

Cisco Wireless Release 8.2

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Overview

The 802.11ac standard is well on its path to becoming the prevalent WLAN standard, and the emergence of 802.11ac Wave 2 clients and WLAN infrastructure is expected to provide another boost to that trend. According to IDC,¹ after two full years of product availability, the 802.11ac standard already accounts for nearly 50 percent of dependent access point unit shipments and 62.8 percent of dependent access point revenues, representing a noticeably faster adoption rate than we saw with the 802.11a/b/g to 802.11n transition several years ago. Increased demand on enterprise WLANs will continue to be a driving factor in this transition, especially as new enterprise mobility use cases are adopted and Internet of Things (IoT) applications move into the mainstream. With the expanded need for WLAN infrastructure comes the need for operational simplification and reduction in operating costs.

Cisco anticipated these emerging trends and updated the wireless controller and access point portfolio with the introduction of the Cisco[®] 5520 and 8540 Wireless Controllers and the Cisco Aironet[®] 1850 and 1830 Series 802.11ac Wave 2 capable access points in Cisco Wireless Release 8.1. Cisco Wireless Release 8.2 continues to build upon innovations such as Cisco High Density Experience (HDX), Airtime Fairness, and ease of management delivered in preceding releases, and provides expanded deployment and management simplification of WLAN networks. It greatly simplifies licensing management, provisioning, and maintenance of WLAN networks. It also focuses on enhancing security and services for a variety of applications to provide an enhanced customer experience on Wi-Fi networks.

Primary Features in Release 8.2

- **Smart licensing support for the Cisco 5520 and 8540 wireless controllers and Cisco Virtual Wireless Controller (vWLC):** Cisco started the initiative of simplifying customer license management by building a Smart Software Manager portal. This portal helps customers understand what licenses they have purchased and what licenses they are using. Various other Cisco products are already smart enabled and, with the introduction of this release, smart licensing will now be available on the 5520, 8540, and vWLC.
- **Increased vWLC scale:** The number of access points that vWLC can support is now 15 times the number it supported prior to this release. vWLC can now support up to 3000 access points and 32,000 clients. This allows customers to deploy high-scale vWLC in the private cloud for simplified operations and flexible deployments.
- **AP Plug-n-Play:** To increase service automation, this release introduces AP Plug-n-Play. AP Plug-n-Play is a highly secure, zero-touch, day-zero deployment feature that simplifies access point deployment using a central server (Cisco Application Policy Infrastructure Controller Enterprise Module [[APIC-EM](#)]). It helps an organization save on the operational costs of configuring access points before they are shipped to the actual location and the travel costs of an IT installer.

¹ <http://www.idc.com/getdoc.jsp?containerId=prUS25867015>

- **NetFlow Export enhancements:** With Cisco's focus on Security Everywhere, this release enhances NetFlow Export to include destination IP, destination Port and user ID in standard NetFlow v9 format. With these added fields, Cisco wireless controllers can now integrate with NetFlow collectors such as [Lanclope](#) to detect suspicious traffic flows, policy violations, and compromised devices in customers' environments.
- **Application Visibility and Control (AVC) enhancements:** The latest Next-Generation Network-Based Application Recognition (NBAR2) engine upgrade provides optimized application classification and support for Protocol Pack 14. It also provides added support for web applications (mail.ru, PirateBay, buzzfeed, etc.) In addition, it will help support Wi-Fi Calling when Protocol Pack 15 is available.
- **Airtime Fairness – client fair sharing:** Some client devices, particularly legacy or low-throughput ones, might waste airtime in the wireless network by receiving data at a slow rate. User experience for all associated clients is then affected, especially for clients that support comparatively better throughput or signal-to-noise ratio by starving them of airtime. The enhancements in this release allow the customer to make wireless airtime usage fair and equitable to all clients.

Platform Support

Cisco Wireless Release 8.2 is supported on the following platforms:

- Cisco Aironet access points running the Control and Provisioning of Wireless Access Points (CAPWAP) Protocol (please see the Release 8.2 release notes for the exact series that are supported)
- Cisco 2500 and 5500 Series Wireless Controllers
- Cisco Wireless Services Module 2 (WiSM2)
- Cisco Flex[®] 7500 Series Wireless Controllers
- Cisco 8500 Series Wireless Controllers
- Cisco Wireless LAN Controller Module for Integrated Services Routers G2 (ISR G2)
- Cisco Virtual Wireless Controller (vWLC)

Management support for Release 8.2 will be delivered as part of the Cisco Prime™ Infrastructure Release 3.0.2 Tech Pack 1.

Recommended Release for Production Deployments

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

- Release 8.0 is the next MD release train (a release in this train will be qualified as MD).
- Release 7.4 is the current MD release train, and 7.4.140.0 the latest recommended release.

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

- Release 8.0 is recommended for customers with 802.11ac deployments. Customers are advised to upgrade to Release 8.0.121.0 to take advantage of multiple software fixes.
- Customers with earlier ED releases 7.2 or 7.3 should upgrade to 7.4.140.0. Customers with earlier ED release 7.5 should upgrade to 8.0.121.0.

Refer to [Guidelines for Cisco Wireless Software Release Migration](#) for additional details.

New Cisco Access Point and Wireless Controller Features

Table 1 describes the new features in Cisco Wireless Release 8.2.

