



# Smart Licensing Overview

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## Overview of Smart Licensing

Smart Licensing is a cloud-based, software license management solution that enables you to automate time-consuming, manual licensing tasks. The Smart Licensing solution allows you to easily track the status of your license and software usage trends.

It is a Cisco initiative to move all the licenses to the cloud. The purpose of this initiative is to simplify the license management for HCS partners and enable them to adopt Cisco's cloud-based license management system. Smart Licensing helps in overcoming most of the limitations with the traditional PAK-based licenses. Most of the Cisco products including routing, switching, security, collaboration, and so on supports smart licensing.

Smart Licensing in HCS depends on Cisco Smart Software Manager (CSSM), Satellite, and HCM-F. In CSSM and satellite you can activate and manage all Cisco licenses. HCM-F simplifies the complexities of registration or activation of UC Applications with CSSM or Satellite, management of Smart Licenses, generate licensing reports for inventory, and billing purposes. HCM-F also provides licensing dashboards for consumption details and compliance status.

PLM is not supported for UC applications cluster versions higher than 11.x. Register all the 12.x UC applications cluster to CSSM.

HCM-F currently supports registration of UC Applications to Prime License Manager (PLM) for consuming the traditional PAK-based licenses. UC application versions 11.x or earlier supports registration through PLM. For more information about PLM, see *Cisco Hosted Collaboration Solution License Management*.

Smart Licensing helps simplify three core functions:

- **Purchasing:** The software that you have installed in your network can automatically self-register themselves, without Product Activation Keys (PAKs).
- **Management:** You can automatically track activations against your license entitlements. Also, you do not need to install the license file on every node. You can create License Pools (logical grouping of licenses) to reflect your organization structure. Smart Licensing offers you Cisco Smart Software Manager, a centralized portal that enables you to manage all your Cisco software licenses from one centralized website.
- **Reporting:** Through the portal, Smart Licensing offers an integrated view of the licenses you purchased and the licenses that are deployed in your network. You can use this data to make better purchase decisions, based on your consumption.

Cisco Smart Software Licensing helps you to procure, deploy, and manage licenses easily, where devices register and report license consumption, removing the need for product activation keys (PAK). It Pools license entitlements in a single account and allow you to move licenses freely through the network, wherever you need them. It is enabled across Cisco products and managed by a direct cloud-based or mediated deployment model.

The Cisco Smart Software Licensing service registers the product instance, reports license usage, and obtains the necessary authorization from Cisco Smart Software Manager and/or Satellite.

HCM-F enables the user to perform multiple tasks, such as, change the license deployment to Hosted Collaboration Solution (HCS), setting the transport mode to UC Applications, create token in CSSM, register the UC applications and validate the same, and so on. If there is a failure while performing the tasks, HCM-F collects the error messages from the UC application or CSSM, and updates the HCM-F Job entry with the issue details.

CSSM reports at smart account-level and product level. However, user information is not available at these levels. HCM-F provides the Service Inventory report and the HLM report of license usage at customer-level and virtual account level. It also provides Licensing dashboards to display the usage.

You can use Smart Licensing to:

- See the license usage and count.
- See the status of each license type.
- See the product licenses registered on Cisco Smart Software Manager and/or Cisco Smart Software Manager satellite .
- Renew License Authorization with Cisco Smart Software Manager and/or Cisco Smart Software Manager satellite .
- Renew the License Registration.
- Deregister with Cisco Smart Software Manager and/or Cisco Smart Software Manager satellite.

The deployment option for Smart Licensing:

### Cisco Smart Software Manager

The Cisco Smart Software Manager (CSSM) is a cloud-based service that handles system licensing. HCM-F can connect to CSSM either directly or through a proxy server. HCM-F and UC applications use the selected Transport Mode. We recommend using a proxy server to connect to CSSM instead of connecting directly. Cisco Smart Software Manager allows you to:

- Manage and track licenses.
- Move licenses across virtual account.
- Remove registered product instance.

To track smart account-related alerts, change the preference settings, and configure email notification. Navigate to **Smart Software Licensing** in **Cisco Smart Software Manager**.

For additional information, go to <https://software.cisco.com>.

