

Cisco Wireless Release 7.6

PB730102

Overview

The IEEE 802.11ac standard promises to bring wire-like performance to wireless technologies. With Cisco® Wireless Release 7.6, customers can now deploy the Cisco Aironet® 3700 Series indoor access point for high-density wireless deployments that utilize mission-critical, high-performance applications. The Aironet 3700 Series is the industry's first and only access point that offers 4x4 MIMO, three spatial streams, and 802.11ac. The 7.6 software release also delivers the new Cisco Aironet 1530 Series outdoor 802.11n access points that customers can incorporate for a low-profile design that looks great, yet can withstand the most rugged outdoor conditions. In addition, Release 7.6 brings innovative software features that can enable secure BYOD with application awareness, and CMX visitor connect and CMX for Facebook to help organizations better understand customer behavior with onsite, online, and social analytics.

Key Features in Release 7.6

Cisco Aironet 3700 Series 802.11ac access point: The 3700 Series is the industry's first access point with integrated 802.11ac Wave 1, supporting 4x4 MIMO with three spatial streams, plus:

- High-density (HD) experience - the technology is optimized to support high-client density and multi-client performance scaling for rich media applications
- Cisco ClientLink 3.0, which adds Cisco patented beamforming support to 802.11a/g/n and now 802.11ac clients to increase downlink performance
- Cisco CleanAir™ Technology redesign for 802.11ac Wave 1, offering 80 MHz-wide channel support

Cisco Aironet 1530 Series 802.11n outdoor access point: This low-profile, flexible, ruggedized access point supports multiple deployment modes, including centralized, standalone, mesh, or bridge.

The **Cisco Aironet 3700P Access Point with Stadium Antenna** enhances the spectator experience in high-density stadium, arena, and auditorium deployments.

The **Cisco Universal Small Cell 5310** module takes advantage of the flexible modular design of the award-winning Cisco Aironet 3600 Series and Cisco Aironet 3700 Series. It offers mobile operators a rapidly deployable, licensed, radio network extension to the Cisco SP Wi-Fi solution, creating a new platform for mobile broadband services.

Application-aware bring-your-own-device (BYOD) services for wireless users:

- For BYOD onboarding use cases, customers can set Domain Name System (DNS)-based (FQDN) access control lists (ACLs) to determine the sites that devices have the permission to visit prior to authentication (e.g. apple.com, play.google.com)
- With iOS7, Apple has enhanced the Captive Network Assistant (CNA) to make it more robust. Release 7.6 includes associated changes to interoperate with Apple's new implementation while helping to ensure a seamless experience for all clients.

- The Application Visibility and Control (AVC) protocol pack update offers support for Microsoft Lync 2013 and Cisco Jabber™.

Guest access - Increased sleeping client scale for the Cisco 8500 Series Wireless Controllers and Cisco Flex® 7500 Series Wireless Controllers: In Release 7.6, for large, geo-distributed deployments that are enabled with the 8500 WLC and Flex 7500, the number of sleeping clients that are remembered is increased to 25,000 from the previous 9000 clients. These sleeping clients connected to the wireless network are remembered even after waking up, eliminating the need for users to re-enter credentials.

Cisco FlexConnect™ Ethernet Fallback feature detects if the Ethernet interface on an access point in FlexConnect mode is disconnected. It shuts down radios to allow clients to join other adjoining access points that continue to have connectivity to the wired network.

Support for the new H domain for China with expanded 5 Ghz spectrum that is approved for indoor use (5150 to 5350 Mhz), in addition to existing (5720 to 5850 Mhz) range.

Cisco CMX Analytics visitor connect provides a simple and highly customizable guest captive portal with location-specific splash templates and plugins for advertisements and social authentication. CMX visitor connect also remembers previously connected users and can intelligently skip registration pages for repeated logins. It provides statistics for active, new, repeat, and total visitors.

CMX for Facebook Wi-Fi is a joint Cisco - Facebook solution that simplifies the guest experience of connecting to Wi-Fi and the Internet while delivering aggregate social media analytics and demographics to the venue owner through the Facebook Insights page.

Platform Support

Cisco Wireless Release 7.6 is supported on the following platforms:

- Cisco Aironet access points running the Control and Provisioning of Wireless Access Points (CAPWAP) Protocol
- Cisco 2500 and 5500 Series Wireless LAN Controllers
- Cisco Catalyst 6500 Series Wireless Services Module 2 (WiSM2)
- Cisco Flex7500 Series Wireless Controllers
- Cisco 8500 Series Wireless Controllers
- Cisco Wireless LAN Controller Module for Integrated Services Routers G2
- Cisco Virtual Wireless Controller (vWLC)
- Cisco Mobility Services Engine (MSE)
- Cisco Virtual Mobility Services Engine (vMSE) - VMWare ESXi and Microsoft Hyper-V

Management support for Release 7.6 will be delivered as part of the Cisco Prime™ Infrastructure Release 1.4.1.

