Licenses and Software Updates

This section contains the following topics:

Prime Infrastructure Licensing

You purchase licenses to access the Prime Infrastructure features required to manage your network. Each license also controls the number of devices you can manage using those features. .

The **Administration > Licenses and Software Updates > Licenses** page allows you to manage traditional Cisco Prime Infrastructure, wireless LAN controllers, and Mobility Services Engine (MSE) licenses.

Although Prime Infrastructure and MSE licenses can be fully managed from the **Administration > Licenses and Software Updates > Licenses page**, you can only view Cisco Wireless LAN Controllers (WLC). You must use Cisco WLC or Cisco License Manager (CLM) to manage Cisco WLC licenses.

The **Administration > Licenses and Software Updates > Smart Software** Licensing page allows you to manage smart licenses.

You need a base license and the corresponding feature licenses (such as Assurance licenses) to get full access to the respective Prime Infrastructure features to manage a set number of devices.

If you have installed Prime Infrastructure for the first time you may access the lifecycle and assurance features using the built-in evaluation license that is available by default. The default evaluation license is valid for 60 days for 100 devices. You can send a request to ask-prime-infrastructure@cisco.com if:

- You need to extend the evaluation period
- You need to increase the device count
- You already have a particular feature license and need to evaluate the other feature licenses

You will need to order a base license and then purchase the corresponding feature license before the evaluation license expires. The license that you purchase must be sufficient to:

- Enable access to all the Prime Infrastructure features you want to use to manage your network.
- Include all the devices in your network that you want to manage using Prime Infrastructure.

To ensure you have the licenses to achieve these goals, do the following:

1. Familiarize yourself with the types of license packages available to you, and their requirements.
2. View the existing licenses. See for help on ordering and downloading licenses.
3. Calculate the number of licenses you will need, based both on the package of features you want and the number of devices you need to manage.
4. Add new licenses.
5. Delete existing licenses.

✎

Note As Prime Infrastructure no longer supports the node-locked licensing approach, the UDI information required to generate licenses are limited to a standard syntax as shown below:

- PID = PRIME-NCS-APL (For Physical Appliance)

  PID = PRIME-NCS-VAPL (For Virtual Appliance/Virtual Machine)

- SN = ANY:ANY

You must provide the subtleties in the mentioned format to generate new licenses.

For more information, see Cisco Prime Infrastructure Ordering and Licensing Guide.

Related Topics

Purchase Prime Infrastructure Licenses

Prime Infrastructure licenses control the features you can use and the number of devices you can manage using those features. For more information about Prime Infrastructure license types and how to order them, see the Cisco Prime Infrastructure Ordering and Licensing Guide for the version of Prime Infrastructure that you want to use.

You can ignore warning messages like "Base license is missing" or "Multiple base licenses present, use only one" displayed in the **Administration > Licenses and Software Updates > Licenses > Files > License Files** area.

Verify License Details

Before you order new licenses, you might want to get details about your existing licenses. For example, number of devices managed by your system.

To verify license details, choose **Administration** > **Licenses and Software Updates** > **Licenses**.

Related Topics

Add Licenses

You need to add new licenses when:

- You have purchased a new Prime Infrastructure license.
- You are already using Prime Infrastructure and have bought additional licenses.

Step 1   Choose **Administration** > **Licenses and Software Updates** > **Licenses**.

Step 2   In the **Summary** folder, click Files, then click **License Files**.

Step 3   Click **Add**.

Step 4   Browse to the location of the license file, then click **OK**.

Related Topics

Delete Licenses

When you delete licenses from Prime Infrastructure, all licensing information is removed from the server. Make a copy of your original license file in case you want to add it again later. There are several reasons you might want to delete licenses:

- You installed temporary licenses and want to delete them before applying your permanent licenses.
- You want to move your licenses to a different server. You must first delete the licenses from the original server, then send an email to licensing@cisco.com requesting a re-host for your licenses. You can then apply the re-hosted licenses to the new server.

Step 1   Choose **Administration > Licenses and Software Updates > Licenses**.

Step 2   Click Files > **License Files**.

Step 3   Select the license file you want to delete, then click **Delete**.

Related Topics

Troubleshoot Licenses

To troubleshoot licenses, you will need to get details about the licenses that are installed on your system. to:

- Get a quick list of the licenses you have: Click **Help > About Prime Infrastructure**.
- Get license details: Choose **Administration > Licenses and Software Updates > Licenses**.

When troubleshooting licenses, it is important to remember that Prime Infrastructure has six types of licenses:

- **Base**: Required for every Prime Infrastructure installation. The requirement stems primarily from the need to do accurate royalty accounting by knowing how many Prime Infrastructure instances have been purchased. A Base license is required for each instance of Prime Infrastructure, and is a prerequisite for all other license types.
- **Lifecycle**: Regulates the total number of devices under Prime Infrastructure management. Lifecycle license is consumed only for admin VDC in Prime Infrastructure. The child VDC does not consume any license. It is either auto-added by admin or added separately.
- **Assurance**: Regulates the total number of NetFlow devices under Prime Infrastructure management.
- **Collector**: Regulates the total number of NetFlow data flows per second that Prime Infrastructure can process.

Lifecycle and Assurance licenses are supplied in either evaluation or permanent form (there is no explicit evaluation version of the Base or Collector licenses):

- **Evaluation**: These licenses permit or extend access to Prime Infrastructure for a pre-set period. You can apply only one evaluation license of each type (that is, only one Lifecycle evaluation license, one Assurance evaluation license, and so on). You cannot apply an evaluation license over a permanent form of the same license.
- **Permanent License**: These permit access to Prime Infrastructure features as specified and are not time-limited. Permanent licenses can be applied over evaluation licenses, and can also be applied incrementally (that is, you can have multiple permanent Assurance licenses, and so on).

