



Cisco DNA Spaces

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Cisco DNA Spaces digitizes physical spaces to help customers learn more about people and things within their properties using existing Wi-Fi infrastructure.

Product overview

Digitization has shaken the foundation of every industry, changing the economics and reinventing business models. Companies that digitize use behavioral data about people and things for making business decisions and as a strategic advantage against competitors.

However, when it comes to physical spaces, enterprises experience a data blind spot. There is limited visibility into the behavior of people (visitors, guests, employees) and things (sensors, smart devices, assets) and how people and things interact in a given space.

What if your Cisco® wireless network could deliver more than connectivity and eliminate the data blind spot in your physical spaces?

We're introducing Cisco DNA Spaces—a powerful, end-to-end, indoor location services cloud platform that provides wireless customers with rich location-based services, including location analytics, business insight, customer experience management, asset tracking, Bluetooth Low Energy (BLE) management, and cloud APIs.

It provides a single point of entry for all location technology and intelligence through a single dashboard interface. Cisco DNA Spaces delivers the industry's most scalable location-based marketing platform, all while being compatible across existing Cisco Aironet®, Cisco Catalyst®, and Cisco Meraki® infrastructure, as well as select Cisco Collaboration endpoints, with flexible deployment options.

Features and benefits

Table 1. Cisco DNA Spaces features and benefits

Feature	Benefit
Business metrics	Understand how people and assets behave inside your property and compare performance with your industry and organization.
Location analytics	Understand behavior of people and assets and create customized views and reports based on specific locations, date ranges, SSIDs, and other criteria.
Location hierarchy	Map business taxonomy to network infrastructure.
Profile rules	Profile and segment visitors based on behavior.
Captive portal	Acquire and identify visitors and map them to your enterprise identity.
Engage	Profile visitors and trigger notifications to visitors and employees through multiple channels (SMS, email, app push, API trigger, Cisco Webex Teams™, etc.).
Operational insights	Identify and monitor assets, monitor and detect anomalies, optimize operations and response times through alerts, and integrate with enterprise systems.

Feature	Benefit
Partner App Center	Access a world of partner and enterprise software applications to extend the power of the platform and realize business outcomes.
APIs	Get a toolbox for developing on the platform and extending product functionality.
Detect and Locate	Search and display location of devices based on MAC or IP address.

