

# **AOS-CX 10.12.1010 Release Notes**

## **9300 Switch Series**



a Hewlett Packard  
Enterprise company

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### Products Supported

This release applies to the 9300Switch Series. The following table lists any applicable minimum software versions required for that model of switch.



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If your product is not listed in the below table, no minimum software version is required.

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Product number	Product name	Minimum software version
R9A29A	Aruba 9300-32D 32p 100/200/400G QSFP-DD 2p 10G SFP+ Front-to-Back 6 Fans 2 AC PSU Bundle	10.10.1000
R9A30A	Aruba 9300-32D 32p 100/200/400G QSFP-DD 2p 10G SFP+ Back-to-Front 6 Fans 2 AC PSU Bundle	10.10.1000
R8Z96A	Aruba 9300-32D 32-port 100/200/400G QSFP-DD 2-port 10G Switch	10.10.1000

### Important information for 9300 Switches



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Aruba switches covered by this release note use eMMC or SSD storage. This is non-volatile memory for persistent storage of config, files, databases, scripts, and so forth. Aruba recommends updating to version 10.06.0100 or later (including this release) to implement significant improvements to memory usage and prolong the life of the switch.

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Starting from AOS-CX 10.12.1010, switches will only support TLSv1.2 ciphers and curves approved by the NIAP on all supported applications such as Secure RADIUS (RadSec), Captive Portal, and EAP-TLS clients. It is advised to upgrade your Secure RADIUS server to a version that supports the NIAP approved ciphers and curves and disable the unsupported ciphers from your EAP-TLS clients. NIAP approved ciphers and curves are DHE-RSA-AES128-GCM-SHA256, DHE-RSA-AES256-GCM-SHA384, ECDHE-ECDSA-AES128-GCM-SHA256, ECDHE-ECDSA-AES256-GCM-SHA384, ECDHE-RSA-AES128-GCM-SHA256, ECDHE-RSA-AES256-GCM-SHA384, secp521r1, secp384r1, and prime256v1.

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To avoid damage to your equipment, do not interrupt power to the switch during a software update.



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Clear the browser cache after upgrading to this version of software before logging into the switch using a Web UI session. This will ensure the Web UI session downloads the latest changes.

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To restore a previous configuration when downgrading to a previous version of software, follow these steps:

1. Use the `show checkpoint` command to see the saved checkpoints and ensure that you have a checkpoint that is an exact match of the target software version (see the `Image Version` column in the output of the command, for example `CL.10.0x.yyy`).

This checkpoint can be the startup-config-backup automatically created during the initial upgrade or any other manually created checkpoint for the target software version.

2. Copy the backup checkpoint into the startup-config.
  3. Boot the switch to the target version (lower version), making sure to select `no` when prompted to save the current configuration.
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For information about Short Supported Releases (SSRs) and Long Supported Releases (LSRs), see <https://www.arubanetworks.com/support-services/end-of-life/arubaos-software-release/>.

To upgrade to:	Your switch must be running this version or later:
AOS-CX 10.12.xxxx Note: 10.12 is an SSR, recommended release is 10.12.0006	AOS-CX 10.09.0002
AOS-CX 10.11.xxxx Note: 10.11 is an SSR, recommended release is 10.11.0001	AOS-CX 10.08.0001

Refer to the Approved Product Lists sites for the Common Criteria, FIPS 140-2 and DoDIN APL to obtain the product certification details. Products should be used as evaluated and defined in the respective configuration guides.

- Common Criteria: <https://www.niap-ccevs.org/Product/>
- FIPS 140-2: <https://csrc.nist.gov/Projects/Cryptographic-Module-Validation-Program/Validated-Modules/Search>
- DoDIN APL: <https://aplits.disa.mil/processAPList.action>

This product includes code licensed under the GNU General Public License, the GNU Lesser General Public License, and/or certain other open-source licenses. A complete machine-readable copy of the source code corresponding to such code is available upon request. This offer is valid to anyone in receipt of this information and shall expire three years following the date of the final distribution of this product version by Hewlett Packard Enterprise Company. To obtain such source code, send a check or money order in the amount of US \$10.00 to:

```
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San Jose, CA 95002
U.S.A.
```

Please specify the product and version for which you are requesting source code. You may also request a copy of this source code free of charge at: <https://hpe.com/software/opensource>

## Version history

All released versions are fully supported by Aruba, unless noted in the table.

