

Upgrading a Nexus Dashboard 4.x Cluster to This Release

Note The procedures in this chapter are applicable if you are upgrading from Nexus Dashboard release **4.x** to Nexus Dashboard release 4.3.1.

If you are upgrading from Nexus Dashboard release **3.2.2m** to Nexus Dashboard release 4.3.1, follow the upgrade procedures provided in Upgrading a Nexus Dashboard 3.2.2m Cluster to This Release.

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Prerequisites and guidelines for upgrading an existing Nexus Dashboard cluster

Before you upgrade your existing Nexus Dashboard cluster:

- Ensure that you have read the target release's *Release Notes* for any changes in behavior, guidelines, and issues that may affect your upgrade.
- Before upgrading to Nexus Dashboard release 4.3.1:
  - Make sure your NTP and DNS services are configured. At least one NTP and DNS are required for the system to upgrade successfully.
  - For LAN deployments, verify that the management network and data network are in different subnets. The upgrade will fail if the management network and data network are not in different subnets.

    Note that this restriction does not apply for SAN deployments (management network and data network can be in same subnet for SAN deployments).
  - We highly recommend that you use the Nexus Dashboard Preupgrade Validation script before performing any Nexus Dashboard upgrades. The Nexus Dashboard Preupgrade Validation script is a Python script that performs various checks for known issues that have been identified to affect

the success of a Nexus Dashboard upgrade. The script is continuously updated and maintained in an effort to mitigate any new upgrade-related issues that are detected in the field.

For detailed information about the script functionality and how to use it in your environment, visit https://github.com/datacenter/Nexus-Dashboard.

- Verify that the `acs health` is healthy.

  1. Access the Nexus Dashboard using `ssh -l rescue-user {management-ip-of-nd}`.
  2. Issue the `acs health` command.

  The output from the `acs health` command should show that all components are healthy:

```
rescue-user@node1:~$ acs health
======
Status
======
All components are healthy
```

- Ensure that your current Nexus Dashboard cluster is healthy.

  You can check the system status on the **Overview** page of the Nexus Dashboard's **Admin Console** or by logging in to one of the nodes as `rescue-user` and ensuring that the `acs health` command returns `All components are healthy`.

- If you have a multi-cluster federated Nexus Dashboard deployment, you must upgrade the primary cluster of the multi-cluster group to Nexus Dashboard version 4.3.1 or later before upgrading the local cluster.
- Review these important guidelines about how backup and restore processes affect your upgrade:
  - Ensure that you perform a backup of your Nexus Dashboard cluster before upgrading and you store the backup file in a safe place. To perform a backup, refer to *Backing Up and Restoring Your Nexus Dashboard*.
  - An upgrade will not proceed if the most recent backup had a failure. Make sure you have a successful backup before proceeding with the upgrade. If you are unable to perform a successful backup and cannot upgrade, contact Cisco Technical Assistance Center (TAC) for support.
  - You will not be able to perform an upgrade if a restore has failed. After the restore has completed, click **View History** to navigate to the **History** area in the **Backup and Restore** page, as described in the "Restore Nexus Dashboard configurations" section in the *Unified Backup and Restore for Nexus Dashboard and Services*.

    The page should display **Success** in the **Status** column for the restore process. If you see any value other than **Success** in the **Status** column, redeploy the cluster and get a **Success** value for the restore process before attempting the upgrade again.

- If you are upgrading a physical Nexus Dashboard cluster, ensure that the nodes have the minimum supported CIMC version for the target Nexus Dashboard release.

  Supported CIMC versions are listed in the *Nexus Dashboard Release Notes* for the target release.

  The CIMC upgrade is described in detail in the "Troubleshooting" article in the Nexus Dashboard *documentation library*.

- If you are upgrading a virtual Nexus Dashboard cluster, Nexus Dashboard will enforce these checks:

- A check of the HDD latency to verify that it is <30ms. If the HDD has a higher latency, the upgrade will fail.
- A check of the network latency to verify that it is <50ms within cluster nodes. If the network has a highter latency, the upgrade will fail.

