

Chapter 10

Class-of-Service Operational Mode Commands

Table 16 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot class of service (CoS). In the table, the commands are grouped by functionality. In the remainder of this chapter, they are explained alphabetically.

Table 16: Commands for Monitoring and Troubleshooting Class of Service

Task	Task or Information to Monitor	CLI Command
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Task	Task or Information to Monitor	CLI Command
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show class-of-service

Syntax show class-of-service

Description Display entire CoS configuration, including system-chosen defaults.

Executing this command is equivalent to executing all show class-of-service commands in succession.

show class-of-service classifier

- Syntax** show class-of-service classifier <name *name*>
<type dscp | type dscp-ipv6 | type exp | type ieee-802.1 | type inet-precedence>
- Description** For each classifier, display mapping of code point value to forwarding class and loss priority.
- Options** none—Display all classifiers.
- name *name*—(Optional) Display named classifier.
- type dscp—(Optional) Display all classifiers of the Differentiated Services code point (DSCP) type.
- type dscp-ipv6—(Optional) Display all classifiers of the DSCP for IPv6 type.
- type exp—(Optional) Display all classifiers of the MPLS EXP type.
- type ieee-802.1—(Optional) Display all classifiers of the ieee-802.1 type.
- type inet-precedence—(Optional) Display all classifiers of the inet-precedence type.
- Required Privilege Level** view
- Output Fields** Classifier— Name of the classifier.
- Code point type—Type of the classifier: exp, dscp, dscp-ipv6, ieee-802.1, or inet-precedence.
- Index—Internal index of the classifier.
- Code point—Code point value used for classification.
- Forwarding class—The classification of a packet affecting the forwarding, scheduling, and marking policies applied as the packet transits the router.
- Loss priority—Loss priority value used for classification.

Sample Output

```

user@host> show class-of-service classifier type ieee-802.1
Classifier: ieee802.1-default, Code point type: ieee-802.1, Index: 3
Code Point      Forwarding Class      Loss priority
000             best-effort           low
001             best-effort           high
010             expedited-forwarding  low
011             expedited-forwarding  high
100             assured-forwarding    low
101             assured-forwarding    high
110             network-control       low
111             network-control       high

Classifier: users-ieee802.1, Code point type: ieee-802.1
Code point      Forwarding class      Loss priority
100             expedited-forwarding  low

```

show class-of-service code-point-aliases

Syntax show class-of-service code-point-alias <dscp | dscp-ipv6 | exp | ieee-802.1 | inet-precedence>

Description Display mapping of code point aliases to corresponding bit patterns.

Options none—Display code point aliases of all code point types.

dscp—(Optional) Display Differentiated Services code point (DSCP) aliases.

dscp-ipv6—(Optional) Display IPv6 DSCP aliases.

exp—(Optional) Display MPLS EXP code point aliases.

ieee-802.1—(Optional) Display IEEE-802.1 code point aliases.

inet-precedence—(Optional) Display IPv4 precedence code point aliases.

Required Privilege Level view

Output Fields Code point type—Type of the code points displayed: dscp, dscp-ipv6, exp, ieee-802.1, or inet-precedence.

Alias—Alias for a bit pattern.

Bit pattern—Bit pattern for which the alias is displayed.

Sample Output user@host> show class-of-service code-point-aliases exp

```
Code point type: exp
Alias      Bit pattern
af11      100
af12      101
be        000
be1       001
cs6       110
cs7       111
ef        010
ef1       011
nc1       110
nc2       111
```

show class-of-service drop-profile

Syntax show class-of-service drop-profile <profile-name *profile-name*>

Description Display data points for each Random Early Detection (RED) drop profile.

Options none—Display all drop profiles.

profile-name profile-name—(Optional) Display named profile only.

Required Privilege Level view

Output Fields Drop profile—Name of a drop profile.

Type—Type of this drop profile: discrete or interpolated.

Index—Internal index of this drop profile.

