

Smart Licensing

This chapter describes the procedures to configure and verify smart licensing.

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Smart Licensing Overview

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

Smart Licensing helps simplify three core functions:

- **Purchasing**: The software that you have installed in your network can be registered, without Product Activation Keys (PAKs).
- **Management**: You can automatically track activations against your license entitlements. Additionally, there is no 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. Cisco Smart Software Manager Overview provides details.
- **Reporting**: Through the portal, Smart Licensing offers an integrated view of the licenses you have purchased and what has been actually deployed in your network. You can use this data to make better purchase decisions, based on your consumption.

Smart Licensing Features

- Your device initiates a call home and requests the licenses it needs.
- Pooled licences - licences are company account-specific, and can be used with any compatible device in your company. You can activate or deactivate different types of licenses on the device without actually installing a license file on the device.
- Licenses are stored securely on Cisco servers accessible 24x7x365.
- Licenses can be moved between product instances without a license transfer. This greatly simplifies the reassignment of a software license as part of the Return Material Authorization (RMA) process.

- 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.

Cisco Smart Account

NCS 4000 integrates with Cisco Smart Accounts to simplify license management.

Smart Accounts provide a centralized, organized, and simple-to-use solution for managing Cisco software licenses across an entire organization. They act as a container that holds all Cisco software assets, allowing customers to view, store, manage, and move these assets as needed. Smart Accounts enable full visibility into license entitlements and usage, helping optimize software management. Smart Accounts support license pooling, portability, and provide compliance reporting.

When creating a Smart Account, you must have the authority to represent the requesting organization. After submitting, the request goes through a brief approval process. See http://software.cisco.com to learn about, set up, or manage Smart Accounts.

Cisco Smart Software Manager Overview

Cisco Smart Software Manager enables you to manage all of your Cisco Smart software licenses from one centralized website. With Cisco Smart Software Manager, you organize and view your licenses in groups called virtual accounts (collections of licenses and product instances). Use the Cisco Smart Software Manager to do the following tasks:

- Create, manage or view virtual accounts.
- Create and manage Product Instance Registration Tokens.
- Transfer licenses between virtual accounts or view licenses.
- Transfer, remove or view product instances.
- Run reports against your virtual accounts.
- Modify your email notification settings.
- View overall account information.

Virtual Accounts

Virtual Accounts are customizable subaccounts within a Smart Account used to organize and optimize Cisco licenses. They can be structured to reflect business units, product types, or geographic locations, allowing better planning and utilization of assets. They are created and maintained by the Smart Account administrator. Smart Licencing allows you to create multiple license pools or virtual accounts within the Smart Software Manager portal. Using the Virtual Accounts option you can aggregate licenses into discrete bundles 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.

All new licenses and product instances are placed in the default virtual account in the Smart Software Manager, unless you specify a different one during the order process. Once in the default account, you may choose to transfer them to any other account as desired, provided you have the required access permissions.

Use the Smart Software Manager portal to create license pools or transfer licenses.

Product Instance Registration Tokens

A product requires a registration token until you have registered the product. On successful registration , the device receives an identity certificate . This certificate is saved and automatically used for all future

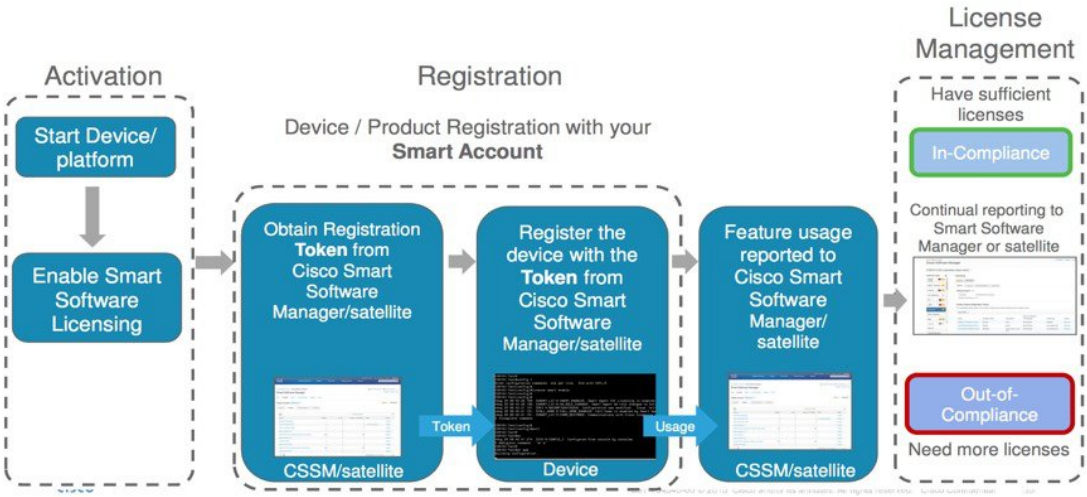
communications with Cisco. Registration tokens are stored in the Product Instance Registration Token Table associated with your enterprise account. Registration tokens can be valid from 1 to 365 days.

