Change Primary Capable AP to Mesh Extender on CBW

Objective

This article will explain a new option to use Primary Capable Access Points (APs) as Mesh Extenders on your Cisco Business Wireless (CBW) network.

Applicable Devices | Software Version

- Cisco Business Wireless140AC **(Data Sheet)** | 10.6.1.0 **(Download latest)**
- Cisco Business Wireless 145AC **(Data Sheet)** | 10.6.1.0 **(Download latest)**
- Cisco Business Wireless 240AC **(Data Sheet)** | 10.6.1.0 (**Download latest**)

Introduction

The needs of networks change, and CBW mesh network options are changing along with it, increasing flexibility.

With firmware version 10.4.1.0 or earlier, your CBW 140AC, 145AC, and 240AC APs could only be used as Primary Capable, Root APs. Starting with firmware update 10.6.1.0 and moving forward, there is a new option to configure an Access Point as a Mesh Extender.

If you want to configure a Primary Capable (Root) AP as a Mesh Extender, keep reading!

Prerequisites

1. Only Primary Capable APs (CBW140AC, CBW145AC, CBW240AC) are allowed to change from a Primary Capable AP role to a Mesh Extender role.
2. Your CBW deployment needs to be in mesh mode.

Things to Consider before Changing a Root AP to a Mesh Extender

- The radio band used for backhaul is also shared with wireless clients connecting to the Mesh Extender.
- Primary Capable APs that are operating with its AP Role as a Mesh Extender will not be considered for Primary AP selection.

Access Point Behaviors: Root Role vs. Mesh Role

	Primary Capable AP	Primary Capable AP

	In Root Role	In Mesh Role
Primary AP Election	Take part in Primary AP election process	Will not take part (same as Mesh Extenders)
Primary AP Configuration Sync (to support Primary AP failover)	Configuration will be synced	Configuration will not be synced
Primary AP Reset	Can boot up as Primary AP	Will wait for Primary AP to boot (same as Mesh Extenders)
Image Used/Image Upgrade	ap1g5, No change in Image upgrade or Efficient Join	ap1g5, No change in Image upgrade or Efficient Join
On Individual AP Factory reset	Role: Root Type: Primary Capable AP	Role: Root Type: Primary Capable AP
Set as Next Preferred Primary/Make Me Primary AP	Applicable	Not Applicable

Port Functionality: AP Connected to a PoE Switch

Primary Capable AP (Mesh AP Role): Uplink port connected to a separate switch, Uplink and Downlink port can forward traffic normally.

This table shows the functionality of the Wide Area Network (WAN) and Local Area Network (LAN) ports on the Access Points when the WAN port is connected to a Power over Ethernet (PoE) switch to power the AP. Both the WAN and LAN ports on the various APs will provide Ethernet bridging. The Ethernet uplink port is the PoE port on the Access Point.

AP Model Uplink port connected to separate switch	Uplink Port	Downlink Port(s)
CBW140AC	Ethernet Bridging	N/A
CBW240AC	Ethernet Bridging	Ethernet Bridging
CBW145AC	Ethernet Bridging	Ethernet Bridging

Port Functionality: AP connected to a Power Injector

This table shows the functionality of the WAN and LAN ports on the Access Points when the WAN port is connected to a Power Injector. The WAN ports won’t provide any functionality if the AP is connected to a stand-alone power injector, or in other words, the power injector is not connected to a switch. The WAN port WILL provide ethernet bridging if the power injector is also connected to a switch. Please note that if the injector is also connected to a switch, it must be connected to a port configured for

a different VLAN or to a separate switch to avoid a network loop. The ethernet uplink port is the PoE port on the Access Point.

Primary Capable AP (Mesh AP Role): Uplink port connected to power injector, CBW145AC/CBW240AC Downlink port can forward traffic normally.

