



Manage Licenses

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License Manager Overview

The Cisco DNA Center License Manager feature helps you visualize and manage all of your Cisco product licenses, including Smart Account licenses. In the Cisco DNA Center GUI, click the **Menu** icon (☰) and choose **Tools > License Manager**. The **License Manager** page contains tabs with the following information:

- **Switch**: Shows purchased and in-use license information for all switches.
- **Router**: Shows purchased and in-use license information for all routers.
- **Wireless**: Shows purchased and in-use license information for all wireless controllers and access points.
- **ISE**: Shows purchased and in-use license information for devices managed by Cisco Identity Services Engine (ISE).
- **All License**: Shows comprehensive details for all types of licenses for all Cisco devices.

To manage licenses, you can use the controls shown above the table listings in each tab. The following table describes each of the controls. Note that not all controls are shown in all tabs.

Table 1: License Management Controls

Control	Description
Filter	Click Filter to specify one or more filter values and then click Apply . You can apply multiple filters. To remove a filter, click the x icon next to the corresponding filter value.
Change Cisco DNA License	Select one or more licenses and click Actions > Change Cisco DNA License to change the level of a selected Cisco DNA Center license to Essential or Advantage. You can also use this control to remove a Cisco DNA Center license. For more information, see Change License Level, on page 7 .
Change Virtual Account	Select one or more licenses and click Actions > Change Virtual Account to specify the Virtual Account used to manage these licenses.
Manage Smart License > Register	Select one or more Smart License-enabled devices and click Actions > Manage Smart License > Register to register the Smart License-enabled devices. Cisco DNA Center does not support Smart Account licenses for Cisco SD-Access.
Manage Smart License > Deregister	Select one or more Smart License-enabled devices and click Actions > Manage Smart License > Deregister to unregister the Smart License-enabled devices.
Manage License Reservation > Enable License Reservation	Choose the device for which you want to apply Specific License Reservation (SLR) or Permanent License Reservation (PLR), and click Actions > Manage License Reservation > Enable License Reservation .
Manage License Reservation > Update License Reservation	The device must be in SLR registered state. You can update the SLR applied to a wireless device or switches with a wireless controller package. Choose the device for which you want to update Specific License Reservation (SLR) then click Actions > Manage License Reservation > Update License Reservation
Manage License Reservation > Cancel/Return License Reservation	Choose the device and click Actions > Manage License Reservation > Cancel/Return License Reservation to cancel or return the SLR or PLR applied to the device.
Manage License Reservation > Factory License Reservation	Choose the device and click Actions > Manage License Reservation > Factory License Reservation to enable the factory-installed SLR on the device.
Recent Tasks	Click Recent Tasks to see a list of all 50 of the most recently performed Cisco DNA Center tasks. Use the drop-down at the top of the list to narrow the list to show only those tasks that ended in Success or Failure , or those that are still In Progress .
Refresh	Click this control to refresh the window.
Export	Click to export the list of displayed licenses as a CSV file. For more information, see Export License Information, on page 8 .
Find	Enter a search term in the Find field to find all licenses in the list that have that term in any column. Use the asterisk (*) character as a wildcard anywhere in the search string.
Show entries	Select the total number of entries to show in each page of the table.

The Licenses table displays the information shown for each device. All of the columns support sorting. Click the column header to sort the rows in ascending order. Click the column header again to sort the rows in descending order.




Note Not all columns are used in every tab. Additionally, some of the columns are hidden in the default column view setting, which can be customized by clicking the More icon () at the right end of the column headings.

Table 2: License Usage Information

Column	Description
Device Type: Device Series	Name of the device product series (for example, Catalyst 3850 Series Ethernet Stackable Switch). Click this link to view the license details window. For more information, see View License Details, on page 6 .
Device Type: Total Devices	The total number of devices in this product series that are under active management by Cisco DNA Center.
Purchased Licenses	The total number of purchased Cisco DNA Center subscription licenses for the devices in this product series.
Purchased Licenses: Network/Legacy	The total number of purchased Network (or Legacy) perpetual licenses for the devices in this product series.
Used Licenses	The total number of Cisco DNA Center subscription licenses applied to the devices in this product series.
Used Licenses: Network/Legacy	The total number of Network perpetual licenses for the devices in this product series.
Feature Licenses (applicable only for Routers)	The number of licenses purchased for specific features like security, AVC, and so on.