Prime Infrastructure also performs the following basic license checks:

- A Lifecycle license is a required prerequisite for Assurance licenses.
- An Assurance license is a required prerequisite for Collector licenses.

Also note that:

- From Release 3.0 Prime Infrastructure enables the user to set threshold limit for generating an alarm for all licenses. To set threshold limit for licenses, see "Configuring Notifications" in Related Topics.
- Prime Infrastructure hides Assurance-related features, menu options and links until an Assurance license is applied. Even if you have purchased an Assurance license, these features remain hidden until you apply it.
- Whenever you apply an Assurance license, you automatically apply a Collector license permitting an instance of Prime Infrastructure to process up to 20,000 NetFlow data flows per second. Collector licenses permitting 80,000 flows per second can be applied only with the Professional or equivalent configurations, due to the hard disk requirements imposed by this data rate.
- You can add Lifecycle and Assurance permanent licenses incrementally. However, you can add only one Collector 80K license, and then only with the Professional or equivalent configuration.

The following table provides some scenarios and tips for troubleshooting.

Table 1: Troubleshooting Scenarios

Scenario	Possible Cause	Resolution
Prime Infrastructure reports a Licensing error.	The license file may be corrupted and unusable. This can occur anyone attempts to modify the license file.	1. Delete the existing license. 2. Download and install a new license.

Scenario	Possible Cause	Resolution
Unable to add new licenses.	Some types of license must be added in the correct order. The Base license is a prerequisite for adding Lifecycle licenses. A Lifecycle license is a prerequisite for adding an Assurance license. An Assurance license is a prerequisite for adding a Collector license (a Collector license is added automatically with the Assurance license).	1. Add the Base license 2. Add Lifecycle licenses 3. Add Assurance licenses 4. Add Datacenter licenses 5. Add Collector licenses
The state of the devices has changed to unmanaged.	The device limit must be less than or equal to lifecycle license limit. The state of the inventoried devices will change to unmanaged if you add or delete devices.	1. Delete the additional devices. 2. The state of the devices will change to managed after the 24 hours synchronization. To verify that the status of the inventoried devices has changed to "managed" after synchronization: 1. Choose **Monitor > Network Devices**. 2. Check the Inventory Collection Status column for the row listing the devices in which you are interested. This will give you a summary of current collection status efforts for those devices. 3. For details about the collection status, hover the mouse cursor over the cross-hair icon in the Inventory Collection Status column.

Related Topics

Controller Licensing

To view controller licenses, choose **Administration > Licenses and Software Updates > Licenses**, then select **Files > Controller Files** from the left sidebar menu.

Note Prime Infrastructure does not directly manage controller licenses, rather it simply monitors the licenses. To manage the licenses you can use command-line interface (CLI) commands, Web UI, or Cisco License Manager (CLM).

This page displays the following parameters:

- Controller Name

- Controller IP—The IP Address of the controller.

- Feature—License features include wplus-ap-count, wplus, base-ap-count, and base.

For every physical license installed, two license files display in the controller: a feature level license and an ap-count license. For example if you install a "WPlus 500" license on the controller, "wplus" and "wplus-ap-count" features are displayed. There are always two of these features active at any one time that combine to enable the feature level (WPlus or Base) and the AP count.

You can have both a WPlus and a Base license, but only one can be active at any given time.

- AP Limit

  AP Limit—The maximum capacity of access points allowed to join this controller.
- EULA status—Displays the status of the End User License Agreement and is either Accepted or Not Accepted.
- Comments

  Comments—User entered comments when the license is installed.
- Type

  Type—The four different types of licenses are as follows:

    - Permanent

      Permanent—Licenses are node locked and have no usage period associated with them. They are issued by Cisco licensing portal and must be installed using management interfaces on the device. Upon installation of these licenses, you have the necessary permissions across different versions.
    - Evaluation—Licenses are non-node locked and are valid only for a limited time period. They are used only when no permanent, extension, or grace period licenses exist. Before using an evaluation license, you must accept an End User License Agreement (EULA). Even though they are non-node locked, their usage is recorded on the device. The number of days left displays for the evaluation license with the fewest number of remaining active license days.
    - Extension—Licenses are node locked and metered. They are issued by Cisco licensing portal and must be installed using management interfaces on the device. Before using an extension license, you must accept a EULA during installation.
    - Grace Period—Licenses are node locked and metered. These licenses are issued by Cisco licensing portal as part of the permission ticket to rehost a license. They are installed on the device as part of the rehost operation, and you must accept a EULA as part of the rehost operation.

Types other than Permanent display the number of days left until the license expires. Licenses not currently in use do not have their counts reduced until they become "In Use."

- Status

    - In Use—The license level and the license are in use.
    - Inactive—The license level is being used, but this license is not being used.
    - Not In Use—The license level is not being used and this license is not currently recognized.
    - Expired In Use—The license is being used, but is expired and will not be used upon next reboot.
    - Expired Not In Use—The license has expired and can no longer be used.
    - Count Consumed—The ap-count license is In Use.

If you need to filter the list of license files, you can enter a controller name, feature, or type and click Go.

MSE Licensing

The MSE packages together multiple product features related to network topology, design such as NMSP, Network Repository along with related Service Engines, and application processes, such as the following:

- Context-Aware Service

- Wireless Intrusion Prevention System(WIPS)

To enable smooth management of MSE and its services, various licenses are offered.

