

Guidelines for Configuring CoS Shaping-Rate Adjustments for Subscriber Local Loops

These guidelines apply to configuring an MX-series router installed as an edge router to adjust the configured shaping rates on scheduler nodes for subscriber interfaces that represent subscriber local loops. This shaping-rate feature uses the topology discovery and traffic-monitoring features of the ANCP.

Keep the following points in mind when you enhance hierarchical CoS policy by configuring ANCP-driven shaping-rate adjustments:

- Shaping-rate adjustments are supported only for subscriber local loops that terminate at DSLAMs that you have configured as ANCP neighbors of the MX-series router.
- Shaping-rate adjustments are supported only for scheduler nodes for which you have configured an initial shaping rate by including the **shaping-rate** statement in a traffic-control profile applied to the scheduler node. Specify the initial shaping rate as a peak rate, in bits per second (bps), and not as a percentage. Other methods of configuring a shaping rate are not supported with this feature.
- Shaping-rate adjustments are supported only for scheduler nodes that are static logical interface sets that you have configured to operate at Level 3 of the scheduler hierarchy on the router. If an interface set is configured with a logical interface (such as unit 0) and queue, then the interface-set is an internal scheduler node (as opposed to a root node or a leaf node) at Level 2 of the hierarchy. However, if there are no traffic control profiles configured on logical interfaces in an interface set, then the interface set is an internal scheduler node at Level 3 of the hierarchy.
- Shaping-rate adjustments are supported only for subscriber interfaces over physical interfaces that you have configured to operate in hierarchical scheduler mode. Only ports on EQ DPCs in MX-series routers support hierarchical scheduler mode.
- After shaping-rate adjustments are enabled and the router has performed shaping-rate adjustments on a scheduler node, you can configure a new shaping rate by including the **shaping-rate** statement in a traffic-control profile and then applying that profile to that scheduler node. However, this new shaping-rate value does not immediately result in shaping traffic at the new rate. The scheduler node continues to be shaped at rate set by ANCP. Only when the ANCP shaping-rate adjustment feature is disabled is the scheduler node shaped at the newly configured shaping-rate.
- The Layer 2 Tunneling Protocol (L2TP) is often used to carry traffic securely between an L2TP Network Server (LNS) and an L2TP Access Concentrator (LAC). The QoS adjustment feature supports the shaping overhead options that you can use to add a specified number of bytes to the actual packet length when determining shaped session packet length. ANCP shaping-rate adjustments are not supported for ingress traffic, only for egress traffic. To configure the number of bytes to add to the packet at the egress side of the tunnel, include the **egress-shaping-overhead** and **mode** statements at the `[edit chassis fpc slot-number pic pic-number traffic-manager]` hierarchy level. Use the shaping overhead options if you need to account for encapsulation overhead.

For more information about the ANCP protocol, see the ANCP Topology Discovery and Traffic Monitoring Overview.

- Related Topics**
- Hierarchical CoS Shaping-Rate Adjustments Overview
 - CoS Shaping-Rate Adjustments for Subscriber Local Loops Overview
 - Enabling CoS Shaping-Rate Adjustments for Subscriber Local Loops
 - Disabling CoS Shaping-Rate Adjustments for Subscriber Local Loops
 - Example: Configuring Hierarchical CoS Shaping-Rate Adjustments for Subscriber Local Loops