Configuration Commands

Generic Commands

description

Syntax **description** *description-string*
no description

Context config>qos>adv-config-policy

Description This command creates a text description stored in the configuration file for a configuration context.

The **description** command associates a text string with a configuration context to help identify the context in the configuration file.

The **no** form of this command removes any description string from the context.

Default No description is associated with the configuration context.

Parameters *description-string* — A text string describing the entity. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, $, spaces, etc.), the entire string must be enclosed within double quotes.

Operational Commands

copy

Syntax **copy adv-config-policy** *src-name dst-name* [**overwrite**]

Context config>qos

Description This command copies existing QoS policy entries for a QoS policy-id to another QoS policy-id.

The **copy** command is a configuration level maintenance tool used to create new policies using existing policies. It also allows bulk modifications to an existing policy with the use of the **overwrite** keyword.

Parameters **adv-config-policy —** Indicates that the source policy ID and the destination policy ID are advanced policy IDs. Specify the source advanced policy ID that the copy command will attempt to copy from and specify the destination advanced policy ID to which the command will copy a duplicate of the policy.

overwrite — Specifies to replace the existing destination advanced policy. Everything in the existing destination policy will be overwritten with the contents of the source advanced policy. If **overwrite** is not specified, an error will occur if the destination policy ID exists.

```
ALA-7>config>qos# copy adv-config-policy default sp1
MINOR: CLI Destination "sp1" exists - use {overwrite}.
ALA-7>config>qos#overwrite
```

Advanced Policy QoS Commands

adv-config-policy

Syntax [**no**] **adv-config-policy** *policy-name* [**create**]

Context config>qos

Description This command enables the context to configure an advanced QoS policy. This command contains only queue and policer child control parameters within a child-control node.

The parameters within the **child-control** node are intended to allow more precise control of the method that hierarchical virtual scheduling employs to emulate the effect of a scheduling context upon a member child queue or policer.

Once a policy is created, it may be applied to a queue or policer defined within a **sap-egress** or **sap-ingress** QoS policy. It may also be applied to a queue or policer defined within an ingress or **egress queue-group** template. When a policy is currently associated with a QoS policy or template, the policy may be modified but not deleted (even in the event that the QoS policy or template is not in use).

While the system maintains default values for the advanced configuration parameters, no default **adv-config-policy** exists.

The **no** form of this command removes the specified advanced policy.

Default None

Parameters *policy-name* — The name of the advanced QoS policy. A policy-name must be specified and conform to the policy naming guidelines. If the specified name does not exist, the optional **create** keyword requirements are met and the total number of policies per system will not be exceeded, an **adv-config-policy** of that name will be created. If the specified name does exist, the system will switch context to that **adv-config-policy** for the purpose of modification of the policy's contents.

Values Valid names consist of any string up to 32 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, $, spaces, etc.), the entire string must be enclosed within double quotes.

child-control

Syntax **child-control**

Context config>qos>adv-config-policy

Description This command contains parameters that are intended to allow more precise control of the method that hierarchical virtual scheduling employs to emulate the effect of a scheduling context upon a member child queue or policer.

This command edits the parameters that control the child requested bandwidth and parental bandwidth distribution for all policers and queues associated with the policy.

offered-measurement

Syntax **offered-measurement**

Context config>qos>adv-config-policy>child-control

Description This command modifies the offered rate measurement used to determine the bandwidth the queue or policer is requesting from its parent virtual scheduling context.

This command modifies the parameters that control the child requested bandwidth for all policers and queues associated with the policy.

add

Syntax [**no**] **add** {**percent** *percent-of-admin-pir* | **rate** *rate-in-kilobits-per-second*} [**min-only** | **active-min-only**]

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to increase the measured rate of the policer or queue associated with the policy. The offered rate (capped by the administrative PIR configured on the queue or policer) is usually used unaltered by the parent virtual scheduler. The add command allows this measured rate to be increased by the specified amount or by a percentage of the administrative PIR. The resulting rate will not exceed the administrative PIR.

The parent scheduler uses the modified measured rate as the available work load for the queue or policer in determining how much bandwidth the child should receive from the bandwidth distribution algorithm.

One example of when an increase in the measured offered rate may be desired is when a queue or policer is handling VOIP traffic. A characteristic of VOIP is the step nature in how traffic is used. Each call typically adds a certain maximum amount to the overall load. By using the add command, the bandwidth required for the next added call may be included in the current measured rate. This allows the virtual scheduler to allocate sufficient bandwidth to the queue or policer so that when the call is made the scheduling algorithm does not need to run to increase the bandwidth.

