



Cisco Nexus Dashboard Insights Deployment Guide, Release 6.0.1

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First Published: 2021-09-14

Last Modified: 2022-07-14

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The Cisco Nexus Dashboard Insights Deployment Guide

New and Changed Information

The following table provides an overview of the significant changes up to the current release. The table does not provide an exhaustive list of all changes or of the new features up to this release.

Table 1. New Features and Changed Behavior in the Cisco Nexus Dashboard Insights

Feature	Description	Release
Cisco Nexus Dashboard Insights Deployment Guide	This document was first published.	6.0.1

This document is available from your Nexus Insights GUI as well as online at www.cisco.com. For the latest version of this document, visit [Cisco Nexus Insights Documentation](#).

Cisco Nexus Dashboard Insights Installation

About Cisco Nexus Insights

Cisco Nexus Dashboard Insights (Nexus Dashboard Insights) is a real-time monitoring and analytics service.

Prerequisites for ACI

- You have configured NTP settings on Cisco APIC. See [Configure NTP in ACI Fabric Solution](#).
- To use the flow telemetry functions in Nexus Dashboard Insights, Telemetry Priority must be selected in the ACI fabric node control policy. In Cisco APIC, choose **Fabric > Fabric Policies > *Policies > *Monitoring > Fabric Node Controls > your policy name > Feature Selection** to select Telemetry Priority.
- To use the flow telemetry functions in Nexus Dashboard Insights, Precision Time Protocol (PTP) must be enabled on Cisco APIC so that Nexus Dashboard Insights can correlate flows from multiple switches accordingly. . In Cisco APIC, choose **System > System Settings > Precision Time Protocol > Admin State** to enable PTP.

The quality of the time synchronization via PTP depends on the accuracy of the PTP Grandmaster (GM) clock which is the source of the clock, and the accuracy and the number of PTP devices such as ACI switches and IPN devices in between.

Although a PTP GM device is generally equipped with a GNSS/GPS source to achieve the nanosecond accuracy which is the standard requirement of PTP, microsecond accuracy is sufficient for Nexus Dashboard Insights and its flow telemetry, hence a GNSS/GPS source is typically not required.

For a single-pod ACI fabric, you can connect your PTP GM via leaf switches. Otherwise, one of the spine switches will be elected as a GM. For a multi-pod ACI fabric, you can connect your PTP GM via leaf switches or via IPN devices. Your IPN devices should be PTP boundary clocks or PTP transparent clocks so that ACI switch nodes can synchronize their clock across pods. To maintain the same degree of accuracy across pods, it is recommended to connect your PTP GM via IPN devices.


See section "Precision Time Protocol" in *Cisco APIC System Management Configuration Guide* for details about PTP connectivity options.


- You have configured in-band management. See [Cisco APIC and Static Management Access](#).
- You have configured Fabric connectivity in Cisco Nexus Dashboard. See [Cisco Nexus Dashboard User Guide](#).
- If one or more DNS Domains are set under DNS Profiles, it is mandatory to set one DNS Domain as default. In Cisco APIC, choose **Fabric > Fabric Policies > Policies > Global8 > DNS Profile > default > DNS Domains** > set one as default. Failure to do will result in the same switch appearing multiple times in the Nexus Dashboard Insights Flow map.

- Deploy ACI in-band network by configuring EPG using the following:
 - Tenant = mgmt
 - VRF = inb
 - BD = inb
 - Node Management EPG = default/<any_epg_name>
- Nexus Dashboard's data-network IP address and ACI fabric's in-band IP address must be in different subnets.