Fill level—Percentage fullness of a queue.

Drop probability—Drop probability at this fill level.

Sample Output

```
user@host> show class-of-service drop-profile
Drop profile: <default-drop-profile>, Type: discrete, Index: 1
  Fill level  Drop probability
    100         100
Drop profile: user-drop-profile, Type: interpolated, Index: 2989
  Fill level  Drop probability
     0         0
     1         1
     2         2
     4         4
     5         5
     6         6
     8         8
    10        10
    12        15
    14        20
    15        23
... 64 entries total
    90        96
    92        96
    94        97
    95        98
    96        98
    98        99
    99        99
   100       100
```

show class-of-service fabric scheduler-map

Syntax	show class-of-service fabric scheduler-map
Description	(T-series and M320 platforms only) Display mapping of scheduler to fabric traffic priority and summary of scheduler parameters for each priority.
Required Privilege Level	view
Output Fields	<p>Fabric priority—Indicates the fabric traffic priority. Currently, two priorities are supported, low and high.</p> <p>Scheduler—Name of the scheduler.</p> <p>Index—Index of the indicated object. Objects that have indexes in this output include schedulers and drop profiles.</p> <p>Drop profiles—Display the assignment of drop profile by name and index to a given loss priority and protocol pair.</p> <p>Loss priority—Packet loss priority for drop profile assignment.</p> <p>Protocol—Transport protocol for drop profile assignment.</p> <p>Name—Name of the drop profile.</p>

Sample Output

```

user@host> show class-of-service fabric scheduler-map
Fabric priority: low
Scheduler: fab-ef-scheduler, Index: 60211
Drop profiles:
  Loss priority  Protocol  Index  Name
  Low           non-TCP  44321  fab-ef-profile
  Low           TCP      44321  fab-ef-profile
  High          non-TCP  44321  fab-ef-profile
  High          TCP      44321  fab-ef-profile

Fabric priority: high
Scheduler: fab-ef-scheduler, Index: 60211
Drop profiles:
  Loss priority  Protocol  Index  Name
  Low           non-TCP  44321  fab-ef-profile
  Low           TCP      44321  fab-ef-profile
  High          non-TCP  44321  fab-ef-profile
  High          TCP      44321  fab-ef-profile

```

show class-of-service forwarding-class

Syntax show class-of-service forwarding-class

Description Display mapping of forwarding class name to queue number.

Required Privilege Level view

Output Fields Forwarding class—The classification of a packet affecting the forwarding, scheduling, and marking policies applied as the packet transits the router.

Queue—Queue corresponding to the forwarding class name.

Sample Output

```
user@host> show class-of-service forwarding-class
Forwarding class      Queue      Restricted Queue      Fabric Priority
my-forwarding-class  0          2                      low
his-forwarding-class 1          2                      low
her-forwarding-class 2          2                      low
the-forwarding-class 3          3                      low
```

show class-of-service forwarding-table

Syntax show class-of-service forwarding-table

Description Display entire class-of-service configuration as it exists in the forwarding table. Executing this command is equivalent to executing all show class-of-service forwarding-table commands in succession.

Required Privilege Level view

Output Fields and Sample Output

- show class-of-service forwarding-table classifier on page 254
- show class-of-service forwarding-table classifier mapping on page 255
- show class-of-service forwarding-table drop-profile on page 256
- show class-of-service forwarding-table fabric scheduler-map on page 257
- show class-of-service forwarding-table rewrite-rule on page 258
- show class-of-service forwarding-table rewrite-rule mapping on page 259
- show class-of-service forwarding-table scheduler-map on page 260

show class-of-service forwarding-table classifier

Syntax show class-of-service forwarding-table classifier

Description Display mapping of code point value to queue number and loss priority for each classifier as it exists in the forwarding table.

Required Privilege Level view

Output Fields Classifier table index—Index of the classifier table.

Entries—Total number of entries.

