Cisco 2500 Series Wireless Controllers

Small to Medium-Sized Enterprise and Branch Office Controller

- Support for up to 50 access points and 500 clients.
- 802.11n ready support up to 500 Mbps.
- Payment Card Industry (PCI) support enables certification for scanner and kiosk deployments.

Licensing Flexibility and Investment Protection

- Additional access point licenses may be added over time.

Comprehensive Security

- Full Control and Provisioning of Wireless Access Points (CAPWAP) access point to controller encryption.
- Supports rogue access point detection and denial-of-service attacks.
- Management frame protection detects malicious users and alerts network administrators.

CleanAir technology

- Detects, classifies, locates, and mitigates RF interference to provide performance protection for 802.11n networks.

OfficeExtend Solution

- Secure, simple, cost-effective mobile teleworker solution.

Product Overview

The Cisco® 2500 Series Wireless Controller enables systemwide wireless functions in small to medium-sized enterprises and branch offices. Designed for 802.11n performance, Cisco 2500 Series Wireless Controllers are entry-level controllers that provide real-time communication between Cisco Aironet® access points to simplify the deployment and operation of wireless networks (Figure 1).

Figure 1.　Cisco 2500 Series Wireless Controller

As a component of the Cisco Unified Wireless Network, this controller delivers centralized security policies, wireless intrusion prevention system (wIPS) capabilities, award-winning RF management and quality of service (QoS) for voice and video. Delivering 802.11n performance and scalability the 2500 Series provides low total cost of ownership and flexibility to scale as network requirements grow.

Cisco 2500 Series Wireless Controller base access point licensing offers flexibility with 5, 15, 25, or 50 access points. Additional access point support may be added in increments of 5 or 25.

Table 1 lists the features and benefits of the Cisco 2500 Series Wireless Controllers.

Table 1.　Cisco 2500 Series Wireless Controller Features and Benefits

Feature	Benefits
Scalability	• Supports 5, 15, 25, or 50 access points
High Performance	• Wired-network speed and nonblocking performance for 802.11n networks
RF Management	• Provides both real-time and historical information about RF interference impacting network performance across controllers, via systemwide Cisco CleanAir technology integration
Comprehensive End-to-End Security	• Offers CAPWAP-compliant Datagram Transport Layer Security (DTLS) encryption to help ensure full-line-rate encryption between access points and controllers across remote WAN/LAN links
End-to-end Voice	• Supports Unified Communications for improved collaboration through messaging, presence, and conferencing • Supports all Cisco Unified Communications Wireless IP Phones for cost-effective, real-time voice services
High-Performance Video	• Integrates Cisco VideoStream technology as part of the Cisco medianet framework to optimize the delivery of video applications across the WLAN
PCI Integration	• Part of Payment Card Industry (PCI) certified architecture, and are well-suited for retail customers who deploy transactional data applications such as scanners and kiosks

Feature	Benefits
OfficeExtend	• Supports corporate wireless service for mobile and remote workers with secure wired tunnels to the Cisco Aironet® 600, 1130, 1140 or 3500 Series Access Points • Extends the corporate network to remote locations with minimal setup and maintenance requirements • Improves productivity and collaboration at remote site locations • Separate service set identifier (SSID) tunnels allow both corporate and personal Internet access • Reduced carbon dioxide emissions from a decrease in commuting • Higher employee job satisfaction from ability to work at home • Improves business resiliency by providing continuous, secure connectivity in the event of disasters, pandemics, or inclement weather
Enterprise Wireless Mesh	• Allows access points to dynamically establish wireless connections without the need for a physical connection to the wired network • Available on select Cisco Aironet access points, Enterprise Wireless Mesh is ideal for warehouses, manufacturing floors, shopping centers, and any other location where extending a wired connection may prove difficult or aesthetically unappealing
Environmentally Responsible	• Organizations may choose to turn off access point radios to reduce power consumption during off-peak hours

Product Specifications

Table 2 lists the product specification for Cisco 2500 Series Wireless Controllers.

