

Guidelines for Configuring QoS over ATM

This section provides general QoS configuration guidelines for ATM line modules. These guidelines are applicable to all JUNOS releases.

The SAR scheduler generates VC backpressure as a way to control the flow of packets from the HRR scheduler to the SAR scheduler. The QoS port modes control integration of the two schedulers.

In default integrated mode, each VC queue in the SAR generates backpressure for the ATM VC node in the default traffic class group in the HRR. The backpressure throttles the dequeue rate of the ATM VC node and the nodes and queues stacked above it in the scheduler hierarchy. VC backpressure is disabled in low-latency QoS port mode and low-cdv QoS port mode.

You can configure queues in default integrated mode in the HRR that are immune to VC backpressure so that you can run voice and video applications. Queues and nodes in any named traffic class group are not subject to VC backpressure.

In addition, ATM VP and ATM (port level) queues are not stacked above ATM VC nodes, so queues are not subject to backpressure, regardless of the traffic class group.

Take care not to saturate SAR queues with too much traffic from the HRR, especially when shaping VP tunnels or VCs in the SAR. You can accomplish this in several ways:



NOTE: These rules apply only to the default integrated mode. VC backpressure is disabled in low-latency or low-cdv modes. You must account for cell tax; to do this, use the **qos-shaping-mode cell** command for the line module.

- Use external admission control to guarantee that the sum of non-backpressured traffic into the VC is less than the SAR shaping rate for the VC.
- Shape the non-backpressured queues or nodes in the HRR, making the aggregate of the non-backpressured traffic for a VC less than the VC rate.
- In JUNOS Release 6.0 and later, you can configure a shared shaper on the ATM VC node in the default traffic class group. Configure the shared-shaping rate to be less than or equal to the VC shaping rate in the SAR.
- Special rules apply for VP tunnels shaped in the SAR. When shaping in the SAR, configure ATM VP nodes in the HRR, and arrange that the aggregate traffic dequeued from the HRR for that vp-tunnel is less than or equal to the VP tunnel shaping rate in the SAR.

Use one of the following two techniques for VP tunnels shaped in the SAR:

- Partition the SAR VP tunnel bandwidth across the ATM VP nodes in the different traffic class groups in the HRR. For example, using a 4 Mbps VP tunnel, allocate 1 Mbps for the ATM VP node in the default traffic class group, 2 Mbps for the ATM VP node in the video traffic class group, and 1 Mbps for the ATM VP node in the voice traffic class group.

When using this technique, keep in mind that the different traffic classes cannot share bandwidth.

- In JUNOS Release 6.1 and later, using the EFA2 ASIC, you can configure shared shaping on the ATM VP nodes in the HRR to perform bandwidth sharing.

Related Topics

- Integrating the HRR Scheduler and SAR Scheduler
- [\[Unresolved xref\]](#)
- Configuring Default Integrated Mode for ATM Interface
- Configuring Low-Latency Mode for Per-Port Queuing on ATM Interfaces
- Configuring Low-CDV Mode for Per-Port Queuing on ATM Interfaces
- Configuring the QoS Shaping Mode for ATM Interfaces

Published: 2010-03-21