Product capabilities

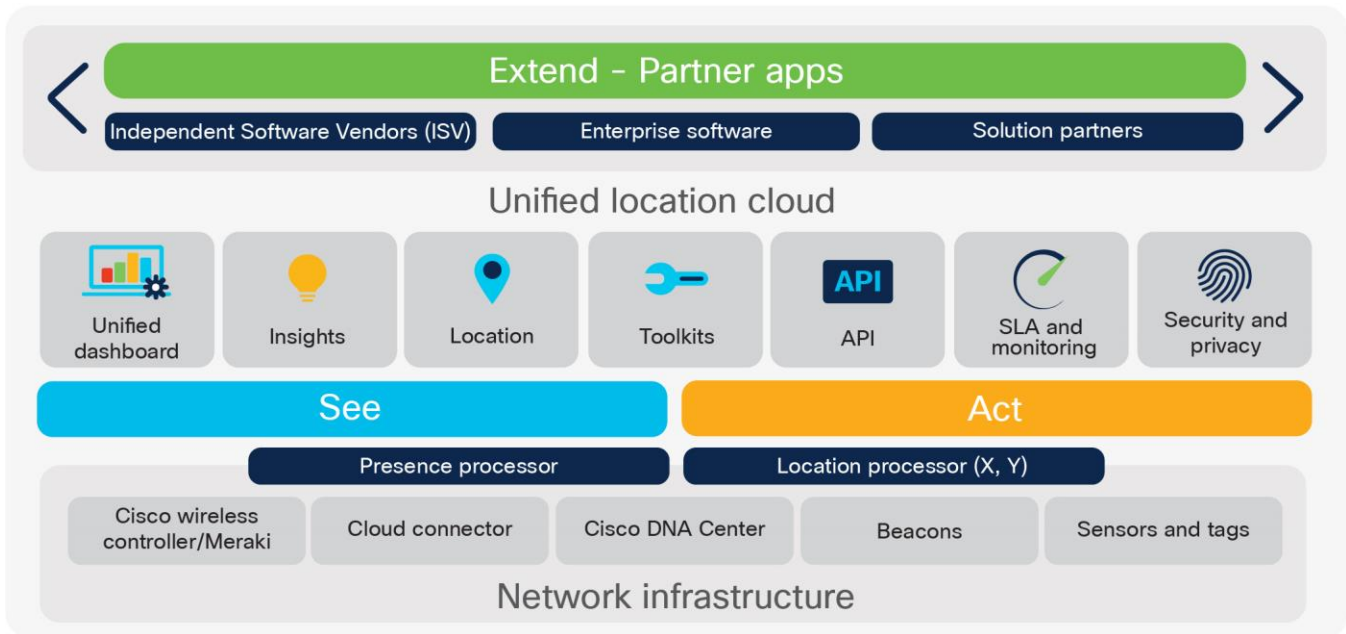


Figure 1.

Cisco DNA Spaces unified location cloud takes input from multiple sensors and processes, filters and cleanses the data, provides toolkits to act on this data and also makes this data accessible to partners - Independent Software vendors, enterprise software as well as solution partners for delivering business outcomes.

Table 2. Additional benefits

See	Extend	Act
Business insights	To partner services	On digitization toolkits
Business metrics 1. How are people and assets behaving in my property?	Partner App Center 1. Discover vertically focused, location-based services applications through the Cisco DNA Spaces App Center	Captive portal 1. Acquire and identify visitors and map to enterprise identity
Location analytics 1. What are behavior patterns in specific locations and time periods?	Firehose API 1. Deliver reliable, high quality location, environmental, and visitor data to partners, with strong enforcement of user privacy and data security	Profile rules 1. Profile and segment visitors based on behavior

See Business insights	Extend To partner services	Act On digitization toolkits
Benchmarks 1. Compare performance with industries and organizations	Partner App Monitoring 1. End-to-end monitoring of location data from the premise the partner app 2. Monitoring and support for Partner Apps via the Monitoring and Support dashboard	Engage 1. Trigger notifications to visitors and employees via multiple channels (SMS, email, app push, API trigger, Webex® Teams, etc.)
OpenRoaming 1. Secure, seamless guest onboarding onto WiFi networks	Specialized RTLS App Support 1. Support for specialized partner RTLS applications using Cloud and On-premise Firehose APIs	Location analytics 1. What are behavior patterns in specific locations and time periods? Understand movement patterns within locations
Real-time metrics 1. What is happening at my property right now?	Streaming Data Export 1. Customizable streaming export optimized to support ingestion into Big Data, Analytics, and Enterprise Applications	Operational insights 1. Identify and monitor assets, detect anomalies, and trigger alerts
Location hierarchy 1. Map business taxonomy to network infrastructure	Includes everything in Cisco DNA Spaces See	Detect and Locate 1. Cloud based Detect and Locate and RSSI location compute with device location history 2. On -premise Detect and Locate with hyperlocation support using CMX 10 on-premises*
Detect and Locate 1. Cloud based Detect and Locate and RSSI location compute 2. On-premises Detect and Locate and RSSI location compute using CMX 10 3. Integration with Cisco applications like Cisco DNA Center and Cisco Prime*	Includes everything in Cisco DNA Spaces Extend	

*CMX 3375 Appliance is recommended for Cisco validated end to end performance for standalone and high availability based CMX on-premises.

Platform Architecture and features

Cisco DNA Spaces supports all Cisco wireless topologies with compatibility and interoperability across Cisco Aironet, Cisco Catalyst, and Cisco Meraki products and solutions (see Figure 2).

