

CoS Shaping-Rate Adjustments for Subscriber Local Loops Overview

This overview describes how an MX-series router installed as an edge router can adjust hierarchical CoS policy for subscriber interfaces for subscriber local loops. You can configure the router to throttle the traffic sent to subscriber local loops so that the traffic does not exceed the current data transmission rate of those lines. This feature ensures that changes to subscriber local loop speeds do not cause bandwidth contention at the subscriber's residential gateway.

In a typical subscriber access network, traffic destined to a subscriber is delivered from the access network, through an edge router, to a DSLAM. The DSLAM multiplexes subscriber traffic through a DSL, also known as a *local loop*, to the subscriber's residential gateway. When line noise or cross talk in a subcarrier causes the error rate on a DSL to exceed a certain threshold, the DSLAM can adapt itself by lowering the data transmission rate to that carrier device. A lower data transmission rate is less susceptible to induced errors.

You can configure an MX-series router to adjust the configured shaping rates on scheduler nodes for subscriber interfaces that represent subscriber local loops. Whenever a DSLAM resynchronizes a subscriber local loop speed, the router adjusts the configured shaping rate for that line so that the aggregate egress traffic to those subscribers is shaped to the local loop speed before the traffic reaches the DSLAM. Unless the maximum amount of bandwidth allocated to the subscriber interface on the router is throttled to the local loop speed, bandwidth contention can occur at the subscriber's residential gateway, which can cause the DSLAM to drop packets. This type of shaping-rate adjustment requires the topology discovery and traffic-monitoring features of the Access Node Control Protocol (ANCP).

You can configure ANCP to communicate the subscriber local loop speed to the MX-series router, which in turn throttles traffic destined to the associated subscriber interface so that it matches the subscriber local loop speed. ANCP acquires subscriber line rate information from DSLAMs and then communicates this data transmission rate for use with CoS.

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

- Related Topics**
- Hierarchical CoS Shaping-Rate Adjustments Overview
 - Guidelines for Configuring CoS Shaping-Rate Adjustments for Subscriber Local Loops
 - 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

