

Cisco Catalyst 9100 and Wi-Fi 6 (802.11ax) Customer

Technology overview



What is Wi-Fi 6?



The emerging IEEE 802.11ax standard is the latest step in a journey of nonstop innovation. It builds on the strengths of 802.11ac while adding flexibility and scalability that lets new and existing networks power next-generation applications. IEEE 802.11ax couples the freedom and high speed of Gigabit Ethernet wireless with the reliability and predictability we find in licensed radio.



Is Wi-Fi 6 different from 802.11ax?



The Wi-Fi Alliance has started a campaign to use the term “Wi-Fi 6” when referring to the IEEE 802.11ax standard, indicating the sixth generation of Wi-Fi. The goal is to simplify the marketing message to better position Wi-Fi relative to the Third Generation Partnership Project (3GPP) standards used in cellular such as 5G which is the 5th Generation of 3GPP. The Wi-Fi 6 name is becoming very common now due to its simplicity. However, 802.11ax is interchangeable with Wi-Fi 6.



What additional features can I expect from Wi-Fi 6?



Cisco, along with other vendors, has been working with the Institute of Electrical and Electronics Engineers (IEEE) on the Wi-Fi 6 standard. When ratified, Wi-Fi 6 will build on the success of 802.11ac, delivering a better experience in typical environments and more predictable performance for advanced applications such as 4K or 8K video; high-density, high-definition collaboration apps; all-wireless offices; and the Internet of Things (IoT). Wi-Fi 6 will drive Wi-Fi toward the future as the growth of wireless continues. You can get more information about the standard from our [technical white paper](#).



Will Wi-Fi 6 be backward compatible with previous generations of Wi-Fi?



In Wi-Fi 6, all devices must also support all the mandatory 802.11a, b, g, n, and ac modes of operation. This ensures that Wi-Fi 6 Access Points (APs) and clients are backward compatible with legacy APs and clients.

Q Will Wi-Fi 6 be allowed in all countries and regulatory domains?

A All countries and regulatory domains that allow 802.11n and 802.11ac will also allow Wi-Fi 6.

Q When will Wi-Fi 6 be ratified (when will the standard be finalized)?

A The IEEE is currently scheduled to ratify the Wi-Fi 6 amendment in the second quarter of 2020. The Wi-Fi Alliance finalized their timeline for a Wi-Fi 6 certification in September 2019. The latest official estimate for ratification is always available at the 802 IEEE website in the “RevCom and Standards Board Final or Continuous Process Approval” column.

Q Are my current mobile/client devices that use Wi-Fi 6 supported? When will mobile devices support Wi-Fi 6?

A Wi-Fi 6 devices have made it to the market during the last year. Leading mobile vendors and Cisco partners Apple, Intel, Microsoft and Samsung all have released Wi-Fi 6 products. Keep in mind that you need both an access point and clients that supports Wi-Fi 6 in order to realize the benefits of this new standard.

Q Which Cisco access points support Wi-Fi 6?

A Cisco® Catalyst® 9100 enterprise-class access points support Wi-Fi 6 capabilities, extending the power of intent-based networking with hardware and software innovations. The Cisco Catalyst 9100 APs offer resiliency and security while enabling intelligence at the network edge.

Q Which Cisco access points support the Cisco RF ASIC?

A Cisco Catalyst 9120 and 9130 Series enterprise-class access points have an embedded Cisco RF Application-Specific Integrated Circuit (ASIC) that delivers capabilities and RF innovations that go beyond the Wi-Fi 6 standard.

Cisco Catalyst 9100 Access Points portfolio

Q What is the portfolio transition from the Cisco Aironet® Series to the Cisco Catalyst 9100 platform?

A The Cisco Catalyst 9100 Access Points consist of the Cisco Catalyst 9105, 9115, 9117, 9120, 9130 Series. These access points are the follow-ups to the Cisco Aironet 1815, 1850, 2800 and 3800 Series Access Points, respectively. The Cisco Catalyst 9100 Access Points come equipped with Wi-Fi 6 capabilities, a better industrial design, and improved RF performance, and deliver reliability, security, and intelligence at scale.

Q What feature sets do the Cisco Catalyst 9100 Access Points support?

A The Cisco Catalyst 9100 Access Points support the packaging of features into Essentials and Advantage packages. The data sheets list the features in each package.

Q Will Cisco Catalyst 9100 Access Points work with existing 802.11ac networks?