Product Instances

A product instance is an individual device with a unique device identifier (UDI) that is registered using a product instance registration token (or registration token). You can register any number of instances of a product with a single registration token. Each product instance can have one or more licenses residing in the same virtual account. Product instances must periodically connect to the Cisco Smart Software Manager servers during a specific renewal period. If you remove the product instance, its licenses are released and made available within the virtual account.

The figure below depicts a working model of Smart Licensing that involves a three-step procedure.

Figure 1: Smart Licensing Work Flow



1. **Setting up Smart Licensing**: You can place the order for Smart Licensing, to manage licenses on Cisco.com portal. You agree to the terms and conditions governing the use and access of Smart Licensing in the Smart Software Manager portal.

2. **Enabling and Use Smart Licensing**: Smart Licensing is enabled by default. You can use either of the following options to communicate:

    - **Smart Call Home**: The Smart Call Home feature is automatically configured when Smart Licensing is enabled. Smart Call Home is used by Smart Licensing as a medium for communication with the Cisco license service. Call Home feature allows Cisco products to periodically call-home and perform an audit and reconciliation of your software usage information. This information helps Cisco efficiently track your install base, keep them up and running, and more effectively pursue service and support contract renewals, without much intervention from your end. For more information on Smart Call Home feature, see http://www.cisco.com/c/dam/en/us/td/docs/switches/lan/smart_call_home/SCH_Deployment_Guide.pdf.

    - **Smart Software Manager Satellite** : is a component of Cisco Smart Licensing and works in conjunction with Cisco Smart Software Manager (SSM). It helps customers intelligently manage product licenses, providing near real-time visibility and reporting of the Cisco licenses they purchase and consume.

      For security-sensitive customers who do not want to manage their installed base using a direct Internet connection, the Smart Software Manager satellite is installed on the customer premises and provides

a subset of Cisco SSM functionality. After you download the satellite application, deploy it, and register it to Cisco SSM, you can perform the following functions locally:

- Activate or register a license
- Get visibility to your company's licenses
- Transfer licenses between company entities

Periodically, the satellite needs to synchronize with Cisco SSM to reflect the latest license entitlements.

For more information about Smart Software Manager satellite, see http://www.cisco.com/c/en/us/buy/smart-accounts/software-manager-satellite.html.

3. **Manage and Report Licenses**: You can manage and view reports about your overall software usage in the Smart Software Manager portal. Compliance reporting describes the types of Smart Licensing reports.

Consumption Model

The consumption model is a new pricing model for line cards. This provides a flexible deployment model with the ability to increase bandwidth to meet your demands. The consumption model is described in the table below.

<table>
<tr><th>License/PID</th><th>Description</th><th>Consumption</th></tr>
<tr><td>NCS4K-4H-OPW-LO</td><td>Licensed PID for NCS4K-4H-OPW-QC2 card. This license is available when the card is purchased.</td><td>This is a licensed PID for OTN that allows 100G of bandwidth per line card.</td></tr>
<tr><td>S-CFP2-WDM-LIC</td><td>Software license for WDM CFP2 pluggable port. This software license needs to be purchased if the WDM CFP2 ports are configured.</td><td>If the DWDM interface is enabled on the NCS4K-4H-OPW-LO licensed PID, then this license is consumed. A maximum of two licenses can be consumed per licensed PID as shown below:
<table>
<tr><th>Port Bandwidth</th><th>WDM CFP2 Pluggable Port
S-CFP2-WDM-LIC</th></tr>
<tr><td>200G</td><td>1</td></tr>
<tr><td>100G</td><td>1</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>License/PID</th><th>Description</th><th>Consumption</th></tr>
<tr><td>S-NCS4K-100G-LIC</td><td>Software license for 100G bandwidth usage. This software license needs to be purchased for subsequent 100G bandwidth usage. The basis for the calculation is the running configuration of the router.</td><td>For every additional 100 G chunk of bandwidth usage this license is consumed per NCS4K-4H-OPW-LO licensed PID. A few examples of the consumption scale is shown below:
<table>
<tr><th>Port Bandwidth</th><th>100G Bandwidth Licenses Consumed
S-NCS4K-100G-LIC</th></tr>
<tr><td>1 x 200G</td><td>2</td></tr>
<tr><td>1 x 100G</td><td>1</td></tr>
<tr><td>1 to 2 x 40G</td><td>1</td></tr>
<tr><td>3 to 5 x 40G</td><td>2</td></tr>
<tr><td>1 to 10 x 10G</td><td>1</td></tr>
<tr><td>11 to 20 x 10G</td><td>2</td></tr>
</table></td></tr>
<tr><td>S-NCS4K-POTS</td><td>License POTS - one per line card. This software license needs to be purchased when carrier ethernet or MPLS packet features are activated.</td><td>This license is consumed when carrier ethernet or MPLS packet features are enabled for the licensed PID.</td></tr>
</table>

