

Release Notes for Cisco Catalyst 9800 Series Wireless Controller, Cisco IOS XE Gibraltar 16.11.1c

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Introduction to Cisco Catalyst 9800 Series Wireless Controllers



Note The documentation set for this product strives to use bias-free language. For purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on RFP documentation, or language that is used by a referenced third-party product.

Cisco Catalyst 9800 Series comprises next-generation wireless controllers (controller) built for intent-based networking. The Catalyst 9800 Series Wireless Controllers are Cisco IOS XE-based and integrate the radio frequency (RF) capabilities from Cisco Aironet with the intent-based networking capabilities of Cisco IOS XE to create a best-in-class wireless experience for your organization.

The Catalyst 9800 wireless controllers are enterprise-ready to power your business-critical operations and transform end-customer experiences:

- The controllers come with high availability (HA) and seamless software updates that are enabled by hot and cold patching. This keeps your clients and services on always, both during planned and unplanned events.
- The controllers come with built-in security, including secure boot, run-time defenses, image signing, integrity verification, and hardware authenticity.
- The controllers can be deployed anywhere to enable wireless connectivity, for example, on an on-premise device, on cloud (public or private), or embedded on a Cisco Catalyst switch or Catalyst access point (AP).
- The controllers can be managed using Cisco Digital Network Architecture (DNA) Center, Programmability interfaces, for example, NETCONF and YANG, web-based GUI, or CLI.

- The controllers are built on a modular operating system. Open and programmable APIs enable the automation of your Day 0 to Day n network operations. Model-driven streaming telemetry provides deep insights into your network and client health.

The Catalyst 9800 Series Wireless Controllers are available in multiple form factors to cater to your deployment options:

- Catalyst 9800 Series Wireless Controller Appliance
- Catalyst 9800 Series Wireless Controller for Cloud
- Catalyst 9800 Embedded Wireless Controller for a switch



Note All of the Cisco IOS-XE programmability-related topics on the Cisco Catalyst 9800 Wireless Controller are supported by DevNet, either through community-based support or through DevNet developer support. For more information, go to <https://developer.cisco.com>.

Whats New in Cisco IOS XE Gibraltar 16.11.1c

There are no new features in this release. See [Caveats](#) section.

Complete List of Supported Features

For the complete list of features supported on a platform, see the Cisco Feature Navigator at: <https://www.cisco.com/go/cfn>

When you search for the list of features by platform, select:

- 9800-40—To view all the features supported on the Cisco Catalyst 9800-40 Wireless Controller models.
- 9800-80—To view all the features supported on the Cisco Catalyst 9800-80 Wireless Controller models.
- 9800-CL—To view all the features supported on the Cisco Catalyst 9800 Wireless Controller for Cloud models.

Important Notes

- The Cisco Catalyst 9800-L Wireless Controller may fail to respond to BREAK signals received on its console port during boot time preventing the user from getting to the ROMMON. This problem is observed on the controllers manufactured till November 2019, with the default config-register setting of 0x2102. This problem can be avoided if you set the config-register to 0x2002. This problem is fixed in the 16.12(3r) ROMMON for Cisco Catalyst 9800-L Wireless Controller. For steps on how to upgrade the ROMMON, see the *Upgrading ROMMON for Cisco Catalyst 9800-L Wireless Controllers* section of [Upgrading Field Programmable Hardware Devices for Cisco Catalyst 9800 Series Wireless Controllers](#).
- By default, the controller uses a TFTP block size value of 512, which is the lowest possible value. This default setting is used to ensure interoperability with legacy TFTP servers. However, you can manually change the block size value to 8192 K using the **ip tftp blocksize** command in global configuration mode to speed up the transfer process.

- We recommend that you configure the **password encryption aes** and the **key config-key password-encrypt key** commands to encrypt your password.
- The features and functions that work on IPv4 networks with IPv4 addresses also works on IPv6 networks with IPv6 addresses. For a list of unsupported features, see the [Unsupported Features](#) section of the *Native IPv6* feature.
- If you encounter ERR_SSL_VERSION_OR_CIPHER_MISMATCH error from the GUI after a reboot or system crash, we recommend that you regenerate the trustpoint certificate.