Table type—Type of code points in the table: DSCP, EXP, IEEE 802.1, IPv4 precedence, or IPv6 DSCP.

Entry #—Entry number.

Code point—Code point value used for classification.

Queue #—The queue in which the code point is assigned.

PLP—Packet loss priority value used for classification.

Sample Output user@host> **show class-of-service forwarding-table classifier**
Classifier table index: 62436, # entries: 64, Table type: DSCP

Entry #	Code point	Queue #	PLP
0	000000	0	0
1	000001	0	0
2	000010	0	0
3	000011	0	0
4	000100	0	0
5	000101	0	0
6	000110	0	0
7	000111	0	0
8	001000	0	0
9	001001	0	0
10	001010	1	1
11	001011	0	0
...			
60	111100	0	0
61	111101	0	0
62	111110	0	0
63	111111	0	0

show class-of-service forwarding-table classifier mapping

Syntax	show class-of-service forwarding-table classifier mapping
Description	For each logical interface, display either the table index of the classifier for a given code point type or the queue number (if it is a fixed classification) in the forwarding table.
Options	none
Required Privilege Level	view
Output Fields	Table index/—If type is Fixed, this is the queue number to which the interface is mapped; for all other types, this is the classifier index number. Interface—Name of logical interface. Index—Logical interface index. Q num—Queue number to which this entry is assigned. Table type—Type of code points in the table: DSCP, EXP, IEEE 802.1, IPv4 precedence, or IPv6 DSCP.

Sample Output user@host> **show class-of-service forwarding-table classifier mapping**

```

Table index/
Interface  Index  Q num  Table type
so-5/0/0.0  10   62436  DSCP
so-0/1/0.0  11   62436  DSCP
so-0/2/0.0  12    1   Fixed
so-0/2/1.0  13   62436  DSCP
so-0/2/1.0  13   62437  IEEE 802.1
so-0/2/2.0  14   62436  DSCP
so-0/2/2.0  14   62438  IPv4 precedence

```

show class-of-service forwarding-table drop-profile

Syntax show class-of-service forwarding-table drop-profile

Description Display the data points of all Random Early Detection (RED) drop profiles as they exist in the forwarding table.

Required Privilege Level view

Output Fields RED drop profile index—Index of this drop profile.

entries—Number of entries in a particular RED drop profile index.

Entry—Drop profile entry number.

Fullness(%)—Percentage fullness of a queue.

Drop Probability(%)—Drop probability at this fill level.

Sample Output user@host> **show class-of-service forwarding-table drop-profile**

RED drop profile index: 4, # entries: 1

Drop

Entry	Fullness(%)	Probability(%)
0	100	100

RED drop profile index: 8742, # entries: 3

Drop

Entry	Fullness(%)	Probability(%)
0	10	10
1	20	20
2	30	30

RED drop profile index: 24627, # entries: 64

Drop

Entry	Fullness(%)	Probability(%)
0	0	0
1	1	1
2	2	2
3	4	4
...		
61	98	99
62	99	99
63	100	100

RED drop profile index: 25393, # entries: 64

Drop

Entry	Fullness(%)	Probability(%)
0	0	0
1	1	1
2	2	2
3	4	4
...		
61	98	98
62	99	99
63	100	100