AP Model	Uplink Port Functionality Uplink port connected to Power Injector Injector NOT connected to a switch	Uplink Port Functionality Injector IS connected to a switch	Downlink port(s)
CBW140AC	NA	Ethernet Bridging	NA
CBW240AC	NA	Ethernet Bridging	Ethernet Bridging
CBW145AC	NA	Ethernet Bridging	Ethernet Bridging

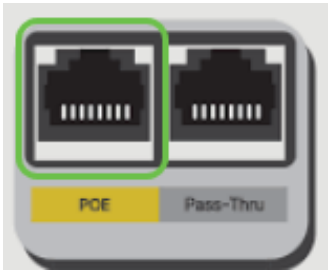
Uplink/Downlink Ports

CBW140AC

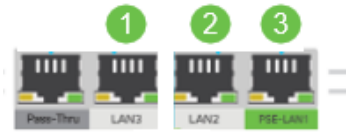
Uplink port only.

CBW145AC

Uplink port.



Downlink ports.



CBW240AC

1. Uplink port
2. Downlink port

Change the role of a Root AP to a Mesh Extender

Step 1

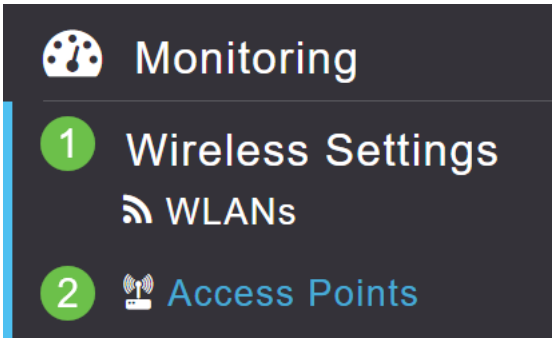
Make sure you have the latest version of firmware running on your CBW mesh network. Click the links above to download the latest firmware for your APs. **Click if you would like step-by-step instructions on doing a firmware update**.

Step 2

Log into the Web UI of your CBW Primary AP. Click on the **light green arrows** in the upper right-hand corner of the Web User Interface (UI) to enter *Expert View*.

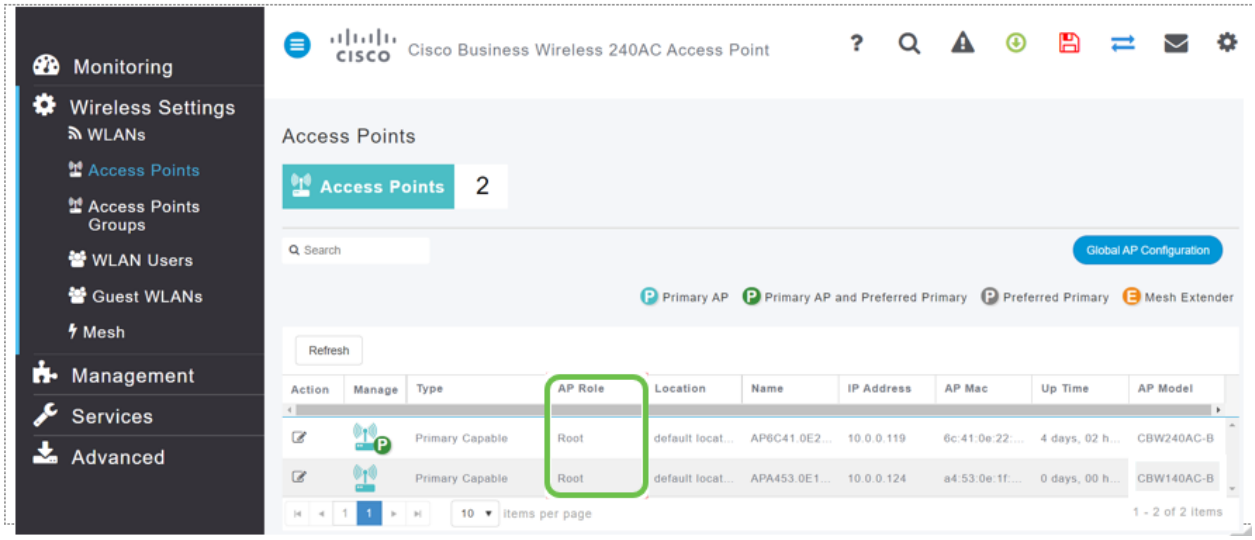
Step 3

Navigate to **Wireless Settings > Access Points**.