The procedure to generate a new self signed trustpoint is as follows:

```
configure terminal
no crypto pki trustpoint <trustpoint_name>
no ip http server
no ip http secure-server
ip http server
ip http secure-server
ip http authentication <local/aaa>
! use local or aaa as applicable.
```

- SNMPv3 user configuration is not reflected in the running configuration. Only SNMPv3 group configuration is visible.
- The Cisco Catalyst 9800 Series Wireless Controller has a service port, which is referred to as *GigabitEthernet 0* port. You cannot use this port for RADIUS, SNMP, DNAC Telemetry, and other communications.

The service port only supports the following IP protocols:

- HTTP
- HTTPS
- SSH
- Licensing for Smart Licensing feature to communicate with CSSM

Supported Hardware

The following table lists the supported virtual and hardware platforms:

Supported Virtual and Hardware Platforms

Table 1: Supported Virtual and Hardware Platforms

Platform	Description
Cisco Catalyst 9800-80 Wireless Controller	<p>Modular wireless controller with up to 100-GE uplinks and seamless software updates.</p> <p>Controller occupies 2-rack unit space and supports multiple module uplinks.</p> <p>See Supported PIDs and Ports for the list of supported modules.</p>

Platform	Description
Cisco Catalyst 9800-40 Wireless Controller	A fixed wireless controller with seamless software updates for mid-size to large enterprises. Controller occupies 1-rack unit space and provides four 1-GE or 10-GE uplink ports.
Cisco Catalyst 9800 Wireless Controller for Cloud	A virtual form factor of the Catalyst 9800 Wireless Controller that can be deployed in a private cloud (supports ESXi, KVM, and NFVIS on ENCS hypervisors), or in the public cloud as Infrastructure as a Service (IaaS).
Cisco Catalyst 9800 Embedded Wireless Controller for Switch	Catalyst 9800 Wireless Controller software for the Cisco Catalyst 9300 switch brings the wired and wireless infrastructure together with consistent policy and management. This deployment model supports only SD Access, which is a highly secure solution for small campuses and distributed branches. The embedded controller supports APs only in Fabric mode.

The following table lists the host environments supported for private and public cloud.

Table 2: Supported Host Environments for Public and Private Cloud

Host Environment	Software Version
VMware ESXi	<ul style="list-style-type: none"> VMware ESXi vSphere 6.0 and 6.7 VMware ESXi vCenter 6.0, 6.5, and 6.7
KVM	<ul style="list-style-type: none"> Linux KVM based on Red Hat Enterprise Linux 7.1 and 7.2 Ubuntu 14.04.5 LTS, Ubuntu 16.04.5 LTS
AWS	AWS EC2 platform
NFVIS	ENCS 3.8.1 and 3.9.1

The following table lists the supported Cisco Catalyst 9800 Series Wireless Controller hardware models and the default license levels they are delivered with. For information about the available license levels, see the [Licensing](#) section.

The Base PIDs are the model numbers of the controller.

The Bundled PIDs indicate the orderable part numbers for the Base PIDs that are bundled with a particular network module. Entering the **show version**, **show module**, or **show inventory** command on such a controller (bundled PID), displays its Base PID.