show class-of-service forwarding-table fabric scheduler-map

Syntax	show class-of-service forwarding-table fabric scheduler-map
Description	(T-series and M320 platforms only) Display the scheduler map information as it is in the forwarding table for switch fabric.
Required Privilege Level	view
Output Fields	<p>Fabric priority—Indicates the fabric traffic priority. Currently only two priorities are supported, low and high.</p> <p>Scheduler index—Index of scheduler applied to a fabric traffic priority.</p> <p>PLP high—Drop profile index for high-packet loss priority (PLP) packets.</p> <p>PLP low—Drop profile index for low-PLP packets.</p> <p>TCP PLP high—Drop profile index for low-PLP and Transmission Control Protocol (TCP) packets.</p> <p>TCP PLP low—Drop profile index for high-PLP and TCP packets.</p> <p>For more information on how PLP priority is assigned to packets, see the <i>JUNOS Network Interfaces and Class of Service Configuration Guide</i>.</p>
Sample Output	<pre>user@host> show class-of-service forwarding-table fabric scheduler-map Fabric priority: low Scheduler index: 60211 PLP high: 44321, PLP low: 44321, TCP PLP high: 44321, TCP PLP low: 44321 Fabric priority: high Scheduler index: 60211 PLP high: 44321, PLP low: 44321, TCP PLP high: 44321, TCP PLP low: 44321</pre>

show class-of-service forwarding-table rewrite-rule

Syntax show class-of-service forwarding-table rewrite-rule

Description Display mapping of queue number and loss priority to code point value for each rewrite rule as exists in the forwarding table.

Required Privilege Level view

Output Fields Rewrite table index—Index for this rewrite rule.

entries—Number of entries in this rewrite rule.

Table type—Type of table: DSCP, EXP, EXP-PUSH-3, EXP-SWAP-PUSH-2, IEEE 802.1, IPv4 precedence, IPv6 DSCP, or Fixed.

Q#—Queue number this entry is assigned to.

Low bits—Code point value for low-priority loss profile.

State—State of this code point: enabled (rewritten) or disabled.

High bits—Code point value for high priority loss profile.

Sample Output user@host> **show class-of-service forwarding-table rewrite-rule**

Rewrite table index: 3753, # entries: 4, Table type: DSCP

Q#	Low bits	State	High bits	State
0	000111	Enabled	001010	Enabled
2	000000	Disabled	001100	Enabled
1	101110	Enabled	110111	Enabled
3	110000	Enabled	111000	Enabled

show class-of-service forwarding-table rewrite-rule mapping

Syntax show class-of-service forwarding-table rewrite-rule mapping

Description For each logical interface, display the table identifier of the rewrite rule mapping for each given code point type.

Required Privilege Level view

Output Fields Interface—Name of logical interface.

Index—Logical interface index.

Table index—Rewrite table index.

Type—Type of classifier: DSCP, EXP, EXP-PUSH-3, EXP-SWAP-PUSH-2, IEEE 802.1, IPv4 precedence, IPv6 DSCP, or Fixed..

Sample Output user@host> **show class-of-service forwarding-table rewrite-rule mapping**

Interface	Index	Table index	Type
so-5/0/0.0	10	3753	DSCP
so-0/1/0.0	11	3753	DSCP
so-0/2/0.0	12	3753	DSCP
so-0/2/1.0	13	3753	DSCP
so-0/2/2.0	14	3753	DSCP
so-0/2/3.0	15	3753	DSCP

show class-of-service forwarding-table scheduler-map

Syntax	show class-of-service forwarding-table scheduler-map
Description	For each physical interface, display the scheduler map information as it is in the forwarding table.
Options	none
Required Privilege Level	view
Output Fields	<p>Interface—Name of the physical interface.</p> <p>Index—Physical interface index.</p> <p>Map index—Scheduler map index.</p> <p>Num of queues—Number of queues defined in this scheduler map.</p> <p>Entry—Number of this entry in the scheduler map.</p> <p>Scheduler index—Scheduler policy index.</p> <p>Queue #—The queue number this entry is applied to.</p> <p>Tx rate—Configured transmit rate of the scheduler (in bps). The rate is a percentage of the total interface bandwidth, or the keyword remainder, which indicates that the scheduler should receive the remaining bandwidth of the interface.</p> <p>Max buffer delay—Amount of transmit delay (in milliseconds) or buffer size of the queue. This amount is a percentage of the total interface buffer allocation or by the keyword remainder, which indicates that the buffer should be sized according to what remains after other scheduler buffer allocations.</p> <p>High priority is set—If this line appears in the output, the queue priority is high; otherwise it is low.</p> <p>PLP high—Drop profile index for high-priority packet loss profile.</p> <p>PLP low—Drop profile index for low-priority packet loss profile.</p> <p>TCP PLP high—Drop profile index for high-priority TCP packet loss profile.</p> <p>TCP PLP low—Drop profile index for low-priority TCP packet loss profile.</p> <p>Policy is exact—If this line appears in the output, exact rate limiting is enabled; otherwise no rate limiting is enabled.</p>