Version number	Release date	Remarks
10.12.1010	05-10-2023	Released, fully supported, and posted on the Web.
10.12.1000	02-08-2023	Released, fully supported, and posted on the Web.
10.12.0006	31-05-2023	Released, fully supported, and posted on the Web.

## Compatibility/interoperability

The switch web agent supports the following web browsers:

Browser	Minimum supported versions
Edge (Windows)	41
Chrome (Ubuntu)	76 (desktop)
Firefox (Ubuntu)	56
Safari (MacOS)	12
Safari (iOS)	10 (Version 12 is not supported)



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Internet Explorer is not supported.

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Recommended versions of network management software for switches found in this release note:

Management software	Recommended version(s)
NetEdit	2.8.0
Aruba Central	2.5.7
Central On-Premises	2.5.6.4
Aruba Fabric Composer	6.5.2
Aruba CX Mobile App	Support coming in future release.



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For more information, see the respective software manuals.

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To upgrade software using NetEdit, make sure to upgrade to the above version of NetEdit first and then execute the switch software upgrade on devices discovered by this version of NetEdit.

## Enhancements

There are no new enhancements introduced in this release.

## Resolved Issues

This section lists fixes found in this branch of the software. The **Symptom** statement describes what a user might experience if this issue is seen on the network. The **Scenario** statement provides additional environment details and trigger summaries. When available, the **Workaround** statement provides a workaround to the issue for customers who chooses not to update to this version of software.

For a list of issues resolved in the previous releases of 9300 switches, refer to the [AOS-CX Release Notes Portal](#).



The Bug ID is used for tracking purposes.

## Resolved issues

This section describes the issues resolved in this release.

Category	Bug ID	Description
Aruba Central	265125	<b>Symptom:</b> Switches are unable to establish connection with Aruba Central. <b>Scenario:</b> The <code>show aruba-central</code> command displays the <code>Central source connectionstatus</code> as <code>connection_failure</code> .
BGP	274060	<b>Symptom:</b> Traffic loss is observed on a few selective BGP networks. <b>Scenario:</b> This issue might occur when the BGP route is relearned when a connected BGP experiences a port flap. Also, a few BGP routes fail to get programmed. <b>Workaround:</b> Add a static route for the failed BGP route.
CLI Infra	269871	<b>Symptom:</b> High CPU utilization is observed on the <code>system-socket proxyd</code> process. <b>Scenario:</b> This issue occurs when the user leaves a vtysh console waiting at the user-input/page-prompt. <b>Workaround:</b> Provide an input at the page break.
Credential Manager	266007	<b>Symptom:</b> The <code>hpe-restd</code> process crashes unexpectedly. <b>Scenario:</b> This issue is observed due to rare timing issues that occur during the initialization and teardown phases of certificate validation requests from multiple modules which would lead to crashes in the REST daemon process. <b>Workaround:</b> Reboot the switch.
L3 Routes	274371	<b>Symptom:</b> Switches forward traffic to incorrect tunnel points. <b>Scenario:</b> This issue occurs either when the switch is rebooted, when the BGP sessions are cleared using the <code>clear bgp</code> command, or when the tunnel bounces.

Category	Bug ID	Description
		<b>Workaround:</b> Disable the tunnel where the traffic is being incorrectly forwarded and re-enable the tunnel when the switch forwards the traffic to the correct tunnel points.
Logging	TMA-3668	<b>Symptom:</b> The critical severity syslog messages continuously log the message, <b>systemd[1]: Failed to start Automatic Rotation Of Logs.</b> <b>Scenario:</b> This issue occurs when the logrotate service and ops-gen-logrotate.service are unable to restart.
NTP	271587	<b>Symptom:</b> The NTP conductor will not be available for NTP clients. <b>Scenario:</b> This issue occurs on VRF when both the NTP conductor and client are configured on the same VRF with a source interface on that VRF. As a result, the conductor will listen only to the configured source interface. <b>Workaround:</b> Configure the conductor on a separate VRF.
PKI	272227	<b>Symptom:</b> The <b>hpe-restd</b> process crashes unexpectedly. <b>Scenario:</b> This issue is observed due to rare timing issues that occur during the initialization and teardown phases of certificate validation requests from multiple modules which would lead to crashes in the REST daemon process. <b>Workaround:</b> Reboot the switch.
sFlow	269486	<b>Symptom:</b> sFlow encounters for some interfaces display zero and negative values intermittently. <b>Scenario:</b> This issue occurs when the OVSDB is overloaded on a system with large number of ports.
VLANS	271762	<b>Symptom:</b> The CLI process crashes on the switch with interface persona configured. <b>Scenario:</b> This issue occurs when the <b>show vlan</b> command is issued.
WebUI	265798	<b>Symptom:</b> NAE graphs render multiple incorrect variations. <b>Scenario:</b> NAE graphs refresh every 10 days and users observe variations in the graph including an incorrect depiction of high CPU utilization.
WebUI	269716	<b>Symptom:</b> NAE graphs render multiple incorrect variations. <b>Scenario:</b> NAE graphs refresh every 10 days and users observe variations in the graph rendering due to missing data.

