



Release Notes for Cisco Catalyst 9800 Series Wireless Controller, Cisco IOS XE Dublin 17.12.x

First Published: 2023-07-31

Last Modified: 2024-10-03

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Introduction to Cisco Catalyst 9800 Series Wireless Controllers

The Cisco Catalyst 9800 Series Wireless Controllers comprise next-generation wireless controllers (referred to as *controller* in this document) built for intent-based networking. The controllers use Cisco IOS XE software 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 controllers are enterprise ready to power your business-critical operations and transform end-customer experiences:

- The controllers come with high availability and seamless software updates that are enabled by hot and cold patching. This keeps your clients and services up and running 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 (for SDA deployments) or a Cisco Catalyst access point (AP).
- The controllers can be managed using Cisco Catalyst Center, programmability interfaces, for example, NETCONF and YANG, or web-based GUI or CLI.
- The controllers are built on a modular operating system. Open and programmable APIs enable the automation of your day zero to day n network operations. Model-driven streaming telemetry provides deep insights into your network and client health.

The 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 Cisco Switch



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

What's New in Cisco IOS XE Dublin 17.12.4

There are no new features in this release.



Note After you upgrade to Cisco IOS XE 17.12.4 release, we recommend that you install APSP2 or a later release, to apply fixes for the following issues:

- [CSCwj72985](#)
 - [CSCwj77042](#)
 - [CSCwj66264](#)
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What's New in Cisco IOS XE Dublin 17.12.3

Table 1: New and Modified Software Features

Feature Name	Description and Documentation Link
Support for Cisco Catalyst 9163E Access Point and CW-ANT-D1-NS-00 Antenna on Cisco Catalyst 9163E Access Point	From this release, support for Cisco Catalyst 9163 Access Point and CW-ANT-D1-NS-00 Antenna on this access point is introduced. For more information, see Cisco Catalyst 9163E Access Point .

Feature Name	Description and Documentation Link
Automated Frequency Coordination (AFC) Support	<p>This release supports the Automated Frequency Coordination (AFC) feature, a coordination system in cloud, that allocates the channels and power levels to APs to operate in standard power mode in the 6-GHz frequency spectrum. To begin with, the feature will be available only in the U.S., subject to final approval from the FCC.</p> <p>Note The AFC support will be enabled in Cisco Catalyst 9800 Wireless Controllers running IOS-XE 17.12.3, through Cisco cloud-based software service, after a final approval is obtained from the FCC.</p> <p>The feature is supported in the following APs:</p> <ul style="list-style-type: none"> • Cisco Catalyst Wireless 9166D1 Access Point • Cisco Catalyst Wireless 9162I Series Access Point • Cisco Catalyst Wireless 9164I Series Access Point • Cisco Catalyst 9136 Series Access Point • Cisco Catalyst Wireless 9163E Access Point • Cisco Catalyst Wireless 9166I Access Point <p>For more information, see the chapter Automated Frequency Coordination.</p>
Cloud Monitoring for Catalyst Controllers	<p>The Cloud Monitoring for Catalyst Controllers feature helps to monitor controllers using the Meraki dashboard. Currently, this feature is in a limited customer beta and is not supported by Cisco TAC.</p> <p>For more information about this feature, see Cloud Monitoring for Catalyst.</p> <p>For further help, write to: c9800-dashboard-monitoring@external.cisco.com</p>
Electronic Shelf Label (ESL) Support Through Internal IoT Radio	<p>This release supports Application Hosting (IOx App) on APs to access its internal IoT radio. The IOx App supports the capability to load custom or proprietary firmware onto the internal IoT radio. For example, running third-party proprietary firmware on the AP's IoT radio for ESL.</p>
Support for Automatic Log Deletion for Wireless	<p>The Automatic Log Deletion feature allows you to delete entries from the logging buffer automatically after a configurable time. You must configure the local syslog retention period after which the entries are purged from the device. This feature also allows one buffer clean up per day, which cleans the buffer log based on the configured duration every 24 hours.</p> <p>The following command is introduced as part of this feature:</p> <ul style="list-style-type: none"> • logging purge-log buffer days <p>For more information about the command, see https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/17-12/cmd-ref/b_wl_17_12_cr/configuration-commands-g-to-z.html#wp1458580136.</p>

Feature Name	Description and Documentation Link
Cisco Catalyst 9800 Wireless Controller for Cloud - Ultra-Low Profile	<p>The Cisco Catalyst 9800 Wireless Controller for Private Cloud - Ultra-Low Profile is introduced to cater to the Cisco FlexConnect deployment mode, targeting a maximum of 100 APs and 1000 clients; and compute resource requirements of two virtual Central Processing Units (vCPUs), 6-GB RAM, and 16-GB hard disk.</p> <p>The supported private cloud providers are VMware ESXi, KVM, Hyper-V, and Cisco NFVIS (on ENCS).</p> <p>For more information, see Cisco Catalyst 9800-CL Cloud Wireless Controller Installation Guide.</p>
AP Power Distribution Support for Cisco Catalyst 9162 Series Access Points	<p>From this release, AP power distribution is supported in Cisco Catalyst 9162 Series APs. This allows the network administrator to determine how the AP radios operate when it is powered with less than 30W.</p>

What's New in Cisco IOS XE Dublin 17.12.2

From this release, Layer 2 VRF is also supported with WGB, RADSEC, and TRUSTSEC capabilities. However, RLAN is not supported with VRF. For more information, see [Remote LANs](#).

What's New in Cisco IOS XE Dublin 17.12.1

Table 2: New and Modified Software Features

Feature Name	Description and Documentation Link
Access Point Auto Location Support	<p>This feature enables support for Access Point Auto Location, which helps to effectively self-locate APs on a map by combining various ranging technologies and algorithms. This feature requires the use of Cisco Spaces to interpret the AP location information and place the APs on maps.</p> <p>The following commands are introduced:</p> <ul style="list-style-type: none"> • ap geolocation derivation ranging • geolocation ftm initiator burst-size • geolocation ftm initiator burst-duration • ap name ap-name floor • ap geolocation ranging all accurate • ap geolocation ranging site ap-site-tag accurate • show ap geolocation ranging <p>Note Fine Timing Measurement (FTM) ranging is a disruptive process and may cause disturbances in radio. We recommend that you run FTM ranging during offpeak or quiet hours.</p> <p>FTM ranging is not supported with FRA (dual 5G) operation.</p> <p>For more information, see AP Management.</p>

Feature Name	Description and Documentation Link
Modified Trustpoints for Secure Unique Device Identity (SUDI) Certificates	

Feature Name	Description and Documentation Link
	<p>From Cisco IOS XE Dublin 17.12.1 onwards, the following changes have been introduced for trustpoints:</p> <ul style="list-style-type: none"> Trustpoint names for existing SUDI certificates <p>If your device supports Cisco Manufacturing CA III certificate and is not disabled, the trustpoint names are as follows:</p> <ul style="list-style-type: none"> For <i>Cisco Manufacturing CA III</i> certificate, the trustpoint name has changed from CISCO_IDEVID_SUDI to CISCO_IDEVID_CMCA3_SUDI For <i>Cisco Manufacturing CA SHA2</i> certificate, the trustpoint name has changed from CISCO_IDEVID_SUDI_LEGACY to CISCO_IDEVID_CMCA2_SUDI <p>If your device does not support Cisco Manufacturing CA III certificate or if the certificate is disabled using no platform sudi cmca3 command, the trustpoint names are as follows:</p> <ul style="list-style-type: none"> For <i>Cisco Manufacturing CA SHA2</i> certificate, the trustpoint name has changed from CISCO_IDEVID_SUDI to CISCO_IDEVID_CMCA2_SUDI For <i>Cisco Manufacturing CA</i> certificate, the trustpoint name has changed from CISCO_IDEVID_SUDI_LEGACY to CISCO_IDEVID_CMCA_SUDI <ul style="list-style-type: none"> Hardware SUDI certificates <ul style="list-style-type: none"> If your device supports <i>High Assurance SUDI CA</i> certificate, this certificate is loaded under CISCO_IDEVID_SUDI trustpoint. If your device does not support <i>High Assurance SUDI CA</i> certificate, <i>ACT2 SUDI CA</i> certificate is loaded under CISCO_IDEVID_SUDI trustpoint. show wireless management trustpoint command output <p>If Cisco Catalyst 9300 Series Switch is used with a Cisco Catalyst 9800 Series Wireless Controller for wireless deployments, the trustpoint name in the output of show wireless management trustpoint command is updated to the modified trustpoint name as mentioned previously.</p> <p>The following example shows a sample output of show wireless management trustpoint command. Note that if your device does not support Cisco Manufacturing CA III certificate or if the certificate is disabled, the Trustpoint Name in the following output displays CISCO_IDEVID_CMCA2_SUDI.</p> <pre>Device# show wireless management trustpoint Trustpoint Name : CISCO_IDEVID_CMCA3_SUDI Certificate Info : Available</pre>

Feature Name	Description and Documentation Link
	<p>Certificate Type : MIC Certificate Hash : <SHA1 - hash> Private key Info : Available FIPS suitability : Not Applicable</p> <ul style="list-style-type: none"> • show ip http server status command output <p>If you configure the trustpoint for the HTTP server as CISCO_IDEVID_SUDI, the output of show ip http server status command displays the operating trustpoint along with the configured trustpoint.</p> <p>The following example shows a sample output of show ip http server status command with both the configured and the operating trustpoint names. Note that if your device does not support Cisco Manufacturing CA III certificate or if the certificate is disabled, the operating trustpoint in the following output displays CISCO_IDEVID_CMCA2_SUDI.</p> <pre>Device# show ip http server status ... HTTP secure server trustpoint: CISCO_IDEVID_SUDI HTTP secure server operating trustpoint: CISCO_IDEVID_CMCA3_SUDI</pre>
Archive less than 1 day	The request platform software trace archive last command has been enhanced to archive all the trace logs relevant to all the processes running on a system.
Cisco Catalyst 9166D Series Wi-Fi 6E Access Point	<p>The Cisco Catalyst 9166D Series Wi-Fi 6E Access Point is an enterprise-class tri-band (2.4 GHz, 5 GHz, 6 GHz) indoor access point with integrated directional antennas. The AP supports full interoperability with leading 802.11ax and 802.11ac clients and a hybrid deployment with other APs and controllers.</p> <p>For a full listing of the AP's features and specifications, see the Cisco Catalyst 9166D Series Wi-Fi 6E Access Point Data Sheet.</p>
Cisco Catalyst 9800 Wireless Controller for Cloud - Ultra-Low Profile (Beta, No TAC Support)	<p>The ultra-low profile memory variant of the Catalyst 9800 Wireless Controller for Cloud comes with 4GB RAM and 2vCPUs and is deployed in a private cloud (supports ESXi, KVM, and NFVIS on ENCS hypervisors) as Infrastructure as a Service (IaaS). This controller can support up to 50 APs and 1000 clients.</p> <p>For more information and technical support, see the Cisco Catalyst 9800 Wireless Controller for Cloud - Ultra-Low Profile Installation Guide.</p>
Cisco Catalyst IW9167I Heavy Duty Access Point	<p>The Cisco Catalyst IW9167I Wi-Fi 6 Access Point is a heavy-duty tri-band (2.4 GHz, 5 GHz, 6 GHz ready) outdoor access point with integrated antennas.</p> <p>For a full listing of the AP's features and specifications, see the Cisco Catalyst IW9167 Heavy Duty Series Data Sheet.</p>

Feature Name	Description and Documentation Link
Ease of Debugging	<p>The following commands are introduced on the AP console to enable or disable the client debug bundle and to verify the client debug status:</p> <ul style="list-style-type: none"> • debug client-bundle start • show client-bundle status • debug client-bundle stop
Embedded Packet Capture Enhancement	<p>In this release, the Embedded Packet Capture (EPC) feature is enhanced to support increased buffer size, continuous capture, and filtering of multiple MAC addresses in one EPC session.</p> <p>The following commands are introduced:</p> <ul style="list-style-type: none"> • monitor capture epc-session-name buffer circular file • monitor capture epc-session-name continuous-capture • monitor capture epc-session-name inner mac <p>For more information, see Embedded Packet Capture.</p>
FIPS 140-3 compliance	<p>This release enables all Wave 2 APs to achieve FIPS 140-3 compliance, ensuring adherence to security standards. The Cisco Catalyst 9800 controllers, however, are FIPS 140-2 compliant.</p> <p>Caution Downgrading to versions below 17.12.1 can have a negative impact on Wave 2 APs in the following scenarios:</p> <ul style="list-style-type: none"> • When FIPS or WLANCC security modes are enabled. • When the ECDHE-RSA-AES128-GCM-SHA256 cipher suite is not selected for AP DTLS (by default it is selected). <p>Note There is no impact on the Cisco IOS AP models.</p> <p>The show wireless certification config command has been introduced to verify whether downgrade is impacted or not.</p> <p>For more information, see FIPS.</p>
Improve crash datacollection, kernel panics, out of memory	<p>A new command is introduced to limit the number of kernel core dumps collected on the AP:</p> <ul style="list-style-type: none"> • core-dump kernel limit
Indoor deployment support for UK -ROW domain on IW9167I and IW9167E	<p>Indoor deployment for UK -ROW domain is supported on Cisco Catalyst IW9167I and IW9167E Heavy Duty Access Point from this release.</p> <p>For more information, see the Cisco Catalyst IW9167 Heavy Duty Series Software Configuration Guide.</p>