Recommended Release for Production Deployments

Maintenance Deployment (MD) releases: These software releases provide bug fixes and ongoing software maintenance.

- Release 7.4 is the next MD release train (a release in this train will be qualified as MD).
- Release 7.0 is the current MD release train and the minimum recommended MD release.

Early Deployment (ED) Releases: These software releases provide new features and new hardware platform support as well as bug fixes.

- Release 7.4.110.0 is the minimum recommended ED release. Customers deploying earlier ED release versions of 7.2, 7.3 and 7.4 should upgrade to 7.4.110.0.
- Release 7.6 is recommended for customers with 802.11ac deployments. Customers using Release 7.5 are advised to upgrade to Release 7.6 to take advantage of new features and multiple software fixes in the release.

For future planning guidance, Release 8.0 (in CY2014) is planned to be MD release train and, when available, will be the recommended MD release train for 802.11ac deployments.

Cisco Aironet Access Points: New Features

Table 1 describes the new access point features in Cisco Wireless Release 7.6.

Table 1. New Access Point Features

Feature	Description	Benefit
Cisco Aironet 3700 Series 802.11ac Access Point	The industry's first access point with integrated 802.11ac Wave 1, supporting 4x4 MIMO with three spatial streams.	Industry-leading performance, scale, and a high-density (HD) experience for both the enterprise and service provider markets. The Aironet 3700 Series extends support to a new generation of Wi-Fi clients, such as smartphones, tablets, and high-performance laptops that have integrated 802.11ac support.
Cisco Aironet 1530 Series Outdoor Access Points	Cisco Aironet 1530 Series outdoor access points incorporate a low-profile design that looks great, yet can withstand the most rugged outdoor conditions.	The Cisco Aironet 1530 Series outdoor access points are small and light enough to be unobtrusively mounted on streetlight poles or building facades. Additionally, Cisco flexible antenna port technology is software-configurable for either single-band or dual-band antennas. Internal or external antenna versions are available, with full lines of supported omni- and directional antennas. Multiple operational modes are supported, including centralized, mesh, point-to-point, point-to-multipoint bridge, and workgroup bridge (WGB).
Cisco Aironet 3700P Series Access Points	Dual-band, controller-based 802.11a/g/n/ac access points for high-density environments, with narrow-beam width, high-gain, antennas.	Ideal solution to enhance fan experience in high-density stadium and arena deployments, the 3700P access point with narrow beamwidth antennas reduces interference and provides high user bandwidth for all wireless clients, including the latest 802.11ac clients.
Universal Small Cell 5310 Module for Modular Cisco Aironet 3600 Series and Cisco Aironet 3700 Series	The 3G Small Cell Module is an innovative solution that can enable mobile operators to deploy licensed small cells. The licensed radio module takes advantage of the modular flexibility of the Aironet 3600 Series and Aironet 3700 Series by delivering a fully integrated, high-performance, low-cost 3G small cell for voice, data, and messaging services.	The Universal Small Cell 5310 module addresses three key challenges facing mobile operators interested in deploying licensed small cells: where to hang them, how to power them, and how to backhaul the traffic. Building on the Cisco Aironet heritage of robust, award-winning Wi-Fi access point design, the 3600 Series and 3700 Series deliver extreme flexibility with modular configuration to enable this innovative solution.
Support for Autonomous Access Points	Full autonomous support for 702i and Aironet 1530 Series Access Points. Site survey support for Aironet 3700 Series Access Points.	With autonomous support for these platforms, customers have complete flexibility in deployment modes available while standardizing in same access point platform. With site survey support for the 3700 Series, customers and partners have the ability to perform a site survey without requiring a wireless LAN controller.

In Software Release 7.6, Cisco wireless LAN controllers provide solutions to facilitate wireless as the primary means of access in high-performance enterprise networks.

Table 2 describes the new features of the wireless controllers in this release.