Table 3: Supported PIDs and Ports

Controller Model	Description
C9800-40-K9	4 1/10-Gigabit Ethernet SFP or SFP+ ports and two power supply slots

Controller Model	Description
C9800-80-K9	8 1/10-Gigabit Ethernet SFP or SFP+ ports and two power supply slots The following QSFP+ ports are also supported: <ul style="list-style-type: none"> • EPA-18X1GE • EPA-10X10GE • EPA-1X40GE • EPA-2X40GE • EPA-1X100GE
C9800-CL-K9	Catalyst Wireless Controller as an infrastructure for Cloud.
Cisco Catalyst 9800 Embedded Wireless Controller for Switch	Catalyst Wireless Controller function on a Switch

Optics Modules

Cisco Catalyst 9800 Series Wireless Controller supports a wide range of optics. The list of supported optics is updated on a regular basis. See the tables at the following location for the latest transceiver module compatibility information:

https://www.cisco.com/en/US/products/hw/modules/ps5455/products_device_support_tables_list.html

Web UI System Requirements

The following subsections list the hardware and software required to access the Web UI:

Table 4: Hardware Requirements

Processor Speed	DRAM	Number of Colors	Resolution	Font Size
233 MHz minimum ¹	512 MB ²	256	1280 x 800 or higher	Small

¹ We recommend 1 GHz.

² We recommend 1 GB DRAM.

Software Requirements

Operating Systems:

- Windows 7 or later
- Mac OS X 10.11 or later

Browsers:

- Google Chrome: Version 59 or later (on Windows and Mac)
- Microsoft Edge (on Windows)
- Mozilla Firefox: Version 54 or later (on Windows and Mac)

- Safari: Version 10 or later (on Mac)

Supported Cisco Access Point Platforms

The following Cisco AP platforms are supported in this release:

Indoor Access Points

- Cisco Aironet 1700 Series Access Points
- Cisco Aironet 1800 Series Access Points
- Cisco Aironet 2700 Series Access Points
- Cisco Aironet 2800 Series Access Points
- Cisco Aironet 3700 Series Access Points
- Cisco Aironet 3800 Series Access Points
- Cisco Aironet 4800 Series Access Points
- Cisco Catalyst 9115AX Access Points
- Cisco Catalyst 9117AX Access Points
- Cisco Catalyst 9120AX-i Access Points - Internal Antenna SKUs only

Outdoor Access Points

- Cisco Aironet 1542 Access Points
- Cisco Aironet 1560 Series Access Points
- Cisco Aironet 1570 Series Access Points
- Cisco Industrial Wireless 3700 Series Access Points

Integrated Access Points

- Integrated Access Point on Cisco 1100 ISR

Network Sensor

- Cisco Aironet 1800s Active Sensor

For information about Cisco Wireless software releases that support specific Cisco AP modules, see the ["Software Release Support for Specific Access Point Modules"](#) section in the *Cisco Wireless Solutions Software Compatibility Matrix* document.

Compatibility Matrix

The following table provides software compatibility information.

Table 5: Compatibility Information

Cisco Catalyst 9800 Series Wireless Controller Software	Cisco Identity Services Engine	Cisco CMX	Cisco Prime Infrastructure	Cisco AireOS-IRCM Interoperability	Cisco DNA Center
Gibraltar 16.11.1c	2.6	10.6	3.7	8.9.100.0	1.3.0.2
	2.4	10.5.1	3.6	8.8.120.0	
	2.3			8.8.111.0	

Upgrading the Controller Software

This section describes the various aspects of upgrading the controller software.

Finding the Software Version

The package files for the Cisco IOS XE software are stored on the system board flash device (flash:).

Use the **show version** privileged EXEC command to see the software version that is running on your controller.



Note Although the **show version** output always shows the software image running on the controller, the model name shown at the end of this output is the factory configuration, and does not change if you upgrade the software license.

Use the **show install summary** privileged EXEC command to see the information about the active package.

You can also use the **dir filesystem:** privileged EXEC command to see the directory names of other software images that you have stored in flash memory.

