Cisco 5520 Wireless Controller

Optimized for 802.11ac Wave2 performance, the Cisco® 5520 Wireless Controller is a highly scalable, service-rich, resilient, and flexible platform that enables next-generation wireless networks for medium-sized to large enterprise campus and branch deployments.

Product Overview

The Cisco 5520 Wireless Controller provides centralized control, management, and troubleshooting for high-scale deployments in service provider and large campus deployments. It offers flexibility to support multiple deployment modes in the same controller: for example, centralized mode for campus, Cisco FlexConnect™ mode for lean branches managed over the WAN, and mesh (bridge) mode for deployments where full Ethernet cabling is unavailable. As a component of the Cisco Unified Wireless Network, this controller provides real-time communications between Cisco Aironet® access points, the Cisco Prime™ Infrastructure, and the Cisco Mobility Services Engine, and is interoperable with other Cisco controllers.

Figure 1. Cisco 5520 Wireless Controller

Features and Benefits

The Cisco 5520 Wireless Controller, optimized for 802.11ac Wave2 performance, high scale, and enhanced system uptime, supports:

- Subsecond access point and client failover for uninterrupted application availability.
- Extraordinary visibility into application traffic, using Cisco Application Visibility and Control (AVC), the technology that includes the Network Based Application Recognition 2 (NBAR2) engine, Cisco's deep packet inspection (DPI) capability. This allows to mark, prioritize, and block to conserve network bandwidth and enhance security. Customers can optionally export the flows to Cisco Prime Infrastructure or a third-party NetFlow collector.
- Embedded wireless bring-your-own-device (BYOD) policy classification engine that allows classification of client devices and application of user group policies.
- Deployment of guest access and Bonjour and Chromecast services in centralized deployments.
- Software-defined segmentation with Cisco TrustSec® technology, reducing access control list (ACL) maintenance, complexity, and overhead.
- Integrated Cisco CleanAir® technology, providing the industry's only self-healing and self-optimizing wireless network.
- Simplified GUI wizard for quick setup and intuitive dashboards for monitoring and troubleshooting.

Table 1. Features and Benefits

Feature	Benefits
Scalability and performance	Optimized to enable 802.11ac Wave 2 next-generation networks, supporting: • 20-Gbps throughput • 1500 access points • 20,000 clients • 4096 VLANs
RF management	• Proactively identifies and mitigates signal interference for better performance • Provides both real-time and historical information about RF interference affecting network performance across controllers, through systemwide integration with Cisco CleanAir technology
Multimode with indoor, outdoor mesh access points	• Versatile controller with support for centralized, distributed, and mesh deployments to be used at different places in the network, offering maximum flexibility for medium-sized campus, enterprise, and branch networks • Centralized control, management, and client troubleshooting • Seamless client access in the event of a WAN link failure (local data switching) • Highly secure guest access • Efficient access point upgrade that optimizes the WAN link utilization for downloading access point images • Cisco OfficeExtend technology that supports corporate wireless service for mobile and remote workers with secure wired tunnels to indoor Cisco Aironet access points supporting OfficeExtend mode
Comprehensive end-to-end security	• Offers Control and Provisioning of Wireless Access Points (CAPWAP)-compliant Datagram Transport Layer Security (DTLS) encryption on the control plane between access points and controllers across remote WAN links • Management frame protection detects malicious users and alerts network administrators • Rogue detection for Payment Card Industry (PCI) compliance • Rogue access point detection and detection of denial-of-service attacks
End-to-end voice	• Supports Cisco Unified Communications for improved collaboration through messaging, presence, and conferencing • Supports all Cisco Unified IP Phones for cost-effective, real-time voice services
Fault tolerance and high availability	• Subsecond access point and client failover for uninterrupted application availability • Redundant 1 Gigabit Ethernet or 10 Gigabit Ethernet connectivity • Solid-state device-based storage - no moving parts • Optional redundant, hot-swappable power supply with no incremental system downtime • Enhanced system uptime with fast system restarts
Cisco 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
WLAN express setup	• Simplified GUI wizard for quick setup and intuitive dashboards for monitoring and troubleshooting
High-performance video	• Cisco VideoStream technology optimizes the delivery of video applications across the WLAN
Mobility, security, and management for IPv6 and dual-stack clients	• Highly secure, reliable wireless connectivity and consistent end-user experience • Increased network availability through proactive blocking of known threats • Equips administrators for IPv6 planning, troubleshooting, and client traceability from Cisco Prime Infrastructure
Environmentally responsible	• Organizations may choose to turn off access point radios to reduce power consumption during off-peak hours

