Configure Quality of Service on the WAP351

Objective

Using Quality of Service (QoS) is a good way to optimize network traffic. Quality of Service lets you slow lower priority traffic in order to provide better throughput of higher priority traffic. Based on the trust mode selected, incoming packets are sorted into 4 different queues, which are then processed according to user-defined priority.

The objective of this article is to show you how to configure Quality of Service settings on the WAP351.

Applicable Devices

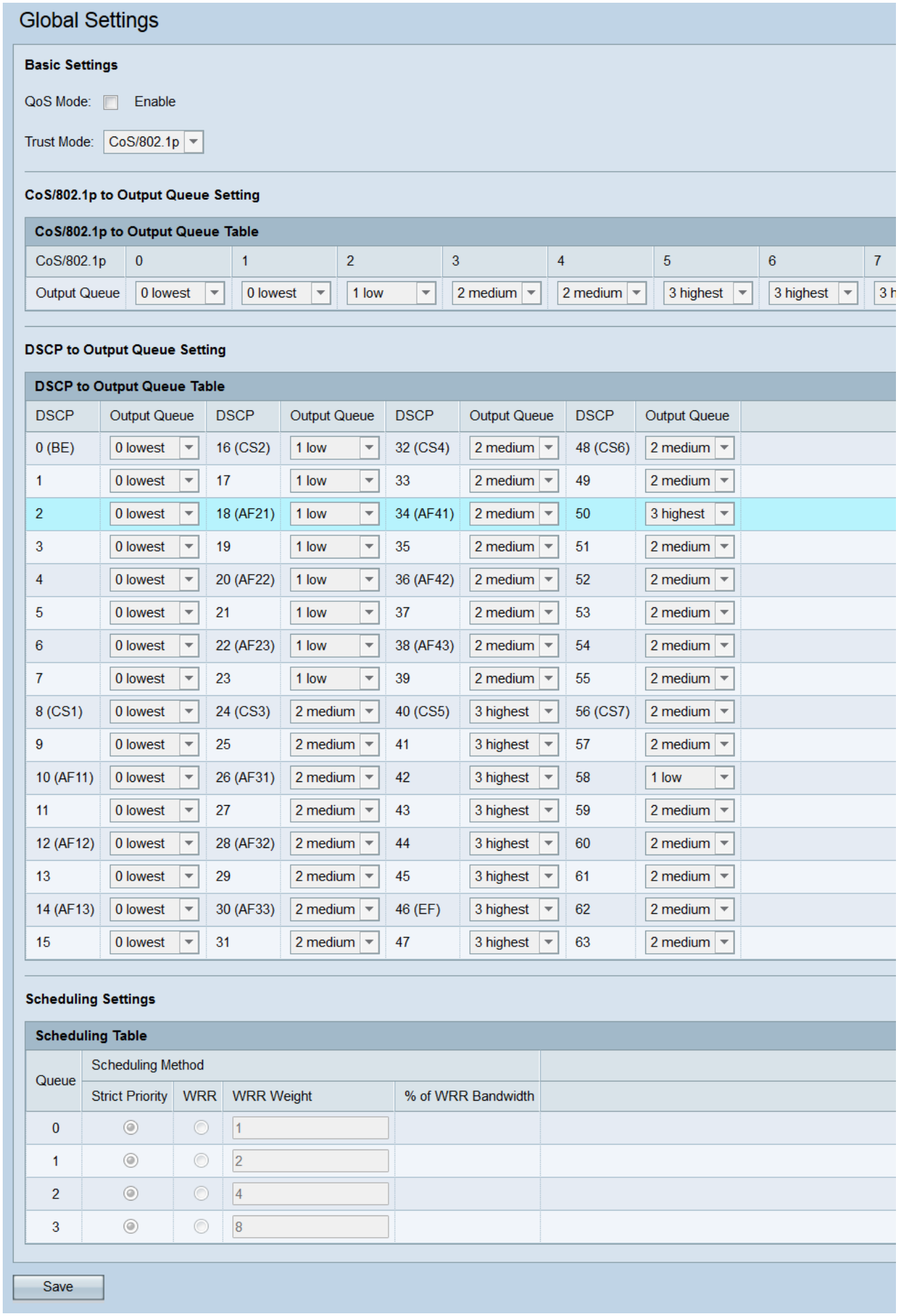
- WAP351

Software Version

- v1.0.1.3

Configuring Quality of Service

Step 1. Log in to the web configuration utility and choose **Quality of Service > Global Settings**. The *Global Settings* page opens:



Global Settings

Basic Settings

QoS Mode: Enable

Trust Mode: CoS/802.1p

CoS/802.1p to Output Queue Setting

CoS/802.1p to Output Queue Table

CoS/802.1p	0	1	2	3	4	5	6	7
Output Queue	0 lowest	0 lowest	1 low	2 medium	2 medium	3 highest	3 highest	3 h

DSCP to Output Queue Setting

DSCP to Output Queue Table

DSCP	Output Queue	DSCP	Output Queue	DSCP	Output Queue	DSCP	Output Queue