## Feature Caveats

The following are feature caveats that should be taken into consideration when using this version of the software.

Feature	Description
REST	The REST v1 API that was deprecated in previous release of AOS-CX is completely deactivated and no longer available in AOS-CX 10.12. For more information on migrating your deployment from the RESTv1API to the RESTv10.xx API, refer to the <a href="#">REST API Migration Quick Start Guide</a> .

Feature	Description
REST	<p>When a user configures a RADIUS server via REST with AOS-CX 10.11 or lower, the REST operation fails. A schema change introduced in the RADIUS_Server table in 10.12 is not backward compatible with REST versions 10.11 and lower. A checkpoint restore operation will fail on a switch running 10.12 firmware if the checkpoint is created on a 10.11 or lower release and includes RADIUS server configurations.</p> <p>Use REST version 10.12 to configure RADIUS servers on a switch running AOS-CX 10.12.xxxx. When using checkpoints with RADIUS server configurations, do not restore the checkpoint directly on a switch running 10.12 firmware. Instead,</p> <ol style="list-style-type: none"> <li>1. Copy the running-config from the switch running the 10.11 or lower release firmware to a remote server as CLI commands (and not as a JSON file).</li> <li>2. Erase the startup-config on the switch.</li> <li>3. Upgrade without saving the configuration to 10.12.xxxx.</li> <li>4. Copy the running-config from the remote server, <i>or</i> apply the entire configuration from scratch on the switch running the 10.12 firmware.</li> </ol>
PIM-SM	Pim Active-Active is not supported on overlay VXLAN SVIs.
SNMP	When SNMP is enabled via the switch CLI, it can take between 1-2 minutes for the SNMP daemon to be ready to respond to requests. If a local or external SNMP MIB walk is performed in the interval between when SNMP is first enabled and the SNMP daemon is ready, the MIB walk action will return an error.
Certificates	When a switch uses a certificate with a legacy certificate name that is not supported in 10.12 because it contains disallowed characters, the information will migrate properly in the upgrade, but that certificate can no longer be edited. For new certificate names, only alphanumeric characters, dots, dashes, and underscores are allowed.
Classifiers	For Classifier policy modifications to be secure, Aruba strongly encourages modifications be done as a three-step process: Bring down the port, modify, and bring the port back up.
Classifiers	Policies containing both MAC and IPv6 classes are not allowed.
CMF	No other checkpoint besides "startup-configuration" gets migrated during the upgrade process.
IGMP/PIM on 6-in-6, Loopback and GRE interfaces	IGMP cannot be enabled on either Loopback or GRE interfaces. IGMP and PIM is not supported on a 6-in-6 Tunnel.
Multicast and VXLAN	<ul style="list-style-type: none"> <li>▪ VXLAN must be configured prior to configuring VSX.</li> <li>▪ IPv6 multicast is not supported for VXLAN overlay.</li> <li>▪ Multicast support for static VXLAN in the overlay has limited support. Contact Aruba Support for details.</li> </ul>
PFC	Priority-based flow control (PFC) is not supported on a split port.
REST	REST supports the 'admin' and 'operator' roles but does not work with TACACS+ command authorization.



Feature	Description
Traceroute	Traceroute v4/v6 over VXLAN fails to find intermediate next-hop IP information from a source VTEP in Virtual Active Gateway environment (the SVI is the same as theActive Gateway IP).

