



# Compliance Audit for Network Devices

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## Compliance Overview

Compliance helps in identifying any intent deviation or *out-of-band* changes in the network that may be injected or reconfigured without affecting the original content.

A network administrator can conveniently identify devices in Cisco DNA Center that do not meet compliance requirements for the different aspects of compliance, such as software images, PSIRT, network profiles, and so on.

Compliance checks can be automated or performed on demand.

- Automated compliance check: Uses the latest data collected from devices in Cisco DNA Center. This compliance check listens to the traps and notifications from various services, such as inventory and SWIM, to assess data.
- Manual compliance check: Lets you manually trigger the compliance in Cisco DNA Center.
- Scheduled compliance check: A scheduled compliance job is a weekly compliance check that runs every Saturday at 11:00 pm.

## Manual Compliance Run

You can trigger a compliance check manually in Cisco DNA Center.

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**Step 1** Click the menu icon (☰) and choose **Provision > Inventory**.

**Step 2** For a bulk compliance check, do the following:

- a) Choose all the applicable devices.

b) From the **Actions** drop-down list, choose **Compliance > Run Compliance**.

**Step 3** For a per-device compliance check, do the following:

- a) Choose the devices for which you want to run the compliance check.
- b) From the **Actions** drop-down list, choose **Compliance > Run Compliance**.
- c) Alternatively, click the compliance column (if available) and then click **Run Compliance**.

**Step 4** To view the latest compliance status of a device, do the following:

- a) Choose the device and inventory. See [Resynchronize Device Information](#).
- b) From the **Actions** drop-down list, choose **Compliance > Run Compliance**.

- Note**
- A compliance run cannot be triggered for unreachable or unsupported devices.
  - If compliance is not run manually for a device, the compliance check is automatically scheduled to run after a certain period of time, which depends on the type of compliance.
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## View Compliance Summary

The inventory page shows an aggregated status of compliance for each device.

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**Step 1** Click the menu icon () and choose **Provision > Inventory**.

The compliance column shows the aggregated compliance status of each device.

**Step 2** Click the compliance status to launch the compliance summary window, which shows the following compliance checks applicable for the selected device:

- Startup versus Running Configuration
- Software Image
- Critical Security Vulnerability
- Network Profile
- Fabric
- Application Visibility

**Note** Network Profile, Fabric, and Application Visibility are optional and are displayed only if the device is provisioned with the required data.

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## Synchronize Startup and Running Configurations of a Device

When there is a mismatch in the startup and running configurations of a device, you can do a remediation synchronization to match the configurations.

**Step 1** Click the menu icon (☰) and choose **Provision > Inventory**.

**Step 2** For a bulk remediation, do the following:

- a) Choose all the applicable devices.
- b) From the **Actions** drop-down list, choose **Compliance > Sync Start vs Run Configuration**.

For a per-device remediation, do the following:

- a) Choose the devices for which you want to do a remediation synchronization.
- b) From the **Actions** drop-down list, choose **Compliance > Sync Start vs Run Configuration**. Alternatively, click the Compliance column and then choose **Compliance Summary > Startup vs Running Configuration > Sync Device Config**.

**Step 3** To view the remedial status of the device, do the following:

- a) Click the menu icon (☰) and choose **Provision > Inventory**.
- b) From the **Actions** drop-down list, choose **Compliance > Compliance Remedial Status**.