- If you are upgrading a virtual Nexus Dashboard cluster deployed in VMware ESX, ensure that the ESX version is still supported by the target release.

  This release supports VMware ESXi 7.0, 7.0.1, 7.0.2, 7.0.3, 8.0, 8.0.2, 8.0.3.

Note If you need to upgrade the ESX server, you must do that before upgrading your Nexus Dashboard. ESX upgrades are outside the scope of this document, but in short:

1. Upgrade one of the ESX hosts as you typically would with your existing Nexus Dashboard node VM running.
2. After the host is upgraded, ensure that the Nexus Dashboard cluster is still operational and healthy.
3. Repeat the upgrade on the other ESX hosts one at a time.
4. After all ESX hosts are upgraded and the existing Nexus Dashboard cluster is healthy, proceed with upgrading your Nexus Dashboard to the target release as described in this document.

- Nexus Dashboard does not support platform downgrades.

  If you want to downgrade to an earlier release, you will need to deploy a new cluster.

Supported upgrade paths

As described in Nexus Dashboard deployment overview, in earlier releases, Nexus Dashboard shipped with only the platform software and no services included, which you would then download, install, and enable separately after the initial platform deployment. In addition, Nexus Dashboard release 3.1.1 introduced a tighter coupling between the Nexus Dashboard and individual services with only a single version of each service compatible with each version of the platform. As a result, as long as you were on the minimum required version of the Nexus Dashboard software, you could upgrade both the platform and all currently enabled services directly to Nexus Dashboard release 3.1x and 3.2x.

Beginning with Nexus Dashboard release 4.1.1, the platform and the individual services have been unified into a single product, which means that you no longer deploy, configure, or upgrade the services separately.

The following table provides a few example scenarios for specific deployment combinations:

Table 1:

Current Nexus Dashboard Release	Compatible Services (depending on form factor and cluster size, you may have one or more of these services currently enabled)	Upgrade Workflow
4.2.1	N/A	Upgrade directly to release 4.3.1 as described in the following section.
4.1.1	N/A	Upgrade directly to release 4.3.1 as described in the following section.
3.2.2m	Fabric Controller: 12.2(3) Orchestrator: 4.4(2) Insights: 6.5(2)	Upgrade directly to release 4.3.1 as described in Upgrading a Nexus Dashboard 3.2.2m Cluster to This Release. All services are unified under a single Nexus Dashboard product in release 4.3.1.
3.2.1	Fabric Controller: 12.2(2) Orchestrator: 4.4(1) Insights: 6.5(1)	1. Upgrade the Nexus Dashboard platform to release 3.2.2m as described in *Nexus Dashboard Deployment Guide, Release 3.2.x* All services will be automatically upgraded along with the platform. 2. Upgrade from release 3.2.2m to release 4.3.1 as described in Upgrading a Nexus Dashboard 3.2.2m Cluster to This Release. All services are unified under a single Nexus Dashboard product in release 4.3.1.
3.1.1	Fabric Controller: 12.2(1) Orchestrator: 4.3(x) Insights: 6.4(1)	1. Upgrade the Nexus Dashboard platform to release 3.2.2m as described in *Nexus Dashboard Deployment Guide, Release 3.2.x* All services will be automatically upgraded along with the platform. 2. Upgrade from release 3.2.2m to release 4.3.1 as described in Upgrading a Nexus Dashboard 3.2.2m Cluster to This Release. All services are unified under a single Nexus Dashboard product in release 4.3.1.
3.0.1	Fabric Controller: 12.1(3) Orchestrator: 4.2(x) Insights: 6.3(1)	1. Upgrade the Nexus Dashboard platform to release 3.2.2m as described in *Nexus Dashboard Deployment Guide, Release 3.2.x* All services will be automatically upgraded along with the platform. 2. Upgrade from release 3.2.2m to release 4.3.1 as described in Upgrading a Nexus Dashboard 3.2.2m Cluster to This Release. All services are unified under a single Nexus Dashboard product in release 4.3.1.