Configure Smart Software Licensing Using CTC

Purpose	This procedure enables you to register or deregister the router in the Cisco Smart Software Manager. You can also manually renew the authorization and ID certificate for your device.
Tools/Equipment	None
Prerequisite Procedures	Login to CTC in *System Setup and Software Installation Guide for Cisco NCS 4000 Series*.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Step 1 In the node view, click **Provisioning** > **Smart Licensing** > **Smart Software Licensing** tabs.

Step 2 To register the device, perform Steps 6 through 9.

Step 3 To deregister the device, perform Steps 10 and 11.

Step 4 To renew ID certificate, perform Step 12.

Step 5 To renew authorization, perform Step 13.

Step 6 Login to your smart account in Cisco Smart Software Manager (https://software.cisco.com/#SmartLicensing-Inventory) or smart software manager satellite using the Cisco provided username and password.

Step 7 Generate a product instance registration token. Copy or download the token to a text file.

The token is used to register and activate a device, and assign the device to a virtual account.

Step 8 Click **Register**.

The Smart Software Licensing Product Registration dialog appears.

Step 9 Paste the token you copied in Step 7 and click **OK**.
A message is displayed that the product registration has initiated successfully. The smart licensing software status is updated. The details in the Provisioning > Smart Licensing > Smart Licensing Usage tab is also updated if the card is in use.

In case an invalid token is used, the registration process fails and the status is displayed in the smart licensing software status area. You can attempt to register the device again by using the correct token.

In the event of a communication failure between the device and the portal or satellite, CTC waits for 24 hours before attempting to register the device again. You can use the " Force Register " button to try registering the device again instead of waiting for 24 hours.

Step 10 To cancel the registration of your device, click **Deregister**.

A Confirm Deregistration dialog is displayed.

Step 11 Click **OK**.

A message is displayed after the device is successfully deregistered.

When your device is taken off the inventory, shipped elsewhere for redeployment or returned to Cisco for replacement using the return merchandise authorization (RMA) process, you can use the Deregister option to cancel the registration on your device. All Smart Licensing entitlements and certificates on the platform are removed.

Note
Though the product instance has been de-registered from the Cisco license cloud service, Smart Licensing is still enabled.

Step 12 To manually renew your ID certificate, click **Renew ID Cert**.

A message is displayed after the renewal of the ID certificate is complete.

Note

ID certificates are renewed automatically after six months. In case, the renewal fails, the product instance goes into unidentified state. You can manually renew the ID certificate.

Step 13 To manually renew the authorization, click **Renew Authorization**.

Authorization periods are renewed by the Smart Licensing system every 30 days. As long as the license is in an 'Authorized' or 'Out-of-compliance' (OOC), the authorization period is renewed. Use the Renew Authorization option to make an on-demand manual update of your registration. Thus, instead of waiting 30 days for the next registration renewal cycle, you can issue this command to instantly find out the status of your license.

After 90 days, the authorization period expires and the status of the associated licenses display "AUTH EXPIRED". Use the Renew Authorization option to retry the authorization period renewal. If the retry is successful, a new authorization period begins.

Stop. You have completed this procedure.

Configure Call Home

Purpose	Call Home provides an email and HTTP/HTTPS based notification for critical system policies. A predefined destination is provided for sending alerts to the Cisco TAC. This procedure enables you configure the HTTP proxy server and also add or remove destination HTTP/HTTPS addresses of the Cisco Smart Software Manager or satellite.
Tools/Equipment	None
Prerequisite Procedures	Login to CTC in *System Setup and Software Installation Guide for Cisco NCS 4000 Series*.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Step 1 In the node view, click **Provisioning** > **Call Home** tabs.

Step 2 To configure the HTTP proxy server, perform Steps 4 and 5.

Step 3 To add or delete a destination HTTP/HTTPS address, perform Step 6.

By default the destination HTTPS address of the Cisco Smart Software Manager for the CiscoTAC-1 profile is https://tools.cisco.com/its/service/oddce/services/DDCEService.

Step 4 Check the **Use HTTP Proxy** checkbox.

The Port Number field is enabled.

Step 5 Specify the port of the HTTP proxy server. The range is 1 to 65535.

Step 6 Click **Create.**

The Create Destination Address dialog is displayed.

Step 7 Specify the URL and click **OK**.

To remove any of the specified destination addresses, select the address from the list and click **Delete**.

Stop. You have completed this procedure.