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Wireless Solution Overview

Your wireless future begins now

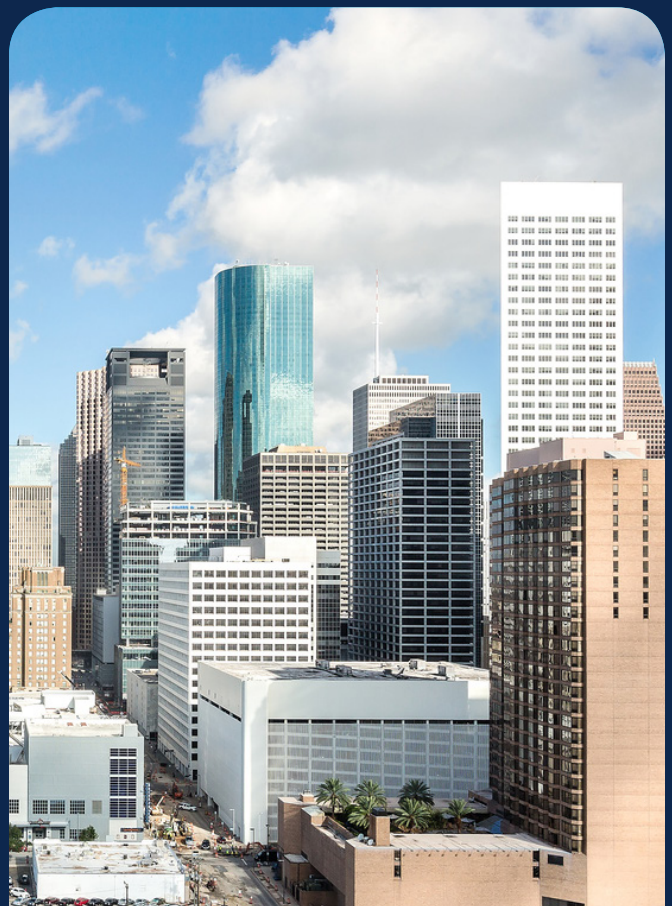
Introduction

With users expecting an immersive experience coupled with IoT becoming the new mobile, we are now more dependent on Wi-Fi than ever before.

Immersive experiences on mobile are becoming the new normal. We are seeing doctors who can practice surgeries with Virtual Reality technology. Students using Augmented Reality to live an experience by learning history and science while engineers can troubleshoot problems remotely from the manufacture floor.

With the explosion of IoT, everything is connected wirelessly including lighting, heating, badging, security cameras. In hospitals, lifesaving medical equipment is connected, in retail robots are restocking shelves while manufacturing is connecting heavy machinery, in the corporation VIPs can enter a room and have a personalized experience. IoT is enabling the business and since machines are less tolerant of downtime than even humans, they must be always-on and always secure.

With all this opportunity comes risk. Mobility and IoT will expand the attack surface since more these devices are unmanaged. As attackers innovate, you need to be one step ahead with a smarter more secure solution that have deep visibility into traffic patterns and the latest intelligence to protect and defend the business. Your wireless future begins now with a wireless network that is more than just access points and controllers. It is part of an end-to-end networking solution that connects all devices securely while providing high quality performance that adds more value to business.



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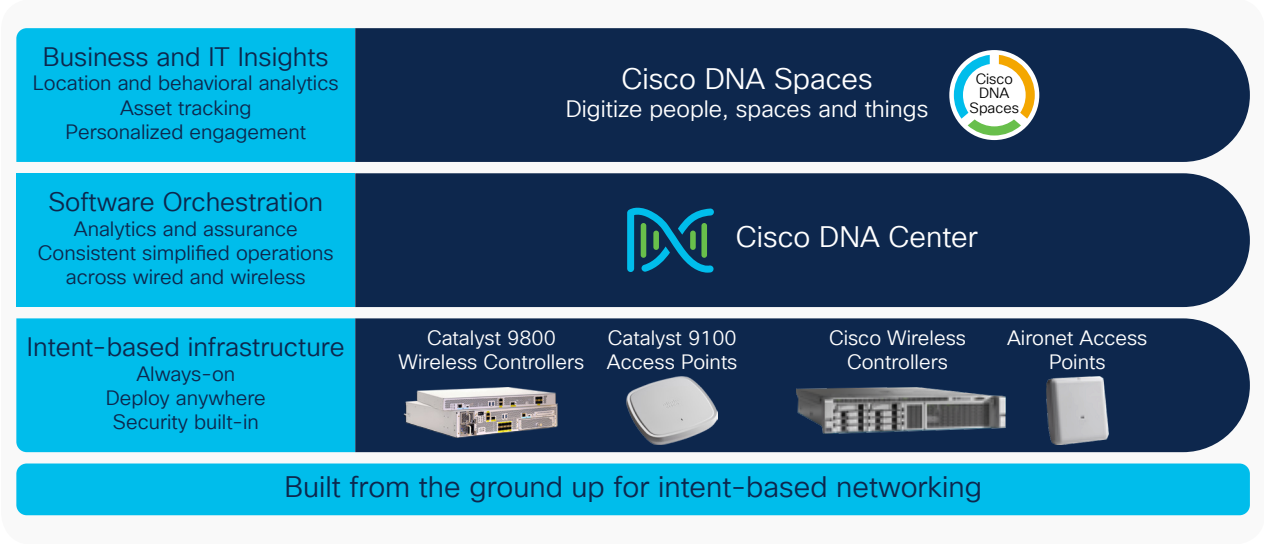
Overview: Cisco next generation wireless stack