Software Images

- **Release**—Cisco IOS XE Gibraltar 16.11.1c
- **Image**—Universal
- **File Name**—C9800-universalk9_wlc.16.11.01c.SPA.bin

Software Installation Commands

Cisco IOS XE Gibraltar 16.11.1c	
To install and activate a specified file, and to commit changes to be persistent across reloads, run the following command:	
Device# install add file <i>filename</i> [activate commit]	
To separately install, activate, commit, end, or remove the installation file, run the following command:	
Device# install ?	
Note We recommend that you use the GUI for installation.	
add file tftp: <i>filename</i>	Copies the install file package from a remote location to a device, and performs a compatibility check for the platform and image versions.
activate [auto-abort-timer]	Activates the file and reloads the device. The auto-abort-timer keyword automatically rolls back image activation.
commit	Makes changes that are persistent over reloads.
rollback to committed	Rolls back the update to the last committed version.
abort	Cancels file activation, and rolls back to the version that was running before the current installation procedure started.
remove	Deletes all unused and inactive software installation files.

Licensing

This section provides information about the licensing packages for the features that are available in the Cisco Catalyst 9800 Series Wireless Controller.

The software features that are available on the controller fall under these license categories:

- AIR DNA Essentials (AIR-DNA-E)
- AIR DNA Advantage (AIR-DNA-A) (Includes the features that are available with the Cisco DNA Essentials license and more.)



Note The controller starts with *AIR-DNA-A* as the default. Any change in the license level requires a reboot.



Note After adding new license in the Cisco Smart Software Manager (CSSM) for customer virtual account, run the **license smart renew auth** command on the controller to get the license status changed from Out OF Compliance to Authorized.

Base Licenses

Base licenses are perpetual licenses and can be used even after the expiry of *Air-DNA-A* and *AIR-DNA-E*. Base licenses include:

- AIR Network Essentials (AIR-NE)
- AIR Network Advantage (AIR-NA) (Includes the features that are available in the Network Essentials license.)

License Term

The licenses are available for a three, five, or seven-year periods.

For a more detailed overview on Cisco Licensing, go to cisco.com/go/licensingguide.

Guidelines and Restrictions

Software

- Internet Group Management Protocol (IGMP)v3 is not supported on Cisco Aironet Wave 2 APs.
- Do not deploy OVA files directly to VMware ESXi 6.5. We recommend that you use an OVF tool to deploy the OVA files.
- AP connection over network address translation (NAT) and port address translation (PAT) is not supported in the following specific scenarios (all the following conditions need to be met):
 - Data-DTLS channel is ON
 - Packets sent from the controller are bigger than minimum Path MTU packets (576B in case of IPv4) with network PMTU \geq 1485.
 - PAT configured on the router or firewall and the network PMTU is less than or equal to 1485.
 - AP connection over NAT/PAT is supported in all other scenarios.



Note This restriction is not applicable from Cisco IOS XE Gibraltar 16.12.2s onwards.

- Mobility NAT is not supported.
- Firefox Version 63.x is not supported.
- Ensure that you remove the controller from Cisco Prime before disabling or enabling Netconf-YANG. Otherwise, the system may reload unexpectedly.
- Unidirectional Link Detection (UDLD) protocol is not supported.
- Voice over WLAN (VoWLAN) using SIP is not supported for FlexConnect local switching deployments.
- The Cisco Catalyst 9800 Series Wireless Controllers (C9800-CL, C9800-L, C9800-40, and C9800-80) support a maximum of 14,000 leases with internal DHCP scope.

- When you configure the Cisco Catalyst 9800 Series Wireless controllers with Cisco Aironet 3700 Series Access Points, through IPv6, and then connect IPv6 capable clients, the IP addresses of all the IPv6 clients are not updated on the controller.

Interoperability with Clients

This section describes the interoperability of the controller software with client devices.

The following table lists the configurations used for testing client devices.

Table 6: Test Configuration for Interoperability

Hardware or Software Parameter	Hardware or Software Type
Release	Cisco IOS XE Gibraltar 16.11.1c
Cisco Wireless Controller	See Supported Hardware, on page 3 .
Access Points	
Radio	<ul style="list-style-type: none"> • 802.11ax • 802.11ac • 802.11a • 802.11g • 802.11n (2.4 GHz or 5 GHz)
Security	Open, PSK (WPA2-AES), 802.1X (WPA2-AES) (EAP-FAST, EAP-TLS) 802.11ax
RADIUS	
Types of tests	Connectivity, traffic (ICMP), and roaming between two APs

The following table lists the client types on which the tests were conducted. Client types included laptops, hand-held devices, phones, and printers.