0 (BE)	0 lowest	16 (CS2)	1 low	32 (CS4)	2 medium	48 (CS6)	2 medium
1	0 lowest	17	1 low	33	2 medium	49	2 medium
2	0 lowest	18 (AF21)	1 low	34 (AF41)	2 medium	50	3 highest
3	0 lowest	19	1 low	35	2 medium	51	2 medium
4	0 lowest	20 (AF22)	1 low	36 (AF42)	2 medium	52	2 medium
5	0 lowest	21	1 low	37	2 medium	53	2 medium
6	0 lowest	22 (AF23)	1 low	38 (AF43)	2 medium	54	2 medium
7	0 lowest	23	1 low	39	2 medium	55	2 medium
8 (CS1)	0 lowest	24 (CS3)	2 medium	40 (CS5)	3 highest	56 (CS7)	2 medium
9	0 lowest	25	2 medium	41	3 highest	57	2 medium
10 (AF11)	0 lowest	26 (AF31)	2 medium	42	3 highest	58	1 low
11	0 lowest	27	2 medium	43	3 highest	59	2 medium
12 (AF12)	0 lowest	28 (AF32)	2 medium	44	3 highest	60	2 medium
13	0 lowest	29	2 medium	45	3 highest	61	2 medium
14 (AF13)	0 lowest	30 (AF33)	2 medium	46 (EF)	3 highest	62	2 medium
15	0 lowest	31	2 medium	47	3 highest	63	2 medium

Scheduling Settings

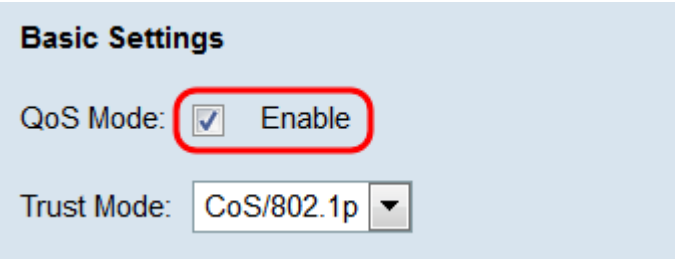
Scheduling Table

Queue	Scheduling Method			
	Strict Priority	WRR	WRR Weight	% of WRR Bandwidth
0			1	
1			2	
2			4	
3			8	

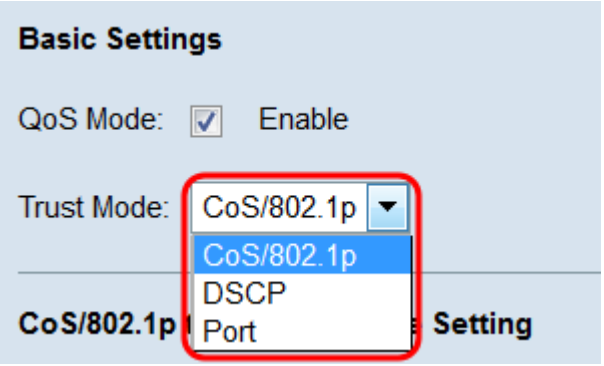
Save

Basic Settings

Step 1. Check the **Enable** checkbox in the *QoS Mode* field to turn on Quality of Service.