A side effect of increasing the measured offered rate is that if the extra bandwidth is allocated by the virtual scheduler, the available bandwidth to lower priority queues or policers is diminished even though the extra allocated bandwidth may not be in use. If this is the case, the effect will be seen as an underrun in the aggregate output of the virtual scheduler.

If the add command is used with a percent based value, the increase is a function of the configured PIR value on the policer or queue. In this case, care should be taken that the child is either configured with an explicit PIR rate (other than max) or the child's administrative PIR is defined using the percent-rate command with the local parameter enabled if an explicit value is not desired. When a maximum PIR is in use on the child, the system attempts to interpret the maximum child forwarding rate. This rate could be very large if the child is associated with multiple ingress or egress ports.

Except for the overall cap on the offered input into the virtual scheduler, the child's administrative PIR has no effect on the calculated increase if an explicit rate is specified.

If the child's administrative PIR is modified while a percent based add is in effect, the system automatically uses the new relative increase value the next time the child's offered rate is determined.

When the add command is not specified or removed, the child's offered rate used by the child's virtual scheduler is not increased.

The **no** form of this command is used to remove an offered rate increase from all child policers and queues associated with the policy.

Parameters *percent-of-admin-pir* — When the percent qualifier is used, this parameter specifies the percentage of the child's administrative PIR that should be added to the child's offered rate. The new offered rate result is capped by the child's PIR. If a value of 0 or 0.00 is used, the system interprets this equivalent to no add.

Default None, an increase percentage value must be specified when the percent qualifier is used.

Values 1.00 — 100.00

rate-in-kilobits-per-second — When the rate qualifier is used, this parameter specifies an explicit number of kilobits-per-second (1000 bits-per-second) that should be added to the child's offered rate. The new offered rate result is capped by the child's PIR. If a rate increase of 0 is specified, the system interprets this equivalent to no add.

Default None, an increase rate value must be specified when the rate qualifier is used.

Values 0 — 100,000,000

min-only — This optional parameter is used to reinterpret the increase as a minimum offered rate. When this option is enabled, the system uses the specified increase as a minimum offered rate even for inactive queues or policers associated with the policy.

active-min-only — When this optional parameter is specified, the respective rate or percentage is treated as the minimum offered rate for a queue only when the queue has an actual non-zero offered rate. This is intended to limit the artificial increase in offered rate to queues that are currently active. Once a queue's measured offered rate drops to zero, the system stops enforcing the minimum value.

granularity

Syntax [**no**] **granularity** {**percent** *percent-of-admin-pir* | **rate** *rate-in-kilobits-per-second*}

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to adjust the sensitivity of the virtual scheduler to changes in the child offered rate. As the child offered rate is determined, it is compared to the previous offered rate. If the delta does not exceed the sensitivity threshold determined for the current offered rate, the change in offered rate is ignored for that iteration.

While it is assumed that changing the offered rate change sensitivity will be a rare occurrence, one may want to react to smaller changes in the offered rate of a particular child policer or queue. Another possible reason for changing the sensitivity is that it may be desired to lower the impact of changes in offered rate on the virtual scheduler for a particular child by raising the granularity.

A side effect of higher sensitivity (lower granularity) is that the virtual scheduler may need to adjust the

distributed bandwidth between all children more often resulting in the possibility of lowering resources available to other virtual scheduler instances on the slot.

A side effect of lower sensitivity (higher granularity) is that the parent virtual scheduler may distribute insufficient bandwidth to the child resulting in dropped packets.

If the granularity command is used with a percent based value, the sensitivity is a function of the configured PIR value on the policer or queue. In this case, care should be taken that the child is either configured with an explicit PIR rate (other than max) or the child's administrative PIR is defined using the percent-rate command with the local parameter enabled if an explicit value is not desired. When a maximum PIR is in use on the child, the system attempts to interpret the maximum child forwarding rate. This rate could be very large if the child is associated with multiple ingress or egress ports.

Except for the overall cap on the offered input into the virtual scheduler, the child's administrative PIR has no effect on the calculated sensitivity if an explicit rate is specified.

If the child's administrative PIR is modified while a percent based granularity is in effect, the system automatically uses the new relative sensitivity value the next time the child's offered rate is determined.