Current Nexus Dashboard Release	Compatible Services (depending on form factor and cluster size, you may have one or more of these services currently enabled)	Upgrade Workflow
2.3.2 and earlier	Fabric Controller: 12.1(2) or earlier Orchestrator: 4.1(x) or earlier Insights: 6.2(x) or earlier	**1.** Upgrade the Nexus Dashboard platform to release 3.1.1 as described in *Nexus Dashboard Deployment Guide, Release 3.1.x* All services will be automatically upgraded along with the platform. **2.** Upgrade from release 3.1.1 to release 3.2.2m as described in *Nexus Dashboard Deployment Guide, Release 3.2.x*. All services will be automatically upgraded along with the platform. **3.** Upgrade from release 3.2.2m to release 4.3.1 as described in Upgrading a Nexus Dashboard 3.2.2m Cluster to This Release. All services are unified under a single Nexus Dashboard product in release 4.3.1.

Upgrade Nexus Dashboard

This section describes how to upgrade an existing Nexus Dashboard 4.x cluster to the Nexus Dashboard 4.3.1 release.

Before you begin

Ensure that you have completed the prerequisites described in Prerequisites and guidelines for upgrading an existing Nexus Dashboard cluster, on page 1

Procedure

Step 1 In your Nexus Dashboard release 4.x system, download the Nexus Dashboard 4.3.1 image.

a) Navigate to the Software Download page: https://software.cisco.com/download/home/286327743/type/286328258/
b) Choose the Nexus Dashboard 4.3.1 release to download.
c) Download the Nexus Dashboard image for the 4.3.1 release.

Note

- The upgrade process is the same for all Nexus Dashboard form factors and uses the Nexus Dashboard ISO image (`nd-dk9.<version>.iso`). In other words, even if you used the virtual form factors (such as the ESX `.ova`) or a cloud provider's marketplace for initial cluster deployment, you must still use the `.iso` image for upgrades.
- If the image fails to download completely, verify the network connectivity between the Nexus Dashboard and the image server. Check the proxy configuration under **Admin** > **System Settings** > **General** > **Proxy configuration**.

  If an HTTP server that is being used to upload the image is reachable through the management network, Nexus Dashboard will try to reach that HTTP server through the proxy, which can fail in some setups where the connection between the Nexus Dashboard management network and the HTTP file server is a direct connection. In that case, if your HTTP file server is not reachable through the proxy, add the HTTP file server under **Ignore hosts** in the **Proxy configuration** page.

d) (Optional) Host the image on a web server in your environment.

Note We recommend hosting the image on a server in your environment. When you upload the image to your Nexus Dashboard cluster, you will have an option to provide a direct URL to the image, which can significantly speed up the process.

Step 2 Add the image.

a) From the main navigation menu, select **Admin** > **System Software**.

b) In the **System Software** page, review the information provided in the **Nexus Dashboard Releases** area.

- The leftmost tile shows the software image that is currently installed and running on your Nexus Dashboard.
- The rightmost tile shows the software image that is currently uploaded onto your Nexus Dashboard.

In either tile, click **What's new** to see the new features available with that particular release, or click **Release notes** to see the Release Notes for that particular release.

c) In the upper right corner of the **Nexus Dashboard Releases** area, click **Add Image**.

Step 3 In the **Add Software Image** page, choose whether your image is stored on a local system or a remote server.

- If you are adding an image from a local system, click **Local**, then select the image file from your local system by clicking **Choose File** and navigating to the image file on your local system.

Note If uploading from a local machine, slow upload speeds may cause the session to timeout which can interrupt the transfer. We recommend at least 40Mbps upload speed and increasing the session timeout to 1800 seconds (from the default 1200).

You can change the session timeout in the **Admin** > **Security** page in your Nexus Dashboard GUI. If you are logged out of your Nexus Dashboard session, it may take a minute before you can re-login to the UI.