Prerequisites for DCNM

- Cisco Nexus Dashboard Prerequisites
 - You have configured fabric connectivity in Cisco Nexus Dashboard. See [Cisco Nexus Dashboard User Guide](#) for more information.
 - The data network must have IP reachability to the fabrics' in-band IP addresses.
 - You have configured 7 persistent IP addresses from the data network to be used in Nexus Dashboard Insights collector services. For IPv6 management you must have configured 7 IPv6 addresses. See section *Cluster Configuration* in the [Cisco Nexus Dashboard User Guide](#) for more information.
 - For a DCNM site installation, the collectors will use persistent IP addresses. You must configure the persistent IP addresses before enabling Nexus Dashboard Insights.
 - If Cisco Nexus Dashboard is deployed in VMware ESX, you must enable promiscuous mode for both management and data network interface portgroups. See [Configuring promiscuous mode on a virtual switch or portgroup](#) for more information.
 - Starting with this release you can use IPv6 addresses to configure persistent IP addresses. You must use either IPv4 or IPv6 to configure persistent IP addresses for Nexus Dashboard Insights. See section *Cluster Configuration* in the [Cisco Nexus Dashboard User Guide](#) for more information.
 - IPv6 is supported for in-band management interface for leaf and spine switches. IPv6 is not supported for out-of-band management interface for leaf and spine switches.
 - Assurance Analysis, Firmware Update Analysis, and Connectivity analysis are not supported for IPv6 underlay EVPN Fabric.
 - For IPv6 address support, the site must be running Cisco DCNM Release 11.5(3) or later.
 - If adding a DCNM site, the Cisco Nexus Dashboard computes must be L2 adjacent (all of the computes should be in the same subnet).
- In Cisco DCNM, the primary and standby hosts (HA) return a status of OK:
 1. In Cisco DCNM, click **Administration**.
 2. Under Cisco DCNM Server, click **Native HA**.
 3. Check the **HA Status** attribute as shown in the following

 Data Center Network Manager

 | Administration / DCNM Server / Native HA

Native HA

Attribute Name	Value
Node ID	2
Virtual IP(VIP)	192.168.10.81
Active IP	192.168.10.77
Active Heart Beat IP	172.25.20.222
Active Host Name	pikannan-77.cisco.com
Standby IP	192.168.10.76
Standby Heart Beat IP	172.25.20.221
Standby Host Name	pikannan-76.cisco.com
HA Status	OK

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It may take some time for both hosts to be recognized. Once the OK status is displayed, AMQP notifications can begin. Check the AMQP server status below.

- The AMQP Server returns a status of OK:
 - In Cisco DCNM, click **Dashboard**.
 - In the *Server Status* tile, click **Health Check**.
 - Check the status of the **AMQP Server** component as shown in the following

Server Status

DCNM

Component	Status	Details
AMQP Server 10.126.216.240	✓ Ok	Service responds to user access.
DHCP Server Local	✓ Ok	Service is running.
TFTP Server Local	✓ Ok	Service is running.
EPLS Local	✗ Down	Service is stopped.
EPLC Local	✗ Down	Service is stopped.

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- Precision Time Protocol (PTP) must be configured on all nodes you want to support with Nexus Dashboard Insights. In both managed and monitor site mode, you must ensure PTP is correctly configured on all nodes in the site.
 - For details about Precision Time Protocol see, *Cisco DCNM LAN Fabric Configuration Guide*.

Ensure PTP is enabled in Cisco DCNM easy site setup. In the **Advanced** tab on Cisco DCNM site setup, check the box for *Enable Precision Time Protocol (PTP)*.

- The PTP Grandmaster Clock should be provided by a device that is external to the network site. Using Cisco Nexus 9000 series switches as PTP Grandmaster is not supported.

The quality of the time synchronization via PTP depends on the accuracy of the PTP Grandmaster (GM) clock which is the source of the clock, and the accuracy and the number of PTP devices along the network path. Although a PTP GM device is generally equipped with a GNSS/GPS source to achieve the nanosecond accuracy which is the standard requirement of PTP, microsecond accuracy is sufficient for Nexus Dashboard Insights and its flow telemetry, hence a GNSS/GPS source is typically not required.