How to connect:

1. Use Cisco DNA Spaces Connector to connect Cisco Aironet WLC 8.0 and above
2. Directly Connect Cisco Aironet WLC 8.8 MR2 or later and Cisco Catalyst 9800 Series WLC
3. Tether CMX on-prem 10.6 or later
4. Directly connect via Cisco Meraki cloud to Cisco DNA Spaces cloud
5. When is CMX on premises required?
Hyperlocation: To use the Cisco Aironet 4800 Series or 3700 Series Access Points with a hyperlocation antenna, or to use fast path on all access points on an on-premises CMX server, it is required to receive fast path UDP data on port 2003 from the access point and use it in CMX for location calculations
6. Integration with Cisco DNA Center or Prime Infrastructure: To provide location data to Cisco DNA Center or Prime Infrastructure, an on-premise Cisco CMX server is currently required

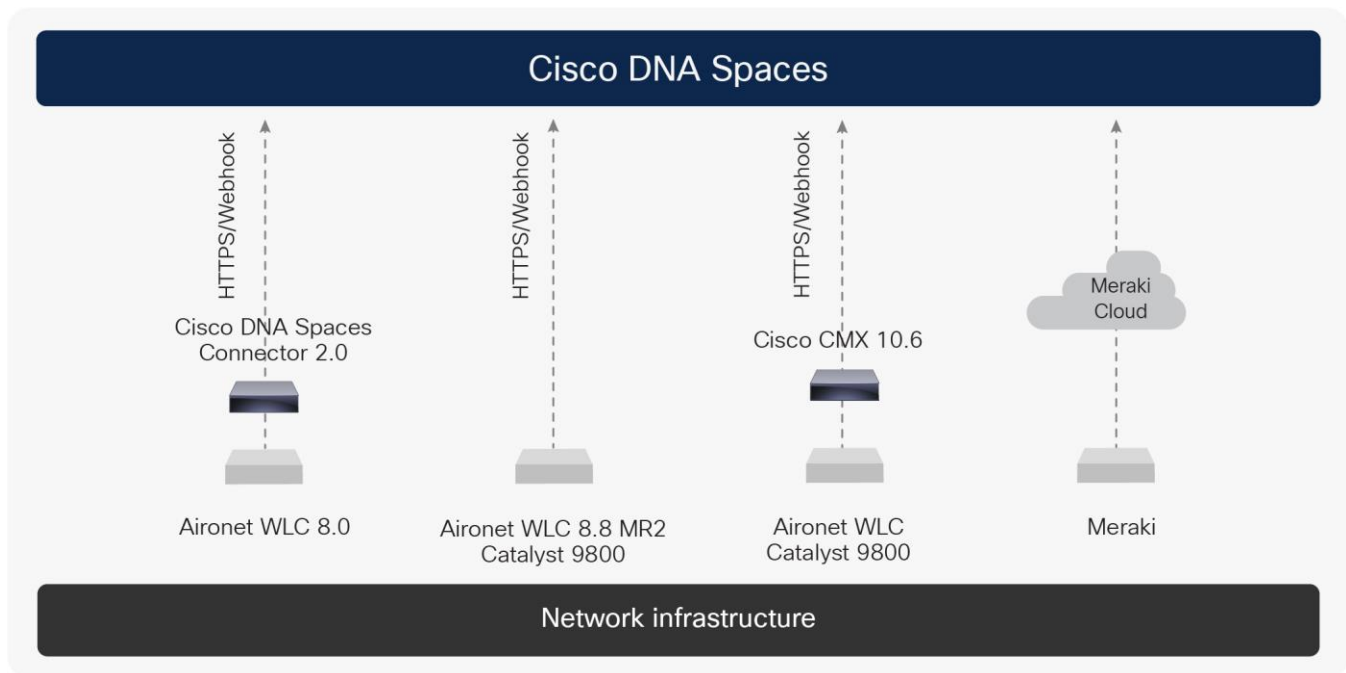


Figure 2.
Compatible across All Network Infrastructure

Table 3. Feature compatibility depending on type of connection

Feature	Cisco DNA Spaces Connector	WLC direct	CMX on-prem	Meraki
X/Y compute	Yes, cloud location	Yes, cloud location	Yes	No
Hyper location	No	No	Yes	No
OpenRoaming	Yes	No	No	Yes
API Monitoring	Yes	No	No	No
Partner App Center	Yes	No	No	Yes
Cisco DNA Center integration	No	No	Yes	No