Feature Name	Description and Documentation Link
Intelligent Capture (iCAP) Hardening	<p>This feature aims at making troubleshooting for wireless clients and APs easier.</p> <p>In this release, the following enhancements are made to the iCAP feature:</p> <ul style="list-style-type: none"> • Anomaly Detection • RF Statistics <p>The following commands are introduced:</p> <ul style="list-style-type: none"> • icap subscription client anomaly-detection report-individual enable • icap subscription client anomaly-detection report-individual per-client throttle • icap subscription client anomaly-detection report-individual per-type throttle • ap name icap subscription client anomaly-detection report-individual enable • ap name icap subscription client anomaly-detection report-individual per-client throttle • ap name icap subscription client anomaly-detection report-individual per-type throttle <p>For more information, see Intelligent Capture Hardening.</p>
MacBook Analytics	<p>This feature is supported on the controller when the MacBook device sends 11k action frames along with the model information.</p> <p>For more information, see Device Analytics.</p>
Mesh Support in Cisco Catalyst 9130AX Series Access Points	<p>From this release, mesh support is included in the Cisco Catalyst 9130AX Series Access Points.</p> <p>All traditional capabilities of mesh are included in the Cisco Catalyst 9130AX Series APs operating in Cisco IOS XE Dublin 17.12.1.</p> <p>For more information, see Mesh Access Points.</p>
New Countries Supporting 6-GHz Radio Band	<p>From this release, Australia, Brazil, Costa Rica, Honduras, Hong Kong, Japan, Jordan, Kenya, Malaysia, Morocco, New Zealand, Peru, Qatar, Saudi Arabia, and United Arab Emirates are added to the list of countries that supports 6-GHz radio band.</p> <p>For more information, see Regulatory Compliance Domain.</p>

Feature Name	Description and Documentation Link
RF based Automatic Load Balancing	<p>The RF based Automatic AP Load Balancing feature uses Radio Resource Management (RRM) neighbor report-based AP grouping and load-balancing across WNCd instances.</p> <p>The following commands are introduced:</p> <ul style="list-style-type: none"> • ap neighborhood load-balance • ap neighborhood calendar-profile • wireless load-balance ap method rf • show ap neighborhood summary • show ap neighborhood details • show ap neighborhood • show ap neighborhood mac details • show ap neighborhood wncd <p>For more information, see RF based Automatic AP Load Balancing.</p>
Rogue Channel Width	<p>From this release, you can specify the channel width and the band for rogue detection.</p> <p>The following command is introduced:</p> <ul style="list-style-type: none"> • condition chan-width <p>For more information, see Radio Resource Management.</p>
Rogue PMF	<p>From this release, the controller will contain rogue APs with 802.11w Protected Management Frame (PMF) on centrally switched WLANs.</p> <p>The following commands are introduced:</p> <ul style="list-style-type: none"> • rogue detection containment pmf-denial • pmf-deauth <p>For more information, see Radio Resource Management.</p>
Software entropy enhancement for FIPS 140-3	<p>From Cisco IOS XE Dublin 17.12.1 onwards, Federal Information Processing Standard (FIPS) 140-3 is supported as a security standard to validate cryptographic modules.</p>

Feature Name	Description and Documentation Link
Support for Cisco Wave 1 Access Points	<p>Support for the following Cisco Wave 1 APs are introduced in this release:</p> <ul style="list-style-type: none"> • Cisco Aironet 1570 Series Access Point • Cisco Aironet 1700 Series Access Point • Cisco Aironet 2700 Series Access Point • Cisco Aironet 3700 Series Access Point <p>Note Feature support is the same as in Release 17.3.x. Features introduced in 17.4.1 or later are not supported on these APs in Release 17.12.1.</p>
VRF Support	<p>From this release, Virtual Routing and Forwarding (VRF) is supported. For more information, see VRF Support.</p>
Wakeup Threshold for AP Power Save Mode	<p>This feature enables you to define the client threshold in the AP power profile configuration to determine when an AP wakes up from the power save mode or enters the power save mode.</p> <p>The following command is introduced:</p> <ul style="list-style-type: none"> • power-save-client-threshold <p>For more information, see AP Management.</p>
Wireless Mesh Support for Cisco Software-Defined Access	<p>From this release, wireless mesh is supported on Cisco Software-Defined Access.</p> <p>The following commands are introduced:</p> <ul style="list-style-type: none"> • show ap name mesh roam history • show wireless mesh ap fabric summary

Table 3: New and Modified GUI Features

Feature Name	GUI Path
AP Location	<ul style="list-style-type: none"> • Configuration > Wireless > Wireless Global • Configuration > Tags & Profiles > AP Join
Configuring Transition Mode and Pure WPA3 (6-GHz) on the Same WLAN Profile	<ul style="list-style-type: none"> • Configuration > Tags & Profiles > WLANs
Rogue Channel Width	<ul style="list-style-type: none"> • Configuration > Security > Wireless Protection Policies > Rogue AP Rules

MIBs

The following MIBs are newly added or modified:

- AIRESpace-WIRELESS-CAPABILITY.my
- AIRESpace-WIRELESS-MIB.my
- CISCO-LWAPP-AP-CAPABILITY.my
- CISCO-LWAPP-CDP-CAPABILITY.my
- CISCO-LWAPP-DOT11-CAPABILITY.my
- CISCO-LWAPP-DOT11-CLIENT-CALIB-CAPABILITY.my
- CISCO-LWAPP-DOT11-CLIENT-CAPABILITY.my
- CISCO-LWAPP-DOWNLOAD-CAPABILITY.my
- CISCO-LWAPP-GUEST-LAN-CAPABILITY.my
- CISCO-LWAPP-IPV6-CAPABILITY.my
- CISCO-LWAPP-MESH-CAPABILITY.my
- CISCO-LWAPP-MESH-LINKTEST-CAPABILITY.my
- CISCO-LWAPP-MFP-CAPABILITY.my
- CISCO-LWAPP-MOBILITY-CAPABILITY.my
- CISCO-LWAPP-MOBILITY-EXT-CAPABILITY.my
- CISCO-LWAPP-QOS-CAPABILITY.my
- CISCO-LWAPP-QOS-MIB.my
- CISCO-LWAPP-REAP-CAPABILITY.my
- CISCO-LWAPP-RF-CAPABILITY.my
- CISCO-LWAPP-ROGUE-CAPABILITY.my
- CISCO-LWAPP-ROGUE-MIB.my
- CISCO-LWAPP-RRM-CAPABILITY.my
- CISCO-LWAPP-SI-CAPABILITY.my
- CISCO-LWAPP-TUNNEL-CAPABILITY.my
- CISCO-LWAPP-WLAN-CAPABILITY.my
- CISCO-LWAPP-WLAN-POLICY-CAPABILITY.my
- CISCO-LWAPP-WLAN-POLICY-MIB.my
- CISCO-LWAPP-WLAN-SECURITY-CAPABILITY.my
- CISCO-WIRELESS-HOTSPOT-CAPABILITY.my

Product Analytics

This feature allows for the collection of non-personal usage device systems information for Cisco products, which helps in continuous product improvements. This feature is supported on the Cisco Catalyst 9800 Series Wireless Controllers (9800-80, 9800-40, 9800-L, and 9800-CL). You can use the `pa` command to enable or disable this feature.

The following commands are introduced as part of this feature:

- `pa`
- `show product-analytics kpi`
- `show product-analytics report`
- `show product-analytics stats`



Note Turning off Smart Licensing Device Systems Information does not impact other Systems Information collection including from Cisco Catalyst Center or vManage.

Important: We are constantly striving to advance our products and services. Knowing how you use our products is key to accomplishing this goal. To that end, Cisco will collect device and licensing [Systems Information](#) through Cisco Smart Software Manager (CSSM) for product and customer experience improvement, analytics, and adoption. Cisco processes your data in accordance with the [General Terms and Conditions](#), the [Cisco Privacy Statement](#) and any other applicable agreement with Cisco. To modify your organization's preferences for device and licensing systems information, use the `pa` command. For more information, see [Cisco Catalyst 9800 Series Wireless Controller Command Reference](#).

For additional information on this feature, see [Wireless Product Analytics FAQ](#).

Behavior Changes

- From Cisco IOS XE Dublin 17.12.2 onwards, 6-GHz radio band is not supported for Honduras country code (HN) in Cisco Catalyst 9136, 9162, 9164, and 9166 Series APs.
- From Cisco IOS XE Dublin 17.12.x, the Express Wi-Fi by Facebook feature is not supported.
- From Cisco IOS XE Dublin 17.12.2, the `show running-config wlan` command is modified. The `wlan_name` variable is removed.
- The following command output is modified for the KPIs for AP Health Via the Controller and AP feature:
 - `show ap name config general`
- The following command outputs are modified for the Configuring Transition Mode and Pure WPA3 (6 GHz) on the Same WLAN Profile feature:
 - `show wlan all`
 - `show wlan id`
 - `show wlan name`

- **show wlan summary**

- WPA2 should be disabled while WPA3, PMF and dot11ax are enabled to broadcast WLAN exclusively on 6-GHz band. WPA2 can be enabled when broadcasting on other bands, such as 2.4 and 5-GHz.
- The inner MAC filtering feature of Embedded Packet Capture (EPC), captures CAPWAP data fragments and CAPWAP control not filtered by MAC.
- When wireless interface is not available, the RMI +RP configuration on the Web UI is disabled.
- From this release, the **bssid-neighbor-stats interval** value has been changed from 1 to 180 seconds to 30 to 600 seconds. The default value is 180 seconds.
- From this release, the default console baud rate of the 802.11AX APs is changed from 9600 bps to 115200 bps.
- Both internal and external APs in NAT deployments must use different AP join profiles when CAPWAP Discovery Private and Public are enabled separately. This is applicable to APs upgraded to Cisco IOS XE Dublin 17.12.x and later.
- If you have configured CISCO_IDEVID_SUDI trustpoint in your configuration, you will need to replace it with CISCO_IDEVID_CMCA3_SUDI to avoid client connection and AP join issues. The reason for this change being the CISCO_IDEVID_SUDI changed from SW-SUDI certificate in previous releases to HW-SUDI certificate. The processing of HW-SUDI certificate is much slower than the SW-SUDI. Here, CISCO_IDEVID_CMCA3_SUDI is the new SW-SUDI certificate.

Interactive Help

The Cisco Catalyst 9800 Series Wireless Controller GUI features an interactive help that walks you through the GUI and guides you through complex configurations.

You can start the interactive help in the following ways:

- By hovering your cursor over the blue flap at the right-hand corner of a window in the GUI and clicking **Interactive Help**.
- By clicking **Walk-me Thru** in the left pane of a window in the GUI.
- By clicking **Show me How** displayed in the GUI. Clicking **Show me How** triggers a specific interactive help that is relevant to the context you are in.

For instance, **Show me How** in **Configure > AAA** walks you through the various steps for configuring a RADIUS server. Choose **Configuration > Wireless Setup > Advanced** and click **Show me How** to trigger the interactive help that walks you through the steps relating to various kinds of authentication.

The following features have an associated interactive help:

- Configuring AAA
- Configuring FlexConnect Authentication
- Configuring 802.1X Authentication
- Configuring Local Web Authentication
- Configuring OpenRoaming

- Configuring Mesh APs



Note If the WalkMe launcher is unavailable on Safari, modify the settings as follows:

1. Choose **Preferences > Privacy**.
2. In the **Website tracking** section, uncheck the **Prevent cross-site tracking** check box to disable this action.
3. In the **Cookies and website data** section, uncheck the **Block all cookies** check box to disable this action.

Supported Hardware

The following table lists the supported virtual and hardware platforms. (See [Table 6: Supported PIDs and Ports](#) for the list of supported modules.)

Table 4: Supported Virtual and Hardware Platforms

Platform	Description
Cisco Catalyst 9800-80 Wireless Controller	A modular wireless controller with up to 100-GE modular uplinks and seamless software updates. The controller occupies a 2-rack unit space and supports multiple module uplinks.
Cisco Catalyst 9800-40 Wireless Controller	A fixed wireless controller with seamless software updates for mid-size to large enterprises. The controller occupies a 1-rack unit space and provides four 1-GE or 10-GE uplink ports.
Cisco Catalyst 9800-L Wireless Controller	The Cisco Catalyst 9800-L Wireless Controller is the first low-end controller that provides a significant boost in performance and features.
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 VMware ESXi, Kernel-based Virtual Machine [KVM], Microsoft Hyper-V, and Cisco Enterprise NFV Infrastructure Software [NFVIS] on Enterprise Network Compute System [ENCS] hypervisors), or in the public cloud as Infrastructure as a Service (IaaS) in Amazon Web Services (AWS), Google Cloud Platform (GCP) marketplace, and Microsoft Azure.
Cisco Catalyst 9800 Embedded Wireless Controller for Switch	The Catalyst 9800 Wireless Controller software for the Cisco Catalyst 9000 switches brings the wired and wireless infrastructure together with consistent policy and management. This deployment model supports only Software Defined-Access (SDA), which is a highly secure solution for small campuses and distributed branches.