You must have a Cisco Prime Infrastructure license to use MSE and its associated services.

Related Topics

MSE License Structure Matrix

The following table lists the breakdown of the licenses between the High end, Low end and Evaluation licenses for MSE, Location services, SCM, wIPS, and MIR.

Table 2: MSE License Structure Matrix

	High End	Low End	Evaluation
MSE Platform	High-end appliance and infrastructure platform, such as the Cisco 3350 and 3355 mobility services engines	Low-end appliance and infrastructure platform, such as Cisco 3310 mobility services engine	—
Context Aware Service	25,000 Tags	2000 Tags	Validity 60 days, 100 Tags and 100 Elements
	25,000 Elements	2000 Elements	
wIPS	3000 access points	2000 access points	Validity 60 days, 20 access points

Related Topics

Sample MSE License File

The following is a sample MSE license file:

FEATURE MSE cisco 1.0 permanent uncounted \

VENDOR_STRING=UDI=udi,COUNT=1 \

HOST ID=ANY \

NOTICE="<LicFileID>MSELicense</LicFileID><LicLineID>0</LicLineID> \

<PAK>dummyPak</PAK>" \

SIGN="0C04 1EBA BE34 F208 404F 98ED 43EC \

45D7 F881 08F6 7FA5 4DED 43BC AF5C C359 0444 36B2 45CF 6EA6 \

1DB1 899F 413F F543 F426 B055 4C7A D95D 2139 191F 04DE"

This sample file has five license entries. The first word of the first line of any license entry tells you what type of license it is. It can either be a Feature or Increment license. A feature license is a static lone item to license. There can be multiple services engines running in MSE. An Increment license is an additive license. In MSE, the individual service engines are treated as increment licenses.

The second word of the first line defines the specific component to be licensed. For example, MSE, LOCATION_TAG. The third word depicts the vendor of the license, for example Cisco. The fourth word denotes the version of the license, for example 1.0. The fifth word denotes the expiration date; this can be permanent for licenses that never expire or a date in the format dd-mm-yyyy. The last word defines whether this license is counted.

Related Topics

Revoke and Reuse an MSE License

You can revoke an MSE appliance license from one system and reuse it on another system. When you revoke a license, the license file is deleted from the system. If you want to reuse the license on another system, then the license needs to be rehosted.

If you want to reuse a license with an upgrade stock keeping unit (SKU) on another system, then you must have the corresponding base license SKU installed in the system to which you want to reuse the upgrade SKU. You cannot reuse the upgrade license SKU in a system if the corresponding base license SKU is deleted from it.

When you revoke a license, MSE restarts the individual service engines to reflect the changes to the licenses. Then the service engines receives the updated capacity from MSE during startup.

Related Topics

MSE Services Coexistence

With MSE 6.0 and later, you can enable multiple services (Context Aware and wIPS) to run concurrently. Before Version 6.0, mobility services engines only supported one active service at a time.

The following must be considered with coexistence of multiple services:

- Coexistence of services might be impacted by license enforcement. As long as the license is not expired, you can enable multiple services.

Note Limits for individual services differ. For example, a low-end mobility services engine (MSE-3310) tracks a total of 2,000 CAS elements; a high-end mobility services engine (MSE-3350) tracks a total of 25,000 CAS elements.A low-end mobility services engine has a maximum limit of 2000 wIPS elements; a high-end mobility services engine has a maximum limit of 3000 wIPS elements.

- Expired evaluation licenses prevent the service from coming up.
- If a CAS license is added or removed, this process restarts all services on the mobility services engine including wIPS. If a wIPS license is added or removed, the process does not impact CAS; only wIPS restarts.
- Other services can be enabled in evaluation mode even if a permanent license for the maximum number of elements has been applied.

Whenever one of the services has been enabled to run with its maximum license, another service cannot be enabled to run concurrently because the capacity of the MSE is not sufficient to support both services concurrently. For example, on MSE-3310, if you install a wIPS license of 2000, then you cannot enable CAS to run concurrently. However, evaluation licenses are not subject to this limitation.

Related Topics

Manage MSE Licenses

To view Mobility Services Engine (MSE) licenses, choose **Administration > Licenses and Software Updates > Licenses**, then select **Files > MSE Files** from the left sidebar menu.

The page displays the MSE licenses found and includes the following information:

- MSE License File—Indicates the MSE License.
- MSE—Indicates the MSE name.
- Type—Indicates the type of mobility services engine (client elements, wIPS local mode or wIPS monitor mode access points).
- Limit—Displays the total number of client elements or wIPS monitor mode access points licensed across the mobility services engine.
- License Type—Permanent licenses are the only license types displayed on this page. Permanent licenses are node locked and have no usage period associated with them. They are issued by Cisco licensing portal and must be installed using management interfaces on the device. Upon installation of these licenses, you have the necessary permissions across different versions.

Tag licenses are installed using the AeroScout System Manager only if the tags are tracked using the Partner engine. Otherwise the tags will be counted along with the CAS element license. Because tag licenses are added and managed using appropriate vendor applications, tag licenses are not displayed in this page. For more information, see the AeroScout Support Page in Related Topics. Evaluation (demo) licenses are also not displayed.

For more information, see AeroScout Support Page.

Related Topics

Register Product Authorization Keys, on page 10

Install Client and wIPS License Files, on page 11

Delete Mobility Services Engine License Files, on page 11

Register Product Authorization Keys

You receive a product authorization key (PAK) when you order a client, wIPS, or tag license from Cisco. You must register the PAK to receive the license file for installation on the mobility services engine. License files are emailed to you after successfully registering a PAK.