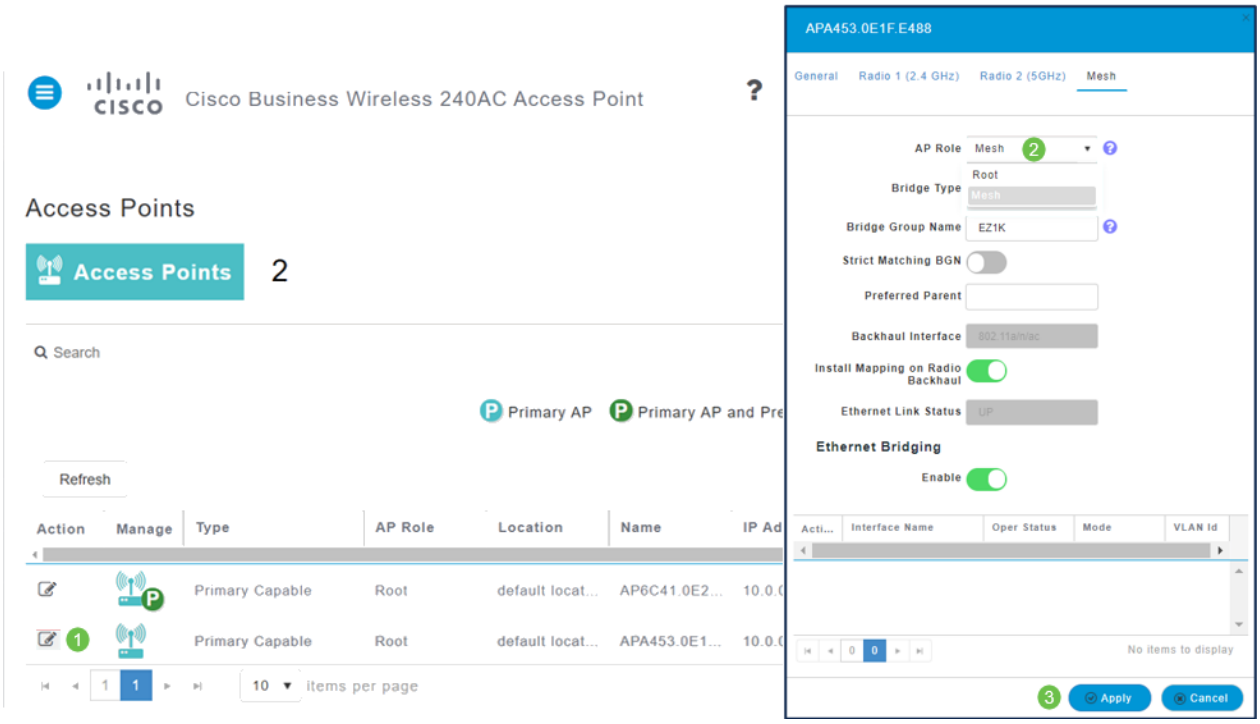
Step 4

In this example, you will see the CBW240 AP and a CBW140 AP configured for mesh. Both APs have the role of *Root*. We will be changing the CBW140AC from *Root* to *Mesh*.



Step 5

Click the **edit icon**. A pop-up window opens. Click the drop-down menu under *AP Role* and select **Mesh**. Click **Apply**. At this point, the AP will reboot. This will take several minutes. Just a friendly reminder that you will need firmware version 10.6.1.0 or above and you will also need to be in Expert Mode instead of General for these options.