Licensing

The Cisco 5520 Wireless Controller provides right-to-use (with End User License Agreement [EULA] acceptance) license enablement for faster time to deployment, with flexibility to add additional access points (up to 1500 access points) as business needs grow.

- Additional access point capacity licenses can be added over time.
- Right-to-use licensing (with EULA acceptance) for faster and easier license enablement.

Starting with the 8.2 release, the Cisco 5520 Wireless Controller also provides an option to enable licensing using Cisco Smart Software Licensing, designed for easy monitoring and consumption of licenses.

- Manage license deployments with real-time visibility to ownership and consumption.
- Pools license entitlements in a single account. Licenses can be moved freely through the network–wherever they are needed.

Product Specifications

Table 2. Product Specifications

Item	Specifications
Wireless	IEEE 802.11a, 802.11b, 802.11g, 802.11d, WMM/802.11e, 802.11h, 802.11n, 802.11k, 802.11r, 802.11u, 802.11w, 802.11ac Wave1 and Wave2
Wired/switching/routing	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX specification, 1000BASE-T. 1000BASE-SX, 1000-BASE-LH, IEEE 802.1Q VLAN tagging, IEEE 802.1AX Link Aggregation
Data request for comments (RFC)	• RFC 768 UDP • RFC 791 IP • RFC 2460 IPv6 • 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 • RFC 5416 CAPWAP Binding for 802.11
Security standards	• Wi-Fi Protected Access (WPA) • IEEE 802.11i (WPA2, RSN) • RFC 1321 MD5 Message-Digest Algorithm • RFC 1851 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 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 4347 Datagram Transport Layer Security • RFC 5426 TLS Protocol Version 1.2
Encryption	• Wired Equivalent Privacy (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): Cipher Block Chaining (CBC), Counter with CBC-MAC (CCM), Counter with Cipher Block Chaining Message Authentication Code Protocol (CCMP) • Data Encryption Standard (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 • IPsec: DES-CBC, 3DES, AES-CBC • 802.1AE MACsec encryption

Item	Specifications
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 5176 Dynamic Authorization Extensions to RADIUS • RFC 3579 RADIUS Support for EAP • RFC 3580 IEEE 802.1X RADIUS Guidelines • RFC 3748 Extensible Authentication Protocol (EAP) • Web-based authentication • TACACS support for management users
Management	• Simple Network Management Protocol (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	• Web-based: HTTP/HTTPS • Command-line interface: Telnet, Secure Shell (SSH) Protocol, serial port • Cisco Prime Infrastructure
Interfaces and indicators	• 2 x 10 Gigabit Ethernet interfaces or 2 x 1 Gigabit Ethernet interfaces • Small Form-Factor Pluggable Plus (SFP+) options (only Cisco SFP+s supported), including S-Class Optics • Small Form-Factor Pluggable (SFP) options (only Cisco SFPs supported), including S-Class Optics • 1 x service port: 1 Gigabit Ethernet port (RJ-45) • 1 x redundancy port: 1 Gigabit Ethernet port (RJ-45) • 1 x Cisco Integrated Management Controller port: 10/100/1000 Ethernet (RJ-45) • 1 x console port: Serial port (RJ-45) • LED indicators: Network Link, Diagnostics
Physical dimensions	• Dimensions (WxDxH): 18.98 x 30.98 x 1.70 in. (48.2 x 78.7 x 4.32 cm) including handles • Weight: 30 lb (13.6 kg) with 1 power supply
Environmental conditions	Air temperature: • Appliance operating: 41° to 104°F (5° to 40°C), derate the maximum temperature by 1.0°C per every 1000 ft. (305m) of altitude above sea level • Appliance nonoperating: -40° to 149°F (-40° to 65°C) Humidity: • Appliance operating: 10% to 90%; noncondensing at 82°F (28°C) • Appliance nonoperating: 5% to 93% at 82°F (28°C)