Client and wIPS PAKs are registered with Cisco.

Tag PAKs are registered with AeroScout. To register your tag PAK, navigate to the AeroScout Support Page given in Related Topics.

To register a product authoritative key (PAK) and obtain a license file for installation, follow these steps:

Step 1 Point your browser to the Cisco Product License Registration Portal (see Related Topics).

You can also access this site by clicking the Product License Registration link located on the License Center page of Prime Infrastructure.

Step 2 Enter the PAK and click SUBMIT.

Step 3 Verify the license purchase. Click Continue if correct. The licensee entry page appears.

If the license is incorrect, click the TAC Service Request Tool link to report the problem.

Step 4 In the Designate Licensee page, enter the mobility service engine UDI in the host ID text box. This is the mobility services engine on which the license will be installed.

UDI information for a mobility services engine is found in the General Properties area at **Services > Mobility Services Engine > Device Name > System**.

Step 5 Select the Agreement check box. Registrant information appears beneath the check box.

Modify information as necessary.

Ensure that the phone number does not include any characters in the string for the registrant and end user. For example, enter 408 555 1212 rather than 408.555.1212 or 408-555-1212.

Step 6 If registrant and end user are not the same person, select the License (End-User) check box beneath registrant information and enter the end-user information.

Step 7 Click Continue.

Step 8 At the Finish and Submit page, review registrant and end-user data. Click Edit Details to correct information, if necessary, then click Submit. For more information, see AeroScout Support Page and Cisco Product License Registration Portal.

Related Topics

Install Client and wIPS License Files

You can install CAS element licenses and wIPS licenses from Prime Infrastructure.

Tag licenses are installed using the AeroScout System Manager. See the AeroScout Support Page.

To add a client or wIPS license to Prime Infrastructure after registering the PAK, follow these steps

Step 1 Choose **Administration > Licenses and Software Updates > Licenses**.

Step 2 From the left sidebar menu, choose Files > MSE Files.

Step 3 Click Add to open the Add a License File dialog box.

Step 4 From the MSE Name drop-down list, choose the mobility services engine to which you want to add the license file.

> **Note** Verify that the UDI of the selected mobility services engine matches the one you entered when registering the PAK.

Step 5 Enter the license file in the License File text box or browse to the applicable license file.

Step 6 Once displayed in the License File text box, click Upload. Newly added license appears in mobility services engine license file list.

> **Note**
> • A Context Aware Service (CAS) restarts if a client or tag license is installed; a wIPS service restarts if a wIPS license is installed.
> • Services must come up before attempting to add or delete another license.

Related Topics

Delete Mobility Services Engine License Files

Step 1 Choose **Administration > Licenses and Software Updates > Licenses**, then select **Files > MSE Files** from the left sidebar menu.

Step 2 Select the check box of the mobility services engine license file that you want to delete.

Step 3 Click Delete, then click OK to confirm the deletion.

Related Topics

Assurance Licensing

As explained in "Purchasing Prime Infrastructure Licenses" (see Related Topics), licenses for Assurance features are based on the number of NetFlow-monitored devices and Network Analysis Module (NAM) data collection-enabled devices you have in your network. You manage, verify, and troubleshoot Assurance licenses much as you do with other feature licenses, as explained in "Add Licenses", "Delete Licenses" and "Troubleshoot Licenses".

In addition to these functions, Prime Infrastructure also lets you choose which NetFlow and NAM devices you want to manage using Assurance features. For example, if you have only 50 Assurance feature licenses and more than 50 NetFlow and NAM devices, you can choose to manage only your most critical devices. If you later purchase additional Assurance licenses, you can add license coverage for the devices previously left unmanaged.

Related Topics

Verify Assurance License Details

Before you buy new Assurance licenses, you may want to get details about your existing Assurance licenses and how they are being used. You can find Assurance license information using the resources in the following table.

Table 3: Finding Assurance License Information

To see	Choose
The NetFlow-enabled devices in your network that are under Assurance management, as a percentage of the total number of Assurance licenses you have.	**Administration > Licenses and Software Updates > Licenses > Summary**.
The total number of Assurance licenses you have and the files associated with them.	**Administration > Licenses and Software Updates > Licenses > Files**.
A list of the devices sending NetFlow or NAM polling data to Prime Infrastructure.	**Administration > Licenses and Software Updates > Licenses > Assurance Licenses** (link is in upper right corner of the page)
The number of Assurance Licenses in use.	
The maximum number of Assurance licenses available to you.	

By default, the total count of Assurance licenses on the Assurance Licenses page and on the Summary and Files > License Files pages is always updated whenever you add or delete Assurance licenses. Addition or removal of devices covered under these added or deleted Assurance licenses takes place as part of a System Defined Job, which runs automatically once every 12 hours. It can take up to 12 hours for the added or deleted devices to appear.

You can always access the **Administration > Licenses and Software Updates > Licenses > Assurance Licenses page** from the **Assurance Licenses** link in the upper right corner of the **Administration > Licenses and Software Updates > Licenses > Summary** and **Administration > Licenses and Software Updates > Licenses > Files** pages.

Related Topics

Install Client and wIPS License Files, on page 11

Delete Mobility Services Engine License Files, on page 11

Add License Coverage For NetFlow and NAM Devices

You want to add license coverage for NetFlow or NAM devices when:

• You have purchased new or additional Assurance licenses.
• You have NetFlow and NAM devices not already licensed for Assurance management.

Step 1 Choose **Administration > Licenses and Software Updates > Licenses > Assurance Licenses** (the **Assurance Licenses** link is in the upper right corner of the page).

Step 2 Above the list of devices currently under Assurance management, click **Add Device**.