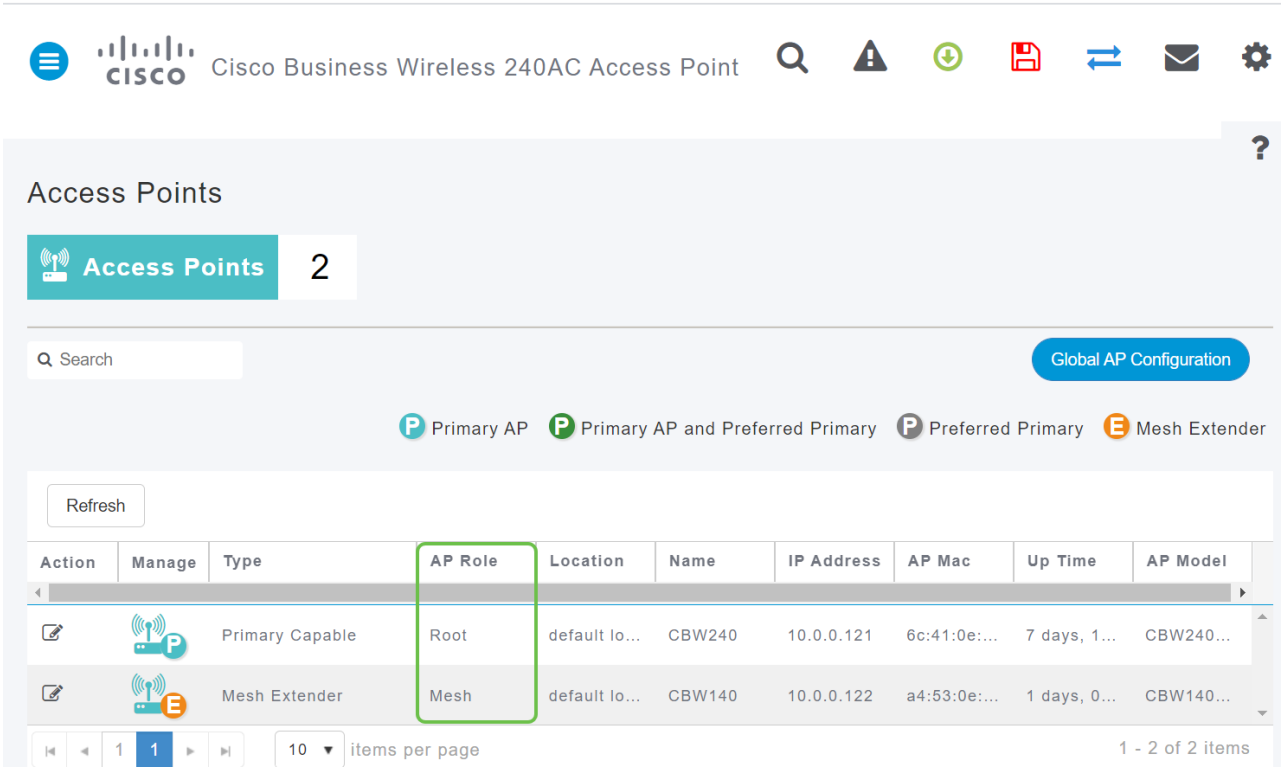


Step 6

After the reboot:

1. The AP joins the Primary AP
2. The change will be reflected in the Access Points table with the CBW140 AP Type labeled as *Mesh Extender* and the AP Role has changed to *Mesh*.
3. The AP is still connected to the local LAN where the AP was originally installed
4. Mesh Extenders use the 5Ghz band for the Mesh Backhaul by default, but you can use

2.4Ghz as well.



Change the Mesh Extender back to a Root AP

If you want to reverse this process:

1. Select the required *Mesh Backhaul Slot***.**
2. Change the AP Type from *Mesh Extender* to *Primary Capable***.** It will be pushed to the AP and will reboot.
3. After reboot, the AP joins the Primary AP.
4. The new Type change will be reflected in the Access Points table.

If the AP needs to be changed back to AP mode but the Primary AP is unavailable, you will need to factory reset the Access Point via the reset button. On factory reset, the AP Role is set to *Root,* and Type is set to *Primary Capable AP.*

Conclusion

There you go, now you know how to change a Root AP to a Mesh Extender and reverse the process if necessary.