A Yes. For Cisco, investment protection, ensuring that Wi-Fi 6 seamlessly coexists with existing 802.11ac Wave 1 and Wave 2 products is the number one priority. The industry has carefully designed Wi-Fi 6 to interact naturally with 802.11ac and older APs and clients. Cisco Catalyst 9100 APs supporting the Wi-Fi 6 standard adhere to the requirement that a Wi-Fi 6 device must support all the mandatory modes of 802.11a/g/n and 802.11ac. They can communicate with 802.11a/g/n and 802.11ac clients using 802.11a/g/n or 802.11ac formatted Physical Protocol Data Units (PPDUs).

Q Will the Cisco Catalyst 9100 Access Points support the new Cisco Catalyst 9800 Series Wireless Controllers?

A Yes, The new Cisco Catalyst 9800 Wireless Controllers will be fully supported by both the Cisco Catalyst 9100 and existing 802.11ac Access Points. With the Cisco Catalyst 9800 Series, your infrastructure Wi-Fi network will be ready to be upgraded to Wi-Fi 6.

Q What controller and management options are available for the Cisco Catalyst 9100 Access Points?

A The Cisco Catalyst 9100 Access Points can be managed by all Cisco Catalyst 9800 Series Wireless Controllers. In addition, they are supported by the Cisco 3504, 5520, and 8540 Wireless Controllers. Also Catalyst 9100 Access point can also run Embedded Wireless Controller (EWC) and act as controller.

The Cisco Catalyst 9100 Access Points are designed to work with Cisco DNA Center for simplified network management and orchestration, with automation, assurance, and topology support. They can also be managed by Cisco Prime® Infrastructure.

Q What cable category will be needed to connect the Cisco Catalyst 9100 Access Points?

A An 80-MHz, 8-Spatial-Stream (8SS), 1024-Quadrature Amplitude Modulation (1024-QAM) Wi-Fi 6 radio, plus a second Wi-Fi 6 radio with 5 GHz at 80 MHz, 4SS, and 1024-QAM approaches 5 Gbps of wired traffic. For this reason, Cisco recommends using Category 6a cables to each AP and suggests 2.5- or 5-Gbps Cisco Catalyst Multigigabit ports for the access switch.

Q What are Cisco's solutions for 2.5-Gbps and 5-Gbps connections to access points?

A Cisco offers stackable Cisco Catalyst 9300 Series Switch models that support 10-, 5-, 2.5-, and 1-Gbps and 100-Mbps interfaces. This dense solution will allow a single stack of eight units to support up to 384 ports, connected using the industry's highest stack bandwidth, Cisco StackWise®-480. All ports also support Cisco Universal Power over Ethernet (Cisco UPoE+ and Cisco UPoE®), Power over Ethernet Plus (PoE+), and Power over Ethernet (PoE). You can find other options at <https://www.cisco.com/c/en/us/products/switches/campus-lan-switches-access/index.html>.

Q What are the options for site survey for Cisco Catalyst 9100 deployment?

A Customers can choose third-party planning and site survey tools for initial deployments. In addition, Cisco Catalyst 9100 Access Points are capable of running the Catalyst 9800 as a virtual wireless controller function embedded on the access point. This deployment option supports an internal Dynamic Host Configuration Protocol (DHCP) server, which enables an access point to be used for a site survey.

Q Will the existing brackets for the Aironet APs work with the Catalyst 9100 APs?

A Yes, aside from the 9105 access points, the Catalyst APs are designed to support the mounting brackets, AIR-AP-BRACKET-1 or AIR-AP-BRACKET-2, used for all Aironet access points, thus reducing installation costs.

For the Catalyst 9105 Access Points, the AIR-BRACKET-8 bracket will be used for the Catalyst 9105 AP. For the Catalyst 9105w Access Point, the AIR-BRACKET-W4 will be used.

Q Will any Catalyst 9100 access points support Intelligent Capture?

A Yes. All Cisco Catalyst 9100 Access Point support the Intelligent Capture feature. This functionality probes your network and provides Cisco DNA Center with the deep data analysis to proactively fight rogue attacks or breaches.

Q Do Cisco Catalyst 9100 Access Points support Bluetooth?

A Yes, all models have native hardware support for Bluetooth 5.

Q **What type of PoE will be needed to power the Cisco Catalyst 9100 Access Points?**

A This depends primarily on the mode of operation. For the current Cisco Catalyst 9100 SKUs, we recommend 802.3at (PoE+) for full radio functionality. These access points can function with AF power with reduced radio capabilities.