Step 3 Select the check box next to each device you want to put under Assurance management, then click Add License. Prime Infrastructure adds the devices immediately.

Step 4 When you are finished, click **Cancel**.

Related Topics

Delete License Coverage for NetFlow and NAM Devices, on page 13

Delete License Coverage for NetFlow and NAM Devices

You may need to delete license coverage for a NetFlow or NAM device when:

• You have too many NetFlow and NAM devices for the number of Assurance licenses you have.
• You want to stop using Assurance management features with one or more NetFlow and NAM devices.

Step 1 Choose **Administration > Licenses and Software Updates > Licenses > Assurance Licenses** (the **Assurance Licenses** link is in the upper right corner of the page).

Prime Infrastructure displays the list of devices currently under Assurance management. It also displays the total number of Assurance licenses you have, and the total number of devices under Assurance management.

Step 2 Select the check box next to each device you want to remove from Assurance management, then click Remove Device.

Related Topics

Add License Coverage For NetFlow and NAM Devices , on page 13

Smart Licensing

Smart Licensing feature provides a standardized licensing platform that simplifies user experience.When Smart Licensing is first enabled, Prime Infrastructure is in Evaluation mode until you register Prime Infrastructure with the Smart Software Manager (which resides on a centralized Cisco web site).

If you are currently using traditional licensing, Cisco recommends that you convert to Smart Licensing. For information on the differences between the two types of licensing, refer to the Cisco Smart Licensing Overview on Cisco.com .

The purpose of the smart licensing feature is to reduce license-related complexity by enabling users to:

- Purchase additional licenses and automatically update the information.
- Monitor current purchases and entitlements (duration and number of units).
- Monitor current usage information and trending information.
- Easily track if adequate licenses are purchased.
- Save time with the ability to transfer licenses across the company.

Note From Cisco Prime Infrastructure Release 3.5, Smart Licensing is supported for Operation Center.

The limitations of smart licensing feature are:

- In HA (High Availability), you can perform smart license actions (enable, register, deregister and disable) on the HA Primary server and these actions are not permitted on the HA Secondary server.
- While performing backup and restore operation, the license supported during backup will be restored. Smart licensing registration state cannot be restored on another server and in that case user has to register once again on the restored setup.
- While performing an upgrade from an older version, the license supported in the older version will be enabled by default in the new version.

Related Topics

Set Up Cisco Smart Licensing on Prime Infrastructure

Follow these steps to set up Cisco Smart Licensing. If you are currently using traditional licensing, use these same procedures to convert to Cisco Smart Licensing.

	Step	See:
1.	Create a Smart Account with Cisco Systems.	Go to: Smart Account Request and follow the instructions on the web site
2.	Set up communication between Prime Infrastructure and the Cisco Smart Software Manager (CSSM) on Cisco.com.	Setting Up the Transport Mode Between Prime Infrastructure and Cisco Smart Software Manager
3.	Enable Smart Licensing in Prime Infrastructure (you will have to restart the web GUI).	Enabling Smart License on Prime Infrastructure
4.	Register Prime Infrastructure with the CSSM on Cisco.com, then enter the license tokens into the Prime Infrastructure web GUI (you will have to restart the web GUI).	Registering Prime Infrastructure with the Cisco Smart Software Manager
5.	Choose the licenses you want to use in Prime Infrastructure.	Choosing Smart Software Licenses
6.	Set up the Smart License Dashboard to signal when you are running out of licenses.	Configuring License Thresholds for the Prime Infrastructure License Dashboard

Set Up the Transport Mode Between Prime Infrastructure and Cisco Smart Software Manager

Step 1   Choose **Administration** > **Settings** > **System Settings** > **General** > **Account Credentials** and select **Smart Licensing Transport** tab.

Alternatively, you can click the link mentioned in the **Smart Software Licensing** page to direct you to the **Smart Licensing Transport** tab to set up transport settings.

Step 2   You can select any of the following three modes:

- Direct mode—Select this option to send data directly to Cisco cloud. The Smart Call Home Server URL is a read-only and cannot be modified.
- Transport Gateway—Uses a Cisco Call Home transport gateway or a Cisco Smart Licensing Software satellite. (A Cisco Smart Licensing Software satellite is installed on customer premises and provides a subset of CSSM functionality. See Cisco.com for more information about satellites.) Specify an appropriate DNS mapped URL for the respective Smart Software Manager Satellite or Smart Software Manager. Refer Smart Software Manager User Guide for details.
- HTTP Proxy—Select this option to use an intermediate HTTP/HTTPS proxy between Prime Infrastructure and the Cisco cloud. To enable this option, you must first configure the proxy settings in the **Proxy** tab.

Step 3   Click **Test Connectivity** to test the connection status. Click **Save** to update the smart licensing transport mode.

Step 4   Proceed to Enabling Smart License on Prime Infrastructure .

Related Topics

Smart Licensing, on page 14

Enable Smart License on Prime Infrastructure

To enable smart license, follow these steps:

Before you begin

Make sure you have set up the transport mode. See "Set Up the Transport Mode Between Prime Infrastructure and Cisco Smart Software Manager" in Related Topics.

Step 1 Choose **Administration > Licenses and Software Updates > Smart Software Licensing**.

Step 2 In the **Licensing Settings** tab, select **Smart Software Licensing**.

Step 3 Choose **Prime Infrastructure** from the **Product Name** drop-down list.

Step 4 Click **Enable Smart Software Licensing**. Prime Infrastructure displays a dialog box informing you that you must log out of Prime Infrastructure and log back in, before you can proceed to the configuration step.