Guidelines and Limitations for ACI

- See [Cisco Nexus Dashboard User Guide](#) for information regarding the ports required by the Cisco Nexus Dashboard cluster and its services.
- You must use In-band VRF while configuring in-band management. Do not use unique VRF in tenant management for in-band configuration.
- After performing a restore the Nexus Dashboard cluster configuration in Nexus Dashboard, you must uninstall Nexus Dashboard Insights and install Nexus Dashboard Insights again.
- If there is a firewall between the Nexus Dashboard nodes and the network site, the firewall should not be doing NAT for the Nexus Dashboard nodes' IP addresses or the in-band management IP addresses of the network devices on the site, including the switches and the APIC or the DCNM controllers.
- The following Cisco Nexus 9000 ACI-Mode Switches versions are not supported with Nexus Dashboard Insights Flow Telemetry:
 - 14.2(4i)
 - 14.2(4k)
 - 15.0(1k)

If you enable Flow Collection for a Site Group that contains 1 or more unsupported switches, the status of Flow is displayed as **Disabled**. After you upgrade the switches to a supported version, the status of Flow is displayed as **Enabled**.

Guidelines and Limitations for DCNM

- See [Cisco Nexus Dashboard User Guide](#) for information regarding the ports required by the Cisco Nexus Dashboard cluster and its services.
- After performing a restore the Nexus Dashboard cluster configuration in Nexus Dashboard, you must uninstall Nexus Dashboard Insights and install Nexus Dashboard Insights again.
- If there is a firewall between the Nexus Dashboard nodes and the network site, the firewall should not be doing NAT for the Nexus Dashboard nodes' IP addresses or the in-band

management IP addresses of the network devices on the site, including the switches and the APIC or the DCNM controllers.


Downloading Cisco Nexus Dashboard Insights

Use this procedure to download Cisco Nexus Dashboard Insights from the Cisco DC App Center.

Before you begin

You must have administrative credentials to download applications from Cisco DC App Center.

Procedure

1. Log in to the [Cisco DC App Center](#) with admin privileges.
2. Click the **Download Applications** icon  on the far-right side of the work pane. A new browser tab or window opens to the Cisco App Center.
3. Search for Cisco Nexus Dashboard Insights using the search bar.
4. Select the Cisco Nexus Dashboard Insights version you want to download and click **Download**.
5. Review the license agreement and, if OK, click **Agree and download**. The Cisco Nexus Dashboard Insights is downloaded to your local machine.



Prior releases used .aci extension for Cisco Nexus Dashboard Insights images. Starting with release 6.0.1, Cisco Nexus Dashboard Insights will be available as .nap file instead.

6. Note the download location of the Cisco Nexus Dashboard Insights file on your local machine.
7. Move the downloaded Cisco Nexus Dashboard Insights file to a http server, which can then be uploaded to Cisco Nexus Dashboard.

Installing Cisco Nexus Dashboard Insights

Use this procedure to install Cisco Nexus Dashboard Insights on Cisco Nexus Dashboard.



Before enabling the Nexus Dashboard Insights, ensure that Cisco Nexus Dashboard cluster has at least three healthy master nodes.

Before you begin

- You have installed and configured the Cisco Nexus Dashboard. See the [Cisco Nexus Dashboard Deployment Guide](#).
- You must have administrator credentials to install Nexus Dashboard Insights.
- You have downloaded Nexus Dashboard Insights from [Cisco DC App Center](#).

Procedure

1. Log in to the Cisco Nexus Dashboard GUI with admin privileges.
2. In the **Navigation** pane, choose **Services > Service Catalog**.
3. You can download and install the service from the AppStore. In the **Navigation** pane, choose **Service Catalog > AppStore**.
 - a. In the Nexus Dashboard Insights tile, click **Install**. Nexus Dashboard Insights will download the service directly from the Cisco DC App Center and install it. After the process completes, the service will be available in your Service Catalog.
 - b. Once the installation is completed, click **Enable**.
4. You can also manually install the service.
 - a. Click **Actions > Upload**.
 - b. Choose the image file you downloaded the Cisco DC App Center. You can choose to upload the application from an http service or from your local machine.
 - c. To upload a local image, select **Local** and click **Choose File** to select the file you downloaded to your local system.
 - d. To use a remote server, select **Remote** and provide the URL to the image file.



