Wi-Fi 6 on Cisco Business 150AX APs

Objective

This article will explain the basics of Wi-Fi 6. This latest wireless technology is available on the new Cisco Business Wireless 150AX and 151AXM Mesh Extender APs.

Applicable Devices | Firmware Version

- CBW150AX AP | 10.2.2.0
- CBW151AXM Mesh Extender | 10.2.2.0

Introduction

The CBW 150AX access points and 151AXM mesh extenders are the next generation of the Cisco Business Wireless Product line.

The major new feature is the implementation of 802.11ax, that uses Wi-Fi 6. These new Access Points provide improved performance by increasing the efficacy of the network and its ability to manage higher numbers of devices.

CBW 15x series devices are not compatible with CBW 14x/240 series devices and coexistence on the same LAN is not supported.

Wi-Fi 6 Highlights

Wi-Fi 6 has advanced technology that takes your wireless network to the next level.

OFDMA

One of the new features is called Orthogonal Frequency Division Multiple Access

(OFDMA). This was created to improve the process of sending and receiving more data across a greater number of channels, using different frequencies.

There are large channels for bulky information and data, as well as small channels that are used for smaller amounts of data transmission. When these channels are used in this way, they can all be used at the same time and still work seamlessly. The technology has more *lanes* of connection, so that it can talk to more devices at the same time.

For example, if you need to upload huge files of graphic images to a site on the Internet, you'll need a channel that can handle sending large files easily and quickly. OFDMA finds the channel with the largest bandwidth to send your files.

What if you need to access your email account at the same time? Since emails are much smaller than the image files, OFDMA selects the channel with the right bandwidth to manage your email account.

In a nutshell, OFDMA can perform different actions at the same time on a Wi-Fi network without losing speed or connection.

MU-MIMO

Another new feature is Multiuser Multiple Input Multiple Output or MU-MIMO.

MU-MIMO allows several devices in your network to communicate with your Access Point at the same time rather than wait for their turn. MIMO breaks up the Internet bandwidth into separate channels for each device.

In a scenario where someone is in an online web meeting and needs separate access so they can stay on the call, MIMO technology keeps all the devices working well without losing speed or connection.

In other words, the access point uses channels to communicate to all the devices at the same time but not on the same channel. This is helpful when you have a lot of devices in the network that are streaming, downloading, or uploading data. In fact, Wi-Fi 6 can support up to 12 streams simultaneously.

BSS Coloring

What happens when your network is close to another network and at times the signals get so close that they overlap and interfere with each other?

Wi-Fi 6 now uses a technology called Basic Service Set, or BSS Coloring, that identifies all the different networks and then marks each network with a different color.

This helps your network identify the channels that belong and ignore the ones that don't.

Both the access point and the client are less distracted by other networks, and ultimately become more responsive and efficient.

Target Wait Time

Do you notice that sometimes the batteries in your network devices wear down more quickly than you would like?

Well, there is another cool feature in Wi-Fi 6 called Target Wait Time, or TWT.

With Wi-Fi 6, the access point uses TWT technology to set up scheduled times on Wi-Fi devices when those devices need to send or receive data. When it isn't sending or receiving, it goes into sleep mode. In this way, the battery life is saved on that device.

WPA3 Security

Last, but not least, Wi-Fi 6 uses the latest security protocol called WPA3.

This security protocol gives you stronger protection against users who may try to access your network. It's called authentication protection, which means you have greater protection from threats like someone trying to access the network by guessing the password several times.

Conclusion

Wi-Fi 6 was designed to help your wireless network become more effective by:

• Using different channels for different data through OFDMA.

• Simultaneously communicating to multiple clients through MIMO.

• Detecting and identifying devices and other networks through BSS Coloring.

• Extending the battery life of your devices through TWT.

• Using the latest authentication protection through WAP3.

All this makes your network and devices work together to send and receive data as quickly and efficiently as possible, and its available now in the CBW150AX AP and 151AXM mesh extender. Welcome to the latest wireless technology!