Table 4. Feature compatibility depending on analytics type and on-premises requirements

Feature	License	X/Y Location or Presence	CMX on-prem. required
Cisco DNA Center integration	See	X/Y	Yes
Prime Infrastructure integration	See	X/Y	Yes
Business Insights	See	Presence	No
OpenRoaming	See	Presence	No
Location Analytics	See	Presence	No
Detect and Locate	See	X/Y	No
Partner stream	Extend	X/Y	No
3 rd Party via API/Webhook	Extend	X/Y	No
Partner Firehose	Extend	X/Y	No
Location Personas	Act	Presence or X/Y	No
Operational Insights	Act	X/Y	No
Location Analytics	Act	X/Y	No
Captive Portal	Act	Presence	No
Engagement	Act	Presence or X/Y	No
Hyperlocation	Act	X/Y	Yes

Licensing information

Table 5. Features included in Cisco DNA Spaces See, Extend, and Act

Feature	Cisco DNA Spaces See license	Cisco DNA Spaces Extend license	Cisco DNA Spaces Act license
Behavior metrics	√	√	√
Location Analytics	√	√	√
Real-time metrics	√	√	√
OpenRoaming	√	√	√
Impact Analysis	√	√	√
Detect and Locate (RSSI)	√	√	√
Location hierarchy	√	√	√
Location API/WebHook for 3 rd party applications		√	√
Partner stream		√	√
Partner Firehose API		√	√
Partner App Center		√	√
Streaming Data Export		√	√
Captive portal			√
Profile rules			√
Engage			√
Operational insights			√
Hyperlocation using on premises CMX server			√

Cisco DNA Spaces is licensed on a per-access-point basis for a 3-, 5-, or 7-year license terms.

Table 6. Cisco DNA Spaces Product IDs and descriptions

Product ID (PID)	Description
DNAS	Cisco DNA Spaces top-level PID
DNAS-SEE	Cisco DNA Spaces See: 3 - 5-, 7-year term
DNAS-EXT	Cisco DNA Spaces Extend: 3-, 5-, 7-year term

Product ID (PID)	Description
DNAS-ACT	Cisco DNA Spaces Act: 3-, 5-, 7-year term
SVS-DNAS-SUP	Cisco DNA Spaces Subscription Support (included with Cisco DNA Spaces See, Extend, or Act subscription)

Cisco DNA Spaces licenses entitles the user to

1. CMX on premise
2. Support for CMX on premise
3. Cisco DNA Spaces Cloud Features

Customers can choose to only use some of the features, but they are entitled to all

Product specifications

Cisco CMX 10 software can be installed on two platforms: the CMX 3375 hardware appliance and Cisco CMX Virtual Appliance (vMSE) to have location computation on-premises. If choosing virtual machine option, we recommend the specifications of your underlying physical host to match CMX 3375 Appliance in terms of compute, memory and SSD disk drive.

Table 7. Software components required on premises to connect to Cisco DNA Spaces

Appliance	RSSI		Hyperlocation (includes FastLocate)		Analytics	Movement
	Number of access points	Number of Unique MACs tracked devices per Day	Number of access points	Number of unique MACs tracked devices per Day	Number of zones	Number of NMSP messages per second
CMX 3375	10,000	100,000	1000	10,000	1000	2500
High-end virtual appliance	10,000	90,000	1000	10,000	1000	2500
Cisco DNA Spaces Connector Virtual Machine	10,000	350,000	N/A	N/A	N/A	10,000

For Cisco DNA Spaces Connector VM, all computation is done in the cloud.

For CMX 3375 and high end virtual appliance, location computation is done on premises. Cisco DNA Spaces connector VM configurations can be changed to support higher load.

Table 8. Cisco DNA Spaces connector minimum system requirements

Item	Supported Requirements
vCPU	2
RAM	4 GB
Hard Disk	60 GB

Get started today

Cisco DNA Spaces supports all Cisco wireless topologies and is compatible across Cisco hardware (Aironet, Catalyst, Meraki). Enroll in a [90-day free trial](#) or email dnaspaces-sales@cisco.com for a demo.

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