Cisco Wireless LAN Controller Modules

Simple and secure wireless deployment and management for small and medium-sized businesses (SMBs) and enterprise branch offices

Product Overview

Cisco® Wireless LAN Controller Modules (WLCMs), shown in Figure 1, supported on the Cisco Integrated Services Routers (ISR), provide an easy to deploy, cost-effective branch office or Small to Medium Business wireless solution. As a component of the Cisco Unified Wireless Network, the Cisco WLCMs give network administrators the visibility and control necessary to effectively and securely manage business-class wireless LANs and mobility services, such as enhanced security, voice, guest access, and context aware mobility or location services. WLCMs work in conjunction with Cisco lightweight access points and the Cisco Wireless Control System (WCS) to provide centralized wireless LAN management and monitoring.

Cisco is delivering higher scalability for the WLCMs. The modules manage 6, 12 or 25 Cisco Aironet® lightweight access points and are supported on Cisco 2800, 2900 and 3800, 3900 Series Integrated Services Routers.

Figure 1. Cisco Wireless LAN Controller Module

Cisco Wireless LAN Controllers

The Cisco WLCMs are models in the Cisco Wireless LAN Controller family, which includes standalone controllers, integrated controllers, and modular wireless LAN controllers that work in conjunction with Cisco switches and routers.

Because the Cisco Wireless LAN controller modules support 802.11a/b/g and the IEEE 802.11n draft 2.0 standard, organizations can deploy the solution that best meets their individual requirements. Organizations can offer robust coverage with 802.11 a/b/g or deliver unprecedented reliability using 802.11n and Cisco's Next-Generation Wireless Solutions.

Features and Benefits

Table 1 lists the features and benefits of the Cisco WLCMs.

Table 1.   Features and Benefits of Cisco WLCMs

Feature	Benefits
Supports 6, 12 or 25 access points	Provides choice of capacity to optimize total cost of ownership
Provides integrated controller module	Provides simplified deployment for branch and small offices
Part of the Cisco Integrated Services Router family of empowered wireless branch-office platforms	Intelligently embeds data, security, voice, and wireless services into a single, resilient system for fast, scalable delivery of mission-critical business applications
Supports all mobility services and runs same software found in all Cisco Unified Wireless Network controllers	Supports all mobility services, including voice and location, and builds on the ongoing investment in new functions for the Cisco Unified Wireless Network

Product Specifications

Table 2 lists the product specifications for the Cisco WLCMs.

Table 2.   Product Specifications for Cisco WLCMs

Item	Specification
Wireless	Access points supporting IEEE 802.11a, 802.11b, 802.11g, 802.11d, 802.11h, and 802.11n
Wired and Switching	Several Ethernet switching modules and Power-over-Ethernet (PoE) options are supported on Cisco 2800, 3700, and 3800 Series routers
Data RFCS	- RFC 768 UDP - RFC 791 IP - RFC 792 ICMP - RFC 793 TCP - RFC 826 ARP - RFC 1122 Requirements for Internet Hosts - RFC 1519 CIDR - RFC 1542 BOOTP - RFC 2131 DHCP
Security Standards	- Wi-Fi Protected Access (WPA) - IEEE 802.11i (WPA2 and Robust Security Network [RSN]) - RFC 1321 MD5 Message-Digest Algorithm - RFC 2104 HMAC: Keyed Hashing for Message Authentication - RFC 2246 Transport Layer Security (TLS) Protocol Version 1.0 - RFC 3280 Internet X.509 public key infrastructure (PKI) certificate and certification revocation list (CRL) profile
Encryption	- WEP and Temporal Key Integrity Protocol Message Integrity Check (TKIP-MIC): RC4 40, 104, and 128 bits (both static and shared keys) - Secure Sockets Layer (SSL) and TLS: RC4 128-bit and RSA 1024- and 2048-bit - AES: Counter Mode with CBC-MAC (CCM) and Counter Mode with Cipher Block Chaining Message Authentication Code Protocol (CCMP)
Authentication, Authorization, and Accounting (AAA)	- IEEE 802.1X - RFC 2548 Microsoft Vendor-Specific RADIUS Attributes - RFC 2716 PPP EAP-TLS - RFC 2865 RADIUS Authentication - RFC 2866 RADIUS Accounting - RFC 2867 RADIUS Tunnel Accounting - RFC 2869 RADIUS Extensions - RFC 3576 Dynamic Authorization Extensions to RADIUS - RFC 3579 RADIUS Support for EAP - RFC 3580 IEEE 802.1X RADIUS Guidelines - RFC 3748 Extensible Authentication Protocol - Web-based authentication