Table 7: Client Types

Client Type and Name	Driver or Software Version
Laptop Model	
Acer Aspire 15 Windows 8 Home	Qc Atheros Qca9377 11.0.0.492 and later
Acer Aspire E15 Windows 8	Qc Atheros Qca9377 15.1.1.1 and later
Acer Aspire E 15 Windows 8.1	QC Atheros Qca9377 11.0.0.492 and later

Client Type and Name	Driver or Software Version
Acer Aspire E15 Windows 8.1 Pro	Qc Atheros Qca9377 11.0.0.492 and later
Apple MAC mini Windows 7 Professional	Broadcom 802.11ac 6.30.224.217 and later
Dell 80TJ	Broadcom 802.11n Network Adapter
Dell Inspiron 15 7569 Windows 10 Home	Ntel Ac 3165 18.32.0.5 and later
Dell Latitude 6430 Windows 8.1 Pro	Intel 6205w8 15.16.0.2 and later
Dell Latitude E5400 Windows 7 Professional	Intel Wifi Link 5300 AGN 12.4.1.4 and later
Dell Latitude E5430 Windows 7	Intel Centrino N 6205 15.17.0.1 and later
Dell Latitude E5450 Windows 7 Professional	Intel 7260 18.33.6.2 and later
Dell Latitude E5530	TU2-ET100 (Version v5.0R) and later
Dell Latitude E5540 Windows 7	Intel Dualband Ac7260 1.566.0.0 and later
Dell Latitude E6430 Windows 10 Enterprise	Intel Wifi Link 5300 AGN 14.2.1.4 and later
Dell Latitude E6430 Windows 10 Enterprise	Linksys AE2500 N 5.100.68.46 and later
Dell Latitude E6430 Windows 7 Professional	Intel 6250 15.11.0.7 and later
Dell Latitude E6430 Windows 7 Professional	Intel 3160 6.30.223.215 and later
Dell Latitude E7450 Windows 7 Professional	Broadcom 1560 15.1.1.1 and later
Dell Latitude Windows 8.1 Pro	Intel Ac7260 18.33.3.2 and later
Fujitsu Lifebook E556 Windows 10 Pro	Intel 8260 11.0.0.492 and later
Lenovo Ideapad T420	TU3-ETG (Version v1.0R) and later
Lenovo T420 Windows 10 Pro	Intel Ac8260 19.1.0.4 and later
Lenovo T420 Windows 7 Enterprise	Intel Centrino Ultimate-N6300 AGN 13.5.0.6 and later
Lenovo T420 Windows 7 Enterprise	Linksys AE6000 5.0.7.0 and later
Lenovo Yoga 460 Windows 10 Pro	Intel Ac8260 19.1.0.4 and later
Macbook Air Mac OS Sierra 10.12.3	Broadcom Bcm43xx 1.0 6.30.225.29.1 and later
Macbook Air MacOS Sierra 10.12.6	Broadcom Bcm43xx 1.0 7.21.171.68.1a4 and later
Macbook Air OS X Yosemite (10.10.5)	Broadcom Bcm43xx 1.0 7.15.166.24.3 and later
Macbook Mac OS Mojave 10.8.5	Broadcom Bcm43xx 1.0 5.106.98.100.17 and later
Macbook Mac OS Sierra 10.12 Beta	Broadcom Bcm43xx 1.0 7.21.149.34.1a7 and later
Macbook Pro Mac OS Sierra 10.12.4	Broadcom Bcm43xx 1.0 7.21.171.68.1a4 and later
Macbook Pro OS X 10.8.5	Broadcom Bcm43xx 1.0 5.106.98.100.17 and later
Macbook Pro Retina Mac OS Sierra 10.12.3	Broadcom Bcm43xx 1.0 7.15.166.24.3 and later
Tablet Model	