Step 2. In the *Trust Mode* drop-down list, choose an option to determine how received packets are assigned priorities.



The options are:

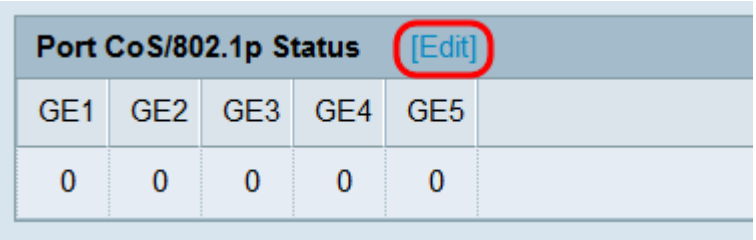
- CoS/802.1p – Priority is assigned to incoming packets based on its 802.1p value. If a packet is not tagged, it is given a priority of 0. You can adjust the priority mapping settings in the
- *CoS/802.1p to Ouput Queue Table*.
- DSCP – The priority of a packet received is based off its IP ToS/DSCP value. If a packet is not tagged, it is given a priority of 0. You can adjust the priority mapping settings in the
- *DSCP to Output Queue Table*.
- Port – In this mode, the priority of a packet is determined by the CoS (Class of Service) of the port it came through. The CoS value of each ports can be configured in the

LAN > Port Settings page. If this option is selected, the priority mapping settings will be displayed in the *Port CoS/802.1p Status* table.

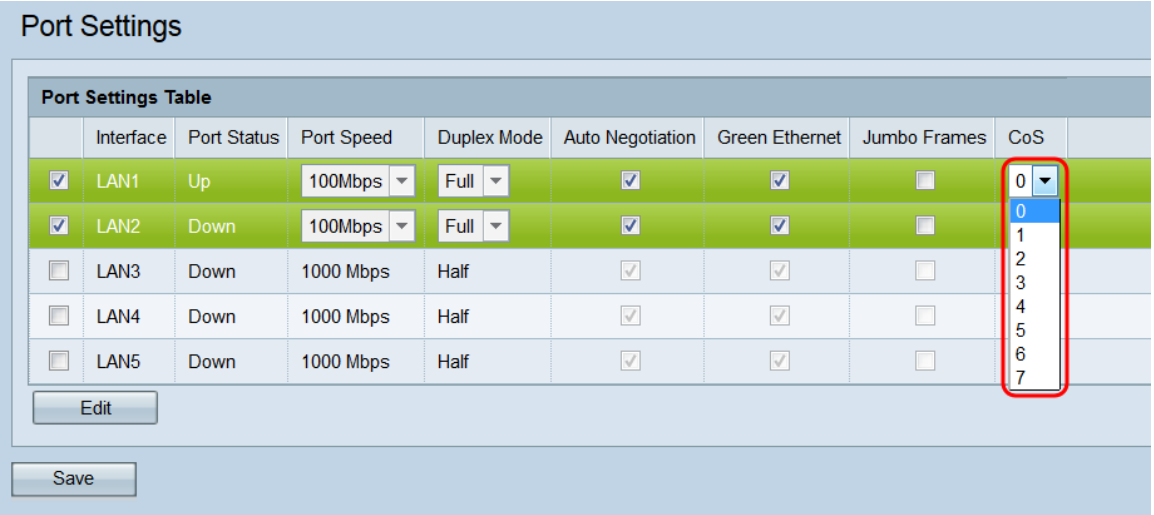
> **Note:** Depending on the option you selected, navigate to the appropriate table to configure the priority mapping settings.

