

What is Cisco CBQoS?

Many network managers deploy quality of service (QoS) in the hope that it's a magic bullet. They expect QoS to solve their performance issues by prioritizing the routing and switching of certain application traffic without any visibility into the QoS operation and its impact on the network. However, this "keep your fingers crossed" method for implementing QoS has a better alternative: Cisco Class-Based Quality of Service (CBQoS).

The CBQoS mechanism has two primary functions: congestion avoidance and congestion management. Both types of CBQoS policy ensure application delivery by deploying strategies for dropping traffic, adjusting application responses, and building packet queues. Given the changes CBQoS is implementing when it's deployed, it is necessary to take a closer look at how it is affecting application performance and traffic flow.

The CBQoS Management Information Base (MIB) contains a wealth of statistics relative to existing QoS policies. Because the QoS configuration lives on the router, CBQoS collects statistics about the traffic traversing the router and reports how the QoS configuration is being applied.

CBQoS is built into Cisco IOS, so no additional licenses or hardware components are required to enable and leverage its capabilities. However, an SNMP polling product with application-aware capabilities is a necessity in this type of environment. SNMP products with CBQoS capabilities can poll the CBQoS MIB to retrieve some of the following metrics:

- Input and output QoS class map utilization
- QoS class map drop percentage
- QoS class map packet counts
- QoS pre- vs. post- utilization traffic volume, traffic rate, and packet count
- QoS traffic-shaping packets
- QoS packet queue size
- QoS police showing traffic marked in conformance, in excess, and in violation of defined policies

Instead of forcing network managers to wear a blindfold once QoS has been implemented, these metrics complement any QoS deployment strategy for maintaining control over application delivery. Visibility into the utilization, health, and scope of QoS policies is a necessity for properly troubleshooting applications that are part of the QoS policy tree.