Monitoring Forwarding and Drop Rates on the Egress Queue

Purpose Display information about forwarding and drop rates on the egress queue. The **show egress-queue rates** command is useful even if no statistics profiles are configured. You can view information about all of the queues even if statistics gathering has not been enabled.

The minimum rate for the queue is the minimum rate at which a node or queue can transmit when all other nodes and queues compete for bandwidth. The system determines the minimum rates by the weight and assured rate configured in a scheduler profile, and are subject to shaping rate and shared-shaping rate configured.

The maximum rate is the maximum rate at which a node or queue can transmit when there are no other nodes or queues competing for bandwidth. The system calculates the maximum rate as the minimum of all shaping rates, shared-shaping rates, and the port rate from the node or queue down to the port.

For example, if a scheduler column configured over a Fast Ethernet port consists of a VLAN queue that has been shaped to 5 Mbps over a VLAN node that has been shaped to 8 Mbps, over an S-VLAN node which is not shaped, then:

- The VLAN queue that is shared-shaped to 5 Mbps has a maximum rate of 5 Mbps.
- The VLAN node that is shaped to 8 Mbps has a maximum rate of 8 Mbps.
- The S-VLAN node which is not shaped has a maximum rate of 100 Mbps.
- The Fast Ethernet port with a bandwidth of 100 Mbps has a maximum rate of 100 Mbps.

Action To display rate statistics only for queues that have queue rate statistics enabled:

```
host1# show egress-queue rates brief interface fastEthernet 9/0.2
                        traffic               forwarded aggregate minimum maximum
interface                class                   rate    drop rate  rate    rate
---------------------- ----------------------- --------- --------- ------- -------
ip FastEthernet9/0.2   best-effort                     0         0   25000 1000000
                       videoTrafficClass               0         0  375000 1000000
                       multicastTrafficClass           0         0  925000 1000000
                       internetTrafficClass            0         0   50000 1000000
   Total:                                              0         0

   Queues reported:                    4
   Queues filtered (under threshold):  0
   Queues disabled (no rate period):   0
   Queues disabled (no resources):     0
   Total queues:                       4
```

To display rate statistics by color rather than as an aggregate of all colors:

```
host1# show egress-queue rates color interface gigabitEthernet 1/0
                       traffic   forwarded      committed     conformed      exceeded
      interface         class      rate         drop rate     drop rate     drop rate
----------------------  -------  ------------  ------------  ------------  ------------
```

```
ip GigabitEthernet1/0   tc1         14645184             0             0             0
                        tc2         11950400       2706400             0             0
                        tc3          9960792             0       4707200             0
                        tc4          7967200             0             0       6705600
Queues reported:                     4
Queues filtered (under threshold):   0
Queues disabled (no rate period):    1
Queues disabled (no resources):      0
Total queues:                        5
```

To display rate statistics all of the configured queues, along with the minimum and maximum rates for the queues, even when statistics gathering has not been enabled:

```
host1#show egress-queue rates full interface atm 11/0
                         traffic               forwarded aggregate   minimum   maximum
interface                class                  rate    drop rate    rate      rate
---------------------- ----------------------- --------- ---------   ------- -------
ip ATM11/0.1           best-effort                    *         *     24979   30000000
                       tc1                            0         0  14987510   30000000
                       tc2                            0         0   9991673   30000000
                       tc3                            0         0   4995836   30000000
ip ATM11/0.2           best-effort                    *         *     19980   20000000
                       tc1                            0         0  11988011   20000000
                       tc2                            0         0   7992007   20000000
    Queues reported:                    5
    Queues filtered (under threshold):  0
  * Queues disabled (no rate period):   2
  **Queues disabled (no resources):     0
    Total queues:                       7
```