Table 2. Product Specifications for the Cisco 2500 Wireless Controller

Item	Specification
Wireless Standards	IEEE 802.11a, 802.11b, 802.11g, 802.11d, WMM/802.11e, 802.11h, 802.11n.
Wired/Switching/Routing	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX specification, 1000BASE-T, and IEEE 802.1Q VLAN tagging.
Data Request for Comments (RFCs)	• RFC 768 UDP • RFC 791 IP • RFC 2460 IPv6 (pass through Bridging mode only) • RFC 792 ICMP • RFC 793 TCP • RFC 826 ARP • RFC 1122 Requirements for Internet Hosts • RFC 1519 CIDR • RFC 1542 BOOTP • RFC 2131 DHCP • RFC 5415 CAPWAP Protocol Specification
Security Standards	• WiFi Protected Access (WPA) • IEEE 802.11i (WPA2, RSN) • RFC 1321 MD5 Message-Digest Algorithm • RFC 1851 The ESP Triple DES Transform • RFC 2104 HMAC: Keyed Hashing for Message Authentication • RFC 2246 TLS Protocol Version 1.0 • RFC 2401 Security Architecture for the Internet Protocol • RFC 2403 HMAC-MD5-96 within ESP and AH • RFC 2404 HMAC-SHA-1-96 within ESP and AH • RFC 2405 ESP DES-CBC Cipher Algorithm with Explicit IV • RFC 2406 IP Encapsulating Security Payload (ESP) • RFC 2407 Interpretation for ISAKMP • RFC 2408 ISAKMP • RFC 2409 IKE • RFC 2451 ESP CBC-Mode Cipher Algorithms • RFC 3280 Internet X.509 PKI Certificate and CRL Profile • RFC 3602 The AES-CBC Cipher Algorithm and Its Use with IPsec • RFC 3686 Using AES Counter Mode with IPsec ESP • RFC 4347 Datagram Transport Layer Security • RFC 4346 TLS Protocol Version 1.1

Item	Specification
Encryption	• WEP and Temporal Key Integrity Protocol-Message Integrity Check (TKIP-MIC): RC4 40, 104 and 128 bits (both static and shared keys) • Advanced Encryption Standard (AES): CBC, CCM, Counter Mode with Cipher Block Chanining Message Authentication Code Protocol (CCMP) • DES: DES-CBC, 3DES • Secure Sockets Layer (SSL) and Transport Layer Security (TLS): RC4 128-bit and RSA 1024- and 2048-bit • DTLS: AES-CBC
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 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 • TACACS support for management users
Management	SNMP v1, v2c, v3 RFC 854 Telnet RFC 1155 Management Information for TCP/IP-Based Internets RFC 1156 MIB RFC 1157 SNMP RFC 1213 SNMP MIB II RFC 1350 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 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 MAUs Cisco private MIBs
Management Interfaces	• Designed for use with Cisco Wireless Control System • Web-based: HTTP/HTTPS individual device manager • Command-line interface: Telnet, SSH, serial port
Interfaces and Indicators	• Console port: RJ-45 connector • Network: Four 1 Gbps Ethernet (RJ-45) *Note: Access point directly connected to the controller is not currently supported.* • LED indicators: Link Activity (each 1G port), Power, Status, Alarm
Physical and Environmental	Dimensions: 1.73 x 8.00 x 6.75 in. (43.9 x 203.2 x 271.5mm) Weight: 3.5 lbs (with power supply) 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 percent, noncondensing • Storage humidity: Up to 95 percent Power adapter: Input power: 100 to 240 VAC; 50/60 Hz

Item	Specification
	Heat dissipation: 72 BTU/hour
Regulatory Compliance	Safety: • UL 60950-1, 2nd Edition • EN 60950:2005 EMI and susceptibility (Class B): • U.S.: FCC Part 15.107 and 15.109 • Canada: ICES-003 • Japan: VCCI • Europe: EN 55022, EN 55024

Ordering Information

Tables 3 and 4 provide ordering information for the Cisco 2500 Series Wireless Controllers. To place an order, visit the Cisco ordering website: http://www.cisco.com/en/US/ordering/index.shtml.