Step 5 Click **OK** in the dialog box.

Once the smart license is enabled and before it is registered, the product will be in **Evaluation Mode** for 90 days and you can manage any number of devices.

Step 6 Perform one of the following:

    a. If you have not yet registered with the CSSM on Cisco.com, proceed to Registering Prime Infrastructure with the Cisco Smart Software Manager.

    b. If you have registered with the CSSM, proceed to Choosing Smart Software Licenses.

Note If you prefer traditional licenses, then in the **Licensing Settings** tab, select **Traditional Licensing** as the **Licensing Mode** and click **Register**. The **Administration > Licenses and Software Updates > Licenses** page is displayed.

Related Topics

Register Prime Infrastructure with the Cisco Smart Software Manager

This procedure creates a token which you will use to register your product instance with the CSSM. For information on how to use the CSSM, see the Cisco Smart Software Manager User Guide.

Note Refer to the Cisco Smart Software Manager User Guide for information on other actions you can perform from the CSSM—for example, renewing license registration and license authorization, unregistering the product from Cisco Smart Licensing, and so forth.

Related Topics

Generate Token ID, on page 17

Register Product Instance, on page 18

Generate Token ID

If this is a new installation (you are not converting from traditional licensing), follow these steps:

Before you begin

If your organization does not have a Smart Account, go to software.cisco.com, choose **Request a Smart Account** (under Administration), and follow the instructions to create an account. If you are converting from traditional licensing, refer Converting from Traditional Licensing.

Step 1 Go to the Cisco Software Central web site (software.cisco.com).

Step 2 On Cisco Software Central, choose **License > Smart Software Licensing**.

Step 3 Select the appropriate virtual account (virtual accounts are automatically created when you create a Smart Account).

Step 4 Click the **General** tab, then click **New Token**.

Step 5 Follow the instructions to provide a name, duration, and export compliance applicability before accepting the terms and responsibilities.

Step 6 Click **Create Token**.

Step 7 Copy the Token ID to your clipboard and proceed to Registering Product Instance.

Convert from Traditional Licensing

If you are converting from traditional licensing, follow these steps:

Step 1 Go to the Cisco Software Central web site (software.cisco.com).

Step 2 On Cisco Software Central, choose **License > Traditional Licensing**.

Step 3 Click **Continue to Product License Registration**.

Step 4 In the **Manage** area of the Product License Registration page, click the **PAKs/Tokens** tab and choose the entitlements you want to convert.

Step 5 From the **Actions** drop-down list, choose **Convert to Smart Entitlements**.

Step 6   Copy the Token ID to your clipboard and proceed to Registering Product Instance.

Register Product Instance

Enter the token IDs into the Prime Infrastructure web GUI and register the product.

Step 1   Choose **Administration** > **Licenses and Software Updates** > **Smart Software Licensing**.

Step 2   Under the **Licensing Settings** tab, paste your token into the **Registration Token** field.

Step 3   Click **Register**.

Step 4   Log out of Prime Infrastructure, then log back in.

Step 5   Proceed to Choosing Smart Software Licenses.

Related Topics

Choose Smart Software Licenses

Step 1   If this is the first time you are choosing Smart licenses:

a)   Choose **Administration > Licenses and Software Updates > Licenses**.

After a few moments, Prime Infrastructure displays a dialog box informing you that you cannot access the page because you are not using traditional licensing. This is normal.

b)   In the dialog box, click **Smart License Settings**.

c)   Click the **Licensing Settings** tab.

Step 2   If you are already using Smart Licensing:

a)   Choose **Administration > Licenses and Software Updates > Smart Software Licensing**.

b)   Click the **Licensing Settings** tab.

Step 3   Click **Smart Software Licensing** radio button.

Step 4   Select the licenses in the Available Licenses dialog box, then click **Save**.

Step 5   Proceed to Configuring License Thresholds for the Prime Infrastructure License Dashboard.

Configure License Thresholds for the Prime Infrastructure License Dashboard

To manage your licenses more efficiently, configure the License Dashboard to indicate when you are nearing the point where your license count is depleted. The settings you configure here apply across the system.

Step 1 Choose **Administration > Licenses and Software Updates > Smart Software Licensing**, then click the **License Dashboard Settings** tab.

Step 2 Select a license from the **License Type** drop-down list.

Step 3 Enter a value in the Threshold Value field.

Step 4 Click **Save**.

The threshold value is displayed as a straight line in the graphical representation of the **License Summary** and the **Device Distribution for License** dashlets.

Related Topics

View the Licensing Dashboard

From the **Licensing** dashboard, you can determine whether traditional or smart software licensing is enabled (indicated in the **Active Licensing Mode** field at the top of the dashboard) and view the number of licenses that are currently in use. You can set the licensing mode from the **Smart Software Licensing** page (**Administration** > **Licenses and Software Updates** > **Smart Software Licensing**).

To open this dashboard, do one of the following:

- Choose **Administration** > **Dashboards** > **Licensing Dashboard**.

- Click the **Licensing Dashboard** link from the top-right corner of the **Smart Software Licensing** page.

The information displayed in the dashboard depends on the licensing mode that is enabled. If smart software licensing is currently enabled, the following dashlets are displayed:

- **License Summary Count** area—Displays the number of licenses consumed and the compliance status for each license type. The number of licenses displayed is based on the current date.

- **License Summary** dashlet—Displays a bar chart that graphs the number of licenses consumed for each license type during a particular time period. To view additional information, place your cursor over the chart.

- **Device Distribution for License** dashlet—To view the device distribution chart for a particular license, click its link from the top of the chart displayed in the **License Summary** dashlet. To view additional information, place your cursor over the chart.