Port CoS/802.1p Status

Step 1. If you selected **Port** in the *Trust Mode* drop-down list, the *Port CoS/802.1p Status* table will appear. This table shows the priority mappings assigned to each port (labeled GE1 – 5) on the WAP. To edit these mappings, click the **[Edit]** link to go to the **LAN > Port Settings** page.

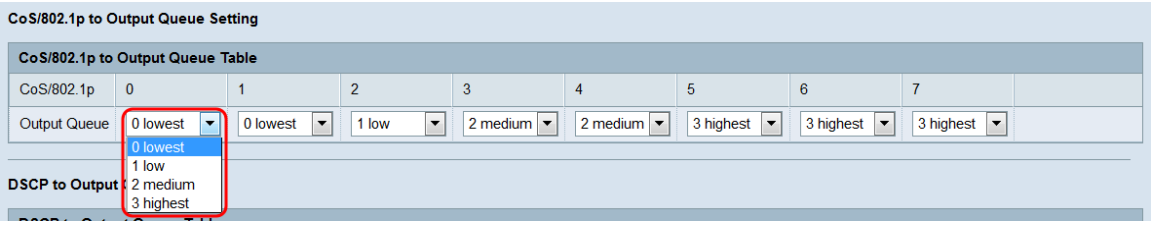


Step 2. On the *Port Settings* page, check the checkbox(s) of the port(s) you wish to edit, then click the **Edit** button. The fields of each selected port will become available. In the *CoS* drop-down lists, select a CoS value for each port. The values range from 0-7, with 0 being the lowest and 7 the highest.



