R Commands

random-detect

To configure weighted random early detection (WRED) on both ingress and egress queues by setting aggregate minimum and maximum packet drop threshold default values for specific class of service (CoS) values, use the **random-detect** command. To remove a WRED configuration, use the **no** form of this command.

random-detect cos *cos-list* **[minimum-threshold]** {*min-threshold* [**packets**| **bytes**| **kbytes**| **mbytes**| **ms**| **us**]| **percent** *min-percent-of-qsize*} **[maximum-threshold]** {*max-threshold* [**packets**| **bytes**| **kbytes**| **mbytes**| **ms**| **us**]| **percent** *max-percent-of-qsize*}

no random-detect cos *cos-list* **[minimum-threshold]** {*min-threshold* [**packets**| **bytes**| **kbytes**| **mbytes**| **ms**| **us**]| **percent** *min-percent-of-qsize*} **[maximum-threshold]** {*max-threshold* [**packets**| **bytes**| **kbytes**| **mbytes**| **ms**| **us**]| **percent** *max-percent-of-qsize*}

Syntax Description

cos *cos-list*	Specifies the CoS values where the software applies thresholds. Valid values are from 0 to 7.
minimum-threshold	(Optional) Specifies the minimum threshold.
min-threshold	Minimum threshold. Valid values are from 1 to 52428800.
packets	(Optional) Specifies that thresholds are in packets.
bytes	(Optional) Specifies that thresholds are in bytes.
kbytes	(Optional) Specifies that thresholds are in kilobytes.
mbytes	(Optional) Specifies that thresholds are in megabytes.
ms	(Optional) Specifies that thresholds are in milliseconds at the underlying interface minimum guaranteed link rate
us	(Optional) Specifies that thresholds are in microseconds at the underlying interface minimum guaranteed link rate.
percent	Specifies the percentage of the threshold.
min-percent-of-qsize	Minimum percentage of the buffer memory used by the queue. Valid values are from 1 to 100.
maximum-threshold	(Optional) Specifies the maximum threshold.
max-threshold	Maximum threshold. Valid values are from 1 to 52428800.

max-percent-of-qsize	(Optional) Maximum percentage of the buffer memory used by the queue. Valid values are from 1 to 100.

Command Default

Thresholds are in packets by default.

The **random-detect cos-based** command must be specified for a queue to establish default thresholds for any CoS values that are not specified in **random-detect** commands for the same queue.

Command Modes

Policy map type queuing class configuration

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

Note You must enter the **random-detect cos-based** command before you enter the **random-detect** command.

The minimum and maximum threshold units must match.

The system drops packets that exceed the minimum threshold at an increasing rate as the maximum threshold is reached. By default, the units are in packets,

WRED and tail drop cannot be configured in the same class. For information about configuring tail drop, see the **queue-limit** command.

You cannot configure WRED on ingress on the 10-Gigabit Ethernet ports.

For CoS lists, you can use the following:

- Specify only one value**—cos 1**
- Specify a range of values**—cos 1-3**
- Specify a comma-separated list of values**—cos 1, 4-6**

This command does not require a license.

Examples

This example shows how to configure WRED for a queue by setting the default WRED thresholds followed by thresholds that apply to CoS values 5 and 7:

```
switch(config)# policy-map type queuing match-first my_queue
switch(config-pmap-que)# class type queuing 1p3q4t-out-pq1
switch(config-pmap-c-que)# random-detect cos-based aggregate 10 mbytes 20 mbytes
switch(config-pmap-c-que)# random-detect cos 5,7 15 mbytes 20 mbytes
switch(config-pmap-c-que)#
```

This example shows how to configure WRED for a queue by setting the default WRED thresholds followed by queue buffer size thresholds that apply to CoS value 5:

```
switch(config)# policy-map type queuing match-first my_queue
switch(config-pmap-que)# class type queuing 1p3q4t-out-pq1
switch(config-pmap-c-que)# random-detect cos-based aggregate 10 mbytes 20 mbytes
switch(config-pmap-c-que)# random-detect cos 5 percent 5 percent 15
switch(config-pmap-c-que)#
```

This example shows how to remove a WRED configuration from a policy map queuing class:

```
switch(config)# policy-map type queuing match-first my_queue
switch(config-pmap-que)# class type queuing 1p3q4t-out-pq1
switch(config-pmap-c-que)# no random-detect cos-based aggregate 10 mbytes 20 mbytes
switch(config-pmap-c-que)# no random-detect cos 5 percent 5 percent 15
switch(config-pmap-c-que)#
```

