

Configuring Licensing, Release 4.1.1

Table of Contents

New and changed information . . . 1
Navigate to Licensing . . . 2
License management . . . 3
- Fabric license tiers . . . 3
- Licenses . . . 3
- Configuration setup . . . 4
- Supported NX-OS platform . . . 4
- Guidelines and limitations for LAN license management . . . 4
- Guidelines and limitations for SAN license management . . . 4
- Working with Smart Licensing . . . 4
  - Smart Licensing guidelines and limitations . . . 4
  - Configure the routes for an online direct connection . . . 5
  - Generate a Smart Licensing token . . . 5

View licenses for fabrics in Nexus Dashboard . . . 6
View license tier for a fabric . . . 7
Multi-cluster environment considerations . . . 8
Editing license tier assigned for a fabric . . . 9
View information for Nexus Dashboard-managed licenses and switch-local licenses . . . 10
- Nexus Dashboard managed . . . 10
- Switch-local . . . 11
  - Manage license files . . . 12

View details and status for license management and smart licenses . . . 14
- License management . . . 14
  - Resync . . . 14
- Smart license details . . . 14
- Smart licenses . . . 15

Configure license management . . . 16
- Switch-based license only . . . 16
- Nexus Dashboard managed smart license . . . 17
  - Online . . . 19
  - Offline . . . 20
- Mixed mode . . . 21
- Additional Nexus Dashboard licensing information . . . 22

New and changed information

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

Release Version	Feature	Description
Nexus Dashboard 4.1.1	Improved navigation and workflow when configuring licenses	Beginning with Nexus Dashboard 4.1.1, the workflow and navigation for configuring licenses for your Nexus Dashboard fabrics has been enhanced.
Nexus Dashboard 4.1.1	Nexus Dashboard license tier for fabric	With this release, Nexus Dashboard allows you to configure each fabric independently with one of the license tiers: **Essentials**, **Advantage**, or **Premier**. Nexus Dashboard grays out features that may not be entitled and displays a lock icon next to the feature. Hovering over the lock icon displays a tooltip indicating the reason for the feature's unavailability. For information on features included with each license tier, you can click the tooltip in the **License tier for fabric** area. For more information, see the View license tier for a fabric.

Navigate to Licensing

The information displayed on **Admin > Licensing** varies, depending on if you are configuring Nexus Dashboard licensing for the first time, or if you are updating an existing license configuration.

To navigate to **Licensing**:

1. Click **Admin > Licensing**.
2. If you are configuring Nexus Dashboard licensing for the first time, the text License management is not configured appears on **Licensing**. Click **Configure license management** to configure license management in this case. For more information, see Configure license management.
3. If you've already configured license management, but you want to make additional license management configurations, click **Configuration setup** on **Licensing**, then click Configure license management on **Configuration setup** to configure license management. For more information, see Configure license management.

License management

Nexus Dashboard licensing is a software management platform that manages all Nexus Dashboard product licenses.

1. Navigate to Licensing.
2. You can view and assign licenses in these tabs on the **Licensing** page.
    - Fabric license tiers
    - Licenses
    - Configuration setup

The table displays the fields that appear on **Fabric license tiers**.



Fabric license tiers appears for LAN deployments only.

Fabric license tiers

Field	Description
Smart license server status	Specifies the status of Smart Licensing.
License tiers by fabric	Specifies the the type of license tier.
View license tier details	Click this option for a detailed view of the licensing options.
Fabric name	The name for the fabric. Even though this field is shown, it is not editable.
Fabric type	Specifies the type of fabric.
Switches on fabric	Specifies the switches on the fabric.
License tier	Specifies the licensing tier for the fabric: · **Essentials** · **Advantage** · **Premier**

The table displays the fields that appear on **Licenses**.

Licenses

Field	Description
Nexus Dashboard managed	Specifies the licenses that you need to purchase or that are expiring soon.
Switch-local	Specifies the licenses that you need to purchase or that are expiring soon.

The table displays the fields that appear on **Configuration setup**.

Configuration setup

The table displays the fields that appear on **Configuration setup**.

Field	Description
License management	Displays a status dashboard of the Nexus Dashboard-managed licenses.
Status	Displays a status dashboard of the smart license details.
Smart licenses	Displays that Smart Licensing is configured. You have to configure Smart Licensing at least once even if you choose a switch only to see the other pages.