Table 2. New Controller Features

Feature	Description	Benefit
DNS-Based (FQDN) ACLs for Clients in the Registration Phase of Onboarding	For BYOD onboarding use cases, IT administrators can set pre-authentication ACLs to restrict the sites that devices have the permission to visit prior to authentication. Registering BYOD devices may need to connect to the Internet for either downloading the supplicant software for registration or validating the device for connection to the Wi-Fi network.	Allow the client to access the proper resource (apple.com or play.google.com typically) without a broad IP-based ACL. With DNS-based ACLs, the client, when in registration phase, will be allowed to connect to the configured URLs.
Apple iOS7 Captive Portal Support	With iOS7, Apple has enhanced the Captive Network Assistant (CNA) to make it more robust. Cisco Wireless Release 7.6 includes associated changes to interoperate with Apple's new implementation.	The wireless LAN controller can detect and respond to pre-iOS7 Captive and iOS7-based changes to CNA, providing a seamless experience for all clients.
Application Visibility and Control (AVC) Protocol Pack Update	The new protocol pack to be delivered with Release 7.6 includes Microsoft Lync 2013 and Cisco Jabber support.	Customers can detect new applications in their networks, including Jabber and Microsoft Lync 2013, and enable appropriate QoS policies for these applications.
Increased Scale for Sleeping Clients on Cisco 8500 WLC and Flex 7500 Products	For large, geo-distributed deployments with the 8500 WLC and Flex7500, the number of sleeping clients that are remembered is increased from 9000 clients to 25,000 clients.	A larger number of sleeping clients are remembered, even after waking up on the wireless network with high-scale controllers. This eliminates the need for user intervention to re-enter credentials for a greater number of clients.
Automatic Recovery of Primary and Standby Controllers in Stateful Switchover High-Availability Deployment from Maintenance Mode After the Network Re-converges	The standby controller will automatically recover from maintenance mode when: <ul style="list-style-type: none"> • The management default gateway is not reachable • The peer redundancy port is not reachable • The standby WLC, which has never paired up with the primary WLC, boots up first 	Prior to Release 7.6, when a wireless LAN controller enters into maintenance mode due to a network outage, IT administrators were required to manually pair the controllers back after the network issue was addressed. In order to address and simplify this problem, enhancement is added in 7.6 to automatically recover.
Ethernet Failback Shutdown for Access Points in Cisco FlexConnect Mode	With this feature enabled, if the access point has power, but its Ethernet interface is disconnected, the radios will shutdown.	Clients can connect to other adjoining access points with connectivity to the wired network over the Ethernet port.
China -H Domain Support	Expanded China 5 GHz spectrum is now approved for indoor use (5150 to 5350 MHz). This is in addition to the existing 5720 to 5850 MHz range.	Support for new channels with a new domain, H, is enabled for China. The older domain, C, is still used by Pakistan and Malaysia.
Support for Secure LDAP Communication	The connection between the wireless controller and LDAP external server can be secured with Transport Level Security (TLS).	In addition to authenticated access to the LDAP server, encryption provides enhanced security for limiting denial-of-service (DoS) attacks and to validate the source of the query.
Enhancements for Radius Accounting and Authentication	Call Station ID Type can be set for Authentication (like in 7.5) and also for Accounting (new in 7.6). In addition, Call Station ID type can be set to new values such as access point Ethernet Mac Address and access point Ethernet Mac Address: SSID.	Additional flexibility for RADIUS information about the source of the RADIUS request is available.
Flexible EAP Timers for External RADIUS	The timers allow for activation of EAP values on a per-WLAN basis, and override global configuration.	Customers can have specific WLANs for specific devices, and require different EAP timers and retries for these WLANs.

Mobility Services

Table 3 describes new Cisco Mobility Services Engine (MSE) features in Cisco Wireless Release 7.6.