The **no** form of this command is used to restore the default offered rate sensitivity behavior to all child policers and queues associated with the policy.

Parameters *percent-of-admin-pir* — When the percent qualifier is used, this parameter specifies the percentage of the child's administrative PIR that should be used as the threshold sensitivity to offered rate change. If a value of 0 or 0.00 is used, the system will interpret this equivalent to no granularity.

Default None, the sensitivity percentage value must be specified when the percent qualifier is used.

Values 1.00 — 100.00

rate-in-kilobits-per-second — When the rate qualifier is used, this parameter specifies an explicit number of kilobits-per-second (1000 bits-per-second) that should be as the child's offered rate change sensitivity value. If a rate sensitivity of 0 is specified, the system interprets this equivalent to no granularity.

Default None, the sensitivity rate value must be specified when the rate qualifier is used.

Values 0 — 100,000,000

max-decrement

Syntax [**no**] **max-decrement** {**percent** *percent-of-admin-pir* | **rate** *rate-in-kilobits-per-second*}

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to limit how fast a child queue or policer can 'give up' bandwidth that it has been allotted from the virtual scheduler in a single iteration. If the child's new offered rate has decreased by more than the maximum decrement limit, the system ignores the new offered rate and instead uses the old offered rate less the maximum decrement limit.

A possible reason to define a maximum decrement limit is to allow a child queue or policer to hold on to a portion of bandwidth that has been distributed by the parent virtual scheduler in case the child's offered rate fluctuates in an erratic manor. The max-decrement limit has a dampening effect to changes in the offered

rate.

A side effect of using a maximum decrement limit is that unused bandwidth allocated to the child queue or policer will not be given to another child as quickly. This may result in an underrun of the virtual scheduler's aggregate rate.

The max-decrement limit has no effect on any increase in a child's offered rate. If the rate increase is above the change sensitivity, the new offered rate is immediately used.

If the max-decrement command is used with a percent based value, the decrement limit will be a function of the configured PIR value on the policer or queue. In this case, care should be taken that the child is either configured with an explicit PIR rate (other than max) or the child's administrative PIR is defined using the percent-rate command with the local parameter enabled if an explicit value is not desired. When a maximum PIR is in use on the child, the system attempts to interpret the maximum child forwarding rate. This rate could be very large if the child is associated with multiple ingress or egress ports.

Except for the overall cap on the offered input into the virtual scheduler, the child's administrative PIR has no effect on the calculated sensitivity if an explicit rate is specified.

If the child's administrative PIR is modified while a percent based max-decrement is in effect, the system automatically uses the new relative maximum decrement limit value the next time the child's offered rate is determined.

When the max-decrement command is not specified or removed, the virtual scheduler does not limit a decreasing offered rate to a specific limit.

The **no** form of this command is used to remove any currently configured maximum decrement limit for all child policers and queues associated with the policy.

Parameters *percent-of-admin-pir* — When the percent qualifier is used, this parameter specifies the percentage of the child's administrative PIR that should be used as the decrement limit to offered rate change. If a value of 100 or 100.00 is used, the system will interpret this equivalent to no max-decrement.

Default None, the decrement limit percentage value must be specified when the percent qualifier is used.

Values 1.00 — 100.00

rate-in-kilobits-per-second — When the rate qualifier is used, this parameter specifies an explicit number of kilobits-per-second (1000 bits-per-second) that should be as the child's offered rate change sensitivity value. If a rate sensitivity of 0 is specified, the system interprets this equivalent to no granularity.

Default None, thedecrement limit value must be specified when the rate qualifier is used.

Values 0 — 100,000,000

high-rate-hold-time

Syntax [**no**] **high-rate-hold-time** *seconds* [**active-min-only**]

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command sets a time period that the current offered rate should be maintained for a child policer or queue once it is seen that the offered rate is decreasing. The offered measurement that triggers the hold time is used when the hold timer expires unless a higher offered rate is seen in the interim. When a higher rate is

observed, the hold timer is canceled and the higher offered rate is used immediately.

A possible reason to define a hold timer for an offered rate is to allow a child queue is to dampen the effects of a child with a fluctuating rate on the virtual scheduler. This works similar to the max-decrement in that the child holds on to bandwidth from the virtual scheduler in case it may be needed in the near future.

This parameter has no effect on an increase to the child's offered rate. If the rate increase is above the change sensitivity, the new offered rate is immediately used.