If you are providing an http URL to the image, your web server must be configured to not interpret **.nap** files and serve them as-is. Typically, this means including the extension in the following line in the web server's **httpd.conf** configuration file: **AddType application/x-gzip .gz .tgz .nap**

- e. Click **Upload**.
 - f. Once the installation is completed, click **Enable**.
5. Select **Deployment Profile** from the menu. The deployment profile defines the resources that the Cisco Nexus Dashboard will allocate to the Nexus Dashboard Insights service. See [Important Notes](#).
 - Deployment profile *physical-standard* : Standard scale profile suitable for more than 50 nodes and 10,000 to 20,000 flows on physical Nexus Dashboard.
 - Deployment profile *physical-small* : Small scale profile suitable for less than 50 nodes and 10,000 flows on physical Nexus Dashboard.
 - Deployment profile *virtual* : Small scale profile for 50 nodes and 2500 flows on virtual Nexus Dashboard Deployment. For virtual deployment profile, you must have 3 data nodes and 3 app nodes. See [Important Notes](#).
 6. Click **Enable**.
 7. Once the service is enabled, click **Open**. The **No Sites Enabled** page is displayed.
 8. Click **Configure Site Group** to set up Nexus Dashboard Insights. See the *Cisco Nexus Dashboard Insights User Guide* for more information.

Important Notes

Table 2. Resource Requirements for Deployment Profile physical-standard

Type	Minimum Usage (Request)	Maximum Usage (Limit)
CPU	13 cores	64 cores
Memory	131.84 GB	312.91 GB
Storage	1.25 TB	-

Table 3. Resource Requirements for Deployment Profile physical-small

Type	Minimum Usage (Request)	Maximum Usage (Limit)
CPU	12 cores	52 cores
Memory	123.73 GB	297.01 GB
Storage	1.2 TB	-

Table 4. Resource Requirements for Deployment Profile virtual

Type	Minimum Usage (Request)	Maximum Usage (Limit)
CPU	11 cores	40 cores
Memory	48.65 GB	132.4 GB
Storage	240.52 GB	-

- To change the service deployment profile from a lower size to higher size (for example from physical-small to physical-standard), you must disable Nexus Dashboard Insights and then change the service deployment profile. See *Changing Service Deployment Profile* in the [Cisco Nexus Dashboard User Guide](#).
- To change the service deployment profile from a higher size to lower size, you must delete Nexus Dashboard Insights and then reinstall.
- To change the Infra services deployment profiles on Cisco Nexus Dashboard, see *App Infra Services* in the [Cisco Nexus Dashboard User Guide](#).
- For cluster sizing information and recommended number of nodes based on specific use cases, see the [Cisco Nexus Dashboard Capacity Planning Tool](#).
- For virtual deployment profile, you must have 3 data nodes and 3 app nodes. The data nodes must be deployed as master nodes and app nodes must be deployed as worker nodes. See [Cisco Nexus Dashboard User Guide](#).
 - The data node must include the following system resources:
 - 32 vCPU
 - 128 GB of RAM
 - 3 x 1 TB SSD/NVMe disks
 - The app node must include the following system resources:
 - 16 vCPU



- 64 GB of RAM
- 550 GB SSD or HDD disk
- Deploying Nexus Dashboard Insights on a virtual Nexus Dashboard cluster is only supported on 4th Generation Intel Core Processor or later.

Disabling and Deleting Cisco Nexus Dashboard Insights on Cisco Nexus Dashboard

Before you begin

You need administrator credentials for Cisco Nexus Dashboard.

