

## Static and Hierarchical Assured Rate Overview

You can configure the effective weight of the scheduler node or queue by configuring a static assured rate or a hierarchical assured rate (HAR). The JUNOS hierarchical assured rate (HAR) feature provides a more powerful and efficient method of configuring assured rates than static assured rates.

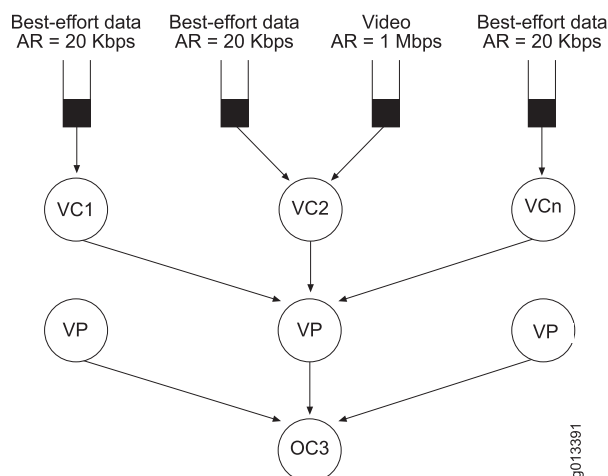
When you use static assured rates, a queue is guaranteed to receive its assured rate only when its parent node is configured with an assured rate that equals the sum of all its child assured rates. Therefore, to ensure that a queue receives its specified assured rate, you must frequently recalculate the assured rates on all parent nodes in the queue's hierarchy. This recalculation is necessary because of the number of scheduler nodes and queues that may be dynamically created or deleted through applications such as bandwidth-on-demand. Eventually, this complicated manual recalculation process becomes unreasonable and virtually impossible.

HAR replaces the manual recalculation process by directing the router to dynamically calculate the assured rate for a scheduler node based on the sum of the assured rates of all its child nodes and queues. For example, you might use HAR to increase the effective weight of an ATM-VC scheduler node when a video queue is created, and to later restore the effective rate of the node when the video queue is deleted.

HAR is applicable only to level 1 and level 2 scheduler nodes, and is not applicable to queues or ports. When you configure HAR, the changes take place immediately. When you disable HAR, the scheduler node's previous weight is restored.

Figure 1 on page 1 shows an application of HAR for VC nodes. In the example, VCs, which are configured for HAR, are stacked over virtual path (VP) nodes. The VP nodes are in turn stacked over an OC-3 ATM port. Each VC has a best-effort data queue, which currently has an assured rate of 20 Kbps. The VCs share equal portions of their parent VP's bandwidth. However, when the video queue is added to VC2, HAR enables VC2's share of the VP bandwidth to increase in proportion to the 1-Mbps video queue that was created. The bandwidth of sibling VC nodes, which have only a data queue, is decreased in equal proportions.

**Figure 1: Hierarchical Assured Rate**



- Related Topics**
- [Configuring an Assured Rate for a Scheduler Node or Queue](#)
  - [Configuring the HRR Weight for a Scheduler Node or Queue](#)