.



### Note

For complete syntax and usage information for the commands used in this chapter, refer to the *Catalyst Supervisor Engine 32 PISA Cisco IOS Command Reference*, Release 12.2ZY, at this URL:  
<http://www.cisco.com/en/US/docs/switches/lan/catalyst6500/ios/12.2ZY/command/reference/cmdref.html>

This chapter contains these sections:

- [Understanding PFC QoS Statistics Data Export](#), page 40-1
- [PFC QoS Statistics Data Export Default Configuration](#), page 40-2
- [Configuring PFC QoS Statistics Data Export](#), page 40-2

## Understanding PFC QoS Statistics Data Export



### Note

- The PFC QoS statistics data export feature is completely separate from NetFlow Data Export and does not interact with it.
- The PFC QoS statistics data export feature supports the PFC QoS features described in [Chapter 38](#), “[Configuring PFC QoS](#),” that are implemented in the port ASICs and the PFC3B.

The PFC QoS statistics data export feature generates per-LAN-port and per-aggregate policer utilization information and forwards this information in UDP packets to traffic monitoring, planning, or accounting applications. You can enable PFC QoS statistics data export on a per-LAN-port or on a per-aggregate policer basis. The statistics data generated per port consists of counts of the input and output packets and bytes. The aggregate policer statistics consist of counts of allowed packets and counts of packets exceeding the policed rate.

The PFC QoS statistics data collection occurs periodically at a fixed interval, but you can configure the interval at which the data is exported. PFC QoS statistics collection is enabled by default, and the data export feature is disabled by default for all ports and all aggregate policers configured on the Catalyst 6500 series switch.

# PFC QoS Statistics Data Export Default Configuration

Table 40-1 shows the PFC QoS statistics data export default configuration.

**Table 40-1 PFC QoS Default Configuration**

| Feature                                         | Default Value        |
|-------------------------------------------------|----------------------|
| <b>PFC QoS Data Export</b>                      |                      |
| Global PFC QoS data export                      | Disabled             |
| Per port PFC QoS data export                    | Disabled             |
| Per named aggregate policer PFC QoS data export | Disabled             |
| Per class map policer PFC QoS data export       | Disabled             |
| PFC QoS data export time interval               | 300 seconds          |
| Export destination                              | Not configured       |
| PFC QoS data export field delimiter             | Pipe character (   ) |

## Configuring PFC QoS Statistics Data Export

These sections describe how to configure PFC QoS statistics data export:

- [Enabling PFC QoS Statistics Data Export Globally, page 40-2](#)
- [Enabling PFC QoS Statistics Data Export for a Port, page 40-3](#)
- [Enabling PFC QoS Statistics Data Export for a Named Aggregate Policer, page 40-4](#)
- [Enabling PFC QoS Statistics Data Export for a Class Map, page 40-5](#)
- [Setting the PFC QoS Statistics Data Export Time Interval, page 40-6](#)
- [Configuring PFC QoS Statistics Data Export Destination Host and UDP Port, page 40-7](#)
- [Setting the PFC QoS Statistics Data Export Field Delimiter, page 40-9](#)

### Enabling PFC QoS Statistics Data Export Globally

To enable PFC QoS statistics data export globally, perform this task:

|               | Command                                             | Purpose                                           |
|---------------|-----------------------------------------------------|---------------------------------------------------|
| <b>Step 1</b> | Router(config)# <b>mls qos statistics-export</b>    | Enables PFC QoS statistics data export globally.  |
|               | Router(config)# <b>no mls qos statistics-export</b> | Disables PFC QoS statistics data export globally. |
| <b>Step 2</b> | Router(config)# <b>end</b>                          | Exits configuration mode.                         |
| <b>Step 3</b> | Router# <b>show mls qos statistics-export info</b>  | Verifies the configuration.                       |

This example shows how to enable PFC QoS statistics data export globally and verify the configuration:

```
Router# configure terminal
Router(config)# mls qos statistics-export
Router(config)# end
```

```
% Warning: Export destination not set.
% Use 'mls qos statistics-export destination' command to configure the export destination
Router# show mls qos statistics-export info
QoS Statistics Data Export Status and Configuration information
-----
Export Status : enabled
Export Interval : 300 seconds
Export Delimiter : |
Export Destination : Not configured
Router#
```

**Note**

You must enable PFC QoS statistics data export globally for other PFC QoS statistics data export configuration to take effect.