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

Table 5: 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, 6.5, 6.7, 7.0, and 8.0 VMware ESXi vCenter 6.0, 6.5, 6.7, 7.0, and 8.0
KVM	<ul style="list-style-type: none"> Linux KVM-based on Red Hat Enterprise Linux 7.6, 7.8, and 8.2 Ubuntu 16.04.5 LTS, Ubuntu 18.04.5 LTS, Ubuntu 20.04.5 LTS
AWS	AWS EC2 platform
NFVIS	ENCS 3.8.1 and 3.9.1
GCP	GCP marketplace
Microsoft Hyper-V	Windows 2019 Server and Windows Server 2016 (Version 1607) with Hyper-V Manager (Version 10.0.14393)
Microsoft Azure	Microsoft Azure

The following table lists the supported Cisco Catalyst 9800 Series Wireless Controller hardware models.

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. Running the **show version**, **show module**, or **show inventory** command on such a controller (bundled PID) displays its base PID.

Note that unsupported SFPs will bring down a port. Only Cisco-supported SFPs (GLC-LH-SMD and GLC-SX-MMD) should be used on the route processor (RP) ports of C9800-80-K9 and C9800-40-K9.

Table 6: Supported PIDs and Ports

Controller Model	Description
C9800-CL-K9	Cisco Catalyst Wireless Controller as an infrastructure for cloud.
C9800-80-K9	Eight 1/10-Gigabit Ethernet SFP or SFP+ ports and two power supply slots.
C9800-40-K9	Four 1/10-Gigabit Ethernet SFP or SFP+ ports and two power supply slots.
C9800-L-C-K9	<ul style="list-style-type: none"> 4x2.5/1-Gigabit ports 2x10/5/2.5/1-Gigabit ports

Controller Model	Description
C9800-L-F-K9	<ul style="list-style-type: none"> • 4x2.5/1-Gigabit ports • 2x10/1-Gigabit ports

The following table lists the supported SFP models.

Table 7: Supported SFPs

SFP Name	C9800-80-K9	C9800-40-K9	C9800-L-C-K9	C9800-L-F-K9
COLORCHIP-C040-Q020-CWDM4-03B	Supported	—	—	—
DWDM-SFP10G-30.33	Supported	Supported	—	—
DWDM-SFP10G-61.41	Supported	Supported	—	—
FINISAR-LR – FTLX1471D3BCL 1	Supported	Supported	—	Supported
FINISAR-SR – FTLX8574D3BCL	Supported	Supported	—	Supported
FINISAR- FTL4C1QL2L	Supported	—	—	—
FINISAR- FTL4C1QE1C	Supported	—	—	—
GLC-BX-D	Supported	Supported	Supported	Supported
GLC-BX-U	Supported	Supported	Supported	Supported
GLC-EX-SMD	Supported	Supported	—	—
GLC-LH-SMD	Supported	Supported	Supported	—
GLC-SX-MMD	Supported	Supported	Supported	Supported
GLC-T	Supported	—	Supported	—
GLC-TE	Supported	Supported	Supported	Supported
GLC-ZX-SMD	Supported	Supported	Supported	Supported
QSFP-100G-LR4-S	Supported	—	—	—
QSFP-100G-SR4-S	Supported	—	—	—
QSFP-40G-BD-RX	Supported	—	—	—
QSFP-40G-CSR-S	Supported	—	—	—

SFP Name	C9800-80-K9	C9800-40-K9	C9800-L-C-K9	C9800-L-F-K9
QSFP-40G-ER4	Supported	—	—	—
QSFP-40G-LR4	Supported	—	—	—
QSFP-40G-LR4-S	Supported	—	—	—
QSFP-40G-SR-BD	Supported	—	—	—
QSFP-40G-SR4	Supported	—	—	—
QSFP-40G-SR4-S	Supported	—	—	—
QSFP-40GE-LR4	Supported	—	—	—
QSFP-H40G-ACU7M	Supported	—	—	—
SFP-10G-AOC10M	Supported	Supported	—	—
SFP-10G-AOC1M	Supported	Supported	—	—
SFP-10G-AOC2M	Supported	Supported	—	—
SFP-10G-AOC3M	Supported	Supported	—	—
SFP-10G-AOC5M	Supported	Supported	—	—
SFP-10G-AOC7M	Supported	Supported	—	—
SFP-10G-ER	Supported	Supported	—	—
SFP-10G-LR	Supported	Supported	—	Supported
SFP-10G-LR-S	Supported	Supported	—	Supported
SFP-10G-LR-X	Supported	Supported	—	Supported
SFP-10G-LRM	Supported	Supported	—	Supported
SFP-10G-SR	Supported	Supported	—	Supported
SFP-10G-SR-S	Supported	Supported	—	Supported
SFP-10G-SR-X	Supported	Supported	—	Supported
SFP-10G-ZR	Supported	Supported	—	—
SFP-H10GB-ACU10M	Supported	Supported	—	Supported
SFP-H10GB-ACU7M	Supported	Supported	—	Supported
SFP-H10GB-CU1.5M	Supported	Supported	—	Supported

SFP Name	C9800-80-K9	C9800-40-K9	C9800-L-C-K9	C9800-L-F-K9
SFP-H10GB-CU1M	Supported	Supported	—	Supported
SFP-H10GB-CU2.5M	Supported	Supported	—	Supported
SFP-H10GB-CU2M	Supported	Supported	—	Supported
SFP-H10GB-CU3M	Supported	Supported	—	Supported
SFP-H10GB-CU5M	Supported	Supported	—	Supported

¹ The FINISAR SFPs are not Cisco specific and some of the features, such as DOM, may not work properly.

Optics Modules

The 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

Network Protocols and Port Matrix

Table 8: Cisco Catalyst 9800 Series Wireless Controller - Network Protocols and Port Matrix

Source	Destination	Protocol	Destination Port	Source Port	Description
Any	Cisco Catalyst 9800 Series Wireless Controller	TCP	22	Any	SSH
Any	Cisco Catalyst 9800 Series Wireless Controller	TCP	23	Any	Telnet
Any	Cisco Catalyst 9800 Series Wireless Controller	TCP	80	Any	HTTP
Any	Cisco Catalyst 9800 Series Wireless Controller	TCP	443	Any	HTTPS

Source	Destination	Protocol	Destination Port	Source Port	Description
Any	Cisco Catalyst 9800 Series Wireless Controller	UDP	161	Any	SNMP Agent
Any	Any	UDP	5353	5353	mDNS
Any	Cisco Catalyst 9800 Series Wireless Controller	UDP	69	69	TFTP
Any	DNS Server	UDP	53	Any	DNS
Any	Cisco Catalyst 9800 Series Wireless Controller	TCP	830	Any	NetConf
Any	Cisco Catalyst 9800 Series Wireless Controller	TCP	443	Any	REST API
Any	WLC Protocol	UDP	1700	Any	Receive CoA packets.
AP	Cisco Catalyst 9800 Series Wireless Controller	UDP	5246	Any	CAPWAP Control
AP	Cisco Catalyst 9800 Series Wireless Controller	UDP	5247	Any	CAPWAP Data
AP	Cisco Catalyst 9800 Series Wireless Controller	UDP	5248	Any	CAPWAP MCAST
AP	Cisco Catalyst Center	TCP	32626	Any	Intelligent capture and RF telemetry
AP	AP	UDP	16670	Any	Client Policies (AP-AP)

Source	Destination	Protocol	Destination Port	Source Port	Description
Cisco Catalyst 9800 Series Wireless Controller	Cisco Catalyst 9800 Series Wireless Controller	UDP	16666	16666	Mobility Control
Cisco Catalyst 9800 Series Wireless Controller	SNMP	UDP	162	Any	SNMP Trap
Cisco Catalyst 9800 Series Wireless Controller	RADIUS	UDP	1812/1645	Any	RADIUS Auth
Cisco Catalyst 9800 Series Wireless Controller	RADIUS	UDP	1813/1646	Any	RADIUS ACCT
Cisco Catalyst 9800 Series Wireless Controller	TACACS+	TCP	49	Any	TACACS+
Cisco Catalyst 9800 Series Wireless Controller	Cisco Catalyst 9800 Series Wireless Controller	UDP	16667	16667	Mobility
Cisco Catalyst 9800 Series Wireless Controller	NTP Server	UDP	123	Any	NTP
Cisco Catalyst 9800 Series Wireless Controller	Syslog Server	UDP	514	Any	SYSLOG
Cisco Catalyst 9800 Series Wireless Controller	NetFlow Server	UDP	9996	Any	NetFlow
Cisco Catalyst 9800 Series Wireless Controller	Cisco Connected Mobile Experiences (CMX)	UDP	16113	Any	NMSP

Source	Destination	Protocol	Destination Port	Source Port	Description
Cisco Catalyst Center	Cisco Catalyst 9800 Series Wireless Controller	TCP	32222	Any	Device Discovery

Supported APs

The following Cisco APs are supported in this release.

Indoor Access Points

- Cisco Catalyst 9105AX (I/W) Access Points
- Cisco Catalyst 9115AX (I/E) Access Points
- Cisco Catalyst 9117AX (I) Access Points
- Cisco Catalyst 9120AX (I/E/P) Access Points
- Cisco Catalyst 9130AX (I/E) Access Points
- Cisco Catalyst 9136AX Access Points
- Cisco Catalyst 9162 (I) Series Access Points
- Cisco Catalyst 9164 (I) Series Access Points
- Cisco Catalyst 9166 (I/D1) Series Access Points
- Cisco Aironet 1815 (I/W/M/T), 1830 (I), 1840 (I), and 1852 (I/E) Access Points
- Cisco Aironet 1700 (I) Series Access Point
- Cisco Aironet 1800i Access Point
- Cisco Aironet 2700 (I/E) Series Access Point
- Cisco Aironet 2800 (I/E) Series Access Points
- Cisco Aironet 3700 (I/E/P) Series Access Point
- Cisco Aironet 3800 (I/E/P) Series Access Points
- Cisco Aironet 4800 (I) Series Access Points

Outdoor Access Points

- Cisco Aironet 1540 (I/D) Series Access Points
- Cisco Aironet 1560 (I/D/E) Series Access Points
- Cisco Industrial Wireless 3700 Series Access Points
- Cisco Catalyst Industrial Wireless 6300 Heavy Duty Series Access Point

- Cisco 6300 Series Embedded Services Access Point
- Cisco Catalyst 9124AX (I/D/E) Access Points
- Cisco Catalyst 9163 (E) Series Access Points
- Cisco Catalyst Industrial Wireless 9167 (I/E) Heavy Duty Access Points
- Cisco Catalyst Industrial Wireless 9165E Rugged Access Point

Integrated Access Points

- Integrated Access Point on Cisco 1100 ISR (ISR-AP1100AC-x, ISR-AP1101AC-x, and ISR-AP1101AX-x)

Network Sensor

- Cisco Aironet 1800s Active Sensor

Pluggable Modules

- Cisco Wi-Fi Interface Module (WIM)

Supported Access Point Channels and Maximum Power Settings

Supported access point channels and maximum power settings on Cisco APs are compliant with the regulatory specifications of channels, maximum power levels, and antenna gains of every country in which the access points are sold. For more information about the supported access point transmission values in Cisco IOS XE software releases, see the *Detailed Channels and Maximum Power Settings* document at <https://www.cisco.com/c/en/us/support/ios-nx-os-software/ios-xe-17/products-technical-reference-list.html>.