Q **What are the minimum software requirements to deploy the Cisco Catalyst 9100 Access Points with Cisco DNA Center and Cisco Catalyst 9800 Series Wireless Controllers?**

A Please consult the Compatibility Matrix.

Q **Which Catalyst 9100 access points can be teleworker/ OfficeExtend Access Point (OEAP) enabled?**

A All of the Catalyst 9100 access points (as well as all of the Aironet access points) can be outfitted to support a teleworking initiative. With an OEAP, an employee at home or in a temporary micro-office will have access to the corporate SSID and the corporate network without any advanced technical know-how or the need to set up a VPN. Furthermore, any Cisco controller—virtual or physical—can be used for creating the secure tunnel from your employee’s home to your office.

Q **Why are there two versions of the Cisco Catalyst 9105 Access Point?**

A There are two versions of the Cisco Catalyst 9105 access point, the Catalyst 9105i (for infra) and the 9105w (for wall). The major difference between these two access points are the mounting options. The 9105i will be traditionally mounted on the ceiling while the 9105w will be mounted on the wall. Wall mounted access points are a great solution for hospitality, residence halls or other multi-dwelling units.

Q **What antennas can be used with Catalyst 9120E and 9120P?**

A Catalyst 9120E can use the same dipole and 4-element antennas as previous Aironet APs: the 2800E and 3800E. Likewise, the Catalyst 9120P can use the same antennas as the 3800P. Both the 9120E and 9120P can use new Self-Identifying Antennas (SIA). These antennas have built-in EEPROM that can be read by the AP to automatically configure the antenna type and gain in the WLC. Refer to the Getting Started Guide and Antenna Reference Guide for details.

Q **What antennas can be used with Catalyst 9130E?**

A The Catalyst 9130E supports 8x8 and thus needs new 8-element antennas. The external antennas will connect through a unique Smart Antenna Connector. Cisco will have a new set of 8-element antenna, including Omni and directional antennas. Refer to the Getting Started Guide and Antenna Reference Guide for details.

Q **Why is the P SKU is not needed for C9130?**

A C9130AXE employs the Smart Antenna Connector that automatically detects the information for the Antenna and sets the radio transmit power appropriately, thus removing the regulatory requirement for professional installation.

Q **Does the Catalyst 9130E support tri-radio operation?**

A Yes, the Catalyst 9130E can support tri-radio operation. A special break-out cable (either with RP-TNC or N-Type connectors) is required to split the 8x8 configuration into two 4x4 paths. Note that the 2.4 GHz radio is only directed to one set of the 4x4 breakout. Refer to the Getting Started Guide and Antenna Reference Guide for details.

Q **What is Application Hosting of Catalyst 9100 Access Points?**

A A solution allowing the ability to future-proof deployments by turning the access point into a development platform. It simplifies the traditional deployment of enterprise IoT solutions by eliminating the need to install and manage an overlay network.

Q **How does Application Hosting work?**

A The access point becomes the IoT gateway, providing the connectivity layer for tags, devices, and more. It eliminates the need for a physical overlay network which, is both time-consuming and expensive, reducing overall TCO. The third-party applications are often built on an open, standards-based container architecture to streamline deployments and simplify management.

Q **Is Application Hosting available on all Catalyst 9100 Access Points?**

A It is available on most Catalyst 9100 access points, including the Catalyst 9130, Catalyst 9120, Catalyst 9117, Catalyst 9115 and Catalyst 9105i. Due to the position of the USB port on the 9105w wall-mounted AP, this solution is not supported on that particular access point.

Q **How do I find the IoT application for my Catalyst 9100 Access Point?**

A You can find Cisco compatible applications for the access points on Cisco Partner Ecosystem page: <https://developer.cisco.com/ecosystem>.

Q **Does Cisco provide support for 3rd party apps?**

A Cisco TAC does not provide support to third-party apps and open source apps unless specifically called out. However, will be validated for compatibility on Cisco APs.

Warranty and support

Q **What is the warranty coverage on the Cisco Catalyst 9100 Access Points?**

A The Cisco Catalyst 9100 Access Points come with a limited lifetime warranty, similar to the Cisco Aironet access points. The warranty includes 10-day advance hardware replacement and ensures that software media are defect-free for 90 days. For more details, visit <https://www.cisco.com/go/warranty>.