### Cisco Smart Software Manager Satellite

Cisco Smart Software Manager satellite is an on-premise deployment that can handle your licensing needs if HCM-F and UC applications cannot connect to CSSM directly, either for security or availability reasons. When this option is deployed, HCM-F registers and report license consumption to the satellite, which synchronizes its database regularly with the backend Cisco Smart Software Manager that is hosted on [cisco.com](https://cisco.com).

The Cisco Smart Software Manager satellite is deployed in either Connected or Disconnected mode, depending on whether the satellite can connect directly to CSSM on [cisco.com](https://cisco.com).

- **Connected**—Used when there is connectivity to [cisco.com](https://cisco.com) directly from the Smart Software Manager satellite. Smart account synchronization occurs automatically.
- **Disconnected**—Used when there is no connectivity to [cisco.com](https://cisco.com) from the Satellite. Smart Account synchronization must be manually uploaded and downloaded. You can specify the sync schedule in CSSM. By default, the sync with CSSM should be within 30 days.

For more information on CSSM to Satellite sync, see [Certificates Used in Cisco SSM On-Prem Data Exchanges](#)

For more information on Cisco Smart Software Manager satellite information, see <https://www.cisco.com/en/us/buy/smart-accounts/software-manager-satellite.html>.




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**Note** HCM-F does not support Smart Software Manager satellite Classic Edition (CE).

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## Smart Versus Traditional Licensing

Traditional (node locked) licensing	Smart (dynamic) licensing
You procure the license and manually install it on the PLM.	Your device requests the licenses that it needs from CSSM.
Node-locked licenses - license is associated with a specific device.	Pooled licenses - Smart accounts are the company account specific that can be used with any compatible device in your company.

Traditional (node locked) licensing	Smart (dynamic) licensing
No common install base location to view the licenses that are purchased or software usage trends.	Licenses are stored securely on Cisco servers that are accessible 24x7x365.
No easy means to transfer licenses from one device to another.	Licenses can be moved between product instances without a license transfer, which greatly simplifies the reassignment of a software license as part of the Return Material Authorization (RMA) process.
Limited visibility into all software licenses being used in the network. Licenses are tracked only on per node basis.	Complete view of all Smart Software Licenses used in the network using a consolidated usage report of software licenses and devices in one easy-to-use portal.

## HCM-F Smart Licensing Task Flow

The Smart Licensing architecture in HCM-F follows the general HCM-F architectural principles.

The workflow is as follows:

Action	Description
Set up Smart Account, Local Account and Virtual Account in CSSM and Satellite	<ul style="list-style-type: none"> <li>• Create a Smart Account in CSSM or Satellite. You can also get access to an existing smart account.</li> <li>• Create Virtual Account</li> <li>• Create client credentials Grant using Mulesoft.</li> </ul> <p>For more information about the one time setup activities, see <a href="#">Initial One Time Setup in CSSM for Smart Licensing</a> and <a href="#">Initial One Time Setup in CSSM on-prem for Smart Licensing</a></p> <p>For more information about operational licenses, see <a href="#">Configuring Operational Licenses</a></p>
Setup Transport Mode	Setup the transport mode in HCM-F to connect HCM-F and UC applications to CSSM.

Action	Description
Provision smart account in HCM-F	<ul style="list-style-type: none"> <li>• Provision the credentials and Smart Account with HCM-F.</li> <li>• HCM-F extracts smart account, local account, and virtual account-related information from CSSM and Satellite.</li> <li>• Creates product registration token to register UC Applications in CSSM and Satellite.</li> <li>• Provide the transport mode in HCM-F to connect HCM-F and UC applications to CSSM and Satellite.</li> </ul> <p><b>Note</b> You can autoregister the clusters to ordered virtual account using HCM-F.</p>
Activate Smart Licensing for Clusters (Cisco Unified Communications Manager, Cisco Unity Connection, Cisco Emergency Responder)	<p>You can assign and unassign clusters to CSSM and Satellite using HCM-F.</p> <p>If autoregistration is enabled, the clusters are automatically assigned to the ordered virtual account. You do not have to manually assign the clusters.</p>
Cluster Summary	For any failed cluster registration, refer to the Cluster Summary page.
Service Inventory and HLM report generated	HCM-F generates the reports to view the licenses from CSSM and Satellite at virtual account-level, or customer-level. For more information on reports, see <a href="#">Smart Licensing Reports</a>
Licensing Dashboard	HCM-F provides a view of the licenses at virtual account-level and customer-level.
HCM-F sync with CSSM and Satellite	<p>HCM-F provides on-demand and automatic sync to CSSM and Satellite. You can trigger the sync from HCM-F, then HCM-F pulls the virtual account and smart account details from CSSM or Satellite and refresh the tokens, if needed.</p> <p>You can sync smart accounts and virtual accounts either manually or automatically. HCM-F periodically syncs with CSSM and Satellite every 824 hours.</p> <p>For more information on manual sync, see <i>Perform Manual Sync</i> in <i>Cisco Hosted Collaboration Mediation Fulfillment Install and Configure Guide</i></p>