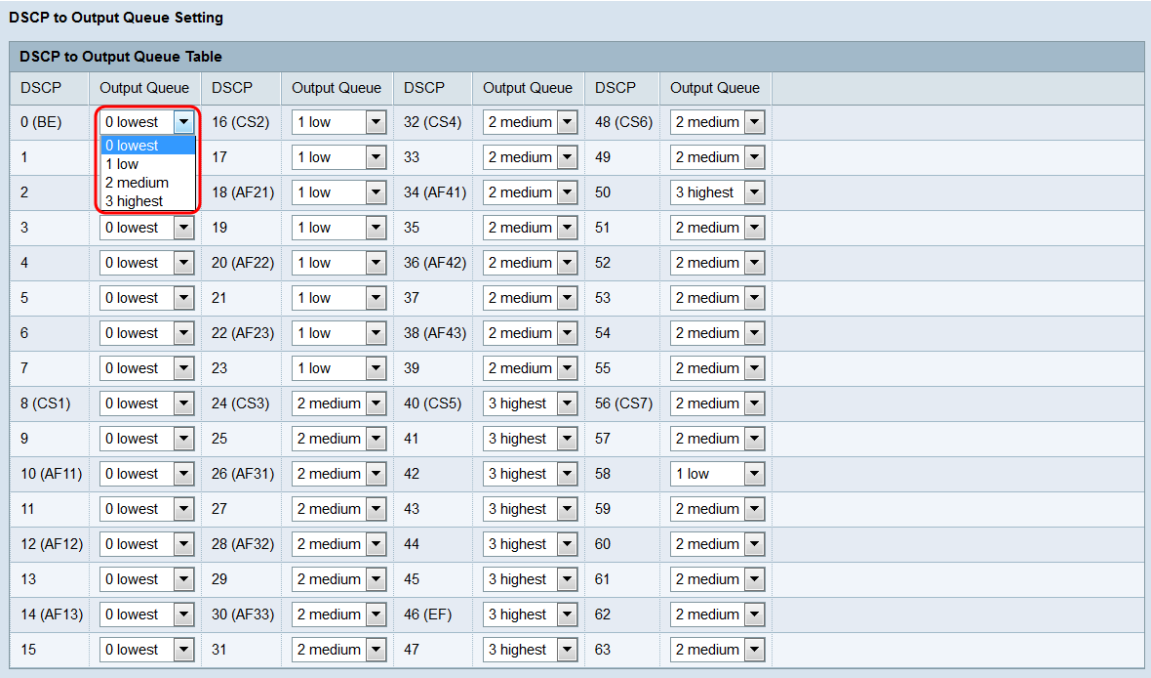
CoS/802.1p to Output Queue Table

Step 1. Navigate to the *CoS/802.1p to Output Queue Setting* area. The table here maps 802.1p priorities to specified output queues. The *CoS/802.1p* field lists priorities ranging from 0-7, where 7 is the highest priority. The *Output Queue* drop-down lists show the output queues (ranging from 0-3) that each priority is mapped to. Use the drop-down lists to adjust which priorities are mapped to each queue.



DSCP to Output Queue Table

Step 1. Navigate to the *DSCP to Output Queue Setting* area. The table here maps DSCP priorities to specified output queues. The *DSCP* field lists priorities ranging from 0-63. These priorities are not required to have set associations, but it is recommended that 0 be given to lowest priority and 63 to highest. The *Output Queue* drop-down lists show the output queues (ranging from 0-3) that each priority is mapped to. Use the drop-down lists to adjust which priorities are mapped to each queue.



DSCP to Output Queue Setting

DSCP to Output Queue Table

DSCP	Output Queue	DSCP	Output Queue	DSCP	Output Queue	DSCP	Output Queue
0 (BE)	0 lowest (0 lowest / 1 low / 2 medium / 3 highest)	16 (CS2)	1 low	32 (CS4)	2 medium	48 (CS6)	2 medium
1	0 lowest	17	1 low	33	2 medium	49	2 medium
2	0 lowest	18 (AF21)	1 low	34 (AF41)	2 medium	50	3 highest
3	0 lowest	19	1 low	35	2 medium	51	2 medium
4	0 lowest	20 (AF22)	1 low	36 (AF42)	2 medium	52	2 medium
5	0 lowest	21	1 low	37	2 medium	53	2 medium
6	0 lowest	22 (AF23)	1 low	38 (AF43)	2 medium	54	2 medium
7	0 lowest	23	1 low	39	2 medium	55	2 medium
8 (CS1)	0 lowest	24 (CS3)	2 medium	40 (CS5)	3 highest	56 (CS7)	2 medium
9	0 lowest	25	2 medium	41	3 highest	57	2 medium
10 (AF11)	0 lowest	26 (AF31)	2 medium	42	3 highest	58	1 low
11	0 lowest	27	2 medium	43	3 highest	59	2 medium
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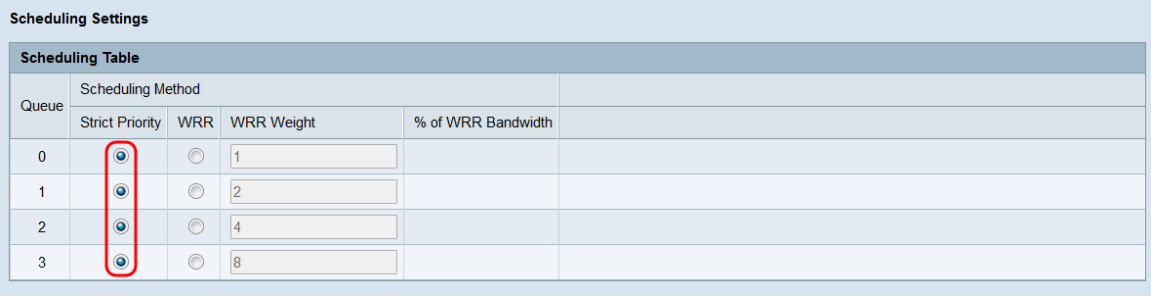
13	0 lowest	29	2 medium	45	3 highest	61	2 medium
14 (AF13)	0 lowest	30 (AF33)	2 medium	46 (EF)	3 highest	62	2 medium
15	0 lowest	31	2 medium	47	3 highest	63	2 medium

Scheduling Settings

Step 1. Navigate to the *Scheduling Settings* area. In the *Scheduling Table*, you can adjust how the queues are scheduled. By default, the *Strict Priority* radio buttons are selected. In this mode, the priority is Queue 3 > Queue 2 > Queue 1 > Queue 0.