When this command is not specified or removed, the virtual scheduler immediately reacts to measured decreases in offered load.

The **no** form of this command is used to remove any currently configured hold time for all child policers and queues associated with the policy. When the hold time is removed, any current hold timers for child policers are automatically canceled.

Parameters *seconds* — The hold time configured must be specified in seconds. A value of 0 is equivalent to no high-rate-hold-time.

Default 0

Values 0 — 60

active-min-only — When this optional parameter is specified, the **high-rate-hold-time** command will accept the optional **active-min-only** parameter. Attempting to remove the active-min-only parameter from the **add** command, or removing the **add** command itself, will fail while **active-min-only** is enabled on the **high-rate-hold-time** command. When specified, the respective rate or percentage is treated as the minimum offered rate for a queue only when the queue has an actual non-zero offered rate. This is intended to limit the artificial increase in offered rate to queues that are currently active. Once a queue's measured offered rate drops to zero, the system stops enforcing the minimum value.

time-average-factor

Syntax [**no**] **time-average-factor** *taf-value* [**dec-only**]

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to weight the new offered rate with a portion of the previous offered rate. It would be expected that this command would mainly be used with the dec-only option enabled.

The adjustment to the offered rate is performed using the following formula when taf-value is not set to '0':

Adjusted_Rate = ((Prev_Offered_Rate x (taf-value – 1)) + New_Offered_Rate) / taf-value

If the dec-only option is specified, the adjustment is only applied when New_Offered_Rate is less than the Prev_Offered_Rate. When taf-value is set to '0', the adjustment is never applied.

The **no** form of this command is used to remove the time average factor adjustments to new offered rate measurements.

Parameters *taf-value* — The taf-value is specified as a whole number between 0 and 64. The value '0' has special meaning in that it disables the time average factor adjustment and has the same effect as no time-average-factor.

Default 0

Values 0 — 64

dec-only — This keyword is an optional parameter. When enabled, the time average factor adjustment is only applied if the new offered rate is decreasing compared to the previous offered rate. If the new offered rate is greater than the previous offered rate, the adjustment is not applied.

sample-interval

Syntax [**no**] **sample-interval** *sample-periods*

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to define the number of intervening sample periods before a new offered rate is measured. The default is 4 sample periods. By decreasing the sampling interval, the system will measure a child's new offered rate more frequently. Inversely, increasing the sampling interval causes the child's offered rate to be measured less frequently.

The overall number of offered rate measurements the system attempts within a given timeframe is not affected by the sample-interval command. If the system is asked to perform offered rate measurements more often on some queues, it will take longer to get to all children.

When this command is not specified or removed, the system evaluates the offered rate of each child after 4 sampling periods.

The **no** form of this command is used to restore the sampling interval default of 4 sample periods.

Parameters *sample-periods* — The sample-periods parameter is specified as a whole number between 1 and 8. The value '4' has the same effect as no time-average-factor. The value '1' represents the fastest sampling rate available and the value '8' represents the slowest sampling period available.

Default 4

Values 1— 8

fast-start

Syntax [**no**] **fast-start**

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to enable fast detection of initial bandwidth on a child policer or queue associated with the policy. Multiple offered rate counter reads may be performed per the sampling interval. The system accumulates these counter values and evaluates the delta at the conclusion of the sampling interval. When fast-start is enabled, the system identifies all children associated with the policy that enter the inactive state (current offered rate is zero). Any inactive 'fast start' child that has a positive offered counter during a sampling period bypasses the normal sampling interval and does an immediate offered rate evaluation.

This option is intended for use with children that would benefit from faster than normal startup detection, typically those of a real-time nature.

When this parameter is not enabled, the system uses the normal sampling interval behavior of both newly active and currently active children.

The **no** form of this command is used to restore the sampling interval based offered rate evaluation for newly active children.

fast-stop

Syntax [**no**] **fast-stop**

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to enable fast detection of lack of offered rate on a child policer or queue associated with the policy. Multiple offered rate counter reads may be performed per sampling interval. The system accumulates these counter values and evaluates the delta at the conclusion of the sampling interval. When fast-stop is enabled, the system bypasses the sampling interval for any currently active 'fast stop' child that has a zero offered counter measurement and does an immediate offered rate evaluation using the zero value.

This option is intended for use with children where other children would benefit from faster than normal inactive detection, typically those of a real-time nature.

When this parameter is not enabled, the system uses the normal sampling interval behavior of both newly inactive and currently active children.