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. For more information, see [Cisco Wireless Solutions Software Compatibility Matrix](#)

Table 9: Compatibility Information

Cisco Catalyst 9800 Series Wireless Controller Software	Cisco Identity Services Engine	Cisco Prime Infrastructure	Cisco AireOS-IRCM Interoperability	Cisco Catalyst Center	Cisco CMX
Dublin 17.12.4	3.2 3.1 3.0 2.7 * all with latest patches	3.10.5 3.10.4 Update 03 3.10.4 Update 02	8.10.196.0 8.10.190.0 8.10.185.0 8.10.183.0 8.10.182.0 8.10.181.0 8.10.171.0 8.10.162.0 8.10.151.0 8.10.142.0 8.10.130.0 8.8.130.0 8.5.176.2 8.5.182.104	See Cisco Catalyst Center Compatibility Information	11.0 10.6.3
Dublin 17.12.3	3.2 3.1 3.0 2.7 * all with latest patches	3.10.5 3.10.4 Update 03 3.10.4 Update 02	8.10.196.0 8.10.190.0 8.10.185.0 8.10.183.0 8.10.182.0 8.10.181.0 8.10.171.0 8.10.162.0 8.10.151.0 8.10.142.0 8.10.130.0 8.8.130.0 8.5.176.2 8.5.182.104	See Cisco Catalyst Center Compatibility Information	11.0 10.6.3

Cisco Catalyst 9800 Series Wireless Controller Software	Cisco Identity Services Engine	Cisco Prime Infrastructure	Cisco AireOS-IRCM Interoperability	Cisco Catalyst Center	Cisco CMX
Dublin 17.12.2	3.2 3.1 3.0 2.7 * all with latest patches	3.10.5 3.10.4 Update 03 3.10.4 Update 02	8.10.196.0 8.10.190.0 8.10.185.0 8.10.183.0 8.10.182.0 8.10.181.0 8.10.171.0 8.10.162.0 8.10.151.0 8.10.142.0 8.10.130.0 8.8.130.0 8.5.176.2 8.5.182.104	See Cisco Catalyst Center Compatibility Information	11.0 10.6.3
Dublin 17.12.1	3.2 3.1 3.0 2.7 * all with latest patches	3.10.5 3.10.4 Update 03 3.10.4 Update 02	8.10.196.0 8.10.190.0 8.10.185.0 8.10.183.0 8.10.182.0 8.10.181.0 8.10.171.0 8.10.162.0 8.10.151.0 8.10.142.0 8.10.130.0 8.8.130.0 8.5.176.2 8.5.182.104	See Cisco Catalyst Center Compatibility Information	11.0 10.6.3

GUI System Requirements

The following subsections list the hardware and software required to access the Cisco Catalyst 9800 Controller GUI.

Table 10: Hardware Requirements

Processor Speed	DRAM	Number of Colors	Resolution	Font Size
233 MHz minimum ²	512 MB ³	256	1280 x 800 or higher	Small

² We recommend 1 GHz.

³ 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: Version 40 or later (on Windows)
- Safari: Version 10 or later (on Mac)
- Mozilla Firefox: Version 60 or later (on Windows and Mac)



Note Firefox Version 63.x is not supported.

The controller GUI uses Virtual Terminal (VTY) lines for processing HTTP requests. At times, when multiple connections are open, the default number of VTY lines of 15 set by the device might get exhausted. Therefore, we recommend that you increase the number of VTY lines to 50.

To increase the VTY lines in a device, run the following commands in the following order:

1. **device#** configure terminal
2. **device(config)#** line vty 50
A best practice is to configure the service tcp-keepalives to monitor the TCP connection to the device.
3. **device(config)#** service tcp-keepalives-in
4. **device(config)#** service tcp-keepalives-out

Before You Upgrade

Ensure that you familiarize yourself with the following points before proceeding with the upgrade:



Note When you upgrade from Cisco IOS XE Dublin 17.12.3 to 17.12.4 or Cisco IOS XE 17.15.1, the Cisco Catalyst Wi-Fi 6 APs fail to upgrade the AP image.

Workaround:

- Reboot the impacted APs through the power cycle.



Caution During controller upgrade or reboot, if route processor ports are connected to any Cisco switch, ensure that the route processor ports are not flapped (shut/no shut process). Otherwise, it may lead to a kernel crash.

- ISSU feature is supported only within and between major releases, for example, 17.3.x (within a release) and 17.3.x to 17.6.x (among major releases).
- Controller upgrade from Cisco IOS XE Bengaluru 17.3.x to Cisco IOS XE Bengaluru 17.6.x or Cisco IOS XE Cupertino 17.9.x or later using ISSU may fail if the **domain** command is configured. Ensure that you run the **no domain** command before starting an ISSU upgrade because the **domain** command has been removed from Cisco IOS XE Bengaluru 17.6.x.
- Controller upgrade from Cisco IOS XE Bengaluru 17.3.x to any release using ISSU may fail if the **snmp-server enable traps hsrp** command is configured. Ensure that you remove the **snmp-server enable traps hsrp** command from the configuration before starting an ISSU upgrade because the **snmp-server enable traps hsrp** command has been removed from Cisco IOS XE Bengaluru 17.4.x.
- Controller upgrade to Cisco IOS XE Dublin 17.12.x from any prior release using ISSU may fail if the **snmp-server enable traps license** command is configured. Ensure that you remove the **snmp-server enable traps license** command from the configuration before starting an ISSU upgrade because the **snmp-server enable traps license** command has been removed from Cisco IOS XE Dublin 17.12.x.
- Rolling AP upgrade, which is a part of the ISSU feature, is not supported for mesh APs.
- Ensure that you add Authentication and Key Management (AKM) setting when you configure WPA3. In older releases, this scenario was not mandatory which resulted in an invalid configuration. However, from 17.9 and higher releases, this invalid scenario is detected and prevented.

Cisco Wave 2 APs may get into a boot loop when upgrading software over a WAN link. For more information, see: <https://www.cisco.com/c/en/us/support/docs/wireless/catalyst-9800-series-wireless-controllers/220443-how-to-avoid-boot-loop-due-to-corrupted.html>.

The following Wave 1 APs are not supported from 17.4 to 17.9.2, 17.10.x, 17.11.x, 17.13.x, 17.14.x, and 17.15.x:

- Cisco Aironet 1570 Series Access Point
- Cisco Aironet 1700 Series Access Point

- Cisco Aironet 2700 Series Access Point
- Cisco Aironet 3700 Series Access Point

**Note**

- Support for the above APs was reintroduced from Cisco IOS XE Cupertino 17.9.3.
- Support for these APs does not extend beyond the normal product lifecycle support. Refer to the individual End-of-Support bulletins on Cisco.com.
- Feature support is on parity with the 17.3.x release. Features introduced in 17.4.1 or later are not supported on these APs in the 17.9.3 release.
- You can migrate directly to 17.9.3 from 17.3.x, where x=4c or later.

- From Cisco IOS XE Dublin 17.10.x, Key Exchange and MAC algorithms like diffie-hellman-group14-sha1, hmac-sha1, hmac-sha2-256, and hmac-sha2-512 are not supported by default and it may impact some SSH clients that only support these algorithms. If required, you can add them manually. For information on manually adding these algorithms, see the **SSH Algorithms for Common Criteria Certification** document available at: https://www.cisco.com/c/en/us/td/docs/routers/ios/config/17-x/sec-vpn/b-security-vpn/m_sec-secure-shell-algorithm-ccc.html

- If APs fail to detect the backup image after running the **archive download-sw** command, perform the following steps:

1. Upload the image using the **no-reload** option of the **archive download-sw** command:

```
Device# archive download-sw /no-reload tftp://<tftp_server_ip>/<image_name>
```

2. Restart the CAPWAP process using **capwap ap restart** command. This allows the AP to use the correct backup image after the restart (reload is not required.)

```
Device# capwap ap restart
```

**Caution**

The AP will lose connection to the controller during the join process. When the AP joins the new controller, it will see a new image in the backup partition. So, the AP will not download a new image from the controller.

- Fragmentation lower than 1500 is not supported for the RADIUS packets generated by wireless clients in the Gi0 (OOB) interface.
- Cisco IOS XE allows you to encrypt all the passwords used on the device. This includes user passwords and SSID passwords (PSK). For more information, see the "Password Encryption" section of the [Cisco Catalyst 9800 Series Configuration Best Practices](#) document.
- While upgrading to Cisco IOS XE 17.3.x and later releases, if the **ip http active-session-modules none** command is enabled, you will not be able to access the controller GUI using HTTPS. To access the GUI using HTTPS, run the following commands in the order specified below:
 1. **ip http session-module-list pkilist OPENRESTY_PKI**
 2. **ip http active-session-modules pkilist**

- Cisco Aironet 1815T OfficeExtend Access Point will be in local mode when connected to the controller. However, when it functions as a standalone AP, it gets converted to FlexConnect mode.
- The Cisco Catalyst 9800-L Wireless Controller may fail to respond to the BREAK signals received on its console port during boot time, preventing users from getting to the ROMMON. This problem is observed on the controllers manufactured until November 2019, with the default config-register setting of 0x2102. This problem can be avoided if you set config-register to 0x2002. This problem is fixed in the 16.12(3r) ROMMON for Cisco Catalyst 9800-L Wireless Controller. For information about how to upgrade the ROMMON, see the [Upgrading ROMMON for Cisco Catalyst 9800-L Wireless Controllers](#) section of the [Upgrading Field Programmable Hardware Devices for Cisco Catalyst 9800 Series Wireless Controllers](#) document.
- 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. If required, you can change the block size value to 8192 to speed up the transfer process, using the **ip tftp blocksize** command in global configuration mode.
- We recommend that you configure the **password encryption aes** and the **key config-key password-encrypt key** commands to encrypt your password.
- If the following error message is displayed after a reboot or system crash, we recommend that you regenerate the trustpoint certificate:


```
ERR_SSL_VERSION_OR_CIPHER_MISMATCH
```

Use the following commands in the order specified below to generate a new self-signed trustpoint certificate:

 1. device# **configure terminal**
 2. device(config)# **no crypto pki trustpoint** *trustpoint_name*
 3. device(config)# **no ip http server**
 4. device(config)# **no ip http secure-server**
 5. device(config)# **ip http server**
 6. device(config)# **ip http secure-server**
 7. device(config)# **ip http authentication** *local/aaa*
- Do not deploy OVA files directly to VMware ESXi 6.5. We recommend that you use an OVF tool to deploy the OVA files.
- Ensure that you remove the controller from Cisco Prime Infrastructure before disabling or enabling Netconf-YANG. Otherwise, the system may reload unexpectedly.
- Unidirectional Link Detection (UDLD) protocol is not supported.
- SIP media session snooping is not supported on 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.
- Configuring the mobility MAC address using the **wireless mobility mac-address** command is mandatory for both HA and 802.11r.

- If you have Cisco Catalyst 9120 (E/I/P) and Cisco Catalyst 9130 (E) APs in your network and you want to downgrade, use only Cisco IOS XE Gibraltar 16.12.1t. Do not downgrade to Cisco IOS XE Gibraltar 16.12.1s.
- The following SNMP variables are not supported:
 - CISCO-LWAPP-WLAN-MIB: cLWlanMdnsMode
 - CISCO-LWAPP-AP-MIB.my: cLApDot11IfRptncPresent, cLApDot11IfDartPresent
- If you are upgrading from Cisco IOS XE Gibraltar 16.11.x or an earlier release, ensure that you unconfigure the *advipservices* boot-level licenses on both the active and standby controllers using the **no license boot level advipservices** command before the upgrade. Note that the **license boot level advipservices** command is not available in Cisco IOS XE Gibraltar 16.12.1s and 16.12.2s.
- The Cisco Catalyst 9800 Series Wireless Controller has a service port that is referred to as *GigabitEthernet 0* port.

The following protocols and features are supported through this port:

- Cisco Catalyst Center
- Cisco Smart Software Manager
- Cisco Prime Infrastructure
- Telnet
- Controller GUI
- DNS
- File transfer
- GNMI
- HTTP
- HTTPS
- LDAP
- Licensing for Smart Licensing feature to communicate with CSSM
- Netconf
- NetFlow
- NTP
- RADIUS (including CoA)
- Restconf
- SNMP
- SSH
- SYSLOG
- TACACS+

- During device upgrade using GUI, if a switchover occurs, the session expires and the upgrade process gets terminated. As a result, the GUI cannot display the upgrade state or status.
- From Cisco IOS XE Bengaluru 17.4.1 onwards, the telemetry solution provides a name for the receiver address instead of the IP address for telemetry data. This is an additional option. During the controller downgrade and subsequent upgrade, there is likely to be an issue—the upgrade version uses the newly named receivers, and these are not recognized in the downgrade. The new configuration gets rejected and fails in the subsequent upgrade. Configuration loss can be avoided when the upgrade or downgrade is performed from Cisco Catalyst Center.
- From Cisco IOS XE Bengaluru 17.4.1 onwards, session timeout under the policy profile is supported.
- Communication between Cisco Catalyst 9800 Series Wireless Controller and Cisco Prime Infrastructure uses different ports:
 - All the configurations and templates available in Cisco Prime Infrastructure are pushed through SNMP and CLI, using UDP port 161.
 - Operational data for controller is obtained over SNMP, using UDP port 162.
 - AP and client operational data leverage streaming telemetry:
 - Cisco Prime Infrastructure to controller: TCP port 830 is used by Cisco Prime Infrastructure to push the telemetry configuration to the controller (using NETCONF).
 - Controller to Cisco Prime Infrastructure: TCP port 20828 is used for Cisco IOS XE 16.10.x and 16.11.x, and TCP port 20830 is used for Cisco IOS XE 16.12.x, 17.1.x and later releases.
- The Cisco Centralized Key Management (CCKM) feature is deprecated from Cisco IOS XE Dublin 17.10.x.
- To migrate public IP address from 16.12.x to 17.x, ensure that you configure the **service internal** command. If you do not configure the **service internal** command, the IP address does not get carried forward.
- RLAN support with Virtual Routing and Forwarding (VRF) is not available.
- When you encounter the SNMP error *SNMP_ERRORSTATUS_NOACCESS 6*, it means that the specified SNMP variable is not accessible.
- We recommend that you perform a controller reload whenever there is a change in the controller's clock time to reflect an earlier time.