Item	Specification
Management	• Simple Network Management Protocol (SNMP) Versions1, 2c, and 3 • RFC 854 Telnet • RFC 1155 Management Information for TCP/IP-Based Internet • RFC 1156 MIB • RFC 1157 SNMP • RFC 1213 SNMP MIB II • RFC 1350 Trivial File Transfer Protocol (TFTP) • RFC 1643 Ethernet MIB • RFC 2030 SNTP • RFC 2616 HTTP • RFC 2665 Ethernet-Like Interface Types MIB • RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual LAN Extensions • RFC 2819 RMON MIB • RFC 2863 Interfaces Group MIB • RFC 3164 Syslog • RFC 3414 User-Based Security Model (USM) for SNMPv3 • RFC 3418 MIB for SNMP • RFC 3636 Definitions of Managed Objects for IEEE 802.3 Media Attachment Units (MAUs) • Cisco private MIBs
Management Interfaces	• Web-based: HTTP/HTTPS • CLI: Telnet and Secure Shell (SSH) Protocol

Physical and Environmental	• Dimensions (W x D x H): 1.55 x 7.10 x 7.2 in. (3.9 x 18.0 x 18.3 cm)
	• Weight: 0.86lb (0.39Kg)
	• Temperature:
	  ◦ Operating: 32 to 104°F (0 to 40°C)
	  ◦ Storage: –13 to 158°F (–25 to 70°C)
	• Humidity:
	  ◦ Operating humidity: 10 to 95% noncondensing
	  ◦ Storage humidity: Up to 95%

Regulatory Compliance	• CE Mark
	• Safety
	  ◦ UL 60950-1:2003
	  ◦ EN 60950:2000
	• EMI and susceptibility (Class A)
	  ◦ United States: FCC Parts 15.107 and 15.109
	  ◦ Canada: ICES-003
	  ◦ Japan: VCCI
	  ◦ Europe: EN 55022, EN 55024

Product Compatibility	• Routers: Cisco 2800, 2900,3800 and 3900 Series (excluding Cisco 2801 and 2901 Integrated Services Routers) • Access points: Integrated APs on the Cisco 880 and 890 Series ISRs, Cisco Aironet 1000, 1100 AG, and 1200 Series lightweight access points • Management: Cisco WCS • Location tracking: Cisco 2700 Series Wireless Location Appliance • Wireless LAN controllers: Cisco 2100 and Cisco 4400 Series Wireless LAN Controllers and Cisco Catalyst® 6500 Series Wireless Services Module (WiSM)
Software Compatibility	Routers: Cisco IOS Software Release 12.4(15)T or later for the 2800 and 3800 series ISRs Cisco IOS Software Release 15.(0).1M for the 2900 and 3900 series ISRs Note: Support for the Wireless LAN Controller Modules in the 2911, 2921, 2951, 3925, and 3945 will be via the network module adapter card (SM-NM-ADPTR).

Ordering Information

Table 3 provides ordering information for the Cisco WLCMs. To place an order, visit the Cisco Ordering Website: http://www.cisco.com/en/US/ordering/index.shtml

Table 3. Ordering Information for Cisco WLCMs

Part Number	Product Name
NME-AIR-WLC6-K9	Cisco Wireless LAN Controller Module for managing up to 6 lightweight access points (when sold as part of ISR system)
NME-AIR-WLC6-K9=	Cisco Wireless LAN Controller Module for up to 6 lightweight access points (spare, ordered as an individual unit)
NME-AIR-WLC12-K9	Cisco Wireless LAN Controller Module for managing up to 12 lightweight access points (when sold as part of ISR system)
NME-AIR-WLC12-K9=	Cisco Wireless LAN Controller Module for up to 12 lightweight access points (spare, ordered as an individual unit)
NME-AIR-WLC25-K9	Cisco Wireless LAN Controller Module for managing up to 25 lightweight access points (when sold as part of ISR system)
NME-AIR-WLC25-K9=	Cisco Wireless LAN Controller Module for up to 25 lightweight access points (spare, ordered as an individual unit)
SM-NM-ADPTR	Network Module Adapter for SM Slot on Cisco 2900, 3900 ISR
SM-NM-ADPTR=	Network Module Adapter for SM Slot on Cisco 2900, 3900 ISR (spare, ordered as an individual unit)

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For More Information

- For more information about the Cisco WLCM, visit: http://www.cisco.com/en/US/products/ps6730/index.html or contact your local account representative

- For more information about the Cisco Unified Wireless Network, visit: http://www.cisco.com/go/unifiedwireless

- For more information about the Cisco Integrated Services Routers, visit: http://www.cisco.com/go/isr

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