



Q&A

CISCO WIRELESS LAN CONTROLLER

Q. What are Cisco® wireless LAN controllers?

A. Cisco wireless LAN controllers are ideal for enterprise and service provider wireless LAN deployments and provide system wide wireless LAN functions, such as creating and enforcing security policies, intrusion prevention, RF management, quality of service (QoS), and mobility. They work in conjunction with Cisco lightweight access points and Cisco Wireless Control System (WCS) to provide the control, scalability, and reliability that IT managers need to build secure, large-scale wireless networks.

Cisco wireless LAN controllers smoothly integrate into existing enterprise and service provider networks. They can communicate with Cisco lightweight access points over any Layer 2 (Ethernet) or Layer 3 (IP) infrastructure using the Lightweight Access Point Protocol (LWAPP). With Cisco wireless LAN controllers, important wireless LAN configuration and management functions can be completely automated across all enterprise and service provider locations—from branch offices to outdoor campuses.

Q. What are the different types of controllers?

A. Cisco Systems currently offers Cisco 2000 Series, 4100 Series, and 4400 Series wireless LAN controllers. The Cisco 2000 Series Wireless LAN Controller supports up to six lightweight access points, making it ideal for small and medium-sized enterprise facilities, such as branch offices. The Cisco 4100 Series was designed for medium-sized and large enterprise facilities. It comes in three models—the 4112, 4124, and 4136—which support a maximum of 12, 24, and 36 lightweight access points, respectively. The Cisco 4100 Series offers one Gigabit Ethernet uplink with a second standby Gigabit Ethernet uplink for high-speed LAN connectivity with high network availability.

The Cisco 4400 Series is available in two models—the 4402 with two Gigabit Ethernet ports comes in configurations that support 12, 25 and 50 lightweight access points, and the 4404 with four Gigabit Ethernet ports supports up to 100 lightweight access points. The 4402 provides one expansion slot and the 4404 provides two expansion slots that can be used to add enhanced functionality in the future such as VPN termination and other capabilities. The 4400 WLAN Controller supports an optional redundant power supply to ensure maximum availability. This unique combination of capabilities makes the Aireospace WLAN system uniquely suited for large-scale WLAN deployments.

Q. What are some of the benefits of Cisco wireless LAN controllers?

A. By managing all access points as a complete wireless LAN system, Cisco wireless LAN controllers provide maximum scalability, performance, and wireless LAN control. In addition, all Cisco wireless LAN controllers can be deployed in an N+1 configuration for cost-effective, system-level resiliency. Cisco wireless LAN controllers come equipped with embedded software with Radio Resource Management (RRM) algorithms to detect and adapt to changes in the air space in real time—creating a self-configuring, self-optimizing, and self-correcting wireless LAN environment. These adjustments create the optimal topology for wireless networking in much the same way that routing protocols compute the best possible topology for IP networks.

Q. What are the security features in the Cisco Wireless LAN Controller?

A. Cisco wireless LAN controllers provide multiple layers of wireless LAN security for complete enterprise protection. This includes support for industry standards, such as:

- 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA, and Wired Equivalent Privacy (WEP)
- 802.1X with multiple Extensible Authentication Protocol (EAP) types, including Protected EAP (PEAP), EAP with Transport Layer Security (EAP-TLS), EAP with Tunneled TLS (EAP-TTLS), and Cisco LEAP
- VPN termination (IP Security [IPSec] and Layer 2 Tunneling Protocol [L2TP]) (4100 Series only)

Cisco wireless LAN controllers also play a prominent role in rogue access point detection and containment, as well as wireless intrusion prevention. With Cisco wireless LAN controllers, IT staff can create and enforce consistent security policies across an entire wireless network.

Q. Is the Cisco Wireless LAN Controller part of the Cisco Integrated Wireless Network framework?

A. Yes, Cisco Wireless LAN controllers are an integral part of the Cisco Integrated Wireless Network framework. For complete details on the Cisco Integrated Wireless Network framework, please visit: <http://www.cisco.com/go/securewireless>

Q. Do Cisco wireless LAN controllers support Cisco Aironet® access points and bridges?

A. Today, Cisco wireless LAN controllers only work in conjunction with Cisco lightweight access points.

Q. What is wireless LAN controller clustering?

A. Cisco uses innovative clustering technology between wireless LAN controllers to help ensure mobility across an entire wireless network. With clustering, IT staff can effortlessly create logical groups of controllers, which proactively share network and user information for transparent roaming. By transferring context information from one controller to another (network addresses, QoS parameters, access control lists, and security policies), users can roam throughout a controller mobility group and receive consistent wireless services—regardless of location. No special client software or modifications to the routing infrastructure are required. In addition, controller mobility groups are established with the click of a mouse and can span an entire wireless network, making system wide mobility easy and cost-effective.

Q. Is there a scalability limit on how many controllers I can have in my network?

A. Up to 24 Cisco wireless LAN controllers can be placed in a single controller cluster, creating a very large wireless LAN system. Multiple clusters of controllers can be deployed throughout an enterprise.

Q. Can the CiscoWorks Wireless LAN Solution Engine (WLSE) manage Cisco 2000 Series, 4100 and 4400 Series wireless LAN controllers?

A. No. The CiscoWorks WLSE does not currently support Cisco 2000 Series, 4100 and 4400 Series wireless LAN controllers.

Q. What options are available for the controllers?

A. The Cisco 4100 Series supports an optional enhanced security module for terminating client IPSec and L2TP VPN sessions. The Cisco 4400 Series supports an optional redundant power supply and SFPs (mini-GBICs). No options are currently available for the Cisco 2000 Series.

Q. What redundancy features are available for the Wireless LAN Controllers?

A. The Wireless LAN Controllers support a number of redundancy features, including:

- **N+1 Controller Redundancy**—if a WLAN Controller fails, the APs joined to that controller automatically failover to an alternate controller
- **AP Redundancy**—if an AP fails, the Controller automatically increases power on the neighboring APs to compensate and provide coverage

The 4400 adds the following redundancy features:

- **Interface Failover**—if a physical port fails, the logical interfaces associated with the failed port automatically move to another port
- **Redundant Power Supplies**—an optional redundant power supply to ensure maximum availability

Q. Does the 4400 Series Controller support link aggregation across the gigabit Ethernet interfaces?

A. The 4400 hardware supports this capability today but the software required to enable link aggregation will not be available until a future software release.

Q. If I purchase a Wireless LAN Controller with a certain AP capacity (e.g. 4402 with support for 12 APs), is there an upgrade path to add additional capacity (e.g., 4402 with support for 25 APs)?

A. No. The AP capacity is programmed into the units at the factory and there is no mechanism to upgrade this value in the field. Keep in mind that controllers can be clustered together to add additional capacity. As a wireless network grows, IT managers simply add controllers to the cluster to add capacity.

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