Client Type and Name	Driver or Software Version
Apple iPad	iOS 12.0.1 and later
Apple iPad mini	iOS 12.0 and later
Apple iPad mini 2	iOS 10.3.1 and later
Apple iPad Air	iOS 10.1.1 and later
Apple iPad Air 2	iOS 10.2.1 and later
Mobile Phone Model	
Apple iPhone 5	iOS 10.3.1 and later
Apple iPhone 5S	iOS 11.4.1 and later
Apple iPhone 6	iOS 12.0.1 and later
Apple iPhone 6 Plus	iOS 12.0.1 and later
Apple iPhone 7	iOS 12.0.1 and later
Apple iPhone 7 Plus	iOS 12.0.1 and later
Apple iPhone 8	iOS 12.0.1 and later
Apple iPhone SE	iOS 10.3.1 and later
Apple iPhone X	iOS 12.2 and later
Apple iPhone XR	iOS 12.2 and later
Cisco 8821	SIP8821.11-0-3SR4-3 6.50.0.3 (r) and later
Google Nexus 5	Android 6.0.1 and later
MI A1	Android 8.1.0 and later
Microsoft Lumia	Windows 8 and later
Moto G 3rd Gen	Andriod 6.0.1 and later
Moto G 4	Andriod 7.0.1 and later
Moto G4 Plus	Andriod 7.0.1 and later
Moto X 2nd Gen	Android 5.0 and later
Nokia 6.1 Plus	Android 9.0.1 and later
Nokia Lumia 730	Windows 8 and later
One Plus 3	Android 6.0.1 and later
One Plus 5	Android 8.1.0 and later
One Plus 5T	Android 8.1.0 and later
One Plus 6	Android 8.1.0 and later
One Plus One	Android 4.3 and later
Redmi Note 3	Android 6.0.1 and later

Client Type and Name	Driver or Software Version
Samsung Galaxy S4	Android 4.2.2 and later
Samsung Galaxy S6	Android 7.0 and later
Samsung Galaxy S7	Android 8.0.0 and later
Samsung Galaxy S8	Android 7.0 and later
Samsung Galaxy S Duos 2	Android 6.0.1 and later
Samsung Tab Pro	Android 4.4.2 and later
Samsung Galaxy S10	Android 9.0 and later

Caveats

Caveats describe unexpected behavior in Cisco IOS releases. Caveats that are listed as Open in a prior release are carried forward to the next release as either Open or Resolved.



Note All incremental releases will cover fixes from the current release.

Cisco Bug Search Tool

The Cisco [Bug Search Tool](#) (BST) allows partners and customers to search for software bugs based on product, release, and keyword, and aggregates key data such as bug details, product, and version. The BST is designed to improve the effectiveness in network risk management and device troubleshooting. The tool has a provision to filter bugs based on credentials to provide external and internal bug views for the search input.

To view the details of a caveat, click the corresponding identifier.

Open Caveats for Cisco IOS XE Gibraltar 16.11.1c

Caveat ID	Description
CSCvk79428	The show tech wireless command is showing PSK information in clear text.
CSCvk79805	The outputs of the auto-rf dot11 commands (such as show ap name name auto-rf dot11 dual-band and show ap auto-rf dot11 dual-band) are not displaying any interference device details.
CSCvm69349	Link test is failing for mesh access points (APs).
CSCvn06657	Multi-instance load balance is not working for APs joined over CAPWAPv6 tunnel.
CSCvn39262	The client is moving to an exclusion state when VLAN is removed from the foreign.