Supported NX-OS platform

For license tiering support for **Advantage** and **Premier** license tiers, the supported NX-OS version is Cisco NX-OS Nexus 9000 version 10.5.2 and higher.

Guidelines and limitations for LAN license management

- There are no **Actions** drop-down list options at the switch level for LAN deployments.
- In a fabric group, if you configure a switch with a border gateway role, Nexus Dashboard uses an **Advantage** license tier by default, even if you selected an **Essentials** license tier.
- For Cisco Nexus 3000 series switches, Nexus Dashboard applies the **Essentials** license tier, even though you chose the **Advantage** or **Premier** license tier.

Guidelines and limitations for SAN license management

- SAN deployments include the **Actions > Assign all** and **Unassign all** options at the switch level.
- The **Fabric license tiers** tab is not available for SAN deployments.
- SAN deployments continue to use the DCNM-SAN license for all Cisco Nexus 9000 and Cisco Nexus 3000 series switches. SAN deployments do not use license tiers.

Working with Smart Licensing

Nexus Dashboard Smart Licensing is a software management platform that manages all Nexus Dashboard product licenses. You can establish connectivity to the Cisco Smart Software Manager (CSSM) from your Nexus Dashboard cluster and track the inventory and license consumption.

Smart Licensing guidelines and limitations

These guidelines apply when enabling CSSM connectivity for Nexus Dashboard.

- While this release allows you to see the licenses that are currently in use, it does not enforce the licensing policy and is used for informational purposes only.

- License information is updated any time you add or remove a fabric or a switch.
- When connecting Smart Licensing to a Smart Account that includes an accented character or a diacritic, you may receive an establishing trust timed-out error message.
- Connectivity for smart licensing to CSSM, proxy, or on-prem occurs over management network.

Configure the routes for an online direct connection

1. Ensure that your Nexus Dashboard cluster can connect to the Smart Licensingm service.
2. Verify if your cluster can access the licensing service at https://smartreceiver.cisco.com/licservice/license, or else you might need to configure a route for your cluster or use the **Proxy** or **On prem** transport. For more information, see Nexus Dashboard managed smart license.

Generate a Smart Licensing token

To generate a Smart Licensing token:

1. Navigate to https://software.cisco.com/software/smart-licensing/inventory.
2. Choose your virtual account.
3. Under **Product Instance Registration Token**, click **New Token**.
4. Define the expiration for your new token and click **Create Token**.

View licenses for fabrics in Nexus Dashboard

Click **View details** to see the features available for each licensing tier. You can view the existing licenses for fabrics in Nexus Dashboard on the **Fabric license tiers** page.

To navigate to the **Fabric license tiers** page, click **Admin > Licensing**, then click the **Fabric license tiers** tab, which displays by default.

You can review the licensing information on the **Fabric license tiers** page.

- In the upper licensing card, review the fabric licensing information at the Nexus Dashboard level.
  - **Smart licensing server status**—Shows the status of the licensing.
  - **License tiers by fabric**—Shows the number of licenses used by the fabrics in the Nexus Dashboard, broken down by tiers. Click on any of the three tiers listed to automatically filter results in the table for only that license tier.
- In the lower table, review the licensing information for each fabric in Nexus Dashboard.
  - **Fabric name**—Shows the name of the fabric.
  - **Fabric type**—Shows the type of fabric.
  - **Switches on fabric**—Shows the number of switches in the fabric.
  - **License tier**—Shows the license tier used by the fabric.

View license tier for a fabric

In Nexus Dashboard 4.1.1, licensing tier selection is applied on a per fabric basis. Features supported within each tier are based on the hardware and software versions supported on various platforms.

If a feature is unavailable due to insufficient licensing, it will be grayed out and appear with a lock icon. Hovering over the lock icon displays a tooltip with a **View details** link, which provides more information about the required license tier for that specific feature. For a complete list of features and associated license tiers, see the **License tier details** page on the Nexus Dashboard UI. For information on how to update your license tier, see Editing license tier assigned for a fabric.



In Nexus Dashboard 4.1.1, license tier selection is honor-based for all features. In future versions, a grace period will be provided before access is limited to features within the chosen tier.