Note The DTLS version (DTLSv1.0) is deprecated for Cisco Aironet 1800 based on latest security policies. Therefore, any new out-of-box deployments of Cisco Aironet 1800 APs will fail to join the controller and you will get the following error message:

```
%APMGR_TRACE_MESSAGE-3-WLC_GEN_ERR: Chassis 1 R0/2: wncd: Error in AP Join, AP <AP-name>,
mac:<MAC-address>Model AIR-AP1815W-D-K9, AP negotiated unexpected DTLS version v1.0
```

To onboard new Cisco Aironet 1800 APs and to establish a CAPWAP connection, explicitly set the DTLS version to 1.0 in the controller using the following configuration:

```
config terminal
ap dtls-version dtls_1_0
end
```

Note that setting the DTLS version to 1.0 affects all the existing AP CAPWAP connections. We recommend that you apply the configuration only during a maintenance window. After the APs download the new image and join the controller, ensure that you remove the configuration.

To upgrade the field programmable hardware devices for Cisco Catalyst 9800 Series Wireless Controllers, see [Upgrading Field Programmable Hardware Devices for Cisco Catalyst 9800 Series Wireless Controllers](#).



Important Before you begin a downgrade process, you must manually remove the configurations which are applicable in the current version but not in older version. Otherwise, you might encounter an unexpected behavior.

- When you downgrade an AP from a higher version to Cisco IOS XE Amsterdam 17.3.x, the AP will not be accessible through SSH or the console due to the denial of the **enable** password, when the AP has not yet joined a controller. If the AP joins a controller, then the AP becomes accessible without any password denial.

Upgrade Path to Cisco IOS XE Dublin 17.12.x

Table 11: Upgrade Path to Cisco IOS XE Dublin 17.12.x

Current Software	Upgrade Path for Deployments with 9130 or 9124	Upgrade Path for Deployments Without 9130 or 9124
16.10.x	— ⁴	Upgrade first to 16.12.5 or 17.3.x and then to 17.12.x.
16.11.x	—	Upgrade first to 16.12.5 or 17.3.x and then to 17.12.x.
16.12.x	Upgrade first to 17.3.5 or later or 17.6.x or later, and then to 17.12.x.	Upgrade first to 17.3.5 or later or 17.6.x or later, and then to 17.12.x.
17.1.x	Upgrade first to 17.3.5 or later and then to 17.12.x.	Upgrade first to 17.3.5 or later and then to 17.12.x.

Current Software	Upgrade Path for Deployments with 9130 or 9124	Upgrade Path for Deployments Without 9130 or 9124
17.2.x	Upgrade first to 17.3.5 or later and then to 17.12.x.	Upgrade first to 17.3.5 or later and then to 17.12.x.
17.3.1 to 17.3.4	Upgrade first to 17.3.5 or later or 17.6.x or later, and then to 17.12.x.	Upgrade directly to 17.12.x.
17.3.4c or later	Upgrade directly to 17.12.x.	Upgrade directly to 17.12.x.
17.4.x	Upgrade first to 17.6.x and then to 17.12.x.	Upgrade directly to 17.12.x.
17.5.x	Upgrade first to 17.6.x and then to 17.12.x.	Upgrade directly to 17.12.x.
17.6.x	Upgrade directly to 17.12.x.	Upgrade directly to 17.12.x.
17.7.x	Upgrade directly to 17.12.x.	Upgrade directly to 17.12.x.
17.8.x	Upgrade directly to 17.12.x.	Upgrade directly to 17.12.x.
17.9.x	Upgrade directly to 17.12.x	Upgrade directly to 17.12.x
17.10.x	Upgrade directly to 17.12.x	Upgrade directly to 17.12.x
17.11.x	Upgrade directly to 17.12.x	Upgrade directly to 17.12.x
8.9.x or any 8.10.x version prior to 8.10.171.0	Upgrade first to 8.10.171.0 or later, 17.3.5 or later, or 17.6.x or later, and then to 17.12.x	Upgrade directly to 17.12.x.
8.10.171.0 and above	Upgrade directly to 17.12.x	Upgrade directly to 17.12.x.

⁴ The Cisco Catalyst 9130 and 9124 APs are not supported in 16.10.x and 16.11.x releases.

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 in 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 the 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.

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 Dublin 17.12.x
- **Image Names (9800-80, 9800-40, and 9800-L):**
 - C9800-80-universalk9_wlc.17.12.x.SPA.bin
 - C9800-40-universalk9_wlc.17.12.x.SPA.bin
 - C9800-L-universalk9_wlc.17.12.x.SPA.bin
- **Image Names (9800-CL):**
 - **Cloud:** C9800-CL-universalk9.17.12.x.SPA.bin
 - **Hyper-V/ESXi/KVM:** C9800-CL-universalk9.17.12.x.iso, C9800-CL-universalk9.17.12.x.ova
 - **KVM:** C9800-CL-universalk9.17.12.x.qcow2
 - **NFVIS:** C9800-CL-universalk9.17.12.x.tar.gz

Software Installation Commands

Cisco IOS XE Dublin 17.12.x	
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

The Smart Licensing Using Policy feature is automatically enabled on the controller. This is also the case when you upgrade to this release. By default, your Smart Account and Virtual Account in Cisco Smart Software Manager (CSSM) are enabled for Smart Licensing Using Policy. For more information, see the "Smart Licensing Using Policy" chapter in the *Cisco Catalyst 9800 Series Wireless Controller Software Configuration Guide*.

For a more detailed overview on Cisco Licensing, see [cisco.com/go/licensingguide](https://www.cisco.com/go/licensingguide).

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 12: Test Configuration for Interoperability

Hardware or Software Parameter	Hardware or Software Type
Release	Cisco IOS XE Dublin 17.12.x
Cisco Wireless Controller	See Supported Hardware, on page 16 .
Access Points	See Supported APs, on page 23 .
Radio	<ul style="list-style-type: none"> • 802.11ax • 802.11ac • 802.11a • 802.11g • 802.11n • 802.11ax in 6GHz (Wi-Fi 6E)
Security	Open, PSK (WPA2-AES), 802.1X (WPA2-AES) (EAP-FAST, EAP-TLS) WPA3 AKM 802.11ax
RADIUS	See Compatibility Matrix, on page 24 .
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 13: Client Types

Client Type and Name	Driver or Software Version
Laptops	
Acer Aspire E 15 E5-573-3870 (Qualcomm Atheros QCA9377)	Windows 10 Pro (12.0.0.832)
Apple Macbook Air 11 inch	macOS Sierra 10.12.6
Apple Macbook Air 13 inch	macOS High Sierra 10.13.4
Macbook Pro Retina	macOS Catalina
Macbook Pro Retina 13 inch early 2015	macOS Mojave 10.14.3
Macbook Pro OS X	macOS X 10.8.5
Macbook Air	macOS Sierra v10.12.2
Macbook Air 11 inch	macOS Yosemite 10.10.5
MacBook M1 Chip	macOS Catalina
MacBook M1 Chip	macOS Ventura 13.2.1
MacBook Pro M2 Chip	macOS Ventura 13.3 beta
MacBook Pro M2 Chip	macOS Ventura 13.1
MacBook Pro M2 Chip (6Ghz Supported client)	macOS Sonoma 14.0
Dell Inspiron 2020 Chromebook	Chrome OS 75.0.3770.129
Google Pixelbook Go	Chrome OS 97.0.4692.27
HP chromebook 11a	Chrome OS 76.0.3809.136
Samsung Chromebook 4+	Chrome OS 77.0.3865.105
Dell Latitude (Intel AX210)	Windows 11 (22.110.x.x)
Dell Latitude 3480 (Qualcomm DELL wireless 1820)	Win 10 Pro (12.0.0.242)
Dell Inspiron 15-7569 (Intel Dual Band Wireless-AC 3165)	Windows 10 Home (21.40.0)
Dell Latitude E5540 (Intel Dual Band Wireless AC7260)	Windows 7 Professional (21.10.1)
Dell Latitude E5430 (Intel Centrino Advanced-N 6205)	Windows 7 Professional (15.18.0.1)
Dell Latitude E6840 (Broadcom Dell Wireless 1540 802.11 a/g/n)	Windows 7 Professional (6.30.223.215)
Dell XPS 12 v9250 (Intel Dual Band Wireless AC 8260)	Windows 10 Home (21.40.0)
Dell Latitude 5491 (Intel AX200)	Windows 10 Pro (21.20.1.1)

Client Type and Name	Driver or Software Version
Dell XPS Latitude12 9250 (Intel Dual Band Wireless AC 8260)	Windows 10 Home
Dell Inspiron 13-5368 Signature Edition	Windows 10 Home (18.40.0.12)
FUJITSU Lifebook E556 Intel 8260 (Intel Dual Band Wireless-AC 8260 (802.11n))	Windows 8 (19.50.1.6)
Lenovo Yoga C630 Snapdragon 850 (Qualcomm AC 2x2 Svc)	Windows 10 Home
Lenovo Thinkpad Yoga 460 (Intel Dual Band Wireless-AC 9260)	Windows 10 Pro (21.40.0)
Webex Room Bar Pro	RoomOS 11.5.2.4
Note For clients using Intel wireless cards, we recommend that you to update to the latest Intel wireless drivers if the advertised SSIDs are not visible.	
Tablets	
Apple iPad Pro (12 inch) 6th Gen	iOS 17 (beta)
Apple iPad Pro (12.9 inch) 6th Gen	iOS 16.4
Apple iPad Pro (11 inch) 4th Gen	iOS 16.4
Apple iPad 2021	iOS 15.0
Apple iPad 7the Gen 2019	iOS 14.0
Apple iPad MD328LL/A	iOS 9.3.5
Apple iPad 2 MC979LL/A	iOS 11.4.1
Apple iPad Air MD785LL/A	iOS 11.4.1
Apple iPad Air 11 4th Gen	iOS 16.4
Apple iPad Air2 MGLW2LL/A	iOS 10.2.1
Apple iPad Mini 4 9.0.1 MK872LL/A	iOS 11.4.1
Apple iPad Mini 2 ME279LL/A	iOS 11.4.1
Apple iPad Mini 4 9.0.1 MK872LL/A	iOS 11.4.1
Microsoft Surface Pro 3 13 inch (Intel AX201)	Windows 10 (21.40.1.3)
Microsoft Surface Pro 3 15 inch (Qualcomm Atheros QCA61x4A)	Windows 10
Microsoft Surface Pro 7 (Intel AX201)	Windows 10
Microsoft Surface Pro 6 (Marvell Wi-Fi chipset 11ac)	Windows 10
Microsoft Surface Pro X (WCN3998 Wi-Fi Chip)	Windows
Mobile Phones	

Client Type and Name	Driver or Software Version
Apple iPhone 5	iOS 12.4.1
Apple iPhone 6s	iOS 13.5
Apple iPhone 7 MN8J2LL/A	iOS 11.2.5
Apple iPhone 8	iOS 13.5
Apple iPhone 8 Plus	iOS 14.1
Apple iPhone 8 Plus MQ8D2LL/A	iOS 12.4.1
Apple iPhone X MQA52LL/A	iOS 13.1
Apple iPhone 11	iOS 15.1
Apple iPhone 12	iOS 16.0
Apple iPhone 12 Pro	iOS 15.1
Apple iPhone 13	iOS 15.1
Apple iPhone 13 Mini	iOS 15.1
Apple iPhone 13 Pro	iOS 15.1
Apple iPhone 14 Pro	iOS 17 (beta)
Apple iPhone 14	iOS 16.6
Apple iPhone SE MLY12LL/A	iOS 11.3
Apple iPhone SE	iOS 15.1
ASCOM i63	Build v 3.0.0
ASCOM Myco 3	Android 9
Cisco IP Phone 8821	11.0.6 SR4
Cisco CP-840S	Android 10 (Version 16.0.34190)
Cisco CP-860S	Android 10 (Version 16.0.34190)
Drager Delta	VG9.0.2
Drager M300.3	VG3.0
Drager M300.4	VG3.0
Drager M540	VG4.2
Google Pixel 3a	Android 11
Google Pixel 4	Android 11
Google Pixel 5	Android 11
Google Pixel 6	Android 12
Google Pixel 7	Android 13