Caveat ID	Description
CSCvn93414	APs are flapping after Stateful Switchover (SSO), when link aggregation (LAG) is enabled on the system and the APs are in flex mode.
CSCvo00177	The controller displays CPU hog message after running show tech wireless command.
CSCvo21047	Ethernet over GRE (EoGRE) throughput of the User Datagram Protocol (UDP) traffic is not load-balanced on the controller egress.
CSCvo22407	The show ap upgrade command output is not showing the correct software version after the rolling AP upgrade.
CSCvo30034	Client failed to get an IP address with the following reason: 'CLIENT_DELETE_REASON_IPLEARN_CONNECT_TIMEOUT'
CSCvo39758	The SNMP warning messages that are shown for the smart licensing are incorrect.
CSCvo66241	The flex profile VLAN range in the controller and PI is not matching.
CSCvo66535	The format used to configure mac-filter for bridge-mode APs through commands and web UI are different.
CSCvo69679	SNMP <i>get</i> followed by <i>set</i> is returning old value for cLApDomainName.
CSCvo70896	Few APs are dropping off during SSO.
CSCvo81105	Frequent tracebacks are observed on the controller.
CSCvp08946	It is not possible to enable the conditional-web-redirect security using CLI.
CSCvp27127	The event manager CLIs under the debug wireless macclient-mac-add command is failing for Terminal Access Controller Access-Control System (TACACS) users.
CSCvp27202	Setting an invalid channel on an AP results in a success message. However, the configuration is not applied.
CSCvp27269	Dynamic Host Configuration Protocol (DHCP) acknowledgment broadcast packet is causing a packet loop.

Caveat ID	Description
CSCvp41886	NAT translations are not being pushed to the AP.
CSCvp51506	Unsupported 802.11ax features: BSSID, Dynamic Fragment, bss-colorcode, bss-colormode, bss-partialcolor, downlink-mumimo, downlink-ofdma, target-waketime, twt-broadcast-support, uplink-mumimo, and uplink-ofdma.
CSCvp85659	The APs connected with Catalyst 9800 controllers and AireOS controllers will have Access-t down for some time, after upgrading from Cisco DNAC 1.2.10 to Cisco DNAC 1.3.
CSCvp90134	Access points are staying connected in non-fabric mode even though TCP connect is up between C9800 and Fabric node.
CSCvp95386	The AP country code is missing after upgrading the IOS version from 16.10.1e to 16.11.1s using Cisco DNAC.

Resolved Caveats for Cisco IOS XE Gibraltar 16.11.1c

Caveat ID	Description
CSCvm44504	The client delete reason is shown as "WLAN Down", which is not the correct reason.
CSCvm46485	The ipv6 radius source-interface wlan command cannot be unconfigured.
CSCvm53357	The ap country command input (in lower case) is not working properly.
CSCvm60234	Configuring IPv6 non-local group mobility multicast also configures IPv4 non-local multicast.
CSCvm64394	Issuing the show tech-support wireless command from web UI results in controller reload.
CSCvm64484	The standby chassis is not showing redundancy IP address.
CSCvm68841	Pre-shared key (PSK) configuration is not giving an option to enter the PSK.
CSCvm81999	The fully qualified domain name (FQDN) is not getting applied in datapath when being pushed from Identity Services Engine, post MAC Authentication Bypass (MAB).

Caveat ID	Description
CSCvm98232	APs are getting reset while adding or removing description.
CSCvn04716	Running the show logging profile wireless internal filter mac command pauses controller indefinitely.
CSCvn06041	Cisco Aironet 2800 subordinate APs are unable to download an image from the primary AP.
CSCvn09552	While upgrading, subordinate APs are not fetching image from the controller.
CSCvn11667	Client is excluded due to VLAN failure, when VLAN name is propagated from the VLAN Trunk Protocol (VTP) server.
CSCvp29213	A crash is observed when CoA is triggered for environment-data update and clear cts environment data command is issued at the same time.
CSCvp48086	Cisco Catalyst 9800 Embedded Wireless Controller for Switch telemetry is stuck in connecting state due to ChannelMessageHandler SSL handshake failure.
CSCvp68691	Keyman memory leak is observed in internal dot1x or local webauth scenarios.
CSCvp73396	Catalyst 9300 series switch reloads with critical software exception.
CSCvp98906	Keyman process leak is observed in scaled setup with internal dot1x client and auto-roaming enabled.
CSCvq10958	IEEE 802.11r capable wireless clients will experience roaming failure between Cisco 1800 series of APs
CSCvq10975	Pairwise Master Key (PMK) is incorrectly deleted from the central database of the controller due to dot1x timeout.
CSCvq10984	Handling IEEE 802.11r unhandled state transition to avoid client to stuck in dot1x pending.

