

# Wireless Quality of Service (QoS) Configuration on WAP551 and WAP561 Access Points

## Objective

Quality of Service (QoS) enables the network device to provide better service to the selected network traffic. It helps to prioritize the traffic based on the type of data. Delay sensitive data (such as voice data and live stream) are given more priority when compared to others. The Wireless QoS settings help you to configure transmission queues for better throughput and performance when the device handles differentiated wireless traffic.

This article explains how to configure Wireless QoS on WAP551 and WAP561 Access Points.

## Applicable Devices

- WAP551
- WAP561

## Software Version

- v1.0.4.2

## Wireless QoS

Step 1. Log in to the web configuration utility and choose **Wireless > QoS**. The QoS page opens:

Select the radio interface first, and then enter the configuration parameters.

Radio:  Radio 1  
 Radio 2

EDCA(Enhanced Distributed Channel Access) Template: Custom

WAP EDCA				
Queue	Arbitration Inter-Frame Space	Minimum Contention Window	Maximum Contention Window	Maximum Burst
Data 0 (Voice)	1	3	7	1.5
Data 1 (Video)	1	7	15	3.0
Data 2 (Best Effort)	3	15	63	0
Data 3 (Background)	7	15	1023	0

Wi-Fi Multimedia (WMM):  Enable

Station EDCA				
Queue	Arbitration Inter-Frame Space	Minimum Contention Window	Maximum Contention Window	TXOP Limit
Data 0 (Voice)	2	3	7	47
Data 1 (Video)	2	7	15	94
Data 2 (Best Effort)	3	15	1023	0
Data 3 (Background)	7	1	1023	0

No Acknowledgement:  Enable

Unscheduled Automatic Power Save Delivery:  Enable

Step 2. In the Radio field, click the radio button to select the desired radio interface to configure.

**Note:** Step 2 is available only for WAP561 Access Point. The WAP551 has only one radio.

Step 3. Choose the desired template from the EDCA (Enhanced Distributed Channel Access) Template drop-down list. The EDCA parameters affect the flow of traffic from the WAP to the client station. The available options are:

- WFA Defaults — Provides the WiFi Alliance (WFA) defaults for the WAP device and the EDCA station that are best for general and mixed traffic.
- Optimized for Voice — Provides the best values for the WAP device and the EDCA station that are best for voice traffic.
- Custom — You can choose the desired EDCA options.

**Timesaver:** If Custom is not chosen in Step 3, skip to Step 7. If custom is chosen, then follow the below steps.

**Note:** The WAP EDCA and Station EDCA tables have the following queues which are defined for different types of data from the WAP device to the EDCA station and also from the EDCA station to the WAP device.

- Data 0 (Voice) — It is a high priority and minimum delay queue, and data such as VoIP and streaming media are sent to this queue.

- Data 1 (Video) — It is a high priority and minimum delay queue, and time-sensitive data such as video is sent to this queue.
- Data 2 (Best Effort) — It is a medium priority, throughput, and delay queue, and most traditional IP data is sent to this queue.
- Data 3 (Background) — It is the lowest priority queue but with high throughput, data that not time-sensitive but requires maximum throughput is sent to this queue.

EDCA(Enhanced Distributed Channel Access)Template:

WAP EDCA				
Queue	Arbitration Inter-Frame Space	Minimum Contention Window	Maximum Contention Window	Maximum Burst
Data 0 (Voice)	<input type="text" value="1"/>	<input type="text" value="3"/>	<input type="text" value="7"/>	<input type="text" value="1.5"/>
Data 1 (Video)	<input type="text" value="1"/>	<input type="text" value="7"/>	<input type="text" value="15"/>	<input type="text" value="3.0"/>
Data 2 (Best Effort)	<input type="text" value="3"/>	<input type="text" value="15"/>	<input type="text" value="63"/>	<input type="text" value="0"/>
Data 3 (Background)	<input type="text" value="7"/>	<input type="text" value="15"/>	<input type="text" value="1023"/>	<input type="text" value="0"/>

Step 4. The WAP EDCA table has the following parameters that can be configured when Custom is chosen in Step 3.

- Arbitration Inter-Frame Space — This is the wait time for the data frames. Enter the wait time measured based on the slot time in the Arbitration Inter-Frame Space field. The slot time is the amount of time a device waits before it retransmits the data. The values are from 1 to 255.
- Minimum Contention Window — This is the input for the method that determines the initial backoff wait time. Choose the backoff time from the Minimum Contention Window drop-down list. This minimum time is used as the upper limit for the random number generated. If the backoff time expires before the data frame is sent, then the value is incremented until it reaches the maximum contention window. The values are 1, 3, 7, 15, 31, 63, 127, 255, 511, or 1024 seconds.
- Maximum Contention Window — This is the time value for doubling the random backoff value. Choose the backoff time from the Maximum Contention Window drop-down list. If the data frame is not sent within the maximum backoff value then there are a few more attempts for the data frame to be sent. If the data frame is not sent after several attempts then the data frame is dropped. The values are 1, 3, 7, 15, 31, 63, 127, 255, 511, or 1024 seconds.
- Maximum Burst — This is applied to traffic that flows only from the WAP device to the client station. It is the maximum burst length allowed for packets without header information. The values are from 0 to 999.

Wi-Fi Multimedia (WMM):  Enable

Station EDCA				
Queue	Arbitration Inter-Frame Space	Minimum Contention Window	Maximum Contention Window	TXOP Limit
Data 0 (Voice)	2	3	7	47
Data 1 (Video)	2	7	15	94
Data 2 (Best Effort)	3	15	1023	0
Data 3 (Background)	7	15	1023	0

Step 5. (Optional) The Wi-Fi Multimedia (WMM) controls the traffic flow from the WAP device to the station and also the traffic flow from the client station to the WAP device. To enable WMM extensions, check the **Wi-Fi Multimedia (WMM)** check box.

**Timesaver:** If WMM is unchecked then skip to Step 7.

Step 6. The Station EDCA table has the following parameters that can be configured if Custom is chosen in Step 3.

- Arbitration Inter-Frame Space — This is the wait time for the data frames. Enter the wait time measured based on slot time in the Arbitration Inter-Frame Space field. The slot time is the amount of time a device waits before it retransmits the data. The values are from 1 to 255.
- Minimum Contention Window — This is the input for the method that determines the initial backoff wait time. Choose the backoff time from the Minimum Contention Window drop-down list. This minimum time is used as the upper limit for the random number generated. If the backoff time expires before the data frame is sent, then the value is incremented till it reaches the maximum contention window. The values are 1, 3, 7, 15, 31, 63, 127, 255, 511, or 1024 seconds.
- Maximum Contention Window — This is the time value for doubling the random backoff value. Choose the backoff time from the Maximum Contention Window drop-down list. If the data frame is not sent within the maximum backoff value, then there are a few more attempts for the data frame to be sent. If the data frame is not sent after several attempts then the data frame is dropped. The values are 1, 3, 7, 15, 31, 63, 127, 255, 511, or 1024 seconds.
- TXOP Limit — This is the traffic from client to the WAP device. The Transmission Opportunity (TXOP) is the time interval when the client station has the right to start transmission from the wireless medium to the unified access point. The values are from 1 to 65535.

Step 7. Check the **No Acknowledgement** check box to enable it so that the WAP device does not acknowledge packet frames with QoSNoAck as the service class value.

Step 8. Check the **Unscheduled Automatic Power Save Delivery** check box to enable Automatic Power Save Delivery (ASPD). It is a power management method and is recommended when the VoIP phones access the network through the WAP device.

Step 9. Click **Save**.