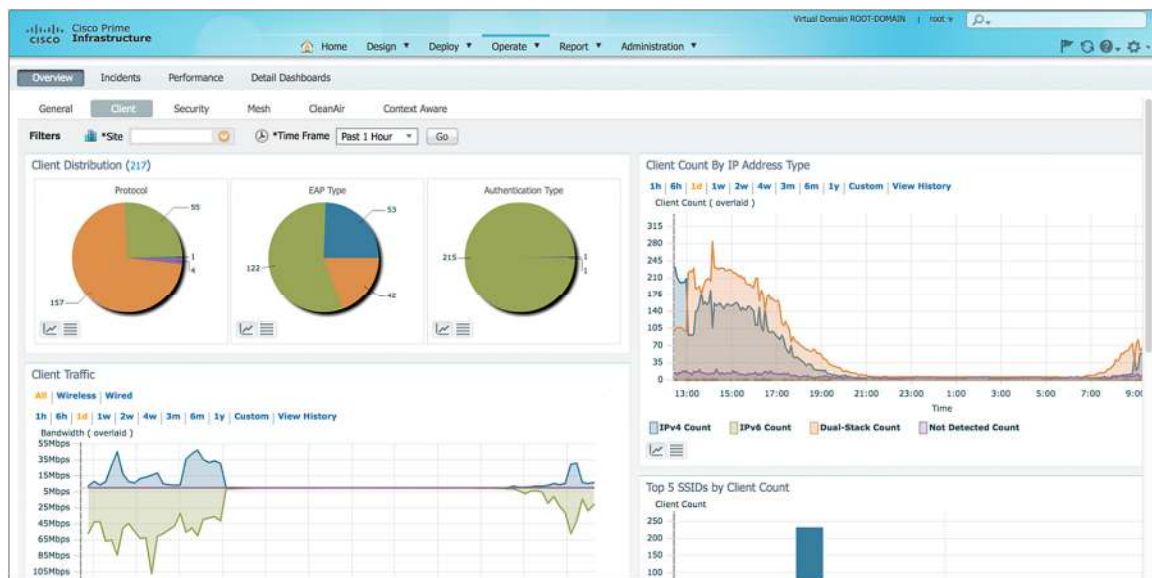
Table 3. New Cisco MSE Features

Feature	Description	Benefit
Virtual MSE with Hyper-V Support	Support added for Hyper-V 2012 and Hyper-V 2008.	Customers now have the deployment option to use a MSE virtual appliance in Microsoft Hyper-V hypervisor environments.
CMX Analytics - Newly Designed UI, REST API	New user experience for CMX Analytics and support for REST API.	The new user experience allows CMX Analytics offers administrators: <ul style="list-style-type: none">• Improved usability, faster performance, easily customizable dashboard view for side-by-side comparison, and the ability to quickly spot actionable trends• An enhanced path display by allowing admins to define common 'navigation paths' in areas of low access-point density
CMX Visitor Connect	CMX Visitor Connect is an easy-to-use guest captive portal that offers a high degree of customization: plugins for advertisements, use of social authentication, and location-specific splash templates.	Venue owners can: <ul style="list-style-type: none">• Gather relevant visitor information during registration• Easily customize guest access experiences and best serve their visitors by using workflow tools• Easily insert ad plugins in the guest onboarding flow to promote a product or a service
CMX for Facebook Wi-Fi	CMX for Facebook Wi-Fi is a joint Cisco - Facebook solution for guest Wi-Fi. It delivers a simple, consistent experience for users, and aggregates social media analytics to venue owners.	Venue owners can: <ul style="list-style-type: none">• Increase their brand exposure• Learn social demographics• Enhance customer experiences by helping better target their offering
Cisco 3355 MSE Wireless Intrusion Prevention System (wIPS) Scale Increase	The 8500 WLC and Flex 7500 controller support 6000 access points. For wIPS support, the Cisco 3355 MSE access point scale is increased to match the controller access point scale, allowing 1-to-1 MSE deployments with high-scale controllers.	The 3355 MSE supports 6000 access points for wIPS. The virtual appliance continues to support 10,000 access points for wIPS.
wIPS - New UI, New Signatures, Alarm Consolidation, Soft Access Point Detection, and Enhanced Valid Client Protection	New UI for configuration workflow, alarm consolidation, new signatures, detecting smartphones setup as a "soft access point"; enhanced protection and tracking for valid clients connecting to rogue access points.	<ul style="list-style-type: none">• One workflow to define wIPS and rogue access point rules• Protection against 27 new wireless threats• Better reporting and tracking of valid clients connected to rogue access points• Soft access point detection and reporting

Cisco Prime Network Infrastructure 1.4.1

Cisco Prime Infrastructure is a network management platform that supports lifecycle management of your entire network infrastructure from one GUI (Figure 1). Cisco Prime Infrastructure provides network administrators with a single-pane-of-glass solution for provisioning, monitoring, optimizing, and troubleshooting both wired and wireless devices. Robust GUIs make device deployments and operations simple and cost-effective.

Figure 1. Cisco Prime Infrastructure 1.4.1



Cisco Prime Infrastructure 1.4.1 with Cisco Wireless Release 7.6 adds support for new features, as described in Table 4.

Table 4. New Cisco Prime Infrastructure 1.4.1 Features

Feature	Description	Benefit
Management Support for New Access Points: 3700 Series and 1530 Series	Support for new access point platforms (Aironet 3700 Series 802.11ac access points and 1530 Series outdoor access points)	Centralized configuration, monitoring, and troubleshooting for the new access points.

Service and Support

Services from Cisco and our partners can help you assess, design, tune, and operate your wireless LAN to transparently integrate mobility services and take advantage of the system wide capabilities of the Cisco Unified Wireless Network.

Our professional services help you align your interference management, performance, and security needs with your technical requirements to better use the self-healing, self-optimizing features built into the silicon-level intelligence of Cisco CleanAir® technology and the increased performance of the 802.11ac standard. These services can enhance deployment and operational efficiencies to reduce the cost and complexity of transitioning to new technologies.

Our Technical Support Services help you maintain network availability and reduce risk. Optimization services provide on going assistance with performance, secure access, and maintenance of a strong foundation for business evolution and innovation.

For More Information

For more information about planning, building, and running services for Cisco CleanAir technology, Cisco 802.11ac, and the Cisco Unified Wireless Network, visit Cisco Technical Support Services or Cisco Professional Services: <http://www.cisco.com/go/services>.

For more information about Cisco wireless products, visit <http://www.cisco.com/go/wireless>.




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