Related Commands

Command	Description
random-detect cos-based	Configures WRED.
queue limit	Configures tail drop.
show policy-map	Displays policy maps and statistics.

random-detect cos-based

To configure weighted random early detection (WRED) on both ingress and egress queues by setting minimum and maximum packet drop thresholds, use the **random-detect cos-based** command. To remove a WRED configuration, use the **no** form of this command.

random-detect cos-based [**aggregate [minimum-threshold]** {*min-threshold* [**packets**| **bytes**| **kbytes**| **mbytes**| **ms**| **us**]| **percent** *min-percent-of-qsize*} **[maximum-threshold]** {*max-threshold* [**packets**| **bytes**| **kbytes**| **mbytes**| **ms**| **us**]| **percent** *max-percent-of-qsize*}]

no random-detect cos-based [**aggregate [minimum-threshold]** {*min-threshold* [**packets**| **bytes**| **kbytes**| **mbytes**| **ms**| **us**]| **percent** *min-percent-of-qsize*} **[maximum-threshold]** {*max-threshold* [**packets**| **bytes**| **kbytes**| **mbytes**| **ms**| **us**]| **percent** *max-percent-of-qsize*}]

Syntax Description

aggregate	(Optional) Specifies where the software applies aggregate thresholds for CoS values that are not specified in the **random-detect** command.
minimum-threshold	(Optional) Specifies the minimum threshold.
min-threshold	Minimum threshold. Valid values are from 1 to 52428800.
packets	(Optional) Specifies that thresholds are in packets.
bytes	(Optional) Specifies that thresholds are in bytes.
kbytes	(Optional) Specifies that thresholds are in kilobytes.
mbytes	(Optional) Specifies that thresholds are in megabytes.
ms	(Optional) Specifies that thresholds are in milliseconds at the underlying interface minimum guaranteed link rate
us	(Optional) Specifies that thresholds are in microseconds at the underlying interface minimum guaranteed link rate.
percent	Specifies the percentage of the threshold.
min-percent-of-qsize	(Optional) Minimum percentage of the buffer memory used by the queue. Valid values are from 1 to 100.
maximum-threshold	Specifies the maximum threshold.
max-threshold	Maximum threshold. Valid values are from 1 to 52428800.

max-percent-of-qsize	(Optional) Maximum percentage of the buffer memory used by the queue. Valid values are from 1 to 100.

Command Default Thresholds are in packets by default.

Command Modes Policy map type queuing class configuration

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines The **random-detect cos-based** command is required when you configure WRED to establish default thresholds for class of service (CoS) values for which you do not define specific thresholds.

The minimum and maximum threshold units must match.

The system drops packets that exceed the minimum threshold at an increasing rate as the maximum threshold is reached. By default, the units are in packets,

WRED and tail drop cannot be configured in the same class. For information about configuring tail drop, see the **queue-limit** command.

Note You cannot configure WRED on ingress 10-Gigabit Ethernet ports.

This command does not require a license.

Examples This example shows how to configure WRED for a queue by setting the default WRED thresholds followed by thresholds that apply to CoS values 5 and 7:

```
switch(config)# policy-map type queuing match-first my_queue
switch(config-pmap-que)# class type queuing 1p3q4t-out-pq1
switch(config-pmap-c-que)# random-detect cos-based aggregate 10 mbytes 20 mbytes
switch(config-pmap-c-que)# random-detect cos 5,7 15 mbytes 20 mbytes
switch(config-pmap-c-que)#
```

This example shows how to configure WRED for a queue by setting the default WRED thresholds followed by queue buffer size thresholds that apply to CoS value 5:

```
switch(config)# policy-map type queuing match-first my_queue
switch(config-pmap-que)# class type queuing 1p3q4t-out-pq1
switch(config-pmap-c-que)# random-detect cos-based aggregate 10 mbytes 20 mbytes
switch(config-pmap-c-que)# random-detect cos 5 percent 5 percent 15
switch(config-pmap-c-que)#
```

This example shows how to remove a WRED configuration from a policy map queuing class:

```
switch(config)# policy-map type queuing match-first my_queue
switch(config-pmap-que)# class type queuing 1p3q4t-out-pq1
switch(config-pmap-c-que)# no random-detect cos-based aggregate 10 mbytes 20 mbytes
switch(config-pmap-c-que)# no random-detect cos 5 percent 5 percent 15
switch(config-pmap-c-que)#
```

Related Commands

Command	Description
random-detect	Configures WRED.
queue limit	Configures tail drop.
show policy-map	Displays policy maps and statistics.