Procedure

1. Log in to Cisco Nexus Dashboard as an admin.
2. In the **Navigation** pane, choose **Services** > **Service Catalog** to view the services hosted on Cisco Nexus Dashboard.
3. Select the Cisco Nexus Dashboard Insights service.
4. Click  and then click **Disable** to disable the service.
5. Click  and then click **Delete** to delete the service.

Cisco Nexus Dashboard Insights Upgrade

Supported Upgrade Paths for Cisco Nexus Dashboard Insights

From	To
Cisco Nexus Insights 6.0.1 on Cisco Nexus Dashboard 2.1.1	Cisco Nexus Dashboard Insights 6.0.1 patch on Cisco Nexus Dashboard 2.1.1
Cisco Nexus Insights 5.1 on Cisco Nexus Dashboard 2.0.2	Cisco Nexus Dashboard Insights 6.0.1 on Cisco Nexus Dashboard 2.1.1

- See [Cisco Nexus Dashboard Deployment Guide](#) for information on upgrading Cisco Nexus Dashboard.
- For cluster sizing information and recommended number of nodes based on specific use cases, see the [Cisco Nexus Dashboard Capacity Planning Tool](#).

Guidelines and Limitations

- If you are running Cisco Nexus Insights, you must disable the service before upgrading to Nexus Dashboard, Release 2.1.1. After the Nexus Dashboard upgrade is complete, enable Nexus Insights 5.1 and then install and upgrade to Nexus Dashboard Insights, Release 6.0.1.
- It is recommended to upgrade the platform and the service together. You must perform the upgrade in the following order:
 1. Upgrade Nexus Dashboard Release 2.0.2 to Nexus Dashboard Release 2.1.1.
 2. In the same maintenance window as the platform upgrade, upgrade the Nexus Dashboard Insights Release 5.1. to Nexus Dashboard Insights Release 6.0.1
- If you are running Cisco Network Assurance Engine in your cluster, you must delete Cisco Network Assurance Engine before upgrading.
- After upgrading from Nexus Insights 5.1 to Nexus Dashboard Insights Release 6.0.1, you must set the DCNM and switch credential in Nexus Dashboard Insights to run Assurance Analysis and Delta Analysis. See section "Cisco Nexus Dashboard Insights Configuring the Basics for Day 0 Setup" in the *Cisco Nexus Dashboard Insights User Guide, Release 6.0.1 - For Cisco DCNM*

Upgrading Nexus Dashboard Insights


Use this procedure to upgrade Nexus Dashboard Insights on Cisco Nexus Dashboard.

Before you begin

- You must have administrator credentials to upgrade Nexus Dashboard Insights .
- You have downloaded the latest version of Nexus Dashboard Insights from the Cisco DC App Center.

- Ensure that you have to upgraded to Cisco Nexus Dashboard Release 2.1.1. See [Cisco Nexus Dashboard Deployment Guide](#).
- You must delete the older versions of Cisco Network Assurance Engine before upgrading to the latest version of Nexus Dashboard Insights.

Procedure

1. Log in to the Cisco Nexus Dashboard GUI with admin privileges.
2. Click **Service Catalog** tab on the left navigation pane.
3. Click **Actions > Upload**.
4. Install the new version. See [Installing Cisco Nexus Dashboard Insights](#).
5. Click **Refresh** icon  to check the upload status.
6. Click the ellipses icon on the Nexus Dashboard Insights tile.
7. Click **Available Versions**.

The popup window displays the available Nexus Dashboard Insights versions.

8. Click **Activate**.
9. Once the new version appears on the Nexus Dashboard Insights tile, the upgrade is complete.
10. Click **Open** to launch the upgraded Nexus Dashboard Insights service.

This upgrade procedure preserves the user data from the previous installation. Nexus Dashboard Insights detects and adds the on-boarded site automatically since the data is already available.