Client Type and Name	Driver or Software Version
Huawei Mate 20 pro	Android 9.0
Huawei P20 Pro	Android 10
Huawei P40	Android 10
LG v40 ThinQ	Android 9.0
One Plus 8	Android 11
Oppo Find X2	Android 10
Redmi K20 Pro	Android 10
Samsung Galaxy S9+ - G965U1	Android 10.0
Samsung Galaxy S10 Plus	Android 11.0
Samsung S10 (SM-G973U1)	Android 11.0
Samsung S10e (SM-G970U1)	Android 11.0
Samsung Galaxy S20 Ultra	Android 10.0
Samsung Galaxy S21 Ultra 5G	Android 13.0
Samsung Galaxy S22 Ultra	Android 13.0
Samsung Fold 2	Android 10.0
Samsung Galaxy Z Fold 3	Android 13.0
Samsung Note20	Android 12.0
Samsung G Note 10 Plus	Android 11.0
Samsung Galaxy A01	Android 11.0
Samsung Galaxy A21	Android 10.0
Sony Xperia 1 ii	Android 11
Sony Xperia	Android 11
Xiaomi Mi 9T	Android 9
Xiaomi Mi 10	Android 11
Spectralink 84 Series	7.5.0.x257
Spectralink 87 Series	Android 5.1.1
Spectralink Versity Phones 92/95/96 Series	Android 10.0
Spectralink Versity Phones 9540 Series	Android 8.1.0
Vocera Badges B3000n	4.3.3.18

Client Type and Name	Driver or Software Version
Vocera Smart Badges V5000	5.0.6.35
Zebra MC40	Android 4.4.4
Zebra MC40N0	Android 4.1.1
Zebra MC92N0	Android 4.4.4
Zebra MC9090	Windows Mobile 6.1
Zebra MC55A	Windows 6.5
Zebra MC75A	OEM ver 02.37.0001
Zebra TC51	Android 6.0.1
Zebra TC52	Android 10.0
Zebra TC53	Android 11.0
Zebra TC55	Android 8.1.0
Zebra TC57	Android 10.0
Zebra TC58	Android 11.0
Zebra TC70	Android 6.1
Zebra TC75	Android 10.0
Zebra TC520K	Android 10.0
Zebra TC8000	Android 4.4.3
Printers	
Zebra QLn320 Mobile Printer	LINK OS 5.2
Zebra ZT230 IndustrialPrinter	LINK OS 6.4
Zebra ZQ310 Mobile Printer	LINK OS 6.4
Zebra ZD410 Industrial Printer	LINK OS 6.4
Zebra ZT410 Desktop Printer	LINK OS 6.2
Zebra ZQ610 Industrial Printer	LINK OS 6.4
Zebra ZQ620 Mobile Printer	LINK OS 6.4
Wireless Module	
Intel AX 411	Driver v22.230.0.8
Intel AX 211	Driver v22.230.0.8, v22.190.0.4
Intel AX 210	Driver v22.230.0.8, v22.190.0.4, v22.170.2.1
Intel AX 200	Driver v22.130.0.5
Intel 11AC	Driver v22.30.0.11

Client Type and Name	Driver or Software Version
Intel AC 9260	Driver v21.40.0
Intel Dual Band Wireless AC 8260	Driver v19.50.1.6
Samsung S21 Ultra	Driver v20.80.80
QCA WCN6855	Driver v1.0.0.901
PhoenixContact FL WLAN 2010	Firmware version: 2.71

Issues

Issues describe unexpected behavior in Cisco IOS releases in a product. Issues 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 contain 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 an issue, click the corresponding identifier.

Open Caveats for Cisco IOS XE Dublin 17.12.4

Identifier	Headline
CSCwk14917	Controller unexpectedly reloads due to unresponsiveness
CSCwj39057	Cisco Catalyst 9130 AP observes traffic loss and delay due to channel utilization and interference
CSCwk03445	AP experiences slowness on 6-GHz band
CSCwj42305	Client is unable to connect due to delete reason NACK_IFID_EXISTS
CSCwk05809	CPUHOG traceback messages observed in Cisco IOS XE Dublin 17.12.2
CSCwj80614	Clients are unable to connect due to assignment of IP address that is in use by stale client entry in device-tracking database in FlexConnect local switching
CSCwj89538	Cisco Aironet 2802 Series AP unable to send reassociation and association requests
CSCwj99712	Controller unable to load broadcast counters under interface

Identifier	Headline
CSCwk21570	Clients on FlexConnect are unable to pass traffic if rate-limiting AVP is missing
CSCwk07132	FlexConnect local switching client rate-limit pushed by AAA is applied per stream and not per client in Cisco IOS XE Dublin 17.12.3
CSCwi04855	AP repeatedly joins and disjoins controller with traceback
CSCwj83526	AP becomes non-operational when connected to Cisco Catalyst 9300 Switch via mGig port
CSCwh63050	Controller sends IGMP queries without IP address and MAC address on Cisco IOS XE Cupertino 17.9.3
CSCwj30587	CAPWAP messaging causes memory leak in WNCd
CSCwj93876	Controller reloads with reason "Critical process wncmgrd fault on rp_0_0 (rc=134)\"
CSCwk32111	Controller generates -1 days messages even when registered using Air Gapped licensing
CSCwk17102	Missing M1 packet causes unexpected client disconnect and inability to reconnect with the controller
CSCwi42059	AP unable to join controller due to stale entries in Cisco IOS XE Cupertino 17.9.4
CSCwj77042	Kernel panic is observed at "pc : splitmac_api_add_client+0x68/0x498 [umac]"
CSCwk58876	802.11AX APs end abnormally or fail to respond to AUTH frames
CSCwk79990	C9800-L-C ends abnormally due to IntelResetRequest

Open Caveats for Cisco IOS XE Dublin 17.12.3

Identifier	Headline
CSCwi99296	Cisco Catalyst 9120 AP encounters multiple kernel unresponsiveness accompanied by AP disconnection from the controller.
CSCwi40659	Clients in the same Remote LAN (RLAN) of different OEAPs cannot communicate with each other.
CSCwj03495	Cisco Aironet 1562 as Mesh AP (MAP) recognizes Cisco Catalyst 9124 Root AP (RAP) as a parent and completes authentication, but fails in the CAPWAP join because Mesh Adjacent messages are undetected by the RAP.
CSCwj05365	Cisco Catalyst 9115 AP encounters a kernel unresponsiveness.
CSCwh63050	Controller sends Internet Group Management Protocol (IGMP) queries without the controller's Internet Protocol (IP) address and Media Access Control (MAC) address.
CSCwi16509	Cisco Aironet 3802 AP disjoins with the error "Invalid radio slot id" and does not reconnect to the controller.

Identifier	Headline
CSCwh52553	Cisco Catalyst 9105 AP encounters high utilization and performance issues due to high Multicast Domain Name System (mDNS) traffic.
CSCwj01916	Cisco Catalyst 9162 APs in FlexConnect mode frequently disconnect from the controller.
CSCvy50798	Cisco Catalyst 9124 AP is not visible in the controller's WebUI even after it is registered.
CSCwj08379	Controller becomes nonoperational when rogue Network-Assurance is enabled.
CSCwi04855	Cisco Catalyst 9115 APs join and disjoin the controller repeatedly with traceback.
CSCwi96176	Cisco Catalyst 9130 and 9166 APs connected to the controller show high channel utilization with one single client connected.
CSCwi91590	Cisco Catalyst 9130 and 9136 APs encounter kernel unresponsiveness due to a free Socket Buffer (skb).
CSCwi95945	Cisco Catalyst 9130 APs stop forwarding router advertisements after 4-6 hours of operation.
CSCwi99437	Clients fail to connect when BSSID is broadcast by Cisco Aironet 1850 APs, but succeed in connecting in the same scenario if it is Cisco Aironet 3800 AP.
CSCwi54064	APs connected to the same controller classify each other as rogue and generate an "AP Impersonation" threat warning.
CSCwj00434	A Cisco Catalyst 2800 AP in Workgroup Bridge (WGB) mode gets stuck after a Dynamic Frequency Channel (DFS) channel change occurs on the controller with CleanAir enabled.
CSCwi56780	Mac Authentication Bypass (MAB) is not initiated unless the client device is deauthenticated.
CSCwi69696	Cisco Aironet 1815 AP encounters random drops in traffic towards wireless clients during normal AP operation.
CSCwj04146	Cisco Aironet 4800 AP does not send traffic over the air when using the 802.1X WLAN.
CSCwi96508	Cisco Wave 2 APs allowing SKC roam cause client deletion with the reason as INVALID_PMKID.
CSCwj32623	Standard power AP is operating on low power in a high density Wi-Fi network.

Open Caveats for Cisco IOS XE Dublin 17.12.2

Caveat ID	Description
CSCwf29762	Controller system not responsive due to null check in mDNS.

Caveat ID	Description
CSCwf93063	Intel Wi-Fi 6E AX210 client connection unresponsive after a few minutes of traffic with 1815 AP.
CSCwh18613	The encrypted pre-shared key of a wireless mesh network changes when the password encryption aes command is run.
CSCwh20239	Cisco Catalyst 9105 AP experiences WCPd restart when generating core.
CSCwh56147	SNMP OID for AP location tag is missing on the controller.
CSCwh58099	The controller allows the clients to reconnect only after client deletion and CoA termination.
CSCwh59543	Radio FW_1 and CAPWAPd unresponsive during scale longevitiy.
CSCwh63050	The controller is sending Internet Group Management Protocol (IGMP) queries with a non-IP address using MAC address in range of controller MAC addresses.
CSCwh67349	Cisco Aironet 3800 Series AP continuously unresponsive in CAPWAPd.
CSCwh68219	Clients are failing to authenticate via 802.1X using Extensible Authentication Protocol-Transport Layer Security Authentication (EAP-TLS).
CSCwh80060	Cisco 802.11ax APs connected to the controller are losing the Flex WLAN-VLAN mapping.
CSCwh92459	Controller unresponsive due to process WNCd fault on rp_0_0
CSCwh88100	Cisco Aironet 3800 Series AP : Kernel panic with PC at skb_unlink+0x40/0x54
CSCwh92425	Cisco Catalyst 9136 Series AP does not process power save mode in the 2.4-GHz band.
CSCwe93421	Cisco Catalyst 9115 Series Wi-Fi 6 APs intermittently stops transmitting multicast traffic downstream.
CSCwh29442	Cisco Catalyst 9800-40 Wireless Controller unresponsive after In-Service Software Upgrade (ISSU) upgrade.
CSCwh46368	Cisco Catalyst 9800-40 Wireless Controller device tracking binds BSSID MAC to wired IP address causing reachability issues.
CSCwh49467	AP is leaking multicast traffic to wrong Basic service set identifiers (BSSID).
CSCwh49810	Client loses network access after inter-WNCd roaming.
CSCwh62342	AP does not respond to the query even when the service provider is on its Multicast Domain Name System (mDNS) cache table.
CSCwh67342	Cisco Catalyst 9130AX Series AP is not able to join when Controller-Based Application Recognition (CBAR) is enabled on the controller.
CSCwh68948	Client is not able to get an IP address over fiber link in Cisco Aironet 1562 AP in FlexConnect local switching mode + local DHCP.

Caveat ID	Description
CSCwh74415	APs are not working in per client rate limit with FlexConnect local switching.
CSCwh75431	Cisco Aironet 1800 Series APs reporting false high channel utilization causing performance issues across the 5-GHz band.
CSCwh82580	Cisco Catalyst 9120AX Series unresponsive when Cisco Prime Infrastructure turns off 1 SSID via the Schedule SSID availability feature.
CSCwh89539	CAPWAP messages are queued for longer than x seconds with client throttling being turned on.
CSCwh60483	Cisco Catalyst 9136 Series AP shows abnormal temperature readings.
CSCwh49406	Cisco Catalyst 9130AX Series AP are spamming the syslog controllers with thousands of logs per second.
CSCwh95315	Cisco Catalyst IW9167 Heavy Duty Series AP is changing its backhaul upon reload.
CSCwh67285	Controller reboots and causes a switchover in High Availability environments.
CSCwh68360	Cisco Catalyst 9120AX Series: Kernel panic due to wlc_key_set_data.
CSCwh63270	Cisco Catalyst 9130AX Series APs unresponsive due to radio failure.
CSCwh87903	Cisco Catalyst 9120AX Series AP sending authentication response failure for specific client MAC addresses due to suppressed by MAC filter.
CSCwh81332	When the controller upgrades to 17.6.6, most of the connected APs gets unresponsive.

Open Caveats for Cisco IOS XE Dublin 17.12.1

From this release, the list of caveats is displayed using BST tool. When you click the BST link, it opens a separate window and lists the bugs sorted by severity. You can filter it further using the options in the tool.