Item	Specifications
	Altitude: ● Appliance operating: 0 to 3000m (0 to 10,000 ft.) ● Appliance nonoperating: 0 to 12,192m (0 to 40,000 ft.) Electrical input: ● AC input frequency range: 47 to 63 Hz ● Input voltage range: ◦ Minimum: 90 VAC ◦ Maximum: 264 VAC ◦ Maximum Power 190W ● Input kilovolt-amperes (kVA), approximately: ◦ Minimum: 0.090 kVA ◦ Maximum: 0.700 kVA ● Heat dissipation: 650 BTU/hr ● Sound power level measure: ◦ A-weighted per ISO 7779 LpAm (dBA), operation at 77°F (25°C): 49.3
Regulatory compliance	CE Markings per directives 2004/108/EC and 2006/95/EC Safety: ● UL 60950-1 Second Edition ● CAN/CSA-C22.2 No. 60950-1 Second Edition ● EN 60950-1 Second Edition ● IEC 60950-1 Second Edition ● AS/NZS 60950-1 ● GB4943 2001 EMC - Emissions: ● 47CFR Part 15 (CFR 47) Class A ● AS/NZS CISPR22 Class A ● EN55022 Class A ● ICES003 Class A VCCI Class A ● EN61000-3-2 EN61000-3-3 KN22 Class A ● CNS13438 Class A EMC - Immunity: ● EN55024 ● CISPR24 ● EN300386 ● KN24

Warranty Information

Find warranty information on Cisco.com at the Product Warranties page.

The Cisco 5520 Wireless Controller is backed by a warranty that includes:

- Three years parts coverage
- 10 day AR - Cisco or its service center will use commercially reasonable efforts to ship a replacement within ten (10) working days after receipt of the RMA request. Actual delivery times might vary depending on customer location

This warranty also includes a 90-day software warranty on media and ongoing downloads of BIOS, firmware, and drivers.

Ordering Information

For ordering details, please consult the part numbers in Table 3.To place an order, visit the Cisco How to Buy homepage. To download software, visit the Cisco Software Center.

Table 3. Ordering Information

Product Name	Part Number	Services 8x5xNBD
Cisco 5520 Wireless Controller	AIR-CT5520-K9	CON-SNT-AIRT5520
Cisco 5520 Wireless Controller supporting 50 access points	AIR-CT5520-50-K9	CON-SNT-AIRT5550
Cisco 5520 Wireless Controller upgrade SKU	LIC-CT5520-UPG	CON-ECMU-LICGT552
Cisco 5520 Wireless Controller 1 access point adder license	LIC-CT5520-1A	CON-ECMU-LICT5520
Cisco 5520 Wireless Controller DTLS license	LIC-CT5520-DTLS-K9	
Spare Power Supply	AIR-PSU1-770W=	
Spare SSD for Cisco Wireless Controller 5520 and 8540	AIR-SD240G0KS2-EV=	
Spare FAN - Cisco 5520 Wireless Controller	AIR-FAN-C220M4=	
Rail Mounting Kit	UCSC-RAILB-M4=	

Cisco Services

Get ready for your next-generation wireless network with our Assessment Services. They help you reduce deployment cost and adoption delays by identifying investment requirements. Our services also make it easier for your operations team to support new solutions that are being introduced.

Lower support cost for your business with Cisco SMARTnet® Service by reducing downtime with flexible hardware coverage, anytime access to Cisco engineers, and an extensive range of resources, tools, and training.

Cisco Capital

Financing to Help You Achieve Your Objectives

Cisco Capital can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce CapEx. Accelerate your growth. Optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital is available in more than 100 countries. Learn more.

For More Information

For more information about the Cisco 5520 Wireless Controller, visit http://www.cisco.com/c/en/us/products/wireless/5520-wireless-controller/index.html

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Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

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