## Enabling PFC QoS Statistics Data Export for a Port

To enable PFC QoS statistics data export for a port, perform this task:

|               | Command                                                                    | Purpose                                               |
|---------------|----------------------------------------------------------------------------|-------------------------------------------------------|
| <b>Step 1</b> | Router(config)# <b>interface</b> <i>type</i> <sup>1</sup> <i>slot/port</i> | Selects the interface to configure.                   |
| <b>Step 2</b> | Router(config-if)# <b>mls qos statistics-export</b>                        | Enables PFC QoS statistics data export for the port.  |
|               | Router(config-if)# <b>no mls qos statistics-export</b>                     | Disables PFC QoS statistics data export for the port. |
| <b>Step 3</b> | Router(config)# <b>end</b>                                                 | Exits configuration mode.                             |
| <b>Step 4</b> | Router# <b>show mls qos statistics-export info</b>                         | Verifies the configuration.                           |

1. *type* = ethernet, fastethernet, gigabitethernet, or tengigabitethernet

This example shows how to enable PFC QoS statistics data export on FastEthernet port 5/24 and verify the configuration:

```
Router# configure terminal
Router(config)# interface fastethernet 5/24
Router(config-if)# mls qos statistics-export
Router(config-if)# end
Router# show mls qos statistics-export info
QoS Statistics Data Export Status and Configuration information
-----
Export Status : enabled
Export Interval : 300 seconds
Export Delimiter : |
Export Destination : Not configured

QoS Statistics Data Export is enabled on following ports:
-----
FastEthernet5/24
Router#
```

When enabled on a port, PFC QoS statistics data export contains the following fields, separated by the delimiter character:

- Export type (“1” for a port)
- Slot/port
- Number of ingress packets
- Number of ingress bytes

- Number of egress packets
- Number of egress bytes
- Time stamp

### Enabling PFC QoS Statistics Data Export for a Named Aggregate Policer

To enable PFC QoS statistics data export for a named aggregate policer, perform this task:

|        | Command                                                                                             | Purpose                                                                |
|--------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Step 1 | Router(config)# <b>mls qos statistics-export aggregate-policer</b> <i>aggregate_policer_name</i>    | Enables PFC QoS statistics data export for a named aggregate policer.  |
|        | Router(config)# <b>no mls qos statistics-export aggregate-policer</b> <i>aggregate_policer_name</i> | Disables PFC QoS statistics data export for a named aggregate policer. |
| Step 2 | Router(config)# <b>end</b>                                                                          | Exits configuration mode.                                              |
| Step 3 | Router# <b>show mls qos statistics-export info</b>                                                  | Verifies the configuration.                                            |

This example shows how to enable PFC QoS statistics data export for an aggregate policer named `aggr1M` and verify the configuration:

```

Router# configure terminal
Router(config)# mls qos statistics-export aggregate-policer aggr1M
Router(config)# end
Router# show mls qos statistics-export info
QoS Statistics Data Export Status and Configuration information
-----
Export Status : enabled
Export Interval : 300 seconds
Export Delimiter : |
Export Destination : Not configured

QoS Statistics Data Export is enabled on following ports:
-----
FastEthernet5/24

QoS Statistics Data export is enabled on following shared aggregate policers:
-----
aggr1M
Router#
    
```

When enabled for a named aggregate policer, PFC QoS statistics data export contains the following fields, separated by the delimiter character:

- Export type (“3” for an aggregate policer)
- Aggregate policer name
- Direction (“in”)
- PFC3B slot number
- Number of in-profile bytes
- Number of bytes that exceed the CIR
- Number of bytes that exceed the PIR
- Time stamp