Cisco wireless solutions are resilient, have the integrated security you need, and employ adaptive and insightful intelligence providing useful insight into your network. With intent-based networking built on Cisco Digital Network Architecture, our wireless solutions go beyond the latest Wi-Fi 6 (802.11ax) standard and are ready for the growing user expectations, IoT devices and next gen cloud-driven applications. With the ability to handle the increased mobile traffic as well as support IoT at Scale, Cisco's first Wi-Fi 6 access points with superior RF innovations will expand wireless access with intelligence and provide a secure, reliable high quality wireless experience for all networks.



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Key benefits

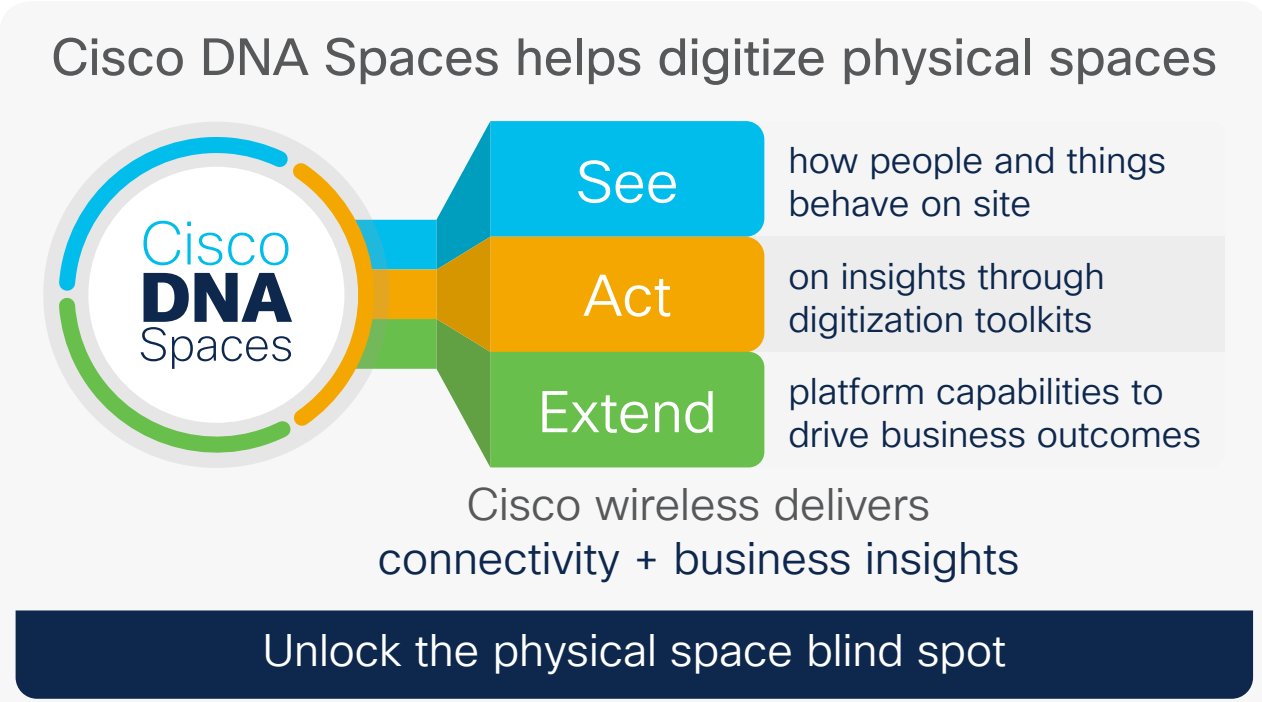
With powerful, customizable solutions for companies of all sizes, the Cisco wireless portfolio helps you manage the growing number of connected wireless devices. From IoT to a growing inventory of applications, the Cisco wireless network provides an always-on, always-available solution with the following benefits:

Comprehensive security:

- Detect encrypted threats with Encrypted Traffic Analytics (ETA)
- Multi-lingual access points that provide visibility and communications with not only Wi-Fi but Zigbee and BLE
- Cisco SD-Access provides automated end-to-end segmentation and group-based policy that is used to separate user, device and application traffic without completely redesigning the network. The group-based policies are also automated so that organizations can make sure that the correct policies are set up for any user or device with any application across the network
- Trustworthy solutions allows for security to be implemented holistically. This solution allows for constant security enhancements of the network to protect against ever-evolving cyber attacks

Cisco Wireless Solutions

Cisco DNA Spaces



Whether it's learning more about visitors to your organization, your employees, or your things, such as assets or sensors, Cisco DNA Spaces digitizes your physical space. How? By synthesizing location data across your properties and wireless investments to deliver location-based services at scale. This information can be used to enhance the customer experience, improve business operations as well as efficiencies (and reduce costs), realize industry-specific business outcomes, and much more.

Cisco DNA Spaces expands its location cloud platform beyond Wi-Fi to BLE tags, beacons and other IoT sensors. With gateway-enabled Cisco Wi-Fi 6 access points, it can easily scale advanced use cases while lowering TCO. Through the End Device Marketplace within Cisco DNA Spaces, customers have flexibility to choose from a diverse set of supported BLE devices. Available second half of calendar year 2020.

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Key benefits (continued)

Data-optimized intelligence:

- Streaming telemetry and contextual data from every access point and controller on the network provides complete visibility
- Automatically detect and prioritize issues with complex event processing with a series of analytics engines to find anomalies instantly
- Correlated insights and contextual cognitive analytics accurately pinpoint root cause
- Guided remediation allows for single-click resolution, allowing automation to close the loop

Reliability beyond Wi-Fi 6:

- Custom RF ASIC provides Flexible Radio Assignment (FRA), CleanAir, Wireless Intrusion Prevention System (WIPS) and DFS detection
- Deterministic capacity at scale with Wi-Fi 6. Wi-Fi 6 is the newest generation of Wi-Fi that adds both flexibility and scalability while allowing new and existing networks the ability to power next-generation applications
- Software updates with minimal disruption. Being always on allows for bug fixes, access point deployments at multiple sites, network upgrades and more to be handled without rebooting the controller or impacting network operations

Cisco DNA Center

The command center for your wireless network needs to be as reliable and secure as the devices it controls. From management to automation to analytics to security, Cisco DNA Center runs your network, provisioning and configuring all of your network devices in minutes. No more making sure that each device is up-to-date with what you need it to do; Cisco DNA Center takes care of all that, automatically. But it does so much more.

Cisco DNA Center uses advanced analytics via Cisco DNA Assurance to proactively monitor, troubleshoot, and optimize the network. And by integrating it with third-party systems, you can improve your operational processes. It provides a 360-degree contextual view of user, network and applications that allows it to isolate an issue and tell IT where to focus. If a malady slips by, you can go back in time so you don't have to wait for the problem to occur again and follow guided remediation to fix the issue.

For organizations that utilize a shared network, Cisco DNA Center makes it easier for IT staff to provide end-users their own partitioned piece of the network. Cisco User Defined Network allows end-users the ability to remotely and securely deploy their devices on the network via an easy-to-use app. From there they have the ability to control who can and can't access their devices. UDN is available in the second half of calendar year 2020.

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Cisco Wireless Access Points

Cisco Access Points

Cisco Catalyst® 9100 Access Points: Going beyond the Wi-Fi 6 standard, the Cisco Catalyst 9100 access points provide integrated security, resiliency, and operational flexibility, as well as increased network intelligence. These access points extend Cisco's intent-based network and scale to the growing demands of the Internet of Things (IoT) while fully supporting the latest innovations and newest technologies, making them perfect for organizations of all sizes.

