Cisco Wireless Solution Overview

Introduction

Cisco Wireless is designed to provide 802.11 wireless networking solutions for enterprises and service providers. Cisco Wireless 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.

Cisco Wireless solution consists of Cisco wireless controllers (Cisco WLCs) and their associated lightweight access points controlled by the operating system, all concurrently managed by any or all of the operating system user interfaces:

- An HTTP and/or HTTPS full-featured Web User Interface hosted by Cisco WLCs can be used to configure and monitor individual Cisco WLCs.
- A full-featured command-line interface (CLI) can be used to configure and monitor individual Cisco Cisco WLCs.
- The Cisco Prime Infrastructure, which you use to configure and monitor one or more Cisco WLCs and associated access points. The Prime Infrastructure has tools to facilitate large-system monitoring and control. For more information about Cisco Prime Infrastructure, see http://www.cisco.com/c/en/us/support/cloud-systems-management/prime-infrastructure/tsd-products-support-series-home.html.
- An industry-standard SNMP V1, V2c, and V3 interface can be used with any SNMP-compliant third-party network management system.

The Cisco Wireless solution supports client data services, client monitoring and control, and all rogue access point detection, monitoring, and containment functions. It uses lightweight access points, Cisco WLCs, and the optional Cisco Prime Infrastructure to provide wireless services to enterprises and service providers.

For detailed information about Cisco Wireless solution, see the *Enterprise Mobility Design Guide* at http://www.cisco.com/c/en/us/td/docs/wireless/controller/8-1/Enterprise-Mobility-8-1-Design-Guide/Enterprise_Mobility_8-1_Deployment_Guide.html.

Cisco Wireless Controllers

When you are adding lightweight access points to a multiple-Cisco WLC deployment network, it is convenient to have all lightweight access points associate with one master Cisco WLC on the same subnet. That way, you do not have to log into multiple Cisco WLCs to find out which controller the newly-added lightweight access points associated with.

One Cisco WLC in each subnet can be assigned as the master Cisco WLC while adding lightweight access points. As long as a master Cisco WLC is active on the same subnet, all new access points without a primary, secondary, and tertiary controller assigned automatically attempt to associate with the master Cisco WLC.

You can monitor the master Cisco WLC using the Cisco Prime Infrastructure and watch as access points associate with the master Cisco WLC. You can then verify the access point configuration and assign a primary, secondary, and tertiary Cisco WLC to the access point, and reboot the access point so it reassociates with its primary, secondary, or tertiary Cisco WLC.

Note Lightweight access points without a primary, secondary, and tertiary Cisco WLC assigned always search for a master Cisco WLC first upon reboot. After adding lightweight access points through the master Cisco WLC, you should assign primary, secondary, and tertiary Cisco WLCs to each access point. We recommend that you disable the master setting on all Cisco WLCs after initial configuration.

Client Location

When you use Cisco Prime Infrastructure in your Cisco wireless LAN solution, Cisco WLCs periodically determine the client, rogue access point, rogue access point client, radio frequency ID (RFID) tag location and store the locations in the Cisco Prime Infrastructure database.

Cisco WLC Platforms

Cisco WLCs 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. Cisco WLCs are built around high-performance network and security hardware, resulting in highly reliable 802.11 enterprise networks with unparalleled security.

The following Cisco WLCs are supported:

- Cisco 2504 Wireless Controller
- Cisco 5508 Wireless Controller
- Cisco 5520 Wireless Controller
- Cisco Flex 7510 Wireless Controller
- Cisco 8510 Wireless Controller

- Cisco 8540 Wireless Controller
- Cisco Virtual Wireless Controller
- Catalyst Wireless Services Module 2 (WiSM2)

Cisco Wireless Solution WLANs

The Cisco Wireless solution can control up to 512 WLANs for lightweight access points. Each WLAN has a separate WLAN ID (1 through 512), a separate profile name, and a WLAN SSID and can be assigned with unique security policies. The lightweight access points broadcast all active Cisco Wireless solution WLAN SSIDs and enforce the policies defined for each WLAN.

Note We recommend that you assign one set of VLANs for WLANs and a different set of VLANs for management interfaces to ensure that controllers operate with optimum performance and ease of management.

If management over wireless is enabled across the Cisco Wireless solution, you can manage the system across the enabled WLAN using CLI and Telnet, HTTP/HTTPS, and SNMP.