Sample Output

```

user@host> show class-of-service forwarding-table scheduler-map
Interface: so-5/0/0 (Index: 9, Map index: 17638, Num of queues: 2):
Entry 0 (Scheduler index: 6090, Queue #: 0):
  Tx rate: 0 Kb (30%), Max buffer delay: 39 bytes (0%)
  Priority low
  PLP high: 25393, PLP low: 24627, TCP PLP high: 25393, TCP PLP low:8742
  Policy is exact
Entry 1 (Scheduler index: 38372, Queue #: 1):
  Traffic chunk: Max = 0 bytes, Min = 0 bytes
  Tx rate: 0 Kb (40%), Max buffer delay: 68 bytes (0%)
  Priority high
  PLP high: 25393, PLP low: 24627, TCP PLP high: 25393, TCP PLP low: 8742

Interface: at-6/1/0 (Index: 10, Map index: 17638, Num of queues: 2):
Entry 0 (Scheduler index: 6090, Queue #: 0):
  Traffic chunk: Max = 0 bytes, Min = 0 bytes
  Tx rate: 0 Kb (30%), Max buffer delay: 39 bytes (0%)
  Priority high
  PLP high: 25393, PLP low: 24627, TCP PLP high: 25393, TCP PLP low: 8742
Entry 1 (Scheduler index: 38372, Queue #: 1):
  Traffic chunk: Max = 0 bytes, Min = 0 bytes
  Tx rate: 0 Kb (40%), Max buffer delay: 68 bytes (0%)
  Priority low
  PLP high: 25393, PLP low: 24627, TCP PLP high: 25393, TCP PLP low: 8742

```

show class-of-service interface

- Syntax** show class-of-service interface *type-fpc/pic/port*
- Description** Display the logical and physical interface associations for the classifier, rewrite rules, and scheduler map objects.
- Options** none—Display CoS associations for physical and logical interfaces.
- type-fpc/pic/port*—(Optional) Display CoS associations for named physical and logical interfaces.
- Required Privilege Level** view
- Output Fields**
- Physical interface—Name of a physical interface.
 - Index—Index of this interface or the internal index of this object.
 - Queues supported—Number of queues you can configure on the interface.
 - Queues in use—Number of queues currently configured.
 - Scheduler map—Name of the scheduler map associated with this interface.
 - Logical interface—Name of a logical interface.
 - Shaping rate—Maximum transmission rate on the interface.
 - Object —Category of an object: Classifier, Scheduler-map, or Rewrite.
 - Name—Name of an object.
 - Type—Type of an object: dscp, dscp-ipv6, exp, ieee-802.1., ip, or inet-precedence.

Sample Output

```
user@host> show class-of-service interface so-0/2/3
Physical interface: so-0/2/3, Index: 135
Queues supported: 8, Queues in use: 4
Scheduler map: <default>, Index: 2032638653
```

```
Logical interface: fe-0/0/1.0, Index: 68
Shaping rate: 32000
Object   Name           Type           Index
Scheduler-map <default>           27
Rewrite  exp-default    exp            21
Classifier exp-default    exp            5
Classifier ipprec-compatibility ip              8
```

```
user@host> show class-of-service interface so-0/2/3.0
Logical interface: so-0/2/3.0, Index: 68
Shaping rate: 32000
Object   Name           Type           Index
Scheduler-map <default>           27
Rewrite  exp-default    exp            21
Classifier exp-default    exp            5
Classifier ipprec-compatibility ip              8
```