Table 3: All License Information

Column	Description
Device Name	Name of the device. Click this link to view the license details window. For more information, see View License Details, on page 6 .
Device Family	The category of device as defined by Cisco DNA Center (for example, Switches and Hubs).
IP Address	IP address of the device.
Device Series	The full name of the Cisco product series to which the listed device belongs (for example, Cisco Catalyst 3850 Series Ethernet Stackable Switch).
Cisco DNA License	The Cisco DNA Center license level.
Cisco DNA License Expiry	The date the Cisco DNA Center license expires.
License Mode	The Cisco DNA Center license mode.

Column	Description
Network License	The type of network license.
Virtual Account	The name of the Cisco Virtual Account managing the license for this device.
Site	The Cisco DNA Center site where the device is located.
Registration Status	The registration status of the device.
Authorization Status	The authorization status of the device.
Reservation Status	The reservation status of the device.
Last Updated Time	Last time this entry in the table was updated.
MAC Address	The MAC address of the licensed device.
Term	The total term during which the Cisco DNA Center subscription license is in effect.
Days to Expiry	The number of days remaining until the Cisco DNA Center license term expires.
Software Version	The version of the network operating system currently running on the device.

Integration with Cisco Smart Accounts

Cisco DNA Center supports Cisco Smart Accounts, an online Cisco service that provides simplified, flexible, automated software- and device-license purchasing, deployment, and management across your organization.

If you already have a Cisco Smart Account, you can use Cisco DNA Center to:

- Track your license consumption and expiration
- Apply and activate new licenses, without intervention
- Promote each device's license level from Essentials to Advantage (or vice versa) and reboot the device with the newly changed level of feature licensing
- Identify and reapply unused licenses
- Retire unused licenses

You can accomplish this automatically, without leaving Cisco DNA Center.

For more on the service itself, see [Cisco Smart Accounts](#) on cisco.com. For more on setting up your Cisco Smart Account for use with Cisco DNA Center, see [Set Up License Manager, on page 4](#).

Set Up License Manager

You must set up access to your Cisco Smart Account before you can use the Cisco DNA Center License Manager tools.

Before you begin

- Ensure that you have SUPER-ADMIN-ROLE permissions and the appropriate RBAC scope to perform this procedure.
- Collect the Cisco user ID and password for your Smart Account.
- If you have one or more Smart Accounts: Select the Smart Account that you want to use with Cisco DNA Center, and collect that account's user ID and password.
- To enable a Smart Account, Cisco DNA Center must have reachability to tools.cisco.com.
- To apply licenses to a device in Cisco DNA Center, the device must be present in Inventory, must have a site assigned to it, and must have reachability to tools.cisco.com.
- Ensure that all allowed ports, FQDNs, and URLs listed in the [Cisco DNA Center Installation Guide](#) are allowed on any firewall or proxy.

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- Step 1** Log in using a Cisco DNA Center system administrator username and password.
- Step 2** In the Cisco DNA Center GUI, click the **Menu** icon (☰) and choose **System > Settings > Cisco Accounts > Cisco.com Credentials**.
- Step 3** Under **Cisco.com Credentials**, enter the username and password for your Smart Account.
- Step 4** To access your Smart Account using a virtual or subordinate Smart Account name and password, under **Link Your Smart Account**, choose:
- **Use Cisco.com user ID** if your cisco.com and Smart Account credentials are the same.
 - **Use different credentials** if your cisco.com and Smart Account credentials are different, and then enter your Smart Account credentials.
- Step 5** Click **View all virtual accounts** to view all virtual Smart License Accounts.
- Step 6** Click **Apply**.
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What to do next

Register the Cisco DNA Center controller as a controller for Cisco Plug and Play Connect in a Cisco Smart Account, for redirection services. This also allows you to synchronize the device inventory from the Cisco Plug and Play Connect cloud portal to Cisco DNA Center Plug and Play. For more information, see "Register or Edit a Virtual Account" in the [Cisco DNA Center User Guide](#).

Visualize License Usage and Expiration

Cisco DNA Center can display graphical representations of your purchased licenses, how many of them are in use (that is, assigned to devices), and their duration.