You can view the license tier for fabric details from one of these pages:

- Navigate to **Manage > Fabrics**.
  - Click on a fabric to view the fabric **Overview** page.
  - Scroll down to the **General** area and click on the License tier value (for example, Premier) to launch the **License tier for fabric** page.
- Navigate to **Manage > Fabrics** .
  - Choose a fabric and click **Actions > Edit Fabric Settings**.
  - Scroll down to **License tier for fabric** field and click the tooltip icon to launch the **License tier for fabric** page.

Multi-cluster environment considerations

In a multi-cluster environment, you can only change the license tier of a fabric if you are on the owner cluster of that fabric. You can verify the owner cluster information in the Nexus Dashboard UI.

- Navigate to **Manage > Fabrics**.
- Click the **Local** tab and locate the fabric you want to update.
- Check the **Owner** column in the table.
  - If the owner cluster name matches the current cluster name (shown in the top left corner of the Nexus Dashboard UI), you are permitted to modify the license tier.
  - If the cluster names do not match, the **License tier** section within the **Edit Fabric Settings** will be disabled (grayed out), and changes to the license tier will not be allowed.

Editing license tier assigned for a fabric

Follow these steps to edit the license tier (Essentials, Advantage, or Premier) assigned for a fabric.

1. Navigate to **Manage > Fabrics**.
2. Locate the fabric to edit the license tier information.
3. Click the circle next to the fabric you want to edit, then click **Actions > Edit Fabric Settings**.

   The **Edit *fabric_name* Settings** page appears.
4. In the **General** tab, scroll to the **License tier for fabric** field.
5. Choose the appropriate tier for your fabric: **Essentials**, **Advantage**, or **Premier**.
6. Click **Save** to apply the updates to your fabric.

   Nexus Dashboard will redirect you to the fabrics page, where the updated tier will be reflected in the **License tier** column.



Changing your fabric's assigned license tier to a lower tier may require disabling features that are available with the current tier.

View information for Nexus Dashboard-managed licenses and switch-local licenses

You can view the existing Nexus Dashboard-managed licenses and switch-local licenses on the **Licenses** page.

1. Navigate to Licensing.
2. You can review licensing information on the **Licenses** page.
    - The **Nexus Dashboard managed licenses** card displays the total number of unlicensed Nexus Dashboard-managed devices where licenses need to be purchased or Nexus Dashboard-managed devices where licenses will be expiring soon.
    - The **Switch-local licenses** tile displays the total number of switch licenses to purchase and the total number of switch licenses that will be expiring.

Nexus Dashboard managed

The **Nexus Dashboard managed** tab displays the following information:

- License status of the managed devices
- Whether devices are licensed, unlicensed, or running in honor mode
- License expiry dates

On **Nexus Dashboard managed**, you can review the status of Nexus Dashboard licenses for each switch. These licenses can be provisioned on the device as a Smart License, an Honor License, or an Unlicensed device.

Choose one or multiple switches by clicking **Actions > Assign** or **Assign All**.

When you assign a license to a device, the Nexus Dashboard license service assigns the available license based on availability on the device, the status of smart licensing, and other factors.

The Cisco MDS switches and Cisco Nexus 3000, 5000, 7000, and 9000 series of switches support a server-based smart license.

The table displays the fields that appear on **Nexus Dashboard managed**.

Field	Description
Switch name	Displays the name of the switch.
Type	Displays the license type of the switch, which can be one of the following: - **Switch** - **Smart** - **Switch Smart** - **DCNM-Server**

State	Displays the license type of the switch, which can be one of the following: • **Permanent** • **Unlicensed** • **Smart** • **Honor** • **Expired** • **Not Applicable** • **Invalid**
Expiration date	Specifies the expiration date of the license. In the case of the Honor license, the expiration data field shows the date that the switch started using an Honor license.
Serial number	Displays the serial number of the device.
Model	Displays the model of the device. For example, DS-C9124 or N9K-C93180YC-FX3.
Fabric	Specifies the name of the fabric.

The table describes the items in the **Actions** drop-down list that appear on **Nexus Dashboard managed**.

Action Item	Description
Assign	Choose a switch, then from the **Actions** drop-down list, choose **Assign**. A confirmation message appears.
Unassign	Choose a switch, then from the **Actions** drop-down list, choose **Unassign**. A confirmation message appears.
Assign all	To assign a license to all the switches in the table: 1. From the **Actions** drop-down list, choose **Assign all**. A confirmation message appears. 2. Click **OK** to refresh the table.
Unassign all	To unassign a license from all the switches in the table: 1. From the **Actions** drop-down list, choose **Unassign all**. A confirmation message appears. 2. Click **OK** to refresh the table.