show class-of-service rewrite-rule

- Syntax** show class-of-service rewrite-rule <name *name*>
<type dscp | type dscp-ipv6 | type exp | type inet-precedence>
- Description** Display mapping of forwarding class and loss priority to code point value.
- Options** none—Display all rewrite rules.
- name *name*—(Optional) Display named rewrite rule.
- type dscp—(Optional) Display named rewrite rule of type dscp.
- type dscp-ipv6—(Optional) Display named rewrite rule of type dscp-ipv6.
- type exp—(Optional) Display named rewrite rule of type exp.
- type inet-precedence—(Optional) Display named rewrite rule of type inet-precedence.
- Required Privilege Level** view
- Output Fields** Rewrite rule—Name of a rewrite rule.
- Code point type—Type of this rewrite rule: exp, dscp, dscp-ipv6, or inet-precedence.
- Forwarding class—The classification of a packet affecting the forwarding, scheduling, and marking policies applied as the packet transits the router.
- Index—Internal index for this particular rewrite rule.
- Loss priority—Loss priority for rewriting.
- Code point—Code point value to rewrite.
- Rewrite rule—Name of a rewrite rule.

Sample Output

```

user@host> show class-of-service rewrite-rule type dscp
Rewrite rule: dscp-default, Code point type: dscp
  Forwarding class      Loss priority  Code point
  gold                  high          000000
  silver                low           110000
  silver                high          111000
  bronze                low           001010
  bronze                high          001100
  lead                  high          101110

Rewrite rule: abc-dscp-rewrite, Code point type: dscp, Index: 3245
  Forwarding class      Loss priority  Code point
  gold                  low           000111
  gold                  high          001010
  silver                low           110000
  silver                high          111000
  bronze                high          001100
  lead                  low           101110
  lead                  high          110111

```

show class-of-service scheduler-map

Syntax	show class-of-service scheduler-map <name>
Description	Display mapping of scheduler to forwarding class and summary of scheduler parameters for each entry.
Options	<p>none—Display all scheduler maps.</p> <p>name—(Optional) Display summary of scheduler parameters for each forwarding class the named scheduler is assigned.</p>
Required Privilege Level	view
Output Fields	<p>Scheduler map—Name of the scheduler map.</p> <p>Index—Index of the indicated object. Objects having indexes in this output include scheduler maps, schedulers, and drop profiles.</p> <p>Scheduler—Name of the scheduler.</p> <p>Forwarding class—The classification of a packet affecting the forwarding, scheduling, and marking policies applied as the packet transits the router.</p> <p>Transmit Rate—Configured transmit rate of the scheduler (in bps). The rate is a percentage of the total interface bandwidth, or the keyword remainder, which indicates that the scheduler should receive the remaining bandwidth of the interface.</p> <p>Rate Limit—Rate limiting configuration of the queue. Possible values are none, meaning no rate limiting, and exact, meaning the queue will only transmit at the configured rate.</p> <p>Maximum buffer delay—The amount of transmit delay (in milliseconds) or buffer size of the queue, as a percentage of the total interface buffer allocation or by the keyword “remainder.” This indicates that the buffer should be sized according to what remains after other scheduler buffer allocations.</p> <p>Priority—Scheduling priority; possible values include low and high.</p> <p>Drop profiles—This table shows the assignment of drop profile by name and index to a given loss priority and protocol pair.</p> <p>Loss priority—Packet loss priority for drop profile assignment.</p> <p>Protocol—Transport protocol for drop profile assignment.</p> <p>Name—Name of the drop profile.</p>

Sample Output

```
user@host> show class-of-service scheduler-map
```

```
Scheduler map: dd-scheduler-map, Index: 84
```

```
Scheduler: aa-scheduler, Index: 8721, Forwarding class: aa-forwarding-class
```

```
Transmit rate: 30 percent, Rate Limit: none, Maximum buffer delay: 39 ms,
```

```
Priority: high
```

```
Drop profiles:
```