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- Step 1** In the Cisco DNA Center GUI, click the **Menu** icon (☰) and choose **Tools > License Manager**.
- Step 2** Select the type of device category whose license usage you want to see: **Switches, Routers, Wireless, ISE, or All Licenses**.

The **License Usage** graphs at the top of the window display the aggregate number of purchased licenses and the number of those licenses currently in use for the device category you selected. The graphs also indicate the proportion of Essentials versus Advantage licenses within each total.

Under the graphs, the **License Usage** table gives subtotals for used and unused licenses, listed alphabetically by product family name.

Step 3 To see detailed comparisons for a particular product family, click the name of the product family given in the **Device Series** column in the table.

Cisco DNA Center displays a window giving details for the product family you selected.

Step 4 To see a graphical representation of license duration, scroll down to the **License Timeline** section of the window. The timeline graph for each product family is a visual representation of when the licenses in the configured Smart Account will expire for that product family.

View License Details


There are many ways to find and view license details in Cisco DNA Center. For example, you can click the license usage and term graphs displayed in the **Switches**, **Routers**, **Wireless**, **ISE**, or **All Licenses** tabs in the License Manager window. Each of these will display pop-ups with aggregated facts about licenses for each of these product families.

The simplest method for getting the most comprehensive license details for a single device is to use the License Manager's **All Licenses** table, as explained in the following steps.


Step 1 In the Cisco DNA Center GUI, click the **Menu** icon (☰) and choose **Tools > License Manager > All Licenses**.

The License Manager window displays a table listing all of your discovered devices and their licenses. Information in the table includes only basic device and license information, such as device type, license expiration dates, and so on.

Step 2 Scroll through the table to find the device whose license details you want to see. If you are having trouble finding the device you want, you can:

- **Filter:** Click  and then enter your filter criteria in the appropriate field (for example: enter all or part of the device name in the **Device Name** field). You may enter filter criteria in multiple fields. When you click **Apply**, the table displays only the rows displaying information that matches your filter criteria.

If you want to view the devices belonging to a particular site, navigate to the site in the left pane, and click the site. The devices will be filtered accordingly. A site marker indicating the site hierarchy is displayed at the top of the page.

- **Find:** Click in the **Find** field and enter the text you want to find in any of the table columns. When you press **Enter**, the table scrolls to the first row with text matching your entry in the **Find** field.
- **Customize:** Click  and select the columns you want displayed in the table. For example: Deselect **Device Model** or select **Days to Expiry**. When you click **Apply**, the table displays only the columns you selected.

Step 3 When you have found the device you want, click the **Device Name** link in the row for that device.

Cisco DNA Center displays a slider panel **License Details** window giving complete license details and license history for the device you selected. The **Actions** displays actions that can be performed on the device or its licenses.

When you are finished, click **✕** to close the **License Details** window.

Change License Level

You can upgrade or downgrade the feature level of your device licenses. You can do this with Cisco DNA Center (subscription) licenses. Your feature level choices are either the basic Essentials level or the comprehensive Advantage level. (Note that network license conversion is available for products in the Cisco Catalyst 9000 device family only and network license conversion is handled implicitly when the Cisco DNA Center license level is changed.)

Whenever you change a device's license level, Cisco DNA Center automatically downloads and applies your licenses behind the scenes, using your Smart Account.

Because applying a license level change requires a device reboot, License Manager prompts you to confirm that you want to reboot the device as soon as the license level change is complete. You can choose not to reboot with the license change, but you will need to schedule the reboot at a later time, or your license level change will not be applied.

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- Step 1** In the Cisco DNA Center GUI, click the **Menu** icon (**☰**) and choose **Tools > License Manager > All Licenses**. The License Manager window displays a table listing all of your discovered devices and their licenses.
- Step 2** Use **Find** or scroll through the table to find the devices whose license level you want to change. If you are having trouble finding the device you want, or want to select multiple devices, follow the tips in [View License Details, on page 6](#) to change the table to display only the devices you want.
- Step 3** Check the check box next to each device for which you want to change the license level, then choose **Actions > Change Cisco DNA License**. Cisco DNA Center displays a **Change License Level** window appropriate for the license type you want to change.
- Step 4** Click the license level you want for these devices: **Essentials** or **Advantage**. To remove the license from the device, click **Remove**.
- Step 5** Click **Next**. Cisco DNA Center asks if you want the change to be applied right away or at a later time. You also must choose whether you want to reboot the device as soon as its license status is updated.
- To continue:
- If you are not ready to make the change: Click **Back** to change your License Level selection, or click **✕** to close the window and cancel the change.
 - If you are ready to make the change immediately: Click **Now**, then click **Confirm**. The device using this license will reboot as soon as the change is applied.
 - If you want the change to be applied later: Click **Later**, enter a name for the scheduled task, and specify the date and time when you want the change to be applied. If you want the change to take place as scheduled in the time

zone of the site where the device is located, click **Site Settings**. When you are finished specifying the schedule parameters, click **Confirm**.