Click on the following link to view the Open Caveats: [BST Link](#)

Resolved Caveats for Cisco IOS XE Dublin 17.12.4

Identifier	Headline
CSCwj93153	Controller becomes unresponsive during WNCd process
CSCwk05030	Controller observes unresponsiveness due to critical software exception
CSCwk07124	802.1X timeout value is set to 0 by default when configuring RLAN through GUI
CSCwj98534	Cisco Catalyst 9115 APs intermittently stop transmitting multicast traffic downstream
CSCwh95938	Cisco Catalyst 9105 AP encounters a radio crash during longevity test because of Single Client Bridge (SCB) mismatch

Identifier	Headline
CSCwj08367	Cisco Catalyst 9800 Wireless Controller generates system report with crash information, segmentation fault - Process = IGMPSN
CSCwj48018	Cisco Catalyst 9105 AP encounters kernel unresponsiveness when PC is at wlc_ampdu_dotxstatus+0x5c/0x5cc
CSCwj79545	Controller unexpectedly reboots during WNCd process due to assertion failure with invalid BSSID
CSCwj67158	Controller does not send mobile address to AP if the CoA is received when the user is in the ip_learn state.
CSCwj86938	Memory leak in scale network with telemetry shared user events with Cisco Catalyst Center
CSCwi72191	VLAN change on the AP port results in unsuccessful update of IPv6 routes on Wave 2 AP
CSCwj42408	Controller posture flow does not work when PMF is optional
CSCwj25110	Controller reports incorrect values during SNMP polling
CSCwi92913	Cisco Catalyst 9105 and 9115 APs show false radar detection
CSCwj34753	Mesh AP (MAP) reports client unicast traffic when the destination is on the same wired port
CSCwi88967	Cisco Catalyst 9120 APs disconnect due to Port Status Monitor (PSM) microcode watchdog CS0001233933
CSCwj01916	Cisco Catalyst 9162 APs in FlexConnect mode frequently disconnect from the controller
CSCwj49502	Cisco Catalyst 9115 AP becomes unresponsive due to Capwapd process crash
CSCwi01382	5-GHz and 2.4-GHz radios remain non-operational down in an AP
CSCwj60910	Controller and PI report observe RRM message mismatch
CSCwe93421	Cisco Catalyst 9115 Series Wi-Fi 6 APs intermittently stop transmitting multicast traffic downstream
CSCwi76476	Cisco Wave 1 APs WGB sends Address Resolution Protocol (ARP) broadcast request as IPv4 multicast to passive clients
CSCwi96176	Cisco Catalyst 9130 and 9166 APs connected to the controller show high channel utilization with one single client connected
CSCwj10697	Cisco Catalyst 9124AX AP experiences image upgrade failure
CSCwj38728	Cisco Catalyst 9130 AP syslog timestamps do not match the AP's internal clock
CSCwi99566	Cisco Catalyst 9124AXI-E AP becomes unresponsive due to channel 36 not being supported in the Jordan regulatory domain

Identifier	Headline
CSCwj72370	Controller uses incorrect username for "show platform" command when logging in GUI
CSCwj96666	Syntax errors observed in LWAPP client
CSCwj42847	Cisco Catalyst 9120 AP encounters kernel unresponsiveness on Power Supply Module (PSM) watchdog CS00012342194
CSCwi99296	Cisco Catalyst 9120 AP encounters kernel unresponsiveness with the PC due to wlc_bmac_suspend_mac_and_wait
CSCwj55168	Multiple Cisco Catalyst 9130 APs encounter kernel unresponsiveness
CSCwi95945	Cisco Catalyst 9130 APs stop forwarding router advertisements after 4-6 hours of operation
CSCwi64010	Controller accepts configuration of a reserved IPv6 multicast address as a mobility IPv6 address
CSCwj34916	Cisco Wave 2 APs in FlexConnect mode are unable to execute Secure Agile Exchange (SAE) Hash-to-element (H2E) IE authentication, stopping beacon/probe responses that cause M3 mismatch
CSCwi56780	Mac Authentication Bypass (MAB) is not initiated unless the client device is deauthenticated
CSCwe11889	Authenticated APs only support Extensible Authentication Protocol-Transport Layer Security (EAP-TLS) certificate renewal once the certificate's validity has expired
CSCwj19805	Cisco Catalyst 9130AX AP BLE 2.7.22 reports chip sync issue during firmware upgrade and 0dBm TxPower
CSCwj96620	Syntax errors observed in LWAPP
CSCwh82872	Cisco Catalyst 9115AXI-S AP association request dropped on the Cisco Catalyst 9800-80 Wireless Controller
CSCwi92439	Cisco Aironet 1815 APs report high channel utilization in the 5-Ghz band
CSCwj06987	APs dissociate from the controller and stop functioning
CSCwj20953	Cisco Catalyst 9130AX APs in FlexConnect mode encounter kernel unresponsiveness
CSCwj66429	Cisco Catalyst 9115 AP encounters kernel unresponsiveness
CSCwj94201	Controller experiences unresponsiveness CPUHOG
CSCwk02633	RSA key pair is configured in the TrustPoint configuration when EC keypair is selected while creating a trustpoint on the controller
CSCwj82898	Controller is unable to onboard on Cisco Spaces
CSCwj69755	Controller WebUI is not updating configuration port parameters

Identifier	Headline
CSCwi54064	APs connected to the same controller classify each other as rogue and generate an "AP Impersonation" threat warning
CSCwj26848	Cisco Wave 2 APs do not check DELETE_VAP_PAYLOAD CAPWAP payload sanity before deleting blindly
CSCwj76892	Controller configures aggregation scheduler parameter incorrectly, causing low downlink speed
CSCwj82679	Power Policy status shows "Not Applied" since the client has not been disconnected after the calendar period ends on the 6G radio
CSCwi27380	Media stream feature does not work
CSCwj15376	Cisco NMSP runs into security protocol issues
CSCwi96508	Cisco Wave 2 APs allowing SKC roam cause client deletion with the reason as INVALID_PMKID
CSCwj40202	Controller does not send RADIUS accounting messages WLAN with PSK/MAB authentication
CSCwj33376	Incorrect selection of APs in load balancing
CSCwi81972	Cisco Wave 2 APs do not check DELETE_VAP_PAYLOAD CAPWAP payload sanity before deleting blindly
CSCwj04904	Cisco Catalyst 9300LM switch is not compatible with Cisco Aironet 1815 AP when the switch is connected to a port with Cisco Unified IP Phone 7945G
CSCwj26196	Controller running the IOS XE software encounters an unexpected reset while trying to validate the MAC address with the EWLC_APP_INFRA_ID_MAGIC
CSCwi96089	Cisco Wave 2 APs do not plumb keys after session timeout reauthentication
CSCwj36962	Controller reboots unexpectedly due to invalid QoS parameters
CSCwj97748	Cisco Catalyst 9130 AP encounters kernel unresponsiveness with PC at _raw_spin_lock/LR wlan_objmgr_peer_try_get_ref
CSCwj85005	Locally Significant Certificates (LSC) provisioning fails depending on Subject Name Parameters values in the controller
CSCwj31356	Cisco Catalyst 9800 Wireless Controller reboots due to Radio Resource Management (RRM) process fault on rp_0_0 (rc=139)
CSCwj34379	Controller encounters unresponsiveness when accessing crimson database
CSCwj34460	Cisco Catalyst 9120 AP encounters kernel unresponsiveness when PC is at wlc_txhinfo2bandunit
CSCwj93906	Cisco Catalyst 9120 AXI AP sends Msg:2 in mode:2 alerting beacon parameter failure

Identifier	Headline
CSCwj77128	URL filter allows only letters as the first character
CSCwj09698	Cisco Catalyst 9800 Wireless Controller encounters an unexpected reset in wncmgrd with a scaled setup while being managed by the Meraki Dashboard
CSCwj93744	Cisco Catalyst 9136 AP encounters Slot 1 radio unresponsiveness with error - Radio recovered from internal failure
CSCwk62269	Click-AP assessment for OpenSSH regreSSHion vulnerability.
CSCwi93213	Controller is marked as AAA Server Down after switchover when using key 6 password encryption.

Resolved Caveats for Cisco IOS XE Dublin 17.12.3

Identifier	Headline
CSCwf49289	The controller does not have its Secure Unique Device Identifier (SUDI) certificates initialized upon new APP registration.
CSCwh59543	Cisco Catalyst 9120 AP encounters a Radio FW_1 unresponsiveness and Capwapd unresponsiveness during scale longevity.
CSCwh88320	Controller reports false jammer alerts.
CSCwf79175	Pairwise Master Key Identification (PMKID) mismatch between FlexConnect central authentication Wave 2 AP and controller for 802.11X-SHA256 on roaming clients.
CSCwi35946	Cisco Catalyst 9120 AP encounters a kernel unresponsiveness.
CSCwi67013	Cisco Aironet 2800 APs running on the Taiwan domain are unable to send Wi-Fi signals on channels 52, 120, 124 and 128.
CSCwh09642	IP theft was observed due to the zone ID being 0x00000000 after the In Service Software Upgrade (ISSU) process.
CSCwh61007	Controller frequently becomes nonoperational when provisioning multiple APs.
CSCwh14232	Controllers do not send Logical Link Control (LLC) / XID spoofed frames following a mobility event.
CSCwi08442	APs are unable to join when Controller-Based Application Recognition (CBAR) is enabled on the controller.
CSCwi22270	Cisco Catalyst 9120 AP encounters a radio unresponsiveness during longevity run.
CSCwi69042	Cisco Aironet 1562 Mesh AP (MAP) is unable to join the network through the Root AP (RAP) using the Extensible Authentication Protocol (EAP) and the Flex+Bridge site tag.
CSCwf78066	Catalyst Center heat map displays the message "No radios in the selected band" for APs managed by the controller.

Identifier	Headline
CSCwh68768	Controller in the public cloud fails to create a FlexConnect WLAN using Basic Wireless Setup.
CSCwh63270	Cisco Catalyst 9130AXI APs joined to controller frequently become nonoperational due to radio failure.
CSCwf84639	Cisco Catalyst 9120 AP Dual Band (XOR) radio mode is not updated in the radio_oper_data database.
CSCwi07094	Apple Client cannot connect to the FlexConnect WPA2+WPA3 SSID when Secure Agile Exchange (SAE) is enabled and Opportunistic Key Caching (OKC) is disabled.
CSCwh91254	PHY High Txpower issue on Broadcom (BCM) APs causes increased coverage and clients are unable to authenticate.
CSCwh20334	Controller's Change of Authorization (CoA) server key appears blank in the GUI.
CSCwh49406	Cisco Catalyst 9130 series AP spams syslog controllers with thousands of CleanAir logs per second.
CSCwh95315	Cisco Catalyst IW9167E Heavy Duty AP changes its backhaul upon reload.
CSCwh60483	Cisco Catalyst 9136I AP shows incorrect temperature readings.
CSCwf96138	Roaming issues observed in iPhone SE 3rd generation.
CSCwi34051	The Cisco Aironet 2800 AP randomly encountered FIQ/NMI resets; PC at wl_get_staid_info.
CSCwh81332	Cisco Catalyst 9130 APs encountered kernel unresponsiveness after upgrade to Cisco IOS XE Bengaluru 17.6.6.
CSCwf92100	Embedded Wireless Controller: Preferred active configuration is lost after CAPWAP AP configuration update in WebUI.
CSCwi28174	Layer 3 multicast packets are sent on native VLAN when VLAN ID 1 is selected on policy profile with AAA override.
CSCwh12481	Cisco Catalyst 9130AXI and 9130AXE AP unable to join the controller when only TZ (Tanzania) country code is configured.
CSCwi03442	Cisco Catalyst 9130 APs does not honor unscheduled automatic power save delivery (U-APSD) trigger frame, which causes RTP stream disruption.
CSCwh30078	Cisco Wave 2 AP becomes nonoperational in throughput testing.
CSCwh33056	Policy tag description is blank after deleting WLAN location entries.
CSCwi19481	Cisco Catalyst 9130 AP in FlexConnect mode stops forwarding router advertisements after 4-6 hours of uptime.
CSCwh88100	Cisco Aironet 3800 AP becomes nonoperational due to kernel panic with PC at skb_unlink+0x40/0x54.

Identifier	Headline
CSCwh37783	Controller Lobby Admin page is unable to load.
CSCwf88890	GUI is stuck on loading in Monitoring > Wireless > AP Statistics > General for Cisco Aironet 3800 AP.
CSCwf87281	NULL Timer causes segmentation fault in the controller.
CSCwh74415	Per client rate limit is not working for FlexConnect local switching APs.
CSCwf54827	Uptime in Acct-Session-Time is high after idle timeout.
CSCwh87903	Cisco Catalyst 9120 AP sends authorization response failures for specific MAC addresses due to "suppressed by MAC filter".
CSCwf93747	Controller WebUI does not load policy profile page when large number of WLANs are configured.
CSCwf60519	Client is unable to connect due to invalid PMKID after an 802.11r reauthentication failure.
CSCwi42112	MAC address of wired clients are being learned from the Cisco Catalyst 9124 MAP port.
CSCwi19804	Cisco Catalyst 9105, 9115, 9120 AP radio are misconfigured after AP reload when admin state is down.
CSCwh76420	Controller becomes nonoperational while performing ISSU upgrade.
CSCwh75431	Cisco Aironet 1830, 1850 APs report false utilization affecting performance on 5 GHz.
CSCwi64652	802.11ax APs do not reset Bluetooth Low Energy (BLE) interface after 100 attempts.
CSCwi52692	Cisco Catalyst 9130 AP signals Universal PoE spare pair to turn off Type-Length-Value (TLV) fields in Cisco Discovery Protocol.
CSCwi49666	Cisco Catalyst 9136 AP environmental sensors are reporting incorrect ambient temperature.
CSCwh62342	FlexConnect AP as an mDNS gateway responds incorrectly when Location Specific Services (LSS) filter is enabled in 5GHz-band.
CSCwh31966	Controller becomes nonoperational on WNCd process during database termination.
CSCwh44793	Cisco Catalyst 9130 AP on Cisco IOS XE Amsterdam 17.3.6 fails to join with error to set FT data in BSSID after site-tag is changed on the controller.
CSCwi11038	Cisco Catalyst 9115 OEAP experiences kernel unresponsiveness.
CSCwi35699	Cisco Catalyst 9120 AP detects its own BSSID as malicious after channel resets.
CSCwi06055	Cisco Industrial Wireless 3702 AP radios reset and stay down when board temperature is less than -20° C.
CSCwi05672	Wireless Driver is unable to decrypt ICAP packets in Cisco Catalyst 9130 AP.