Switch-local

The **Switch-local** tab provides more detailed information about which license feature is currently in use on the switches.

The table displays the fields that appear on the **Switch-local** tab.

Field	Description

Switch	Displays the name of the switch.
Features	Displays the license features on the switch.
Status	Displays whether the feature on the device is in use or not: · **Unused** · **IN USE** · **Out Of Compliance**
Type	Displays the license type of the switch, which can be one of the following: · **Temporary** · **Permanent License** · **Smart License** · **Counter Permanent** · **Unlicensed** · **Counted**
Warnings	Specifies the warnings about the license, such as the expiration date and time.
Group	Specifies the fabric name.

Manage license files

Nexus Dashboard allows you to upload multiple licenses with a single instance. Nexus Dashboard parses the license files and extracts the switch serial numbers. Nexus Dashboard maps the serial numbers in the license files with the discovered fabric to install the licenses on each switch. License files are moved to bootflash and installed.

To bulk install licenses on the switches on Nexus Dashboard:

1. On the **Switch-local** tab, click **Manage license files**.

   The **Manage license files** page appears.

2. Click **Actions > Add license**.

   The **Add license file** page appears.

3. Drag and drop the appropriate files from your local directory, or click **Browse** to navigate to your local directory to select the appropriate files.
4. Click **Upload**.

   The license file is uploaded to Nexus Dashboard. The following information is extracted from the license file:

   - **Switch IP**—IP address of the switch to which this license is assigned
   - **License file**—Filename of the license file
   -

Features list—List of features supported by the license file

5. Choose the set of licenses that you want to upload and install on the respective switches. A license file is applicable for a single specific switch.
6. Click **Actions > Install** to install the licenses.

   Nexus Dashboard uploads and installs the selected licenses on the respective switches. Status messages, including any issues or errors, are updated for each file as the installation completes.
7. After the licenses match with their respective switches and completes the installation, the **Status** column displays the latest status.

The table describes the fields that appear on the **Manage license files** page.

Field	Description
Switch	Specifies the switch name.
Switch IP	Specifies the switch IP address.
License File	Specifies the type of license file.
Status	Specifies the status of license.
Result Message	Specifies the license details.
Last Upload Time	Specifies the date and time uploaded on server.
Features	Specifies the license features.

View details and status for license management and smart licenses

This information is available in **Configuration setup**.

- License management
- Smart license details
- Smart licenses

License management

The information displayed in this card varies, depending on the following factors:

- If you've already configured license management and you selected **Switch based license only** on the Configure license management page, then the text "Switch based license only" appears in the **License management: Status** area.
- If you've already configured license management and you selected **Nexus Dashboard smart license** or **Mixed mode** on the Configure license management page, then information related to Nexus Dashboard Smart Agent appears in the **License management: Status** area:
  - **Nexus Dashboard managed smart license**: Shows **Enabled** or **Disabled** as the state for the Nexus Dashboard Smart Agent.
  - **License status**: Specifies the status of the licensing on Nexus Dashboard.

If you've already configured license management but you want to make additional license management configurations, click Configure license management on the **Configuration setup** page.

Resync

The **Resync** area is displayed only if you selected **Nexus Dashboard smart license** or **Mixed mode** on the Configure license management page.

When the total number of licenses for Nexus Dashboard devices are not same as the CSSM license count, click **Resync** to refresh the license count. Resync causes a local audit of the Nexus Dashboard licenses in the switch inventory and updates the smart license counts for reporting.

Smart license details

The **Smart license details** area is displayed only if you selected **Nexus Dashboard smart license** or **Mixed mode** on the Configure license management page.

This card provides detailed smart license information, such as the last report generated date, next report generated date, transport mode, UDI serial number, and so on.

- If you enabled smart licensing on the server in the *online* mode, it will also display the **Account Name**, **Virtual Account Name**, and **Transport URL**. For more information, see the Online procedure provided in Nexus Dashboard managed smart license.
- If you enabled smart licensing on the server in the *offline* mode, the **Export license data** and

Import license data options are displayed, and are used to export the license data and import the response from the CSSM. For more information, see the Offline procedure provided in Nexus Dashboard managed smart license.