Export License Information

You can quickly export license information from Cisco DNA Center to backup PDF or Microsoft Excel files. These license backup files are intended to assist your organization's accounting and reporting needs.

- Step 1** In the Cisco DNA Center GUI, click the **Menu** icon (☰) and choose **Tools > License Manager**.
 - Step 2** Click **All Licenses**. Cisco DNA Center displays a list of all your currently assigned licenses.
 - Step 3** Click **Export**. Cisco DNA Center displays the Export Licenses window.
 - Step 4** Choose the destination file format.
 - Step 5** (Optional) Check the check box next to each type of license information that you want to exclude or include in the export. Check the check box at the bottom to save your choices as the default for later exports.
 - Step 6** Click **Export** and specify the location and file name for the exported license file.
 - Step 7** Click **OK** to complete the export.
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Auto Registration of Smart License-Enabled Devices

You can enable auto registration of Smart License (SL)-enabled devices. When auto registration is enabled, any SL-enabled devices added to Cisco DNA Center are automatically registered to the chosen virtual account.

- Step 1** Log in using a Cisco DNA Center system administrator username and password.
 - Step 2** In the Cisco DNA Center GUI, click the **Menu** icon (☰) and choose **System > Settings > Cisco Accounts > Cisco.com Credentials**.
 - Step 3** Click **License**.
 - Step 4** Check the **Auto register smart license enabled devices** check box.
 - Step 5** Choose a virtual account.
 - Step 6** Click **Apply**.
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Day 0 Configuration for Smart License-Enabled Devices

Devices that are already added to Cisco DNA Center before enabling auto registration are not automatically registered. You can view the Smart License-enabled devices that are not registered in the **All License** page.

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- Step 1** In the Cisco DNA Center GUI, click the **Menu** icon (☰) and choose **Tools > License Manager > All License**.
- The **License Manager** window displays a banner message with the number of SL-enabled devices that are not auto registered and a table listing all of your discovered devices and their licenses with a link to set up auto registration.
- Alternatively, you can filter the unregistered devices by using the **Registration Status** column.
- Step 2** Choose the SL-enabled devices that you want to register and choose **Actions > Manage Smart License > Register**.
- Step 3** Choose the virtual account and click **Continue**.
- Step 4** To register the devices:
- If you want to register the devices immediately, choose **Now** and click **Confirm**.
 - If you want to register the devices later, choose **Later** and specify a date and time. When you are finished specifying the schedule parameters, click **Confirm**.
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Apply Specific License Reservation or Permanent License Reservation to Devices

Smart Licensing requires a smart device instance to regularly sync with Cisco Smart Software Management (CSSM) so that the latest license status is refreshed and compliance is reported. Some customers have devices that are within highly secured networks with limited internet access. In these types of networks, devices cannot regularly sync with CSSM and show out of compliance. To support these customer environments, Specific License Reservation (SLR) and Permanent License Reservation (PLR) have been introduced. The License Manager enables Cisco DNA Center customers to reserve licenses securely from CSSM using an API-based workflow. In Cisco DNA Center, it requires a one-time connectivity to CSSM in the staging environment, then the devices never need to connect to Cisco in SLR or PLR mode. If no connectivity to CSSM or staging is possible, you can resort to the manual SLR/PLR workflow available in CSSM.

SLR lets you install a node-locked license file (SLR authorization code) on a product instance. This license file enables individual (specific) licenses (entitlement tags).

PLR lets you install an authorization code that enables all licensed features on the product.

Both SLR and PLR require preapproval at the Smart Account level. Contact licensing@cisco.com for support.