The **no** form of this command is used to restore the sampling interval based offered rate evaluation for newly inactive children.

bandwidth-distribution

Syntax **offered-measurement**

Context config>qos>adv-config-policy>child-control

Description This command modifies or controls the bandwidth distribution phase of the parent virtual scheduler.

This command edits the parameters that control the child given bandwidth for all policers and queues associated with the policy.

above-offered-cap

Syntax [**no**] **above-offered-cap** {**percent** *percent-of-admin-pir* | **rate** *rate-in-kilobits-per-second*}

Context config>qos>adv-config-policy>child-control>bandwidth-distribution

Description This command is used to limit the operationally configured shaping or policing rate on the child associated with the policy. After the parent virtual scheduler or policer control policy determines the appropriate rate

for a given child a separate operation decides the actual PIR that should be configured for that child. When the parent determines that the distributed rate is equal to or less than the child's offered rate, the configured operational PIR will be equal to that determined rate. But when the parent determines that the child's offered rate is less than the available bandwidth the child could consume, the operational PIR may be set to a value larger than the distributed bandwidth. This extra rate is not currently used by the child since the offered rate is less. The system provides this extra bandwidth in case the child's offered rate increases before the next sampling interval is complete in order to mitigate the periodic nature of the child's operational PIR adjustments. The increase in the offered rate is not subtracted from the parent's remaining distribution bandwidth for lower priority children, only the determined rate is considered consumed by the parent virtual scheduler or policer control policy instance. The actual operationally configured PIR will never be greater than the child's administratively defined PIR.

This 'fair share' PIR configuration behavior may result in the sum of the children's PIRs exceeding the aggregate rate of the parent. If this behavior violates the downstream QoS requirements, the above-offered-cap command may be used to minimize or eliminate the increase in the child's configured PIR.

If the above-offered-cap command is used with a percent based value, the increase is a function of the configured PIR value on the policer or queue. In this case, care should be taken that the child is either configured with an explicit PIR rate (other than max) or the child's administrative PIR is defined using the percent-rate command with the local parameter enabled if an explicit value is not desired. When a maximum PIR is in use on the child, the system attempts to interpret the maximum child forwarding rate. This rate could be very large if the child is associated with multiple ingress or egress ports.

If the child's administrative PIR is modified while a percent based above-offered-cap is in effect, the system automatically uses the new relative limit value the next time the child's operational PIR is distributed.

When this command is not specified or removed, the child's operational 'fair share' operational PIR may be configured up to the child's administrative PIR based on the actual parental bandwidth available at the child's priority level.

The **no** form of this command is used to remove a fair share operational PIR rate increase limit from all child policers and queues associated with the policy.

Parameters *percent-of-admin-pir* — When the percent qualifier is used, the following percent-of-admin-pir parameter specifies the percentage of the child's administrative PIR that used as the fair share increase limit. The new operational PIR result is capped by the child's PIR. If a value of 0 or 0.00 is used, the system will disable the fair share increase function and only configure the actual distribution rate. If a value of 100 or 100.00 is used, the system will interpret this equivalent to executing the no above-offered-cap command and return the fair-share operation to the default behavior..

Default None, an increase limit percentage value must be specified when the percent qualifier is used.

Values 0.00 — 100.00

rate-in-kilobits-per-second — When the rate qualifier is used, the following rate-in-kilobits-per-second parameter specifies an explicit number of kilobits-per-second (1000 bits-per-second) that should be used as the limit to the child's fair share increase to the operational PIR. The new operational PIR result is capped by the child's PIR. If a value of 0 is used, the system will disable the fair share increase function and only configure the actual distribution rate.

Default None, an increase limit rate value must be specified when the rate qualifier is used.

Values 0 — 100,000,000

enqueue-on-pir-zero

Syntax [**no**] **enqueue-on-pir-zero**

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to enable queuing of new packets when HQoS determines that a queue should stop forwarding (operational PIR set to zero). The default behavior is to allow the queue to continue to use the previously determined operational PIR and set the queue's MBS (Maximum Burst Size) to zero. This prevents new packets from being admitted to the queue until the PIR zero case terminates. The new behavior when **enqueue-on-pir-zero** is enabled is to set the operational PIR to zero and leave the queue's MBS set to the normal value.

This command is ignored for FP1 based forwarding planes as this feature is not supported on Q1 traffic management devices. This command overrides the **limit-pir-zero-drain** command for FP2 and above forwarding planes that are based on the Q2 or greater traffic management devices.