Ordering

Q **Where can I find the complete SKU list, shipping list, or data sheets for the Cisco Catalyst 9100 Access Points?**

A A complete list of product IDs is available in the platform-specific data sheets:

- Cisco Catalyst 9105 Series Access Points: [Data sheet](#).
- Cisco Catalyst 9115 Series Access Points: [Data sheet](#).
- Cisco Catalyst 9117 Series Access Points: [Data sheet](#).
- Cisco Catalyst 9120 Series Access Points: [Data sheet](#).
- Cisco Catalyst 9130 Series Access Points: [Data Sheet](#).

Q **Where can I find more details on how to order the Cisco Catalyst 9100 Access Points?**

A Please check the ordering guide.

Services

Q **Are any services available to support the Cisco Catalyst 9100 Access Points?**

A Yes. With Cisco Services, you can achieve infrastructure excellence faster with less risk. From initial WLAN readiness assessment to implementation, full solution support, and in-depth training, our services for the Cisco Catalyst 9100 Access Points provide expert guidance to help you successfully plan, deploy, manage, and support your new access points. With unmatched networking expertise, best practices, and innovative tools, Cisco Services can help you reduce overall upgrade, refresh, and migration costs as you introduce new hardware, software, and protocols into the network. With a comprehensive lifecycle of services, Cisco experts will help you minimize disruption and improve operational efficiency to extract maximum value from your Cisco DNA ready infrastructure. [Learn more](#).

Licensing and migration

Q What are the licensing options for the Cisco Catalyst 9100 Access Points?

A Cisco DNA term-based licenses (AIR-Cisco DNA licenses) are mandatory with the purchase of Cisco Catalyst 9100 Access Points (except when connection to the AireOS controllers with sufficient number of perpetual AP/C1 licenses). **Note:** DNA licenses are required for connecting any access point to the Catalyst 9800 Series Controllers, DNA Center (On-prem or DNA Spaces).

These access points support three types of Cisco DNA Licenses: Cisco DNA Essentials, Cisco DNA Advantage, and Cisco DNA Premier. Cisco DNA subscription licenses have to be purchased for a 3-, 5-, or 7-year subscription term. Upon expiration of the Cisco DNA license, the Cisco DNA features will expire, whereas Network Essentials and Network Advantage features will remain.

Q Can Cisco Catalyst 9100 Access Points connect to AireOS and Cisco Catalyst 9800 Series controllers? If so, what are the licensing options?

A Cisco Catalyst 9100 Access Points can connect to both AireOS 3504, 5520, and 8540 controllers and Cisco Catalyst 9800 Series controllers. These access points require a mandatory Cisco DNA license to connect to either AireOS controllers or Cisco Catalyst 9800 Controllers.

Q Are Cisco Catalyst 9100 Access Points' licenses portable?

A Cisco DNA licenses for Cisco Catalyst 9100 Access Points are portable across the Cisco Catalyst 9100 product family, AireOS controllers, and Cisco Catalyst wireless controllers.

Q What are the options for migrating existing Cisco DNA licenses when purchasing the Cisco Catalyst 9100 Access Points?

A Customer Smart Accounts allow for existing DNA licenses to be easily migrated to new access points. The remaining DNA license term will be consumed on the new access point.

Q Are Cisco DNA licenses eligible for the Cisco Enterprise Agreement?

A Yes. Cisco DNA licenses are currently eligible for the Enterprise Agreement.

Q Will the 9100 Access Points support Flexible Radio Assignment (FRA)?

A The Catalyst 9120 and 9130 Access Points both support Flexible Radio Assignment.

Q What options do I have after the Cisco DNA term expires?

A You can renew the Cisco DNA license. If you choose not to renew the license, you should purchase Cisco Smart Net Total Care® Service on APs and controllers to continue receiving Cisco Technical Assistance Center (TAC) support and software updates and upgrades.

Q Can I port APs from one controller to another after the Cisco DNA term expires?

A Yes. You will need to ensure the following:

1. A Smart Account is already set up.
2. Network Essentials or Network Advantage licenses are deposited into that Smart Account.
3. Controllers are registered to that Smart Account.

Q If I need an evaluation license, how do I get it?

A There is no evaluation license. The evaluation period is automatically triggered when a device is in the unidentified state and not registered to a Smart Account. The device will not attempt to communicate with Cisco in this state. Evaluation mode is available for only 90 days, after which out-of-compliance messages will be triggered.

Q Do I need to purchase licenses on both controllers for a high-availability pair or an N+1 redundancy scenario?

A No, licenses are purchased per AP.