✏️

Note   The information displayed in the **License Dashboard** is refreshed daily after the SmartLicense job runs at 02:00 A.M. (its pre-configured run time). To view this job in the **Job Dashboard**, choose **Administration** > **Dashboards** > **Job Dashboard**.

If traditional licensing is currently enabled, the **Licensing** dashboard displays the **Traditional Licensing** dashlet. Specify whether you want to view information about Lifecycle or Assurance licenses by choosing the corresponding option from the **License Type** drop-down list. The dashlet updates, displaying information such as the device families with that license type, the number of tokens allocated to each device in those families, as well as the number of tokens that are not being used at the moment.

Disable Smart Licensing

Step 1   Disable Smart licensing.

   a) Choose **Administration > Licenses and Software Updates > Smart Software Licensing**, then click the **Licensing Settings** tab.

   b) At the bottom of the window, click **Disable Smart Licensing** and confirm your choice.

Step 2   Enable traditional licensing. (This is done from the Smart License Settings page.)

   a) Choose **Administration > Licenses and Software Updates > Licenses**.

   b) In the dialog box, click **Smart License Settings**.

   c) Click the **Licensing Settings** tab.

   d) For the Licensing Mode, select **Traditional Licensing**.

   e) Click **Register**.

Related Topics

Perform Additional Actions

Choose any of the following actions from the **Actions** drop-down list. To know more about the status of licenses and product registration, refer Reference: Product Registration and License Authorization Statuses.

   • Renew Authorization Now—Click **Renew Authorization Now** to renew authorization with CSSM to enable Prime Infrastructure to remain compliant. By default, authorization periods are renewed every 30 days.

   • Renew Registration Now—Click **Renew Registration Now** to renew the ID certificate that needs to be renewed every year for Prime Infrastructure to remain registered.

   • Deregister—Prime Infrastructure will be de-registered from Smart Software Licensing and goes back to evaluation mode.

 • Disable Smart Software Licensing—Prime Infrastructure will be unregistered from Smart Licensing and will be unlicensed. Once disabled, only **Administration** menu will be available on logging in. See Disable Smart Licensing.

Related Topics

Reference: Product Registration and License Authorization Statuses

Product Registration Status

The Product Registration Status reflects whether the product is properly registered with Cisco Smart Software Licensing on Cisco.com.

Product Registration Status	Description
Unregistered	Smart Software Licensing is enabled on Prime Infrastructure, but Prime Infrastructure is not registered with the CSSM.
Registered	Prime Infrastructure is registered with the CSSM. Prime Infrastructure has received an ID certificate that will be used for future communication with the Cisco licensing authority.
Registration Expired	Prime Infrastructure did not successfully renew its registration prior to the expiration date and has been removed from CSSM.

License Authorization Status

The License Authorization Status reflects usage against purchased licenses and whether you are in compliance with Cisco Smart Licensing. If you exceed the number of purchased licenses, you will be Out of Compliance.

License Authorization Status	Description
Evaluation Mode	Prime Infrastructure is running in evaluation mode until the evaluation period expires (90 days).
Authorized	Prime Infrastructure has a valid Smart Account and is registered. All licenses requested by the product are authorized for use.
Out of Compliance	Prime Infrastructure has exceeded the number of licenses that were purchased.The Virtual account containing the product instance has a shortage of one or more of license types used.

License Authorization Status	Description
Evaluation Expired	The Evaluation period has expired and Prime Infrastructure will be in unlicensed state.
Authorization Expired	Prime Infrastructure did not successfully renew its license authorization prior to the authorization expiration date.

Related Topics

Manage Software Updates

What Are Software Updates?

Cisco provides updates to the software periodically. These updates fall into the following three categories:

- Critical Fixes—Provide critical fixes to the software. We strongly recommend that you download and apply all of these updates as soon as they are available.
- Device Support—Adds support for managing devices which did not support at release time.
- Add-ons—Provide new features, which can include GUI screens and functionality, to supplement the version you are using. This includes maintenance packs and maintenance pack point patches.

The update notifications that displays depend on the Notification Settings specified by your administrator. See Enable or Disable Notifications About Software Updates, on page 23 . All software updates are packaged in .ubf files. A large update can contain individual smaller updates, from which you can choose what you want to install. When you install an update, does the following:

- Verifies that the file publisher is Cisco Systems and the file has not been tampered with

- Automatically installs any other updates that are required

If you have connectivity to http://www.cisco.com , you can download and install the updates directly from Cisco.com. If you do not have internet connectivity, copy the update from a server that has the necessary connectivity and install it from there.

View the Installed Product Software Version

Use one of these methods to check the product version:

To use the CLI, see Establish an SSH Session With the Server.

View Installed Software Updates

If you are not logged in to the web GUI, you can view a pop-up window that lists the software updates by clicking **View Installed Updates** from the login page.

If you are logged in to the web GUI, you can view the software updates in two ways:

- From the page, by clicking the settings icon at the top right of the page and clicking , and then clicking **View Installed Updates**. (The **View Installed Updates** link is also available from the login page.)

- By choosing **Administration** > **Licenses and Software Updates** > **Software Update** (this method provides the most detail).

The **Software Update** page displays two tabs:

- **Installed Updates**—Updates that is currently using.

- **Uploaded Update Files**—Update files that have been uploaded to the server (including those that are not being used). The Corresponding Updates field lists any prerequisite updates that were also uploaded.

  If an update file has not yet been installed, it can be deleted. Select the file and click the **Delete** button.