## Known issues

The following are known open issues with this branch of the software. The **Symptom** statement describes what a user might experience if this is seen on the network. The **Scenario** statement provides additional environment details and trigger summaries. When available, the **Workaround** statement provides a workaround to the issue.

Category	Bug ID	Description
Internal srvc: pspo	267398	<p><b>Symptom:</b> VXLAN tunnels go down after removing interfaces with IPv6 address that are the same as the VXLAN VTEP IP addresses.</p> <p><b>Scenario:</b> In an EVPN-VXLAN deployment with an IPv6 tunnel, if any interface (irrespective of the VRF) that has same IP address as the tunnel source IP, it goes down, and then the tunnel interface is brought down</p> <p><b>Workaround:</b> Unconfigure loopback and VXLAN and re-configure them.</p>

## Upgrade information

AOS-CX 10.12.0006 uses ServiceOS CL.01.12.0002.



CAUTION

Each VSX switch in a pair must run the same version of AOS-CX. If a primary VSX switch is upgraded to 10.10.xxxx, the secondary VSX switch must be immediately upgraded to that same version. If the ISL link is disabled and enabled on VSX switches that are running different versions of AOS-CX, a VSX secondary switch running an older version of AOS-CX may be unable to synch information from the VSX primary, which can cause the port state to become blocked and lead to traffic loss.



NOTE

Do not interrupt power to the switch during this important update.

## Manual configuration restore for software downgrade

To restore a previous configuration when downgrading to a previous version of software, follow these steps:

1. Use the **show checkpoint** command to see the saved checkpoints and ensure that you have a checkpoint that is an exact match of the target software version (see the **Image Version** column in the output of the command, for example, CL.10.xx.yyyy).

This checkpoint can be the startup-config-backup automatically created during the initial upgrade or any other manually created checkpoint for the target software version.

2. Copy the backup checkpoint into the startup-config.
3. Boot the switch to the target version (lower version), making sure to select `no` when prompted to save the current configuration.

## Performing the upgrade

For additional upgrade and downgrade scenarios, including limitations of automatic upgrade and downgrade scenarios provided by the Configuration Migration Framework (CMF), refer to the [AOS-CX 10.12 Fundamentals Guide](#).



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This version may contain a change of BootROM from the current running version. A BootROM update is a non-failsafe update. Do not interrupt power to the switch during the update process or the update could permanently damage the device.

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1. Copy the new image into the non-current boot bank on the switch using your preferred method.
2. Depending on the version being updated, there may be device component updates needed. Preview any devices updates needed using the `boot system <BOOT-BANK>` command and entering `n` when asked to continue.

For example, if you copied the new image to the secondary boot bank and no device component updates are needed, you will see this:

```
switch# boot system secondary
Default boot image set to secondary.
Checking if the configuration needs to be saved...

Checking for updates needed to programmable devices...
Done checking for updates.

This will reboot the entire switch and render it unavailable
until the process is complete.
Continue (y/n)? n
```

In this example, three device updates will be made upon reboot, one of which is a non-failsafe device:

```
switch# boot system secondary
Default boot image set to secondary.
Checking if the configuration needs to be saved...

Checking for updates needed to programmable devices...
Done checking for updates.

2 device(s) need to be updated during the boot process.
The estimated update time is between 2 and 3 minute(s).
There may be multiple reboots during the update process.

1 non-failsafe device(s) also need to be updated.
Please run the 'allow-unsafe-updates' command to enable these updates.

This will reboot the entire switch and render it unavailable
until the process is complete.
Continue (y/n)? n
```

3. When ready to update the system, if a non-failsafe device update is needed, make sure the system will not have any power interruption during the process. Invoke the `allow unsafe updates` command to allow updates to proceed after a switch reboot. Proceed to step 4 within the configured time.

```

switch# config
switch(config)# allow-unsafe-updates 30

This command will enable non-failsafe updates of programmable devices for
the next 30 minutes. You will first need to wait for all line and fabric
modules to reach the ready state, and then reboot the switch to begin
applying any needed updates. Ensure that the switch will not lose power,
be rebooted again, or have any modules removed until all updates have
finished and all line and fabric modules have returned to the ready state.

WARNING: Interrupting these updates may make the product unusable!

Continue (y/n)? y

Unsafe updates      : allowed (less than 30 minute(s) remaining)

