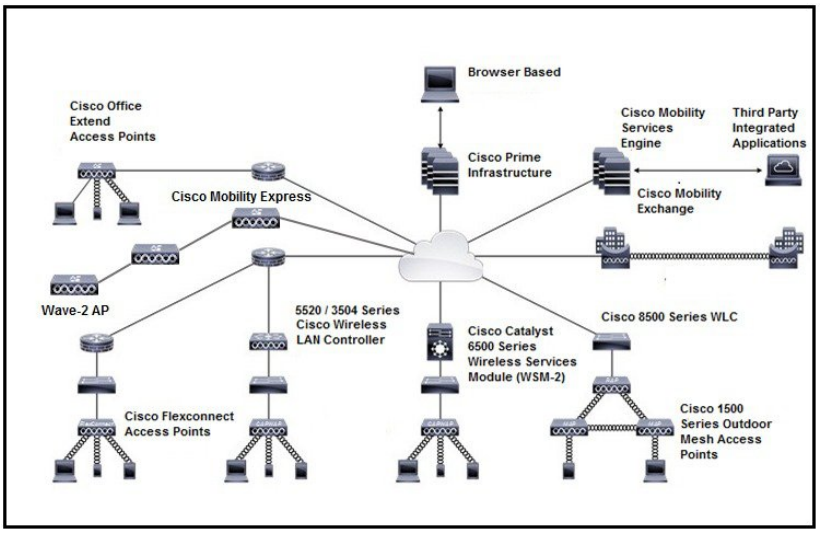
Cisco Wireless Solution Overview

Cisco Wireless Solution is designed to provide 802.11 wireless networking solutions for enterprises and service providers. Cisco Wireless Solution simplifies deploying and managing large-scale wireless LANs and enables a unique best-in-class security infrastructure. The operating system manages all data client, communications, and system administration functions, performs radio resource management (RRM) functions, manages system-wide mobility policies using the operating system security solution, and coordinates all security functions using the operating system security framework.

This figure shows a sample architecture of a Cisco Wireless Enterprise Network:

Figure 1: Sample Cisco Wireless Enterprise Network Architecture



The interconnected elements that work together to deliver a unified enterprise-class wireless solution include:

- Client devices
- Access points (APs)
- Network unification through Cisco Wireless Controllers (WLCs)
- Network management
- Mobility services

Beginning with a base of client devices, each element adds capabilities as the network needs to evolve and grow, interconnecting with the elements above and below it to create a comprehensive, secure WLAN solution.

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Core Components

A Cisco Wireless network consists of the following core components:

- Cisco Wireless Controllers—Controllers are enterprise-class high-performance wireless switching platforms that support 802.11a/n/ac and 802.11b/g/n protocols. They operate under control of the operating system, which includes the radio resource management (RRM), creating a Cisco Wireless solution that can automatically adjust to real-time changes in the 802.11 RF environment. Controllers are built around high-performance network and security hardware, resulting in highly reliable 802.11 enterprise networks with unparalleled security.

  The following controllers are supported:

  - Cisco 3504 Wireless Controller
  - Cisco 5520 Wireless Controller
  - Cisco 8540 Wireless Controller
  - Cisco Virtual Wireless Controller

- Cisco Aironet Access Points (APs)—Cisco Aironet series wireless access points can be deployed in a distributed or centralized network for a branch office, campus, or large enterprise. For more information about APs, see https://www.cisco.com/c/en/us/products/wireless/access-points/index.html

- Cisco Prime Infrastructure (PI)—Cisco Prime Infrastructure can be used to configure and monitor one or more controllers and associated APs. Cisco PI has tools to facilitate large-system monitoring and control. When you use Cisco PI in your Cisco wireless solution, controllers periodically determine the client, rogue access point, rogue access point client, radio frequency ID (RFID) tag location and store the locations in the Cisco PI database. For more information about Cisco PI, see http://www.cisco.com/c/en/us/support/cloud-systems-management/prime-infrastructure/tsd-products-support-series-home.html.

- Cisco Connected Mobile Experiences (CMX)—Cisco Connected Mobile Experiences (CMX) acts as a platform to deploy and run Cisco Connected Mobile Experiences (Cisco CMX). Cisco Connected Mobile Experiences (CMX) is delivered in two modes—the physical appliance (box) and the virtual appliance (deployed using VMware vSphere Client) . Using your Cisco wireless network and location intelligence from Cisco MSE, Cisco CMX helps you create personalized mobile experiences for end users and gain operational efficiency with location-based services. For more information about Cisco CMX, see https://www.cisco.com/c/en/us/support/wireless/connected-mobile-experiences/tsd-products-support-series-home.html.

- Cisco DNA Spaces—Cisco DNA Spaces is a multichannel engagement platform that enables you to connect, know, and engage with visitors at their physical business locations. It covers various verticals of business such as retail, manufacturing, hospitality, healthcare, education, financial services, enterprise work spaces, and so on. Cisco DNA Spaces also provides solutions for monitoring and managing the assets in your premises.

  The Cisco DNA Spaces: Connector enables Cisco DNA Spaces to communicate with multiple Cisco Wireless Controller (controller) efficiently by allowing each controller to transmit high intensity client data without missing any client information.

For information about how to configure Cisco DNA Spaces and the Connector, see https://www.cisco.com/c/en/us/support/wireless/dna-spaces/products-installation-and-configuration-guides-list.html.

For more information about design considerations for enterprise mobility, see the *Enterprise Mobility Design Guide* at:

https://www.cisco.com/c/en/us/td/docs/wireless/controller/8-5/Enterprise-Mobility-8-5-Design-Guide/Enterprise_Mobility_8-5_Deployment_Guide.html

Overview of Cisco Mobility Express

The Cisco Mobility Express wireless network solution comprises of at least one 802.11ac Wave 2 Cisco Aironet Series access point (AP) with an in-built software-based wireless controller managing other APs in the network.

The AP acting as the controller is referred to as the primary AP while the other APs in the Cisco Mobility Express network, which are managed by this primary AP, are referred to as subordinate APs.

In addition to acting as a controllers, the primary AP also operates as an AP to serve clients along with the subordinate APs.

Cisco Mobility Express provides most features of a controllers and has the capability to interface with the following:

- Cisco Prime Infrastructure—For simplified network management, including managing AP groups
- Cisco Identity Services Engine—For advanced policy enforcement
- Connected Mobile Experiences (CMX)—For providing presence analytics and guest access using Connect & Engage

For more information about using Cisco Mobility Express, see the user guide for relevant releases at: https://www.cisco.com/c/en/us/support/wireless/mobility-express/products-installation-and-configuration-guides-list.html