- If you are adding an image from a remote location, choose how you will add the image:
  - If you choose **HTTP**, enter the full URL to the image in the **URL** field.
  - If you choose **SFTP/SCP**:
    a. In the **Remote Storage** field, choose an already-configured remote storage location from the list, if available, or click **Create Remote Storage Location**.

       If you click **Create Remote Storage Location**, follow the procedures provided in the section Create a remote storage location in Backing Up and Restoring Your Nexus Dashboard, then return here.

    b. In the **Remote Path Filename** field, enter the remote path for the image.

Step 4 Click Add to add the image.

The rightmost tile will show the image upload progress. Wait for it to finish before proceeding to the next section.



Note See Troubleshooting upgrades, on page 8 for more information on the validation checks that occur during this point of the upgrade and how to deal with upgrade issues that might arise.

a) After the validation is complete, these buttons appear in the card in the **Nexus Dashboard Releases** area in the **System Software** page.

- **Factory install**: The **Factory install** option wipes all data, including bootstrap configurations. You will have to re-bootstrap the cluster afterward.
- **Upgrade**: Click the **Upgrade** option if you are upgrading from a previous release. You do not have to perform a **Factory install** before upgrading.

Click the appropriate button to install or upgrade the software.

The installation progress window is displayed. You can navigate away from this screen while the update is in progress.

This step may take up to 60 minutes or more, depending on the number of nodes in the cluster, during which the nodes will reboot and the GUI will not be accessible. Nexus Dashboard goes through several stages:

- Install Release Firmware
- Disable Services
- Shutdown Infrastructure services
- Update Platform Services
- Enable Infrastructure Services
- Enable Services

You can click on the **Details** link to see the progress and the various stages of the upgrade.

Note If you see any issues during the upgrade process, such as a possible indexing issue, refer to Prerequisites and guidelines for upgrading an existing Nexus Dashboard cluster, on page 1 for more information and possible workarounds.

After the process above is complete, you should be upgraded to Nexus Dashboard 4.3.1.

Note Depending on the cluster format and the number of cluster nodes that you have deployed, certain features (such as controller, orchestrator, or telemetry) might not be available. Review the information in the Nexus Dashboard Capacity Planning tool to verify what features would be available for your cluster installation.

Step 5 After the node upgrade tasks are completed, verify that the nodes are healthy and you can log into the UI.

Once the upgrade process completes, you can view the Nexus Dashboard UI as you typically would.

You can check the **Overview** page for overall system health and the **Admin** > **System Software** page to see the current `Running` version.

Step 6 Review the cluster name changes in DNS.

Beginning with Nexus Dashboard release 4.3.1, for fresh installs and upgrades, the cluster DNS will be hardcoded to `nd-cluster.case.local`. When upgrading from previous releases to Nexus Dashboard release 4.3.1, the DNS domain name that you see based on the cluster name will change after the upgrade, and you will see the fixed cluster name (`nd-cluster.case.local`) rather than the cluster name within that DNS domain.

Troubleshooting upgrades

After all the nodes restart during new image activation stage described in the previous section, you may log in to the GUI to check the status of the upgrade workflows. Initially, you can see the bootstrap process similar to the initial cluster deployment and once the nodes come up, you can see additional information about service activation in the GUI's **Overview** page.

In case the upgrade fails for any reason, the GUI will display the error and additional workaround steps. For example, you might then see an error message, along with the remedy, similar to this:

```
Failed to activate

Upgrade failed while shutting down the cluster: Operation Timedout, last status: Operation
 Timedout


Please login to one of the primary nodes as 'rescue-user' and follow the steps provided by
 the upgrade recovery
helper by invoking following command: 'acs upgrade recover Cluster Shutdown'. If the issue
 persists, please contact Cisco TAC for assistance.
```

If an issue persists, click **Admin** to access Tech support. See *Working with Cisco Tech Support* for more information.