```

4. Use the `boot system <BOOT-BANK>` command to initiate the upgrade. On the switch console port an output similar to the following will be displayed as various components are being updated:

```

switch# boot system secondary
Default boot image set to secondary.
Checking if the configuration needs to be saved...

Checking for updates needed to programmable devices...
Done checking for updates.

3 device(s) need to be updated during the boot process.
The estimated update time is between 2 and 3 minute(s).
There may be multiple reboots during the update process.

This will reboot the entire switch and render it unavailable
until the process is complete.
Continue (y/n)? y
The system is going down for reboot.

Looking for SVOS.

Primary SVOS:  Checking...Loading...Finding...Verifying...Booting...

ServiceOS Information:
  Version:      <serviceOS_number>
  Build Date:   yyyy-mm-dd hh:mm:ss PDT
  Build ID:    ServiceOS:<serviceOS_number>:6303a2a501ba:202006171659
  SHA:         6303a2a501bad91100d9e71780813c59f19c12fe

Boot Profiles:

0. Service OS Console
1. Primary Software Image [xx.10.11.1010]
2. Secondary Software Image [xx.10.12.1000]

Select profile(secondary):

ISP configuration:
  Auto updates      : enabled
  Version comparisons : match (upgrade or downgrade)

```

```

Unsafe updates      : allowed (less than 29 minute(s) remaining)

Advanced:
Config path        : /fs/nos/isp/config [DEFAULT]
Log-file path     : /fs/logs/isp [DEFAULT]
Write-protection  : disabled [DEFAULT]
Package selection  : 0 [DEFAULT]

3 device(s) need to be updated by the ServiceOS during the boot process.
The estimated update time by the ServiceOS is 2 minute(s).
There may be multiple reboots during the update process.

MODULE 'mc' DEVICE 'svos_primary' :
  Current version  : '<serviceOS_number>'
  Write-protected  : NO
  Packaged version : '<version>'
  Package name     : '<svos_package_name>'
  Image filename   : '<filename>.svos'
  Image timestamp  : 'Day Mon dd hh:mm:ss yyyy'
  Image size       : 22248723
  Version upgrade  needed

Starting update...

Writing...      Done.
Erasing...     Done.
Reading...     Done.
Verifying...   Done.
Reading...     Done.
Verifying...   Done.

Update successful (0.5 seconds).

reboot: Restarting system

```

Multiple components may be updated and several reboots will be triggered during these updates. When all component updates are completed, the switch console port will arrive at the login prompt with a display similar to following:

```

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Development LP required for possession, use or copying. Consistent with FAR
12.211 and 12.212, Commercial Computer Software, Computer Software
Documentation, and Technical Data for Commercial Items are licensed to the
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We'd like to keep you up to date about:
  * Software feature updates
  * New product announcements
  * Special events
Please register your products now at: https://asp.arubanetworks.com

switch login:

```




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Aruba recommends waiting until all upgrades have completed before making any configuration changes.

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Aruba is committed to ensuring you have the resources you need to be successful. Check out these learning and documentation resources:

- AOS-CX switch software documentation portal: [https://www.arubanetworks.com/techdocs/AOS-CX/help\\_portal/Content/home.htm](https://www.arubanetworks.com/techdocs/AOS-CX/help_portal/Content/home.htm)
- AOS-CX 10.11 playlist of technical training videos on YouTube: [https://www.youtube.com/playlist?list=PLsYGHuNuBZcbWPEjjHuVMqP-Q\\_UL3CskS](https://www.youtube.com/playlist?list=PLsYGHuNuBZcbWPEjjHuVMqP-Q_UL3CskS)

A Security Bulletin is the first published notification of security vulnerabilities and is the only communication vehicle for security vulnerabilities.

- Fixes for security vulnerabilities are not documented in manuals, release notes, or other forms of product documentation.
- A Security Bulletin is released when all vulnerable products still in support life have publicly available images that contain the fix for the security vulnerability.

The Aruba security policy can be found at <https://www.arubanetworks.com/en-au/support-services/sirt/>. Security bulletins can be found at <https://www.arubanetworks.com/en-au/support-services/security-bulletins/>. You can sign up at [https://sirt.arubanetworks.com/mailman/listinfo/security-alerts\\_sirt.arubanetworks.com](https://sirt.arubanetworks.com/mailman/listinfo/security-alerts_sirt.arubanetworks.com) to initiate a subscription to receive future Aruba Security Bulletin alerts via email.