## Types of Compliance

Compliance Type	Compliance Check	Compliance Status
Startup versus Running Configuration	This compliance check helps in identifying whether the startup and running configurations of a device are in sync. If the startup and running configurations of a device are out of sync, compliance is triggered and a detailed report of the out-of-band changes is displayed. The compliance for startup vs. running configurations is triggered within 5 minutes of any out-of-band changes.	<ul style="list-style-type: none"> <li>• Noncompliant: The startup and running configurations are not the same. In the detailed view, the system shows different startup vs. running between or running vs. previous running.</li> <li>• Compliant: The startup and running configurations are the same.</li> <li>• NA (Not Applicable): The device, such as AireOS, is not supported for this compliance type.</li> </ul>
Software Image	This compliance check helps a network administrator to see if the tagged golden image in Cisco DNA Center is running on the device. It shows the difference between the golden image and the running image for a device. When there is a change in the software image, the compliance check is triggered immediately without any delay.	<ul style="list-style-type: none"> <li>• Noncompliant: The device is not running the tagged golden image of the device family.</li> <li>• Compliant: The device is running the tagged golden image of the device family.</li> <li>• NA (Not Applicable): The golden image is not available for the selected device family.</li> </ul>

Compliance Type	Compliance Check	Compliance Status
Critical Security (PSIRT)	This compliance check enables a network administrator to check whether the network devices are running without critical security vulnerabilities.	<ul style="list-style-type: none"> <li>• Noncompliant: The device has critical advisories. A detailed report displays various other information.</li> <li>• Compliant: There are no critical vulnerabilities in the device.</li> <li>• NA (Not Applicable): The security advisory scan has not been done by the network administrator in Cisco DNA Center, or the device is not supported.</li> </ul>
Network Profile	<p>Cisco DNA Center allows you to define its intent configuration using Network Profiles and push the intent to the device. If any violations are found at any time due to out-of-band or any other changes, this check identifies, assesses, and flags it off. The violations are shown to the user under <b>Network Profiles</b> in the compliance summary window.</p> <p><b>Note</b> Network profile compliance is applicable for routers and wireless LAN controllers.</p>	<ul style="list-style-type: none"> <li>• Noncompliant: The device is not running the intent configuration of the profile.</li> <li>• Compliant: While applying a network profile to the device, the device configurations that are pushed to Cisco DNA Center are actively running on the device.</li> <li>• Error: The compliance could not compute the status because of an underlying error. For details, see the error log.</li> </ul>
Fabric (SDA) This feature is in beta.	Fabric compliance helps to identify fabric intent violations, such as any out-of-band changes for fabric-related configurations.	<ul style="list-style-type: none"> <li>• Noncompliant: The device is not running the intent configuration.</li> <li>• Compliant: The device is running the intent configuration.</li> </ul>
Application Visibility	Cisco DNA Center allows you to create an application visibility intent and provision it to a device through CBAR and NBAR. If there is an intent violation on the device, this check identifies, assesses, and shows the violation as compliant or noncompliant under <b>Application Visibility</b> . The automatic compliance check is scheduled to run every 5 hours.	<ul style="list-style-type: none"> <li>• Noncompliant: The CBAR/NBAR configuration is not running on the device.</li> <li>• Compliant: The intent configuration of CBAR/NBAR is running on the device.</li> </ul>
Model Config	This compliance check enables the network administrator to check any mismatch from the designed intent of Model Config. The mismatch is shown under <b>Network Profile</b> in the <b>Compliance Summary</b> window.	<ul style="list-style-type: none"> <li>• Noncompliant: There is mismatch in the actual and intended value of attributes in Model Config.</li> <li>• Compliant: No mismatch of attributes in Model Config from the intended value.</li> </ul>

## Compliance Behavior After Device Upgrade

- A compliance check for all applicable devices (devices for which compliance never ran in the system) is triggered after successful device upgrade.
- Compliance calculates and shows the status of the devices in the inventory, except the Startup vs Running type.
- After upgrade, the Startup vs Running tile shows as NA with the text "Configuration data is not available."
- After a day of successful upgrade, a one-time scheduler runs and makes configuration data available for devices. The Startup vs Running tile starts showing the correct status (Compliant/Noncompliant) and detailed data.
- If any traps are received, the config archive service collects configuration data and the compliance check runs again.



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**Note** In the upgrade setup, ignore any compliance mismatch for the **Flex Profile** interface. For the interface name, **1** maps to **management**.

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