Cisco Catalyst 9130	• Designed for large enterprise • With four radios (2.4 GHz and 5 GHz), FRA, unified RF engine and IOT-ready (BLE and Zigbee) and optimized for Wi-Fi 6 standard • Equipped with Cisco RF ASIC to deliver CleanAir, WIPS, DFS detection and supports up to 500 clients
Cisco Catalyst 9120	• Designed for midsize to large enterprise • With four radios (2.4 GHz and 5 GHz), FRA, unified RF engine and IOT-ready (BLE, Zigbee, Thread) and optimized for Wi-Fi 6 standard • Equipped with Cisco RF ASIC to deliver CleanAir, WIPS, DFS detection and supports up to 500 clients
Cisco Catalyst 9117	• Perfect for small or midsized deployments • With three radios (2.4 GHz, 5 GHz and BLE) compliant with Wi-Fi 6 standard • Supports up to 500 clients and is available with an internal antenna
Cisco Catalyst 9115	• Ideal for small or midsized deployments • With three radios (2.4 GHz, 5 GHz and BLE) adheres to the Wi-Fi 6 standard • Supports up to 500 clients and is available with either an internal or external antenna
Cisco Catalyst 9105	• Designed for small or midsized deployments • With three radios (2.4 GHz, 5 GHz and BLE) adheres to the Wi-Fi 6 standard • Supports up to 200 clients and is available in two mounting options: ceiling and wall
Cisco Aironet 4800	• Target deployment is large enterprise organizations requiring mission-critical traffic • Equipped with four radios (2.4 GHz and 5 GHz), built-in BLE and FRA, Intelligent Capture, Hyperlocation and supports 802.11ac Wave 2 • Supports up to 400 clients and can be run without a controller via Mobility Express
Cisco Aironet 3800	• Great for midsized to large enterprise requiring mission-critical traffic • Equipped with three radios (2.4 GHz and 5 GHz) and FRA, the ability to develop specific applications through a separate developer platform and supports 802.11ac Wave 2 • Supports up to 400 clients and can be run without a controller via Mobility Express
Cisco Aironet 2800	• Designed for midsize to large enterprise requiring advanced features • Equipped with three radios (2.4 GHz and 5 GHz) and FRA and supports 802.11ac Wave 2 • Supports up to 400 clients and can be run without a controller via Mobility Express
Cisco Aironet 1800	• Four different access points to choose from, all ideal for small to medium-sized business environments • Equipped with dual radios (2.4 Ghz and 5 GHz) that support the 802.11ac Wave 2 standard • Supports up to 400 clients and can be run without a controller via Mobility Express

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Cisco Wireless Controllers

Cisco Controllers

Cisco Catalyst 9800 Series Wireless Controllers: The Catalyst controllers streamline the best of RF excellence with open, programmable Cisco IOS® XE benefits, meaning you no longer have two operating systems to manage. These modular, reliable, and highly secure controllers are flexible enough to deploy anywhere—including your choice of cloud.

Cisco Catalyst 9800-80	• Great for large enterprise and service provider networks • Adheres to Wi-Fi 6 standard with 80Gbps throughput • Supports 6,000 access points and 64,000 clients
Cisco Catalyst 9800-40	• Ideal for midsize to large enterprises • Supports Wi-Fi 6 standard with 40Gbps throughput • Supports 2,000 access points and 24,000 clients
Cisco Catalyst 9800-L	• Perfect for small to medium-sized deployments and offers two different versions: copper and fiber uplinks • Supports Wi-Fi 6 standard with 5Gbps throughput • Supports 250 access points and 5,000 clients
Cisco Catalyst 9800-CL	• A virtual wireless controller that has multiple scale options, deployment on either on public or private cloud and is available VMWare ESXi, KVM, Cisco ENCS, Amazon Web Services and Google Cloud Marketplace • Wi-Fi 6 compliant with 2Gbps throughput • Can support up to 6,000 access points and 64,000 clients
Cisco Embedded Wireless Controller on AP	• Zero footprint option with no physical appliance • Easy to deploy and manage via WebUI or mobile app • Can support up to 100 access points and 2,000 clients
Cisco Catalyst 9800 embedded on a Catalyst 9000 switch	• Installed on Cisco Catalyst 9300 switches and is perfect for small campuses or distributed branches • Optimized for Wi-Fi 6 standard • Supports up to 200 access points and 4,000 clients
Cisco Wireless LAN Controller 8540	• Great for high-scale deployment in service provide, enterprise and large campus deployments • Supports 802.11ac Wave 2 standard with 40Gbps throughput • Supports 6,000 access points and 64,000 clients
Cisco Wireless LAN Controller 5520	• Designed for medium-sized to large enterprise and campus deployments • 802.11ac Wave 2 compliant with 20Gbps throughput • Supports 1,500 access points and 20,000 clients
Cisco Wireless LAN Controller 3504	• Ideal for small and medium-sized businesses • Optimized for 802.11ac Wave 2 with 4Gbps throughput • Supports 150 access points and 3,000 clients