Troubleshooting

For the most up-to-date, detailed troubleshooting information, visit the Cisco TAC website at:

<https://www.cisco.com/c/en/us/support/docs/wireless/catalyst-9800-series-wireless-controllers/213949-wireless-debugging-and-log-collection-on.html>

Go to **Product Support** and select your product from the list or enter the name of your product. Look under **Troubleshoot and Alerts** to find information about the problem that you are experiencing.

Related Documentation

Information about Cisco IOS XE is available at:

<https://www.cisco.com/c/en/us/products/ios-nx-os-software/ios-xe/index.html>

Cisco Validated Designs documents are available at:

<https://www.cisco.com/go/designzone>

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use the Cisco MIB Locator found at:

<http://www.cisco.com/go/mibs>

Cisco Wireless Controller

For more information about the Cisco wireless controller, lightweight APs, and mesh APs, see these documents:

- [Cisco Wireless Solutions Software Compatibility Matrix](#)
- [Cisco Catalyst 9800 Series Wireless Controller Software Configuration Guide](#)
- [Cisco Catalyst 9800 Series Wireless Controller Command Reference](#)

The installation guide for your controller is available at:

- [Hardware Installation Guides](#)

For all Cisco Wireless Controller software-related documentation, see:

<https://www.cisco.com/c/en/us/support/wireless/catalyst-9800-series-wireless-controllers/tsd-products-support-series-home.html>

Cisco Catalyst 9800 Wireless Controller Data Sheets

- Cisco Catalyst 9800-CL Wireless Controller: <https://www.cisco.com/c/en/us/products/collateral/wireless/catalyst-9800-cl-wireless-controller-cloud/nb-06-cat9800-cl-cloud-wirel-data-sheet-ctp-en.html>
- Cisco Catalyst 9800-80 Wireless Controller: <https://www.cisco.com/c/en/us/products/collateral/wireless/catalyst-9800-series-wireless-controllers/nb-06-cat9800-80-wirel-mod-data-sheet-ctp-en.html>
- Cisco Catalyst 9800-40 Wireless Controller: <https://www.cisco.com/c/en/us/products/collateral/wireless/catalyst-9800-series-wireless-controllers/nb-06-cat9800-wirel-cont-data-sheet-ctp-en.html>
- Cisco Catalyst 9800-L Wireless Controller: <https://www.cisco.com/c/en/us/products/collateral/wireless/catalyst-9800-series-wireless-controllers/datasheet-c78-742434.html>

Cisco Embedded Wireless Controller on Catalyst Access Points

For more information about the Cisco Embedded Wireless Controller on Catalyst Access Points, see:

<https://www.cisco.com/c/en/us/support/wireless/embedded-wireless-controller-catalyst-access-points/tsd-products-support-series-home.html>

Wireless Products Comparison

- Use this tool to compare the specifications of Cisco wireless APs and controllers:
<https://www.cisco.com/c/en/us/products/wireless/wireless-lan-controller/product-comparison.html>
- Wireless LAN Compliance Lookup:
<https://www.cisco.com/c/dam/assets/prod/wireless/wireless-compliance-tool/index.html>
- AireOS to Catalyst 9800 Wireless Controller Feature Comparison Matrix
https://www.cisco.com/c/en/us/td/docs/wireless/controller/technotes/8-8/AireOS_Cat_9800_Feature_Comparison_Matrix.html

Cisco Prime Infrastructure

[Cisco Prime Infrastructure Documentation](#)

Cisco Connected Mobile Experiences

[Cisco Connected Mobile Experiences Documentation](#)

Cisco DNA Center

[Cisco DNA Center Documentation](#)

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