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**Note** If you are not using HCM-F, you must follow the steps described in the UC Applications user documents to register with Smart Licensing.

- [For Unified Communications Manager](#)
- [For Unity Connection](#)
- [For Emergency Responder](#)

You must ensure that you change the licensing mode to HCS. For more information on license mode, see [License Modes in Hosted Collaboration Mediation- Fulfillment, on page 7](#)

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## Cisco Smart Software Manager (CSSM)

Cisco Smart Software Manager allows product instances to register and report license consumption.

You can use Cisco Smart Software Manager to:

- Manage and track licenses
- Move licenses across virtual account
- Remove registered product instance



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**Note** Enable Javascript 1.5 or a later version in your browser.

We recommend using `connected` mode for the satellite connection.

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For details on Cisco Smart Software Manager (CSSM), see <https://software.cisco.com/>.

## Cisco Smart Software Manager On-Prem(Satellite)

Cisco Smart Software Manager on-prem (satellite) is similar to Cisco Smart Software Manager (CSSM). However, instead of being hosted on cisco.com, it is available as an *on-premise* version.

Cisco Smart Software Manager on-prem (satellite) is used to:

- Manage and track licenses of the on-premise users
- Support multiple local accounts (multi-tenant)
- Scale 10,000 product instances
- Connect to Cisco either online or offline



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**Note** Enable Javascript 1.5 or a later version in your browser. Use Cisco Smart Software Manager satellite 7.2 or later version to use all the functionalities.

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For details on Cisco Smart Software Manager on-prem (satellite), see [Smart Licensing](#).

## Smart Accounts and Virtual Accounts

### Smart Account

Cisco Smart Account is an account where all products that are enabled for Smart Licensing are deposited. Cisco Smart Account allows you to manage and activate your licenses to devices, monitor license use, and track Cisco license purchases.

### Virtual Account

Smart Licensing allows you to create multiple license Pools or virtual accounts within the Smart Software Manager portal or Cisco Smart Software Manager satellite. Using the Virtual Accounts option, you can aggregate licenses into discrete bundles that are associated with a cost center so that one section of an organization cannot use the licenses of another section of the organization. For example, if you segregate your company into different geographic regions, you can create a virtual account for each region to hold the licenses and product instances for that region.

For details on Cisco Smart Accounts and Virtual Accounts, see <https://software.cisco.com/>.

## Smart Licensing Deployment Options

The following options are available for connecting to CSSM and Satellite:

### Proxy (Cloud access through an HTTPs proxy)

In a proxy deployment method, Cisco products send usage information through a proxy server.



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**Note** Proxy is the recommended transport mode.

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### Satellite (Cisco Smart Software Manager Satellite)

In the Satellite deployment method, UC applications register with a Satellite server. Based on the Satellite Server configuration (Offline or Online), Satellite syncs with CSSM.

### Direct (Direct Cloud Access)

In a direct cloud-access deployment method, Cisco products send usage information directly.

HCS 12.5 release does not support Smart Licensing APIs.

## License Modes in Hosted Collaboration Mediation- Fulfillment

Currently, HCM-F supports the license modes of HCS, HCS-LE, and Enterprise. In a single HCM-F, one PLM can be in an HCS mode, another can be in an HCS-LE mode, and the third one can be in the Enterprise mode. The licensing mode is assigned to the PLM in version 11.x or earlier when it is created in the HCM-F.

