

Configuring Low-CDV Mode for Per-Port Queuing on ATM Interfaces

In low-CDV mode, the HRR scheduler and the SAR scheduler operate in concert. In low-CDV QoS port mode, QoS automatically configures the shaping rate of the VPs, VCs, or both based on the QoS profile and the scheduler profile. Therefore, the QoS shaping mode must be set to the cell mode. In low-CDV mode, the SAR scheduler converts frame-atomic bursts of cells to CDVT-conformant streams of interleaved cells. There is no VC backpressure, and the port backpressure is loose, so several megabytes of cells can reside in the SAR buffer pool.

When you configure low-CDV mode:

- QoS synchronizes the shaping rates for VPs and VCs in the HRR and SAR schedulers.
- VC backpressure is disabled.
- Port backpressure is set to default thresholds of 6 MB per OC3 port and 24 MB per OC12 port.
- SAR scheduler performs more buffering than in low-latency mode.
- Use cell QoS shaping mode.

This procedure creates the low-CDV mode with per-VP CDVT configuration shown in Figure 1 on page 1. Figure 2 on page 2 shows low-CDV mode with per-VC CDVT.

Figure 1: Low-CDV Mode (per-VP CDVT)

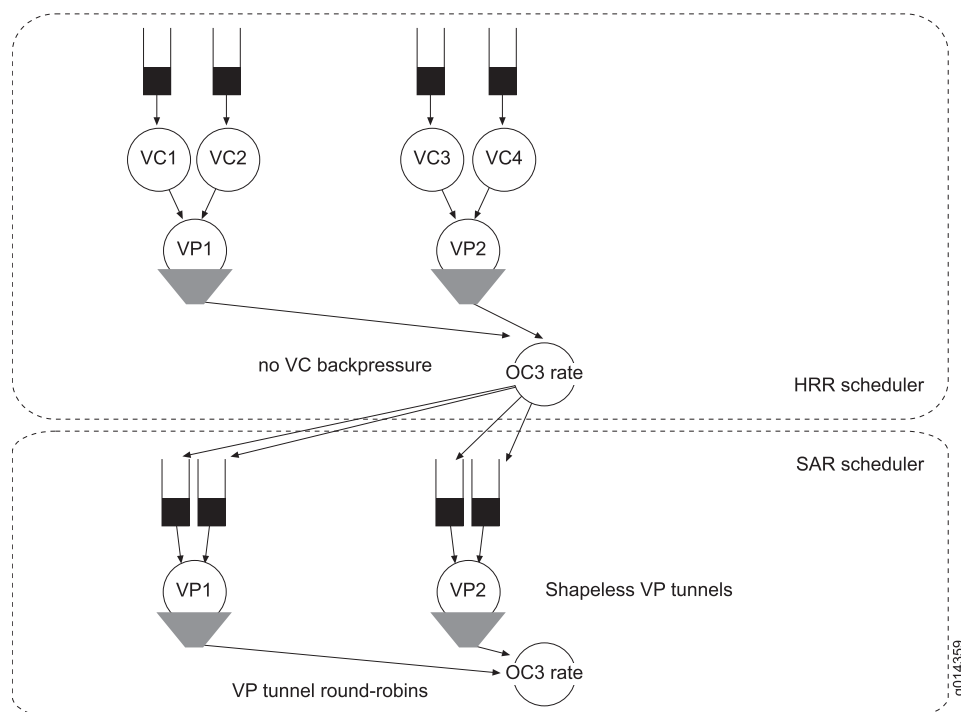
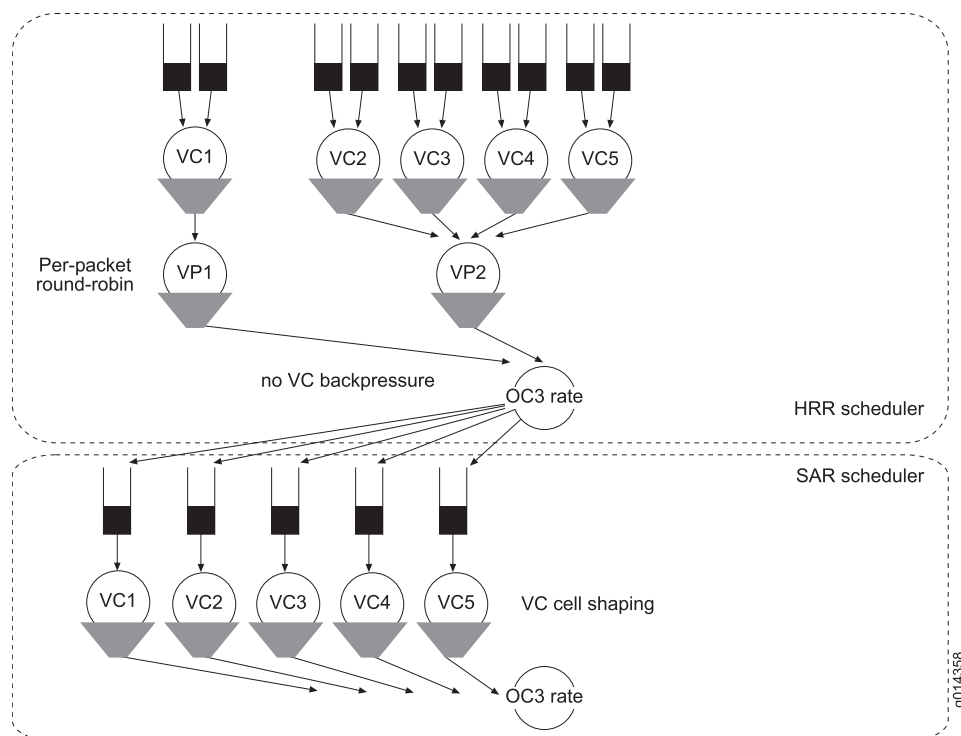


