

CISCO ULTRA-RELIABLE WIRELESS BACKHAUL QUALITY-OF-SERVICE (QOS) SPECIFICATIONS

The Cisco Ultra-Reliable Wireless Backhaul (formerly Fluidmesh) Prodigy 2.0 forwarding engine contains an embedded, DiffServ-inspired framework that applies end-to-end QoS treatment to user traffic.

The QoS implementation leverages MPLS technology to bring traffic-engineering features to wireless mesh networks.

QoS marking

The QoS system supports eight priority levels. The levels are numbered from 0 (lowest) to 7 (highest).

When an IP packet originating from a client device first enters the mesh network through an ingress Cisco router, the TOS/DSCP field of the IP header is inspected, and a priority class is assigned to the packet. The class number is taken from the three most significant bits (B7 to B5) of the TOS/DSCP field, as shown in the table below:

B7	B6	B5	B4	B3	B2	B1	B0
Priority class assignment			X	X	X	X	X

The priority class tag is preserved along the entire end-to-end path to the egress router (from which the packet leaves the mesh network to be delivered to the destination client device). Priority scheduling is applied at the different transmission interfaces for each hop along the end-to-end path.

For IP packets that are transmitted wirelessly, the eight priority levels are further mapped into four access categories after scheduling, as shown in the table below:

Priority value	Access category
0	BE
1	BK
2	BK
3	BE
4	VI
5	VI
6	VO
7	VO

Each access category corresponds to a specific set of MAC transmission parameters. Each parameter set is designed to provide a different level of robustness and performance.