During the UC cluster assignment process to the PLM, the mode of the UC application is automatically changed to reflect the licensing mode of the PLM.

From HCS 12.5 release, Smart account or virtual account in CSSM and Satellite does not have a concept of license mode. The license mode is only within HCM-F and UC applications. In HCM-F you need to set the license mode to a virtual account so that during assignment phase the UC Application could be assigned the same mode.

Once the virtual accounts are synced from CSSM and Satellite to HCM-F, set the license mode before cluster assignment.

## Cloud Connectivity

Set the transport mode in HCM-F to connect HCM-F and UC applications to CSSM and Satellite.

The first option is Proxy transport mode (Connection to Cisco Smart Software Manager through proxy server) where data transfer happens directly over the Internet to the Cloud server through an HTTPs proxy. HCM-F does not support proxy authentication for communication with CSSM.




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**Note** Transport Gateway is not supported while you register the UC applications.

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The second option is Satellite transport mode (Connection to Satellite either online or offline) where data transfer happens either through connected or disconnected mode. HCM-F connects to an on-premise Satellite server through connected or disconnected mode.

The third option is Direct transport mode (Direct connection to Cisco Smart Software Manager on cisco.com) where data transfer happens over the Internet to the CSSM (Cloud server) directly from the devices to the cloud through HTTPs. In Direct transport mode, HCM-F connects directly to the Cisco Smart Software Manager on cisco.com.

When Smart Account is provisioned with client credentials (Client ID and Client Secret) in HCM-F, the HCM-F authenticates with the Cisco Authentication Gateway with client credentials. HCM-F gets the access token from Cisco Authentication Gateway for communicating with CSSM and Satellite.

## Supported Licensing Model

The supported license types for HCM-F Smart Licensing are:

- HCS UCM Essential
- HCS UCM Basic
- HCS UCM Foundation
- HCS UCM Standard
- HCS UCM TelePresence Room
- HCS Emergency Responder
- HCS Unity Connection Basic



- HCS Unity Connection Enhanced
- HCS Unity Connection Speech Connect
- HCS Unity Connection Standard

Smart Accounts provide full visibility into all types of Cisco software licenses except for Right-To-Use (RTU) licenses. The greatest benefit of a Smart Account is achieved when consuming a Smart License.

- For Smart Licensing, no PAKs are required and it's easy to order and activate Smart Licenses.
- For Classic, PAK-based licenses, you gain enterprise-wide visibility of PAK licenses and devices that are assigned to the Smart Account.
- For Cisco Enterprise Agreements (EA), you benefit from simplified EA management, enterprise-wide visibility, and automatic license fulfillment.

Smart Accounts are the gateway to three different portals:

- For Smart Licenses, there is the Cisco Smart Software Manager, and Satellite, where Smart Licenses are stored and managed.
- For Classic Licenses, there is the License Registration Portal, where Classic Licenses are deposited and managed.
- For EAs, the EA Workspace is a tool where users can manage their Enterprise Agreement licensing activities all in one place.

When the user orders the licenses in CCW or Cisco commerce, user should select the smart account and virtual account, so that all the licenses are sent to the virtual account.

## License Authorization Status

The license authorization is renewed automatically every 30 days. The authorization status expires after 90 days if it is not connected to Cisco Smart Software Manager.

If Satellite option is selected, the satellite can be connected to Cisco Smart Software Manager either through online or offline mode for the authorization to occur. The sync happens automatically if online within 30 days, and manually if offline.

For more information about license authorization status for the UC applications, see

- Cisco Unified Call Manager: [Authorization Status for Unified Call Manager](#)
- Cisco Unity Connection: [Authorization Status for Unity Connection](#)
- Cisco Emergency Responder: [Authorization Status for Emergency Responder](#)

## License Conversion and Migration to Smart Licensing

You can convert Classic, PAK-based licenses (PLM licenses) to a Smart Entitlement (if a Smart License equivalent is available). The license conversion can be performed in the License Registration Portal (LRP) or in Cisco Smart Software Manager (CSSM). You can initiate the process by downloading and installing the

Smart Licensing version of the software and registering the device to a Smart Account using a Registration Token. The migration of any entitlements tracked by Cisco, automatically migrates to the Customers Smart Account.