Figure 2: Low-CDV Mode (per-VC CDVT)



To configure low-CDV mode with a strict-priority queue and a best-effort queue:

1. Configure the traffic class.

```
host1(config)#traffic-class strict
host1(config-traffic-class)#exit
```

2. Set the traffic class in the traffic-class group.

```
host1(config)#traffic-class-group strict
host1(config-traffic-class-group)#traffic-class strict
host1(config-traffic-class-group)#exit
```

3. Define the scheduler profiles for the traffic-class group.

```
host1(config)#scheduler-profile strict
host1(config-scheduler-profile)#strict-priority
host1(config-scheduler-profile)#exit
```

```
host1(config)#scheduler-profile 500k
host1(config-scheduler-profile)#shaping-rate 500000
host1(config-scheduler-profile)#exit
```

```
host1(config)#scheduler-profile 1m
host1(config-scheduler-profile)#shaping-rate 1000000
host1(config-scheduler-profile)#exit
```

```
host1(config)#scheduler-profile 2m
host1(config-scheduler-profile)#shaping-rate 2000000
host1(config-scheduler-profile)#exit
```

4. Configure per-VC CDVT by configuring QoS profile with ATM VC queues.

```
host1(config)#qos-profile low-cdv-q-p
host1(config-qos-profile)#atm-vc node scheduler-profile 1m
host1(config-qos-profile)#atm-vp node scheduler-profile 2m
host1(config-qos-profile)#atm-vc queue traffic-class best-effort
host1(config-qos-profile)#atm group strict scheduler-profile strict
host1(config-qos-profile)#atm-vc queue traffic-class strict scheduler-profile 500k
host1(config-qos-profile)#exit
```

5. Configure per-VP CDVT using shapeless VP tunnels that are used when the QoS application controls SAR scheduler shaping and set the QoS port mode to low CDV.

```
host1(config)#interface atm 2/0
host1(config-if)#atm vp-tunnel 0 0
host1(config-if)#atm vp-tunnel 1 0
host1(config-if)#qos-mode-port low-cdv
host1(config-if)#qos-profile low-cdv-q-p
host1(config-subif)#interface atm 2/0.5
host1(config-subif)#atm pvc 5 0 5 aal5snap
host1(config-subif)#interface atm 2/0.6
host1(config-subif)#atm pvc 6 0 6 aal5snap
host1(config-subif)#interface atm 2/0.7
host1(config-subif)#atm pvc 7 1 7 aal5snap
host1(config-subif)#interface atm 2/0.8
host1(config-subif)#atm pvc 8 1 8 aal5snap
```



TIP: For ATM interfaces on ERX-7xx models, ERX-14xx models, and the ERX-310 router, you must specify port 0.

Configuring an ATM VP tunnel sets a shaping rate in the SAR scheduler. Before configuring an ATM VP tunnel, there must be no PVCs with the same VPI that you are about to configure. Before using the **atm vp-tunnel** command, remove any PVCs from the configuration. You can reconfigure the PVCs after configuring the shapeless VP tunnel.

The **qos-mode-port** command:

- Excludes non-UBR ATM QoS services on any VC on the ATM module; for example, PCR, nrtVBR, and CBR
- Cannot be used if shaping is currently configured on the SAR scheduler
- Cannot be used with ATM VP tunnels with nonzero rates; however, can be used with tunnels with rates of zero (shapeless tunnels)

- Related Topics**
- Per-Packet Queuing on the SAR Scheduler Overview
 - Guidelines for Configuring QoS over ATM
 - atm vp-tunnel command
 - interface atm command
 - qos-mode-port command