Table 1. New Access Point and Wireless Controller Features

| Feature | Description | Benefit |
|---|---|--|
| Smart licensing | Available on the 5520, 8540, and vWLC. Provides cloud-based license visibility on licenses that the customer owns and that the customer is using. | Improved license and usage visibility, reduced activation complexity, and optimal utilization. |
| vWLC increased access point and client scale | Increased vWLC scale allows up to 3,000 access points and 32,000 clients. | High-scale vWLC in the private cloud for simplified operations, flexible deployments, and pay-as-you-grow model. |
| Access point provisioning using Plug-n-Play (PnP) | Plug-and-play ability to configure access points using APIC-EM. Supported on the following access points: 702i, 702W, and 1600, 2600, 3600, 1700, 2700, and 3700 Series. | Helps preprovision the access point details from a central service (APIC-EM) for easier installation. |
| NetFlow Export 2.0 | Enhanced NetFlow Export to include 802.1X username, destination IP, destination interface, source port, and destination port. Enhanced NetFlow Export is supported on the 5520 and 8540 controllers only. | Helps track applications and traffic flows by user ID and provides better integration support with NetFlow collectors such as Lancope. |
| AVC enhancements | NBAR 2 engine on wireless controllers has been upgraded to Version 23. Base Protocol Pack (PP) that comes with the release is PP 14. The upgraded engine provides future support for Protocol Packs until PP 21. | Newer engine provides optimized application classification with added support for web applications (mail.ru, PirateBay, buzzfeed, etc.). PP 15 includes Wi-Fi Calling and Skype for business support. |
| Bonjour gateway with Googlecast support | Enable wireless clients to discover Chromecast across VLANs, along with location-specific services capabilities. | Enables users to mirror screens using the Chromecast application or Chrome browser using Chromecast. |
| Enhanced wIPS support for Hyperlocation Module with Advanced Security | Wireless Intrusion Prevention System (wIPS) support for 40 and 80 MHz using Hyperlocation Module with Advanced Security. | Ability to detect AwIPS attacks on 40- and 80-Mhz channels. |
| Airtime Fairness – client fair sharing | Airtime within an SSID can now be shared equally among clients. | Better user experience, as slower clients can no longer slow down the network for faster clients. |
| WLAN Express enhancements | Enhanced dashboards with RF Overview, RF Troubleshoot, and other UI enhancements. | Ease of monitoring and troubleshooting. |
| 2.4-GHz mesh | Mesh functionality in 2.4 GHz. | Enables customers in countries that do not allow 5 GHz to use mesh. Provides alternate mesh radio for locations with heavy radar interference in the 5-GHz band. |
| Pre-shared key (PSK) provisioning support for mesh | Adds a new type of access point join security for mesh access points. Three mesh access point authentication options (X-Wildcard MAC, X-PSK, and X-LSC) are now available, based on desired security and ease of configuration. | Easier to configure using PSK instead of locally signed certificates (LSC). |
| Dynamic management user login via authentication, authorization, and accounting (AAA) server | Enables management users to be notified and reauthenticated when RADIUS/TACACS server comes back up while they are connected locally using local credentials. | Better RADIUS/TACACS-based security. |
| Test AAA command for RADIUS | Test AAA command for RADIUS using simulated client on wireless controller. | Helps verify connectivity from wireless controller to AAA and profiles being pushed from AAA for a particular 802.1X user. |
| Custom HTTP port for profiling | Wireless controllers can now send HTTP user agent information to the Cisco Identity Services Engine (ISE) for devices that are using custom ports (not only port 80). | Helps ISE provide better profiling of the device. |
| Layer 3 interface for Tunneling Protocol | Layer 3 interface for Tunneling Protocol. | Allows the use of Layer 3 interfaces other than the management interface for tunneling and some other applications. |
| Out-of-band management support | Service port can now be used for out-of-band management support in the 5520, 8510, and 8540 wireless controllers. | Enables service port to serve as a functional port for out-of-band management. |
| Support for Wi-Fi CERTIFIED Passpoint release 2 | Ability to add (onboard) new user devices to a secure WLAN without preprovisioning them. | Both new employees and guests will be able to obtain a credential on the fly upon their first visit to the venue. The “bootstrapping” will need to be done only once (unless the network administrator explicitly expires the credential). |

| Feature | Description | Benefit |
|---|--|--|
| Mobility Express enhancements | <ul style="list-style-type: none"> • Network Time Protocol (NTP) server based on URL input (not only IP) and default to a pool. • Software update via HTTP. • Mobility Express best practice updates. | Ease of use and deployment for Mobility Express. |
| Increased channel and transmit power support for various countries | <ul style="list-style-type: none"> • Indoor and outdoor access points for Thailand and Vietnam now use the –S regulatory domain. • Indoor access points for Macau now use the –S regulatory domain. • Outdoor access points for Hong Kong now use the –S regulatory domain. | Using the –S domain provides additional channels and increased transmit power in certain channels to improve wireless deployments. |

Cisco Prime Infrastructure 3.0.2

Cisco Prime Infrastructure is a network management platform that supports lifecycle management of your entire network infrastructure from one GUI. It 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.

Cisco Prime Infrastructure 3.0.2 Tech Pack 1 allows basic monitoring and management of Cisco Wireless Release 8.2 with technology packs to enable new feature support.

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 systemwide 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 ongoing assistance with performance, secure access, and maintaining 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 at <http://www.cisco.com/go/services>.

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



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