## Enabling PFC QoS Statistics Data Export for a Class Map

To enable PFC QoS statistics data export for a class map, perform this task:

|        | Command                                                                            | Purpose                                                  |
|--------|------------------------------------------------------------------------------------|----------------------------------------------------------|
| Step 1 | Router(config)# <b>mls qos statistics-export class-map</b> <i>classmap_name</i>    | Enables PFC QoS statistics data export for a class map.  |
|        | Router(config)# <b>no mls qos statistics-export class-map</b> <i>classmap_name</i> | Disables PFC QoS statistics data export for a class map. |
| Step 2 | Router(config)# <b>end</b>                                                         | Exits configuration mode.                                |
| Step 3 | Router# <b>show mls qos statistics-export info</b>                                 | Verifies the configuration.                              |

This example shows how to enable PFC QoS statistics data export for a class map named class3 and verify the configuration:

```
Router# configure terminal
Router(config)# mls qos statistics-export class-map class3
Router(config)# end
Router# show mls qos statistics-export info
QoS Statistics Data Export Status and Configuration information
-----
Export Status : enabled
Export Interval : 300 seconds
Export Delimiter : |
Export Destination : Not configured

QoS Statistics Data Export is enabled on following ports:
-----
FastEthernet5/24

QoS Statistics Data export is enabled on following shared aggregate policers:
-----
aggr1M

QoS Statistics Data Export is enabled on following class-maps:
-----
class3
Router#
```

When enabled for a class map, PFC QoS statistics data export contains the following fields, separated by the delimiter character:

- For data from a physical port:
  - Export type (“4” for a classmap and port)
  - Class map name
  - Direction (“in”)
  - Slot/port
  - Number of in-profile bytes
  - Number of bytes that exceed the CIR
  - Number of bytes that exceed the PIR
  - Time stamp

- For data from a VLAN interface:
  - Export type (“5” for a class map and VLAN)
  - Classmap name
  - Direction (“in”)
  - PFC3B slot number
  - VLAN ID
  - Number of in-profile bytes
  - Number of bytes that exceed the CIR
  - Number of bytes that exceed the PIR
  - Time stamp
- For data from a port channel interface:
  - Export type (“6” for a class map and port channel)
  - Class map name
  - Direction (“in”)
  - PFC3B slot number
  - Port channel ID
  - Number of in-profile bytes
  - Number of bytes that exceed the CIR
  - Number of bytes that exceed the PIR
  - Time stamp

## Setting the PFC QoS Statistics Data Export Time Interval

To set the time interval for the PFC QoS statistics data export, perform this task:

|        | Command                                                                          | Purpose                                                                      |
|--------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Step 1 | Router(config)# <b>mls qos statistics-export interval interval_in_seconds</b>    | Sets the time interval for the PFC QoS statistics data export.               |
|        | Router(config)# <b>no mls qos statistics-export interval interval_in_seconds</b> | Reverts to the default time interval for the PFC QoS statistics data export. |
| Step 2 | Router(config)# <b>end</b>                                                       | Exits configuration mode.                                                    |
| Step 3 | Router# <b>show mls qos statistics-export info</b>                               | Verifies the configuration.                                                  |

This example shows how to set the PFC QoS statistics data export interval and verify the configuration:

```
Router# configure terminal
Router(config)# mls qos statistics-export interval 250
Router(config)# end
```

```

Router# show mls qos statistics-export info
QoS Statistics Data Export Status and Configuration information
-----
Export Status : enabled
Export Interval : 250 seconds
Export Delimiter : |
Export Destination : Not configured

QoS Statistics Data Export is enabled on following ports:
-----
FastEthernet5/24

QoS Statistics Data export is enabled on following shared aggregate policers:
-----
aggr1M

QoS Statistics Data Export is enabled on following class-maps:
-----
class3
Router#

```

## Configuring PFC QoS Statistics Data Export Destination Host and UDP Port

To configure the PFC QoS statistics data export destination host and UDP port number, perform this task:

|        | Command                                                                                                                                                                            | Purpose                                                                             |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Step 1 | Router(config)# <b>mls qos statistics-export destination</b> {host_name   host_ip_address}<br>{port port_number   syslog<br>[facility facility_name]<br>[severity severity_value]} | Configures the PFC QoS statistics data export destination host and UDP port number. |
|        | Router(config)# <b>no mls qos statistics-export destination</b>                                                                                                                    | Clears configured values.                                                           |
| Step 2 | Router(config)# <b>end</b>                                                                                                                                                         | Exits configuration mode.                                                           |
| Step 3 | Router# <b>show mls qos statistics-export info</b>                                                                                                                                 | Verifies the configuration.                                                         |



### Note

When the PFC QoS data export destination is a syslog server, the exported data is prefaced with a syslog header.