Identifier	Headline
CSCwf86242	Controller experiences unexpected reload with CAPWAP window size set to 0.
CSCwi04705	Controller is not sending gARP broadcast announcements on behalf of the client on inter-controller roaming events.
CSCwf75646	Controller MIB update is required to include all coded integer values for cRFStatusLastSwactReasonCode.
CSCwh42002	Controller becomes nonoperational while processing CAPWAP data and generates WNCd core file.
CSCwf90646	Controller sends CAPWAP payload for DOT11R_WLC_MAC_IP_PAYLOAD as two packets with the same sequence number of 2 but there is no information about fragmentation or offset.
CSCwi38791	Cisco Catalyst 1850 AP becomes nonoperational due to kernel panic in Cisco IOS XE Dublin 17.11.

Resolved Caveats for Cisco IOS XE Dublin 17.12.2

This release provides a critical fix for a security vulnerability. See the following table for information.

Caveat ID	Description
CSCwh87343	Cisco IOS XE Software Web UI Privilege Escalation Vulnerability For more information, see Security Advisory: cisco-sa-iosxe-webui-privesc-j22SaA4z .
CSCwf14400	Cisco Catalyst 9166 AP: CAPWAP down/up during Dual Band operation changes between 5 GHz and 6 GHz.
CSCwf60151	Memory leak at kernel level with PUBd process triggering unexpected reloads on the controllers.
CSCwe11213	Cisco Catalyst 9130AX Series AP unresponsive due to radio failure.
CSCwf79458	802.11ax workgroup bridge (WGB) 2.4-GHz radio does not roam with 802.11r enabled.
CSCwh20306	Cisco Catalyst AP hyperlocation breaks when Adaptive Wireless Intrusion Prevention System (wIPS) is enabled.
CSCwf83278	Client traffic unresponsive with N+1 when AP sends CLIENT_DEL_STOP_REASSOC.
CSCwh08532	Differentiated Services Code Point (DSCP) marking on Cisco Catalyst AP for QoS metal policies not happening in slow path and fast path.
CSCwh20301	No telemetry data transfer from controller to Cisco Catalyst Center.
CSCwf53520	Kernel panic unresponsive when Cisco Aironet 1815 Series AP is running version 17.9.2.
CSCwh22038	Functional The Cisco Catalyst 9162 Series AP Radio1 unresponsive on 17.12.1.5

Caveat ID	Description
CSCwh42002	Controller unresponsive with WNCd core while processing CAPWAP data.
CSCwh61011	AP stops processing downstream frames after CAPWAP restart.
CSCwf59348	Beacon set Max Transmit Power Level to 128 dBm in Country IE, which happens in some 5G channels.
CSCwf63818	Cisco Aironet 1830 Series AP running version 17.9.2 is unresponsive due to kernel panic.
CSCwf93992	Cisco Aironet 2800 APs in FlexConnect mode are not processing Extensible Authentication Protocol-Transport Layer Security Authentication (EAP-TLS) fragmented packets if delay is more than 50 ms.
CSCwf99932	Functional Cisco Catalyst 9120 AP Radio unresponsive on ap-17.12.0.116.
CSCwh09879	Clients are not able to connect to FlexConnect APs after country code change.
CSCwh20934	Systemd critical process not working when joining the Cisco Catalyst 9800-CL running 17.9.3
CSCwh54279	Cisco Aironet 1815 Series OEAP running 17.9.4 is unresponsive due to kernel panic.
CSCwh74663	Clients are stuck in authenticating or in IP learn for open SSIDs.
CSCwh81040	Cisco Catalyst 9120 AP in local mode is unresponsive when WGB associates with the SSID profile.
CSCwf87904	The Cisco Catalyst 9164 Series AP unresponsive on [<fffffbffd6524e0>] cisco_wlan_crypto_decap+0x2a8/0x518 [umac](SF06713784)
CSCwh26854	Cisco Catalyst 9166 and 9162 APs adaptive 802.11r roam fails in Apple clients.
CSCwh54762	AP kernel panic due to not syncing.
CSCwf53331	Cisco Catalyst 9124 AP: Kernel panic observed after changing channel on the 5-GHz in Bridge mode.
CSCwf85025	The transmission power in Cisco Catalyst 9166-ROW GB decreases when there is a channel change.
CSCwh06834	Using special characters in the password while generating TP generates an invalid TP.
CSCwh08625	AP is unresponsive due to kernel panic with low PC and LR values.
CSCwh18759	Cisco Aironet 1815 Series AP unresponsive due to system memory running low and kernel panic; not syncing.
CSCwf13804	netlink_socket_receive multicast_group 1 return failure: No buffer space available errors are seen.
CSCwf52815	Cisco AP should improve Path Maximum Transmission Unit (PMTU) to be able to honor the ICMP unreachable MTU value.

Caveat ID	Description
CSCwf62051	Cisco Aironet 1815w AP unresponsive due to kernel panic.
CSCwf90014	Issues with Cisco Intelligent Capture (iCAP) on IPv6 cluster.
CSCwf44321	Interferers on Connected Mobile Experiences won't be displayed, although they are shown on the controller for 2.4 and 5 GHz.
CSCwf61881	AP is randomly moving from US -> UX domain and unable to set it to standard power.
CSCwf86242	Cisco 9800 Wireless Controller unexpectedly reloads with CAPWAP window size set to 0.
CSCwh61007	Controller constantly being unresponsive whenever it provisions multiple APs.
CSCwf29742	Cisco Catalyst 9120 AP: Firmware unresponsive while running multicast & longevity with 80+ clients
CSCwh33190	Cisco Catalyst 9115 Series Wi-Fi 6 AP unresponsive due to kernel panic.
CSCwf07384	Wired client behind Cisco Catalyst 9105 Series RLAN is not able to pass traffic.
CSCwf68131	The Cisco Catalyst Series 9105AXW AP faces bad block monitoring after upgrading the software.
CSCwf95868	Single Band BCM WGB Radio 0 Tx power decreases by nearly 20 dBm while configuring antenna number.
CSCwh13494	Cisco Catalyst 9136 Series APs in -F regulatory domain are beaconing at a lower power.
CSCwf83292	Cisco Catalyst 9130 Series AP receives DHCP offer and ACK at the wired Ethernet port, but does not send it over the radio interface to the client.
CSCwf90114	Stale entries remain for APs no longer connected to system.
CSCwh59420	Cisco Catalyst 9136 Series APs unresponsive on Cisco IOS XE Cupertino 17.9.x
CSCwh76420	A controller may get unresponsive within WNCd service when performing an ISSU upgrade from Cisco IOS XE Bengaluru 17.6.x releases to Cisco IOS XE Cupertino 17.9.x releases.
CSCwf81866	Radio 0 WGB configuration is not backed up correctly when doing a TFTP backup of the configuration.
CSCwf65794	Cisco 1852 AP reloads unexpectedly due to radio failure.
CSCwf78066	Cisco Catalyst Center users might see a "No radios in the selected band" message on the floor maps and the AP icons might start showing up as white circles instead of the normal AP icons.
CSCwh29924	Cisco Catalyst 9105 APs, Cisco Catalyst 9115 APs, or Cisco Catalyst 9120 APs WGB: Antenna-a couldn't function properly if configuration is ab-antenna.

Caveat ID	Description
CSCwf12301	The retries number is always 0 for [QCA 12.0] WCPD TX.
CSCwf10839	A large amount of Virtual Router Redundancy Protocol (VRRP) traffic causes the switch port to be down due to storm-control action configuration.
CSCwe24263	Cisco Catalyst 9130 Series AP: Inconsistent Tx power levels advertised in beacons.
CSCwh30996	The Bluetooth Low Energy Power Distribution Unit used in dual mode for iBeacon with PDU type is adv_discover_ind vs the one used in tx only mode for vibeacon is adv_non_connectable_ind.
CSCwf91445	Controller pushes accounting information for pre-shared key (PSK) Local Auth WLANs.
CSCwf94863	Cisco Catalyst 9115 Series Wi-Fi 6 AP unexpectedly reboots due to kernel panic.
CSCwf64009	Cisco Aironet 1815 Series AP leaking RLAN VLAN traffic with looped port.
CSCwf98534	Geolocation reported by Global Navigation Satellite System(GNSS) module does not take into account external GPS antenna cable length in the computation of the ellipse uncertainty region.
CSCwh09676	Wireless Control Protocol (WCP) Dynamic Memory Allocation unfree logs missing and dmalloc files not updated periodically.
CSCwh27366	AP radio firmware failure reset code 2 with failure signature GDP.
CSCwh27425	Cisco Catalyst 9115AX Series AP does not forward a part of CAPWAP data packets to the uplink direction.
CSCwf13107	Radio being unresponsive during longevity test with Cisco Catalyst 9105 Series AP.
CSCwh35072	Cisco Aironet 3800 Series AP reloads unexpectedly due to FIQ/NMI reset.
CSCwh45418	Cisco Catalyst 9124 Series AP is sending incorrect duplex information via Cisco Discovery Protocol (CDP).
CSCwh50681	New SSID arp0v0 being broadcast after Cisco IOS XE Cupertino 17.9.3 wireless upgrade.
CSCwf68612	Controller may reload unexpectedly, generating a system-report containing a core file for the WNCd process.
CSCwf99906	Network Time Protocol (NTP) authentication removed after reload using more than 16 bytes.
CSCwh11858	When removing an Fully qualified domain name (FQDN) ACL from the switch, the device unexpectedly reloads, the ACL is not deleted after the reload.
CSCwf21390	Duplicate Access-Request messages with Cisco Trusted Security (CTS) client username when more than one RADIUS server is configured.

Caveat ID	Description
CSCwf36752	Using template from Cisco Catalyst Center or using copy-paste with a specific configuration for first time, the TACACS+ encryption fails.
CSCwf66661	Web UI page renders the page slowly while accessing device_type contents.

Resolved Caveats for Cisco IOS XE Dublin 17.12.1

From this release, the list of caveats is displayed using BST tool. When you click the BST link, it opens a separate window and lists the bugs sorted by severity. You can filter it further using the options in the tool.

Click on the following link to view the Resolved Caveats: [BST Link](#)

Troubleshooting

For the most up-to-date, detailed troubleshooting information, see [Troubleshooting TechNotes](#).

Related Documentation

- [Information about Cisco IOS XE](#)
- [Cisco Validated Design documents](#)
- [MIB Locator](#) to locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets

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](#)
- [Cisco Catalyst 9800 Series Configuration Best Practices](#)
- [In-Service Software Upgrade Matrix](#)
- [Upgrading Field Programmable Hardware Devices for Cisco Catalyst 9800 Series Wireless Controllers](#)

The installation guide for your controller is available at:

- [Hardware Installation Guides](#)

[All Cisco Wireless Controller software-related documentation](#)

Cisco Catalyst 9800 Series Wireless Controller Data Sheets

- [Cisco Catalyst 9800-CL Wireless Controller for Cloud Data Sheet](#)
- [Cisco Catalyst 9800-80 Wireless Controller Data Sheet](#)

- [Cisco Catalyst 9800-40 Wireless Controller Data Sheet](#)
- [Cisco Catalyst 9800-L Wireless Controller Data Sheet](#)

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 Product Comparison

- [Compare specifications of Cisco wireless APs and controllers](#)
- [Wireless LAN Compliance Lookup](#)
- [Cisco AireOS to Cisco Catalyst 9800 Wireless Controller Feature Comparison Matrix](#)

Cisco Access Points—Statement of Volatility

The STATEMENT OF VOLATILITY is an engineering document that provides information about the device, the location of its memory components, and the methods for clearing device memory. Refer to the data security policies and practices of your organization and take the necessary steps required to protect your devices or network environment.

The Cisco Aironet and Catalyst AP Statement of Volatility (SoV) documents are available on the [Cisco Trust Portal](#).

You can search by the AP model to view the SoV document.

Cisco Prime Infrastructure

[Cisco Prime Infrastructure Documentation](#)

Cisco Connected Mobile Experiences

[Cisco Connected Mobile Experiences Documentation](#)

Cisco Catalyst Center

[Cisco Catalyst Center Documentation](#)

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Cisco Bug Search Tool

[Cisco Bug Search Tool](#) (BST) is a gateway to the Cisco bug-tracking system, which maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. The BST provides you with detailed defect information about your products and software.

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