Loss priority	Protocol	Index	Name
Low	non-TCP	8724	aa-drop-profile
Low	TCP	9874	bb-drop-profile
High	non-TCP	8833	cc-drop-profile
High	TCP	8484	dd-drop-profile

```
Scheduler: bb-scheduler, Forwarding class: aa-forwarding-class
```

```
Transmit rate: 40 percent, Rate limit: none, Maximum buffer delay: 68 ms,
```

```
Priority: high
```

```
Drop profiles:
```

Loss priority	Protocol	Index	Name
Low	non-TCP	8724	aa-drop-profile
Low	TCP	9874	bb-drop-profile
High	non-TCP	8833	cc-drop-profile
High	TCP	8484	dd-drop-profile

show interfaces extensive (CoS-related attributes only)

Syntax	show interfaces extensive <interface-name <i>interface-name</i> >
Description	Display CoS statistics for physical interfaces.
Options	<p>none—Display CoS queue statistics for all physical interfaces.</p> <p>interface-name <i>interface-name</i>—(Optional) Name of physical interface to be displayed.</p>
Required Privilege Level	view
Output Fields (related to CoS)	<p>Physical interface—Name of the physical interface.</p> <p>Queue counters—Queue number and its associated forwarding class designation.</p> <p>Queued packets—Number of packets queued to the given queue.</p> <p>Transmitted packets—Number of packets transmitted by the given queue.</p> <p>RED dropped packets—Number of Random Early Detection (RED) dropped packets.</p> <p>PFE configuration—Information about how the Packet Forwarding Engine is configured.</p> <p>Destination slot—Slot the card is plugged into.</p> <p>CoS transmit queue—CoS transmit queue number and its associated forwarding class designation.</p> <p>Bandwidth%—Configured bandwidth as percentage of the specified queue.</p> <p>Bandwidth bps—Configured bandwidth, in bits per second (bps).</p> <p>Buffer%—Configured buffer percentage of the specified queue.</p> <p>Buffer bytes—Configured size of the queue, in bytes.</p> <p>Priority—The queue priority. Possible values are low, high, none or exact. None indicates no rate limiting and exact indicates the queue will only transmit at the configured rate.</p> <p>Limit—Rate-limiting configuration of the queue. Possible values are none, meaning no rate limiting, and exact, meaning the queue will only transmit at the configured rate.</p> <p>Dropped packets—Number of packets dropped by the specified queue due to RED or tail drop.</p>

**Sample Output
(related to CoS)**

```

user@host> show interfaces extensive ge-0/0/0
Physical interface: ge-0/0/0, Enabled, Physical link is Up
...
Queue counters:   Queued packets  Transmitted packets  Dropped packets
0 best-effort      103                103                   0
1 expedited-fo    616679163          588733189            0
2 assured-forw    2648825387          2528227577          120446880
3 network-cont    27284126            26134172             1149954
...
PFE configuration:
Destination slot: 0, PLP byte: 1 (0x00)
CoS transmit queue  Bandwidth  Buffer  Priority  Limit
                   %    bps  %    bytes
0 best-effort      95        0 95    0    low  none
1 expedited-forwarding 0        0 0     0    low  none
2 assured-forwarding  0        0 0     0    low  none
3 network-control   5        0 5     0    low  none