To display rate statistics based on an S-VLAN:

```
host1# show egress-queue rates interface gigabitEthernet 11/0 svlan 0
                                          traffic        forwarded   aggregate      minimum
            interface                      class           rate     drop rate       rate
---------------------------------        -----------       ---------  ---------     ---------
svlan GigabitEthernet 11/0 svlan 0 tc1         0              0                    166666666
vlan GigabitEthernet 11/0.1                   tc1             0            0       166666666
ip GigabitEthernet 11/0.1                  best-effort        0            0               0
vlan GigabitEthernet 11/0.2                   tc2             0            0               0
ip GigabitEthernet 11/0.2                  best-effort        0            0               0

                                           maximum
            interface                        rate
---------------------------------          ----------
svlan GigabitEthernet 11/0 svlan 0         1000000000
vlan GigabitEthernet 11/0.1                1000000000
ip GigabitEthernet 11/0.1                  1000000000
vlan GigabitEthernet 11/0.2                1000000000
ip GigabitEthernet 11/0.2                  1000000000
  Queues reported:                    5
  Queues filtered (under threshold):  0
* Queues disabled (no rate period):   0
**Queues disabled (no resources):     0
  Total queues: 5
```

In the output of this command, the aggregate of all drop rates—WRED, tail, and forwarding events—is displayed in the aggregate drop rate field. You cannot

distinguish among the counters used for different drop rates from the output of this command. As a result, for ES2 10G ADV LMs, you cannot identify the counters used for committed, conformed, and exceeded packet dropping by WRED functionality from the value displayed in this field. View the value displayed for the Dropped by WRED committed field in the output of the **show ip interface** command to know the cumulative number of committed, conformed, and exceeded packets dropped by WRED for ES2 10G ADV LMs.

To display rate statistics for the previous or current rate period:

```
host1#show egress-queue rates previous interface gigabitEthernet 11/0 svlan
0
host1#show egress-queue rates current interface gigabitEthernet 11/0 svlan
0
```

To display rate statistics for an L2TP session:

```
host1#show egress-queue rates l2tp session session1
```

To display rate statistics for a tunnel interface, specify the interface at the root of the scheduler hierarchy located on the tunnel-service interface or at the same hierarchy for LNS GRE tunnel traffic:

```
host1#show egress-queue rates tunnel-server 6/0
```

To display rate statistics for queues bound to the specified interface:

```
host1#show egress-queue rates interface gigabitEthernet 11/0 svlan 0 explicit
```

To display the sum of all rates of queues bound to interfaces that are stacked above the specified interface.

```
host1#show egress-queue rates interface gigabitEthernet 11/0 svlan 0 summary
```

To display rate statistics for queues belonging to a specific traffic class:

```
host1#show egress-queue rates interface gigabitEthernet 11/0 svlan 0 traffic-class
 voice
```

To filter output based on the number of queues with rates that exceed the specified value.

```
host1#show egress-queue rates gigabitEthernet 1/0 rate-exceeding committed
host1#show egress-queue rates gigabitEthernet 1/0 rate-exceeding conformed
host1#show egress-queue rates gigabitEthernet 1/0 rate-exceeding exceeded
host1#show egress-queue rates gigabitEthernet 1/0 rate-exceeding forwarded
```

Meaning Table 1 lists the **show egress-queue rates** command output fields.

Table 1: show egress-queue rates Output Fields

Field Name	Field Description
interface	Name of the interface

Table 1: show egress-queue rates Output Fields *(continued)*

Field Name	Field Description
traffic class	Name of the traffic class
forwarded rate	Statistics for the rate at which packets are enqueued. In some time periods, the enqueue rate might exceed the dequeue rate. This can occur when a burst of traffic arrives at a queue which might be dequeuing at a slower rate because of a shaper or congestion. In other time periods, the enqueue rate might be less than the dequeue rate. This can occur when a buffered burst of packets are being dequeued, and no new packets are arriving at the queue.
aggregate drop rate	Total number of all drop rates
committed drop rate	Drop rate for green packets
conformed drop rate	Drop rate for yellow packets
exceeded drop rate	Drop rate for red packets
minimum rate	Minimum rate for queue
maximum rate	Maximum rate for queue
Queues reported	Number of queues reported
Queues filtered (under threshold)	Number of queues not reported because they are under the threshold
Queues disabled (no rate period)	Number of queues not displayed because statistics gathering is disabled (that is, the referenced statistics profile does not have a rate period set)
Queues disabled (no resources)	Number of queues not displayed because no resources were available
Total queues	Total number of queues within the hierarchical scope of the command

Related Topics

- Configuring Rate Statistics
- For more information about the assured rate, see Configuring an Assured Rate for a Scheduler Node or Queue
- show egress-queue rates

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