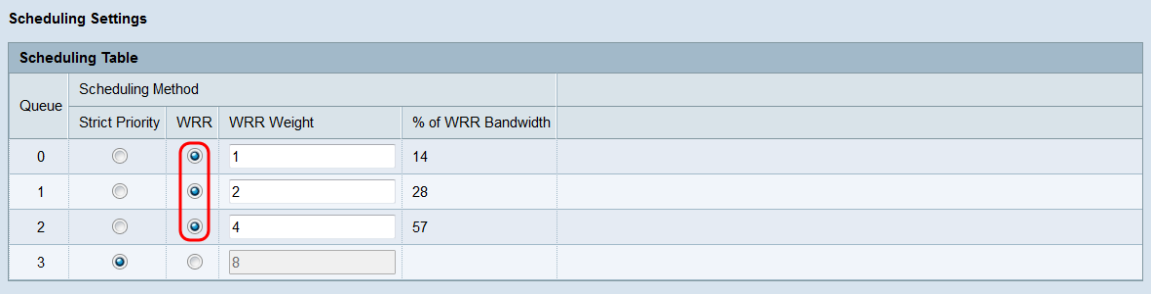


Scheduling Settings

Scheduling Table

Queue	Scheduling Method			
	Strict Priority	WRR	WRR Weight	% of WRR Bandwidth
0	◉	○	1	
1	◉	○	2	
2	◉	○	4	
3	◉	○	8	

Step 2. Click a queue's *WRR* radio button to switch to WRR (weighted round-robin) mode. In this mode, queues are scheduled in a round-robin method according to the service weight of each queue. WRR is only allowed in the following configurations: [Q0, Q1], [Q0, Q1, Q2], and [Q0, Q1, Q2, Q3].

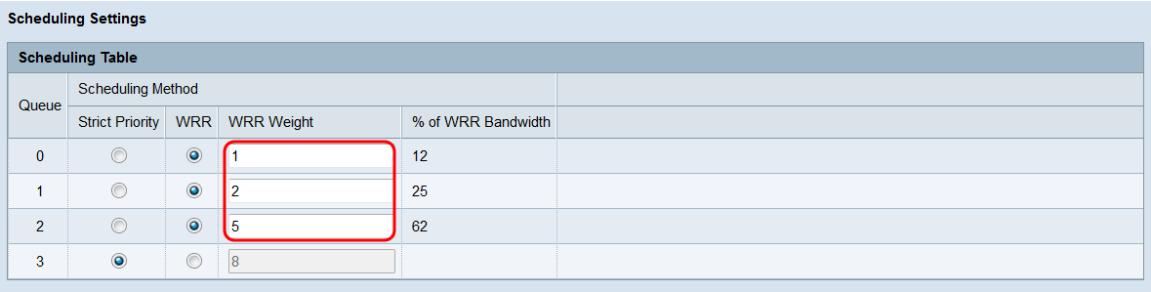


Scheduling Settings

Scheduling Table

Queue	Scheduling Method			
	Strict Priority	WRR	WRR Weight	% of WRR Bandwidth
0	○	◉	1	14
1	○	◉	2	28
2	○	◉	4	57
3	◉	○	8	

Step 3. If WRR is enabled, you can adjust the service weight of each available queue in the *WRR Weight* field. The valid range is 1-49.



Note: The *% of WRR Bandwidth* shows how often each queue will be serviced in WRR mode. It changes depending on the values entered in the WRR Weight fields.

Step 4. Click **Save**.