Table 3.   Ordering Information for Cisco 2500 Series Wireless Controllers

Part Number	Description	Cisco SMARTnet® 8x5xNBD
AIR-CT2504-5-K9	2500 Series Wireless Controller for up to 5 Cisco access points	CON-SNT-CT255
AIR-CT2504-15-K9	2500 Series Wireless Controller for up to 15 Cisco access points	CON-SNT-CT2515
AIR-CT2504-25-K9	2500 Series Wireless Controller for up to 25 Cisco access points	CON-SNT-CT2525
AIR-CT2504-50-K9	2500 Series Wireless Controller for up to 50 Cisco access points	CON-SNT-CT2550

Table 4.   Ordering Information for Cisco 2500 Series Wireless Controllers: Optional Accessories

Part Number	Product Name
AIR-CT2504-RMNT=	Cisco 2504 Wireless Controller Rack Mount Bracket

Additive Capacity Upgrade Licenses

The following additive capacity upgrade licenses are available for the Cisco 2500 Series.

Table 5.   Ordering Information for Cisco 2500 Series Wireless Controllers: Access Point Adder Licenses (e-Delivery PAKs)

Part Number	Description	Cisco SMARTnet 8x5xNBD
L-LIC-CT2504-UPG	Primary upgrade SKU: Pick any number or combination of the following options under this SKU to upgrade one or many controllers under one product authorization key	CON-SNT-LCT25UP
L-LIC-CT2504-5A	5 Access Point Adder License for Cisco 2504 Wireless Controller (e-Delivery)	CON-SNT-LCT255A
L-LIC-CT2504-25A	25 Access Point Adder License for Cisco 2504 Wireless Controller (e-Delivery)	CON-SNT-LCT2525A

Table 6.   Ordering Information for Cisco 2500 Series Wireless Controllers: Access Point Adder Licenses (Paper PAKs)

Part Number	Description	Cisco SMARTnet 8x5xNBD
LIC-CT2504-UPG	Primary upgrade SKU: Pick any number or combination of the following options under this SKU to upgrade one or many controllers under one product authorization key	CON-SNT-LCT25UP
LIC-CT2504-5A	5 Access Point Adder License for Cisco 2504 Wireless Controller (Paper Certificate - U.S. Mail)	CON-SNT-LCT255A
LIC-CT2504-25A	25 Access Point Adder License for Cisco 2504 Wireless Controller (Paper Certificate - U.S. Mail)	CON-SNT-LCT2525A

Table 7 shows the optional paper PAK license for Cisco 2500 Series Wireless Controllers. DTLS license is designated for customers who purchase a controller with DTLS disabled due to import restrictions but get permission to add DTLS support after initial purchase. This optional DTLS license is required for OfficeExtend deployment.

Table 7.   Optional Licensing for Cisco 2500 Series Wireless Controllers (Paper PAKs)

Part Number	Description
LIC-CT2504-UPG	Primary upgrade SKU: Pick any number or combination of the following options under this SKU to upgrade one or many controllers under one product authorization key
LIC-CT25-DTLS-K9	Cisco 2504 Controller DTLS License (Paper Certificate – US Mail)

Service and Support

Cisco Wireless LAN Services

Cisco and our specialized partners offer a broad portfolio of end-to-end services to help you improve your organization's productivity and collaboration by assisting with the readiness, deployment, and optimization of your wireless network and mobility services. Our services help you successfully deploy the Cisco 2500 Series Wireless Controller and integrate mobility solutions effectively to lower the total cost of ownership and secure your wireless network. To learn more about Cisco Wireless LAN Service offers, please visit: http://www.cisco.com/go/wirelesslanservices.

Cisco WLAN Advanced Services Consulting is available for the planning and deployment stages to help ensure the successful integration of the Cisco 2500 Series Wireless Controller in your network. Cisco WLAN Advanced Services Consulting can be ordered with the SKU listed in Table 8.

Please contact your Cisco Sales representative with the information required for a pricing quote:

- Number of sites
- Desired coverage area (square feet or square miles)
- Estimated number of access points per site
- Advanced Mobility Services and required applications

Table 8.   Ordering Information for Planning and Deployment Consulting Services for the Cisco 2500 Series Wireless Controllers

Part Number	Service Name
AS-WLAN-CNSLT	Cisco WLAN Advanced Services Consulting

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco services, visit Cisco Technical Support Services or Cisco Advanced Services.

For More Information

For more information about Cisco wireless controllers, contact your local account representative or visit: http://www.cisco.com/en/US/products/ps6366/index.html.

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

Printed in USA

C78-645111-01   05/11