Table 40-2 lists the supported PFC QoS data export facility and severity parameter values.

**Table 40-2 Supported PFC QoS Data Export Facility Parameter Values**

| Name   | Definition                       | Name   | Definition             |
|--------|----------------------------------|--------|------------------------|
| kern   | kernel messages                  | cron   | cron/at subsystem      |
| user   | random user-level messages       | local0 | reserved for local use |
| mail   | mail system                      | local1 | reserved for local use |
| daemon | system daemons                   | local2 | reserved for local use |
| auth   | security/authentication messages | local3 | reserved for local use |
| syslog | internal syslogd messages        | local4 | reserved for local use |

**Table 40-2 Supported PFC QoS Data Export Facility Parameter Values (continued)**

| Name | Definition             | Name   | Definition             |
|------|------------------------|--------|------------------------|
| lpr  | line printer subsystem | local5 | reserved for local use |
| news | netnews subsystem      | local6 | reserved for local use |
| uucp | uucp subsystem         | local7 | reserved for local use |

Table 40-3 lists the supported PFC QoS data export severity parameter values.

**Table 40-3 Supported PFC QoS Data Export Severity Parameter Values**

| Severity Parameter |        |                                  |
|--------------------|--------|----------------------------------|
| Name               | Number | Definition                       |
| emerg              | 0      | system is unusable               |
| alert              | 1      | action must be taken immediately |
| crit               | 2      | critical conditions              |
| err                | 3      | error conditions                 |
| warning            | 4      | warning conditions               |
| notice             | 5      | normal but significant condition |
| info               | 6      | informational                    |
| debug              | 7      | debug-level messages             |

This example shows how to configure 172.20.52.3 as the destination host and syslog as the UDP port number and verify the configuration:

```
Router# configure terminal
Router(config)# mls qos statistics-export destination 172.20.52.3 syslog
Router(config)# end
Router# show mls qos statistics-export info
QoS Statistics Data Export Status and Configuration information
-----
Export Status : enabled
Export Interval : 250 seconds
Export Delimiter : |
Export Destination : 172.20.52.3, UDP port 514 Facility local6, Severity debug

QoS Statistics Data Export is enabled on following ports:
-----
FastEthernet5/24

QoS Statistics Data export is enabled on following shared aggregate policers:
-----
aggr1M

QoS Statistics Data Export is enabled on following class-maps:
-----
class3
```



## Setting the PFC QoS Statistics Data Export Field Delimiter

To set the PFC QoS statistics data export field delimiter, perform this task:

|        | Command                                                                               | Purpose                                                               |
|--------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Step 1 | Router(config)# <b>mls qos statistics-export delimiter</b> <i>delimiter_character</i> | Sets the PFC QoS statistics data export field delimiter.              |
|        | Router(config)# <b>no mls qos statistics-export delimiter</b>                         | Reverts to the default PFC QoS statistics data export field delimiter |
| Step 2 | Router(config)# <b>end</b>                                                            | Exits configuration mode.                                             |
| Step 3 | Router# <b>show mls qos statistics-export info</b>                                    | Verifies the configuration.                                           |

This example shows how to set the PFC QoS statistics data export field delimiter and verify the configuration:

```
Router# configure terminal
Router(config)# mls qos statistics-export delimiter ,
Router(config)# end
Router# show mls qos statistics-export info
QoS Statistics Data Export Status and Configuration information
-----
Export Status : enabled
Export Interval : 250 seconds
Export Delimiter : ,
Export Destination : 172.20.52.3, UDP port 514 Facility local6, Severity debug

QoS Statistics Data Export is enabled on following ports:
-----
FastEthernet5/24

QoS Statistics Data export is enabled on following shared aggregate policers:
-----
aggr1M

QoS Statistics Data Export is enabled on following class-maps:
-----
class3
```