The **no** form of this command reverts to default behavior.

granularity

Syntax [**no**] **granularity** {**percent** *percent-of-admin-pir* | **rate** *rate-in-kilobits-per-second*}

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to create a stepped like behavior where the operational PIR will round up to the nearest increment of the specified granularity before being applied to the child. The only exception is when the distributed bandwidth is less than 1% above a lower step value in which case the lower step value is used.

This stepped behavior may be useful when the bandwidth used by an active child is well known. While the above-offered-cap function automatically adds a specified amount to the operational PIR of a child, the granularity function only increments the operational PIR to the next step value. While not expected to be used in conjunction, the above-offered-cap and granularity commands may be used simultaneously in which case the above-offered-cap increase will be applied first followed by the granularity rounding to the next step value.

If the granularity command is used with a percent based value, the rounding up function of the configured PIR value on the policer or queue is based on the child's administrative PIR. In this case, care should be taken that the child is either configured with an explicit PIR rate (other than max) or the child's administrative PIR is defined using the percent-rate command with the local parameter enabled if an explicit value is not desired. When a maximum PIR is in use on the child, the system attempts to interpret the maximum child forwarding rate. This rate could be very large if the child is associated with multiple ingress or egress ports.

If the child's administrative PIR is modified while a percent based granularity is in effect, the system automatically uses the new relative rounding value the next time the child's operational PIR is determined.

When this command is not specified or removed, the system makes no attempt to round up the child's determined operational PIR.

The no form of this command is used to remove the operational PIR rounding behavior from all child

policers and queues associated with the policy.

Parameters *percent-of-admin-pir* — When the percent qualifier is used, the following percent-of-admin-pir parameter specifies the percentage of the child's administrative PIR that should be used as the rounding step value. If a value of 0 or 0.00 is used, the system will interpret this equivalent to no granularity.

Default None, the rounding percentage of administrative PIR must be specified when the percent qualifier is used.

Values 0.00 — 100.00

rate-in-kilobits-per-second — When the rate qualifier is used, the following rate-in-kilobits-per-second parameter specifies an explicit number of kilobits-per-second (1000 bits-per-second) that should be as the child's rounding step value. If a rate step of 0 is specified, the system interprets this equivalent to no granularity.

Default None, the rounding rate step must be specified when the rate qualifier is used.

Values 0 — 100,000,000

limit-pir-zero-drain

Syntax [**no**] **limit-pir-zero-drain**

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to configure the system to use the minimum configurable PIR instead of an HQoS derived zero operational PIR. The default behavior is to allow the operational PIR of the queue to remain the last configured value while setting the queue MBS to zero (preventing queuing of newly arriving packets). Retaining the previous PIR value may cause a momentary burst above an aggregate rate associated with the queue as it drains. Using the **limit-pir-zero-drain** command causes the queue to drain at the lowest rate possible (typically 1Kbps) which limits overrun situations.

The **no** form of this command reverts to default behavior.

lub-init-min-pir

Syntax [**no**] **lub-init-min-pir**

Context config>qos>adv-config-policy>child-control>offered-measurement

Description This command is used to initialize new queues associated with a LUB context to use a minimum PIR similar to the effect of the **limit-pir-zero-drain** command. When a queue is initially created in a LUB context it defaults to a zero value PIR until HQoS has an opportunity to configure an offered rate based operational PIR. Enabling this command forces a minimum rate operational PIR to be applied to the queue for use by enqueued packets prior to an HQoS iteration.

The **no** form of this command reverts to default behavior.

internal-scheduler-weight-mode

Syntax **internal-scheduler-weight-mode** {**default** | **force-equal** | **offered-load** | **capped-offered-load**}
no internal-scheduler-weight-mode

Context config>qos>adv-config>policy>child-control>bandwidth-distribution

Description This command overwrites the internal scheduler weight configured on a card level.

Parameters **default —** Use card-level configuration

force-equal — Queues are always equally weighted

offered-load — Queues are weighted based on observed offered load

capped-offered-load — Queues are weighted based on observed offered load capped by PIR

Show Commands

adv-config-policy

Syntax **adv-config-policy** [*policy-name*] [**detail**]

Context show>qos

Description This command displays advanced QoS policy information.

Parameters *policy-name* — The name of the advanced QoS policy.

detail — Displays detailed information about the advanced QoS policy.