Smart licenses

The **Smart licenses** area is displayed only if you selected **Nexus Dashboard smart license** or **Mixed mode** on the Configure license management page.

The following table describes the fields that appear in the **Smart licenses** area:

Field	Description
Name	Specifies the license name.
Count	Specifies the number of licenses used.
Status	Specifies the status of the licenses used. Valid values are **IN USE** and **NOT IN USE**.
Description	Specifies the type and details of the license.

For offline mode only, you need to upload or download license reports, go to https://software.cisco.com/ and navigate to **Smart Software Licensing > Reports**. In the **Usage Data Files** tab, click **Upload Usage Data** to upload usage reports from Nexus Dashboard. After a few minutes of uploading the report, click **Download** in the **Acknowledgment** column to download a response, then import the response into Nexus Dashboard.

Configure license management

Follow the procedures in this section to configure license management.

1. Navigate to Licensing.

   The **Licensing** page appears.

2. Click **Configure License Management**.

   The **Licensing > Configuration setup** page displays.

3. In the **License management** area, click **Configure license management**.

   The **Configure License Management** page appears.

4. Choose the appropriate license management option based on the licenses that you've purchased.

   The following sections provide more information for each license management type displayed on this page:

   - Switch-based license only: These are licenses that have one of these characteristics:
     - They are licenses that reside on the switch, such as legacy file-based licenses, or
     - The switch has smart license mode enabled and retrieves its own license from CSSM (DCNM-LAN, DCNM-SAN, and NX-OS Essentials, Advantage, or Premier License)
   - Nexus Dashboard managed smart license: These are smart licenses for the following switches:
     - N7K
     - N5K
     - 3rd-party switches
     - Switches that do not have switch-based licenses

       See Working with Smart Licensing if you choose this option.
   - Mixed mode: These are a combination of both switch-based licenses and Nexus Dashboard smart licenses.

Switch-based license only

To configure switch-based license management:

1. On the **Configure License Management** page, click **Switch based license only**, then click **Next**.

   The **Switch based license only** page appears.

2. Verify that the information provided on this page applies for your switches.

   This mode supports switches operating with the legacy file-based licenses or the switch smart license mode.

- **Legacy file based licenses**:

  You should have licenses reside on the switch in this mode.

- **Switch Smart License**:

  If smart licensing mode is configured on the switch, the switch reports smart license usage to CSSM (Cisco Smart Software Manager). See the documentation for enabling Smart Mode.

  - Minimum NX-OS version for smart license mode: 9.3(6)
  - Minimum MDS version for smart license mode: 9.2(2)

3. Click **Continue** to complete the switch-based license management configurations.

   The **Summary** page appears.

4. Review the licensing selections shown on the **Summary** page.

   The **Summary** page displays the selection that you made on the **Select type** page.

5. When you have verified that the information on the **Summary** pagew is correct, click **Submit**.

Nexus Dashboard managed smart license

Nexus Dashboard allows you to configure Smart Licensing. Cisco Smart Licensing is a flexible licensing model that provides you with an easier, faster, and more consistent way to purchase and manage software across the Cisco portfolio and across your organization. You can use the Smart Licensing feature to manage licenses at the device level and renew them if required.

To use Smart Licensing, you must first set up a Smart Account on Cisco License Central. For a more detailed overview on Cisco Licensing, visit the Licensing Hub.

The Smart Licensing policy runs in the license microservice and provides the ability to manage licenses for Nexus Dashboard using CSSM. You can register smart licensing on-premises or in the offline mode.

You can discover, configure, and manage licenses for third-party switches, such as Arista switches, on Nexus Dashboard. You can either configure third-party Essentials licenses for fixed platforms or third-party Essentials licenses for modular platforms.

To view a list of supported platforms and chassis IDs, see Smart Licensing Using Policy for Cisco NDFC, Release 12.1.x.



- Enable Nexus Dashboard server Smart Licensing; otherwise, the license will be in the **Honor** state.
- When you register Smart Licensing on Nexus Dashboard directly with internet access, you might see an error message because Nexus Dashboard uses IP addresses to access the Smart License rather than using a hostname.