License conversion can be performed either on:

- LRP ( [License Registration Portal](#)), go to the **PAKs/Tokens** tab, select **Actions > Convert to Smart Entitlement**, or
- CSSM ( [Cisco Smart Software Manager](#)), go to the **License Conversion** tab to convert Classic Licenses to Smart Licenses.

For more information on converting classic licenses to smart licenses, see [Migrating classic licenses to smart licenses with active SWSS](#) in *Cisco Smart Software Licensing with Cisco Unified Communications Manager 12.0 Solution Overview*

## HCS Managed Services

The UC applications and Prime License Manager (PLM) are available on premise. HCM-F does not have connectivity to the on-premise applications.

The change in Cisco Smart Software Manager (CSSM) helps customers migrating from Enterprise to cloud, to use HCS licenses that are Flex Hosted. The Flex Hosted licenses in version 12.x and later work for both on-premise UC (Enterprise mode) and HCS cloud (HCS mode) so it provides an easier migration from on-premise to HCS as there is no need to migrate licenses during the migration phase.

The CSSM accepts the license request from Enterprise UC applications in Enterprise mode and allocates the mapped HCS licenses if corresponding Enterprise licenses are not available. This is called dual parenting.

CSSM follows hierarchy in allocating the licenses. The higher level licences are utilized to fulfill the request for lower level licenses and avoid a shortage of the licenses. The licences are allocated in the following priority, higher to lower-order:

- Enterprise (when both Enterprise and HCS licences are available)
- HCS Foundation (when the Enterprise licences are all allocated or when there are only HCS licences)
- HCS Standard (when the Enterprise licences are all allocated or when there are only HCS licences)

Following is the HCS license mapping for Enterprise licenses:

**Table 1: License Mapping**

HCS License	Enterprise Licenses		
	Cisco Unified CM	Cisco Unity Connection	Cisco Emergency Responder
HCS Cisco UCM Foundation License	<ul style="list-style-type: none"> <li>• Basic</li> <li>• Essential</li> <li>• Enhanced</li> </ul>		

HCS License	Enterprise Licenses		
	Cisco Unified CM	Cisco Unity Connection	Cisco Emergency Responder
HCS Cisco UCM Standard License	<ul style="list-style-type: none"> <li>• Cisco Unified Workspace Licensing (UWL)</li> <li>• Enhanced plus</li> </ul>		
HCS Cisco UCM TelePresence Room License	Telepresence Room		
HCS Unity Connection Basic License		CUC_BasicMessaging	
HCS Unity Connection Standard License		CUC_EnhancedMessaging	
HCS Emergency Responder User License			CER_USER



**Note** From Cisco Unified Communications Manager (CUCM) 12.5 SU4 onwards, partners can operate CUCM in HCS mode in order to have access to SpeechView functionality.

## Migration from On Premise to HCS

Use this procedure to change the license mode for the Unified Communication applications and PLM from enterprise license mode to HCS mode for cluster versions below 12.x and for versions 12.x and later. Use the `ciscocm.HCSMode_v4.cop.sgn` file to change the licensing from Enterprise Mode to HCS Mode. Install the cop file on the publisher node of all Cisco Unified CM, Cisco Emergency Responder, and Cisco Unity Connection clusters, and standalone PLM or co-resident PLM. The cop file is available at [License Mode Change - Enterprise Mode to HCS Mode](#).

To change the licensing from HCS Mode to Enterprise Mode, install the `ciscocm.EnterpriseMode_v4.cop.sgn` file on the publisher node of all CUCM, CER, and CUC clusters, and standalone PLM or co-resident PLM. The cop file is available at [License Mode Change: HCS Mode to Enterprise Mode](#).

For detailed information on the COP files, see these links:

To change from enterprise mode to HCS mode: [Readme for License Migration from On-prem to Hosted Collaboration Solution](#).

To change from HCS mode to enterprise mode: [Readme for License Migration from Hosted Collaboration Solution to On-prem](#).