Enable or Disable Notifications About Software Updates

By default, displays information about all available updates in the **Software Updates** page. Because the list can be quite long, you may want to adjust what is displayed and the updates for which you are notified. You can also disable all notifications and re-enable them later.

Step 1   Configure the default Cisco.com credentials so that can get information about available updates.
    a) Choose **Administration** > **Settings** > **System Settings**, then choose **General** > **Account Settings**.
    b) Click the **Cisco.com Credentials** tab, enter the credentials, then click **Save**.

Step 2   Configure your software update notification settings.
    a) Choose **Administration** > **Settings** > **System Settings**, then choose **General** > **Software Update**.
    b) Under **Notification Settings**, select or deselect the update categories. To disable all notifications, make sure no categories are selected. For an explanation of the categories, see What Are Software Updates?, on page 22
    c) Click **Save**.

Validate Images (ISO and OVA) Before Installing Them

Before installing any software, you should verify the authenticity of the publisher by making sure the image is signed. This ensures that the image is from Cisco Systems and that it has not been tampered with.

software is provided in the following formats:

- .ubf files that you can download and install using the Software Update web GUI feature

- ISO or OVA images that are provided during major product releases and updates

You do not have to manually validate UBF packages that are downloaded using the Software Update feature. This is because automatically validates the .ubf files during the Software Update installation process. If a file is not signed, generates an error message and will not install the .ubf file. If this occurs, contact your Cisco representative.

You *do* need to manually validate ISO and OVA images. Use the following procedure to validate them before installation.

Step 1 If you do not have **openssl** installed, download and install it (see http://www.openssl.org).

Step 2 Place the following files in a temporary directory:

- The product file to be verified (***.iso** or ***.ova**).

- The signature file (***.signature**) that is packaged with the product file.

- The certificate file (***.pem**). The same certificate is used to verify OVA and ISO images.

Step 3 Move to the temporary directory and run the following command as the Linux CLI root user (see Log In and Out as the Linux CLI root User):

```
openssl dgst -sha512 -verify cert-file -signature sig-file content-file
```

Where:

- *cert-file* is the certificate file

- *sig-file* is the signature file

- *content-file* is the ISO file or OVA image to be verified

Step 4 If the result is **Verified OK**:

- For an ISO file, proceed with the installation (you do not have to perform any more steps as part of this validation procedure).

- For an OVA package, proceed to the next steps.

Step 5 (OVA package only) Verify that Cisco Systems is the publisher.

a) In the VMware vSphere client, choose **File** > **Deploy OVF Template**.
b) Browse to the OVA file (*.ova), select it, and click **Next**.
c) Verify that the **Publisher** field in the **OVF Template Details** window displays **Cisco Systems, Inc.** with a green check mark next to it. Proceed to the next step.

Note Do not validate the image using the **Vendor** field. This field does not authenticate Cisco Systems as the publisher.

Note Do not proceed if the **Publisher** field displays **No certificate present**. This indicates the image is not signed, is not from Cisco Systems, or has been tampered with.

Step 6 Check the certificate chain.

a) In the **OVF Template Details** window, click the **Cisco Systems, Inc.** hyperlink in the **Publisher** field.
b) In the **Certificate** window, click the **Certification Path** tab.

    c) In the **Certification Path** tab (which lists the certificate chain), ensure that the **Certification Path** area displays **Cisco Systems, Inc.** and the **Certification Status** area displays **The certificate is OK**.

Download and Install a Software Update from Cisco.com

These steps explain how to download a software update from cisco.com and then install it on the server.

If you are using high availability, .

Before you begin

Make sure you have an account on Cisco.com.

Step 1 Back up your data. See Perform a Manual Backup.

Step 2 Download the file to your local machine, then upload it from your local machine to the server.

    a) Log into cisco.com and go to the Software Download site.

    b) Locate the .ubf file you want to download, and download it to your local machine.

Step 3 Copy the file from your local machine to the server as described in Copy a File from a Client Machine to the Server, on page 26.

Step 4 Log in to the web GUI as a user with Administrator privileges.

Step 5 Upload the file to the server.

    a) Choose **Administration** > **Licenses and Software Updates** > **Software Update**.

    b) Click **Upload** at the top of the page.

    c) Click **Browse**, navigate to the file, and click **OK**. After the successful upload, the software will appear under the **Files** tab.

Step 6 Select the software update, click **Install**, and then click **Yes** in the confirmation pop-up window.

    Note If the .ubf file is not signed or has been modified since it was downloaded from Cisco.com, will abort the installation. Contact your Cisco representative.

will auto-restart and the web GUI will not be accessible for some time. (If it does not, restart it by following the procedure in Stop and Restart.)

Step 7 When the web GUI is accessible, log in and check the version on the **Software Update** page.

    a) Choose **Administration** > **Licenses and Software Updates** > **Software Update**.

    b) Verify the information under the Updates tab.

What to do next

Instruct all users to clear their browser cache before opening the web GUI.

Copy a File from a Client Machine to the Server

Use the following SCP command to retrieve files from your client machine and copy them to the server's default local repository (/localdisk/defaultRepo). You should run this command as the Linux CLI root user (see Log In and Out as the Linux CLI root User).

scp *clientUsername***@***clientIP***:/***fullpath-to-file* **/localdisk/defaultRepo**

Where:

- *clientUsername* is your username on the client machine

- *clientIP* is the IP address of the client machine where the file resides

- *fullpath-to-file* is the full pathname of the file on the client machine

For example:

scp jsmith@123.456.789.101:/temp/myfile.tar.gz /localdisk/defaultRepo

Before you begin

Make sure SCP is enabled on your client machine, and the required ports are open (see the).