```

show interfaces queue

Syntax	show interfaces queue <interface-name <i>interface-name</i> > <forwarding-class <i>forwarding-class</i> >
Description	Display CoS information per physical interface. On M-series routing platforms (except the M320), this command is valid only for a PIC installed on an enhanced Flexible PIC Concentrator (FPC).
Options	<p>none—Show detailed CoS queue statistics for all physical interfaces.</p> <p>interface-name <i>interface-name</i>—(Optional) Show detailed CoS queue statistics for the named physical interface.</p> <p>forwarding-class <i>forwarding-class</i>—(Optional) Forwarding class name for this queue. Shows detailed CoS statistics for the queue associated with the named forwarding class.</p>
Required Privilege Level	view
Output Fields	<p>Physical interface—Name of the physical interface.</p> <p>Interface index—Physical interface's index number, which reflects its initialization sequence.</p> <p>SNMP ifIndex—SNMP index number for the interface.</p> <p>Forwarding class—Classification of a packet affecting the forwarding, scheduling, and marking policies applied as the packet transits the router.</p> <p>Forwarding classes supported—Total number of forwarding classes supported on the specified interface.</p> <p>Forwarding classes in use—Total number of forwarding classes in use on the specified interface.</p> <p>Queue—Queue number.</p> <p>Queued Packets—Number of packets queued to this queue.</p> <p>Queued Bytes—Number of bytes queued to this queue.</p> <p>Transmitted Packets—Number of packets transmitted by this queue.</p> <p>Transmitted Bytes—Number of bytes transmitted by this queue.</p> <p>Tail-dropped Packets—Number of packets dropped due to tail drop.</p> <p>RED-dropped packets—Number of packets dropped due to Random Early Detection (RED). On T-series routing platforms and M320 routers, only the total number of dropped packets is displayed.</p>

On M-series routing platforms (except the M320), the output classifies dropped packets into the following categories:

Low, non-TCP—Number of low loss priority, non-TCP packets dropped due to RED.

Low, TCP—Number of low loss priority, TCP packets dropped due to RED.

High, non-TCP—Number of high loss priority, non-TCP packets dropped due to RED.

High, TCP—Number of high loss priority, TCP packets dropped due to RED.

RED-dropped bytes—Number of bytes dropped due to RED. On T-series routing platforms and M320 routers, only the total number of dropped bytes is displayed.

On M-series routing platforms, the output classifies dropped bytes into the following categories:

Low, non-TCP—Number of low loss priority, non-TCP bytes dropped due to RED.

Low, TCP—Number of low loss priority, TCP bytes dropped due to RED.

High, non-TCP—Number of high loss priority, non-TCP bytes dropped due to RED.

High, TCP—Number of high loss priority, TCP bytes dropped due to RED.

Sample Output on a T640 router

```
user@host> show interfaces queue
Physical interface: so-0/0/0, Enabled, Physical link is Up
Interface index: 13, SNMP ifIndex: 16
Description: WAN oc192 to so-0/0/0.bbr2.wdc1
Forwarding class: best-effort, Queue: 0
Queued:
Packets      :      105241031460      255943 pps
Bytes        :      55161351042622    961902968 bps
Transmitted:
Packets      :      105241031460      255943 pps
Bytes        :      55161351042622    961902968 bps
Tail-dropped packets :          0          0 pps
RED-dropped packets :          0          0 pps
RED-dropped bytes   :          0          0 bps
```

Sample Output on an M160 router

```

user@host> show interfaces queue so-0/2/3 forwarding-class expedited-forwarding
Physical interface: so-0/2/3, Enabled, Physical link is Up
Interface index: 32, SNMP ifIndex: 60
Forwarding classes: 4 supported, 4 in use
Queues: 4 supported, 4 in use
Queue: 1, Forwarding Class: expedited-forwarding
Queued:
Packets      :      2330856562      15324 pps
Bytes        :      1355644425098    74579296 bps
Transmitted:
Packets      :      2330856562      15323 pps
Bytes        :      1371748879546    75453024 bps
Tail-dropped packets :          0          0 pps
RED-dropped packets :          0          0 pps
Low, non-TCP   :          0          0 pps
Low, TCP       :          0          0 pps
High, non-TCP  :          0          0 pps
High, TCP      :          0          0 pps
RED-dropped bytes :          0          0 bps
Low, non-TCP   :          0          0 bps
Low, TCP       :          0          0 bps
High, non-TCP  :          0          0 bps
High, TCP      :          0          0 bps
    
```