  Ensure that subnets for IP addresses on https://smartreceiver.cisco.com are added to the route table in Nexus Dashboard.

  To add IP addresses/subnets, in Nexus Dashboard, navigate to the **Admin >**

System Settings > Routes area. Click **Edit** in the **Management network routes** area and add the necessary IP addresses/subnets, then click **Save** to confirm.

You can ping https://smartreceiver.cisco.com to find the most recent subnet. For example:

```
$ ping smartreceiver.cisco.com
PING smartreceiver.cisco.com (146.112.59.81): 56 data bytes
64 bytes from 146.112.59.81: icmp_seq=0 ttl=52 time=48.661 ms
64 bytes from 146.112.59.81: icmp_seq=1 ttl=52 time=44.730 ms
64 bytes from 146.112.59.81: icmp_seq=2 ttl=52 time=48.188 ms
```

- After you register Smart Licensing, you must manually assign licenses to the existing switches. For all switches discovered after registration, Smart Licenses are automatically assigned to the switches.
- Switch-based Smart Licenses are supported for Multilayer Director Switch (MDS) switches and the Nexus 9000 and 3000 series of switches.

To configure Nexus Dashboard managed smart licenses:

1. On the **Configure License Management** page, click **Nexus Dashboard managed smart license**, then click **Next**.

   The **Select mode** step in the license management wizard appears.

2. Select the appropriate mode for your Nexus Dashboard smart license management:
   - Online: In the **Online** mode, Nexus Dashboard can communicate with the Cisco Smart Licensing servers to report license usage. This includes:
     - **Direct Connection**: This is the most commonly used network setting. The Nexus Dashboard must have an Internet connectivity so that the Nexus Dashboard can send RUM reports to the CSSM directly. The DNS must be configured and the CSSM hostname (https://smartreceiver.cisco.com/licservice/license) must be pingable.
     - **Via a proxy**: With this setting, the Nexus Dashboard does not have Internet connectivity. The Nexus Dashboard sends RUM reports to the CSSM using your web server. Make sure the web server is properly configured to allow the smart licensing messages to pass through the firewall and to reach the destination (https://smartreceiver.cisco.com/licservice/license).
     - **Using a Cisco OnPrem server**: In On-Prem mode, Nexus Dashboard can report to a **Smart Software Manager(SSM) On-Prem** using the SSM On-Prem's CSLU URL. The SSM acts as an intermediate server that resides within the local network, with an uplink to Cisco's SSM for periodic sync. For details on the SSM On-Prem, refer to the SSM On-Prem Cisco documentation.

       You require a trust token for direct connection and proxy. For more information, see the Cisco Software Licensing Guide.
   - Offline: In the **Offline** mode, you can share data between the Nexus Dashboard instance and CSSM. Operating in an air-gap or disconnected environment, usage reporting is done using

an xml file, which is downloaded from Nexus Dashboard before being uploaded to CSSM. A response file is then downloaded from CSSM, which is then uploaded to Nexus Dashboard. For more information, see the Cisco Software Licensing Guide.

Online

To enable the online mode:

1. Choose the **Online** option in the **Select mode** step in the license management wizard, then click **Next**.

   The **Select transport** step in the license management wizard appears.

2. Choose the transport option that you would like to use when establishing trust for the Smart License Agent:
   - **Direct**: With this transport option, Nexus Dashboard communicates directly with Cisco's licensing servers. This option uses the following URL: https://smartreceiver.cisco.com/licservice/license.
     a. Click **Direct**, then click **Next**.
     b. In the **Establish trust with CSSM** step, click **Get trust token**.

        For Direct transport, Nexus Dashboard must establish Trust with CSSM. A Trust Token can be retrieved or generated at https://software.cisco.com.

     c. Enter the trust token in the **Token** field, then click **Continue**.

        The **Summary** page appears. Go to Step 3.
   - **Proxy**: With this transport option, Nexus Dashboard uses a proxy to reach smartreceiver.cisco.com.
     a. Click **Proxy**, then enter the URL and port details to access the license using a proxy server.
     b. Click **Next**.

        The **Summary** page appears. Go to Step 3.
   - **On prem**: With this transport option, Nexus Dashboard communicates with OnPrem (CSLU Transport Protocol required).

     > You must configure the license smart URL on the product to use the CSLU transport URL.

     a. Click **On prem**, then enter the CSLU transport URL.

