

Queue Prioritization

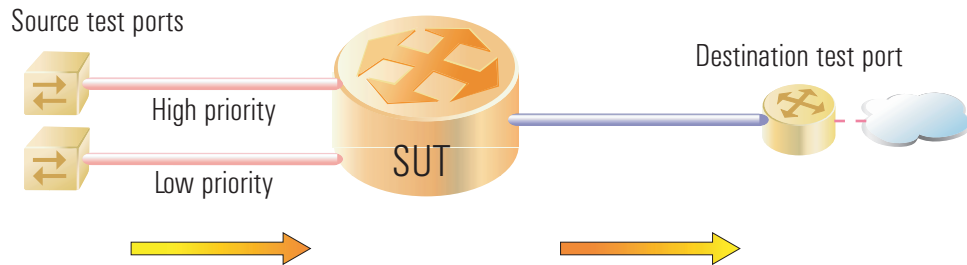
Purpose

This test measures the basic ability of a router to provide preferential treatment to one stream over another.

Description

The test uses three test ports: two source and one destination. It sends two streams to the SUT from the source ports—one high priority and one low priority. The traffic load on the low priority stream is gradually increased to oversubscribe the output (destination) port. The test then measures whether packets from the low priority stream were delayed and/or dropped.

Configuration



Procedure

- 1 Using a routing protocol, such as RIP or BGP-4, advertise a set of prefixes on the destination test port.
- 2 Send a stream of high priority packets (i.e., diffserv EF encoding) at 50% load from the first source test port to addresses advertised from the destination test port.
- 3 Send a stream of low priority packets (i.e., best effort) at 25% load from the second source test port to the addresses advertised from the destination test port.
- 4 Benchmark the nominal packet loss, throughput, and latency, on the high priority stream on the destination test port.
- 5 Increase the bandwidth of low priority packets by a specified increment, and measure the throughput, packet loss, and minimum, maximum, and average latency of both streams.
- 6 Continue incrementing the offered load until the destination test port is oversubscribed.

Variables

- Increment by which the offered load is increased.
- Packet length.
- Number of prefixes advertised.

Results

The high priority stream should see no change in packet loss, latency, or throughput as the low priority stream increases and oversubscribes the destination test port. Any change in these values for the high priority stream indicates an inability in the router to prioritize high priority traffic.