To enable SLR or PLR when both the device and Cisco DNA Center are connected to CSSM, see [Enable SLR/PLR when the Device and Cisco DNA Center Are Connected to CSSM, on page 10](#).

To enable SLR or PLR when the device and Cisco DNA Center do not have connectivity to CSSM, see [Enable SLR/PLR Using CSV when the Devices and Cisco DNA Center Are Not Connected to CSSM, on page 10](#).

Enable SLR/PLR when the Device and Cisco DNA Center Are Connected to CSSM

Before you begin

Ensure that both the device for which you want to generate SLR/PLR and Cisco DNA Center are connected to CSSM.

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- Step 1** In the Cisco DNA Center GUI, click the **Menu** icon (☰) and choose **Tools > Licenses > All Licenses**.
- Step 2** Select the devices for which you want to apply SLR or PLR, and choose **Actions > Manage License Reservation > Enable License Reservation**.
- Step 3** Choose **Specific License Reservation (SLR)** or **Permanent License Reservation (PLR)** and click **Continue** to obtain the request codes for the selected devices.
- Step 4** After the request codes are generated for the selected devices, click **Continue**.
- Step 5** Choose a virtual account from which you want to reserve licenses and click **Continue** to generate the authorization codes for the selected devices.
- Step 6** After the authorization codes are generated, do any of the following:
- To apply SLR immediately, choose the devices and click **Continue**.
 - To apply SLR at a later time, click **Apply Later**.
- Step 7** Click **Confirm** to apply SLR/PLR to the selected device.
- You can now view the updated status of the devices under **Reservation Status** on the **All Licenses** page.
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Enable SLR/PLR Using CSV when the Devices and Cisco DNA Center Are Not Connected to CSSM

Use this procedure to enable SLR/PLR for the devices that are not connected to CSSM.

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- Step 1** In the Cisco DNA Center GUI, click the **Menu** icon (☰) and choose **Tools > Licenses > All Licenses**.
- Step 2** Select the devices for which you want to apply SLR or PLR, and choose **Actions > Manage License Reservation > Enable License Reservation**.
- Step 3** Choose **Specific License Reservation (SLR)** or **Permanent License Reservation (PLR)** and click **Continue** to obtain the request codes for the selected devices.
- You also can connect to the device through Telnet to obtain the request code.
- Step 4** After the request codes are generated for the selected devices, click **Export**. This downloads the requestcodes.csv file, which contains the IP address, serial number of the device, and the request code.
- Step 5** Save the file to your preferred location.
- Step 6** Get the authorization code for each device from CSSM and update it in the csv file. See [Generate the Authorization Code from CSSM](#).

- Step 7** Click the **Upload CSV** link.
- Step 8** Click the **Select a file from your computer** link to select the saved csv file.
- Step 9** Click **Continue**.
- Step 10** Choose a virtual account from which you want to reserve licenses and click **Continue**. SLR/PLR are applied to the selected devices.
- You can now view the updated status of the devices under **Reservation Status** on the **All Licenses** page.
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Generate the Authorization Code from CSSM


Before you begin

You must have Smart Account credentials to log in to CSSM.

- Step 1** Log in to CSSM.
- Step 2** Choose **Inventory > Licenses > License Reservation**. The Smart License Reservation wizard appears.
- The **License Reservation** button is visible on the **Licenses** tab only if you have specific license reservation enabled for your Smart Account.
- Step 3** In the **Step 1: Enter Request Code** tab, enter the request code in the **Reservation Request Code** field and click **Next**.
- Step 4** In the **Step 2: Select Licenses** tab, check the **Reserve a specific license** check box.
- Step 5** In the **Quantity to Reserve** field, enter the number of licenses that you want to reserve and click **Next**.
- Step 6** In the **Step 3: Review and Confirm** tab, click **Generate Authorization Code**.
- Step 7** Obtain the authorization code from the **Step 4: Authorize Code** tab.
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Cancel SLR or PLR Applied to Devices

You can cancel or return the SLR or PLR that is applied to a device.

- Step 1** In the Cisco DNA Center GUI, click the **Menu** icon () and choose **Tools > Licenses > All Licenses**.
- Step 2** Click the device and choose **Actions > Manage License Reservation > Cancel/Return License Reservation**.
- Step 3** Click **Cancel** to return the licenses.
- You can view the updated status of the devices under **Reservation Status** on the **All Licenses** page.
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