        You do not require a trust token to enable licensing. Trust is established between the CSSM and the OnPrem CSLU. From Nexus Dashboard and the OnPrem CSLU, trust is constant, as it expected to be a local connection.

     b. Click **Next**.

        The **Summary** page appears. Go to Step 3.

3. Review the licensing selections shown on the **Summary** page.

   The **Summary** page displays the selections that you made in the **Select type**, **Select mode**, and **Select transport** pages.

4. When you have verified that the information on the **Summary** page is correct, click **Submit**.

   A page appears, displaying the progress at each stage of the online license management configuration:

   - The **Enabling Smart Agent** field initially shows **In Progress**, then changes to **Success**.
   - The **Verifying connectivity to <URL>** field initially shows **Pending**, then changes to **In Progress**, and finally changes to **Success**.
   - The **Establish trust** field initially shows **Pending**, then changes to **In Progress**, and finally changes to **Trusted**.

5. When the state in all fields change to **Success** and **Trusted**, click **Done**.

   You return to the main **License Management** page, with the **Overview** tab selected by default.

   The fields in the **License Management Status** area should display the following values:

   - **Nexus Dashboard Smart Agent**: Enabled
   - **License Status**: In Use
   - **Trust Status**: Trusted

Offline

To export the license data and import the response from the CSSM:

1. Choose the **Offline** option in the **Select mode** step in the license management wizard, then click **Next**.

   The **Summary** page appears.

2. Review the licensing selections shown on the **Summary** page.

   The **Summary** page displays the selection that you made on the **Select type** and **Select mode** pages.

3. When you have verified that the information on the **Summary** page is correct, click **Submit**.

   A page appears, displaying the progress of the offline license management configuration:

   - The **Enabling Smart Agent** field changes to **Success**.
   - The **Setting Mode to OFFLINE** field moves from **In Progress** to **Success**.

4. When the state in both fields change to **Success**, click **Done**.

   You return to the main **License Management** page, with the **Overview** tab selected by default.

5. In the **Smart License Details** area, click **Export License Data**.

6. On Cisco Software Central, navigate to the smart licensing section, then click the **Reports** tab and choose the relevant usage data files tab.

   You can upload the usage report from Nexus Dashboard, and after few minutes, you can download a response and the import response to Nexus Dashboard.

7. In the **Smart License Details** area within the **Overview** tab on the **License Management** page, click **Import License Data** and upload the CSSM acknowledge file to Nexus Dashboard.

Mixed mode

To configure mixed-mode license management:

1. On the **Configure License Management** page, click **Mixed mode**, then click **Next**.

   The **Mixed Mode** page appears.

2. Verify that the information provided on this page applies for your switches.

   This mode supports both switch-based license and Nexus Dashboard Smart License.

   - Switch-based licenses include switches operating with the legacy file-based licenses or the switch smart license mode. See the documentation for enabling Smart Mode.
     - **Legacy file based licenses**: You should have licenses reside on the switch in this mode.
     - **Switch Smart License**: If smart licensing mode is configured on the switch, the switch reports smart license usage to CSSM (Cisco Smart Software Manager).
       - Minimum NX-OS version for smart license mode: 9.3(6)
       - Minimum MDS version for smart license mode: 9.2(2)
   - Nexus Dashboard Smart Licenses include smart licenses for N7K, N5K, 3rd party and switches that do not have switch-based licenses.

3. Click **Continue**.
4. Select the appropriate mode for your Nexus Dashboard smart license management:

   - Online: In the **Online** mode, you can communicate with the Cisco Smart Licensing servers to report license usage. This includes:
     - Direct Connection
     - Via a proxy
     - Using a Cisco OnPrem server

   A trust token is required for direct connection and proxy. See the Cisco Software Licensing Guide for more information.

   - Offline: In the **Offline** mode, you can share data between the Nexus Dashboard instance and CSSM. Operating in an air-gap or disconnected environment, usage reporting is done using an xml file, which is downloaded from Nexus Dashboard before being uploaded to CSSM. A response file is then downloaded from CSSM, which is then uploaded to Nexus Dashboard. See the Cisco Software Licensing Guide for more information.

Additional Nexus Dashboard licensing information

For more information on Nexus Dashboard licensing, see Nexus Dashboard Licensing.