License Management

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Overview

Cisco Smart licensing is simple, flexible and a smart way of procuring, deploying and managing licenses in your environment. For more information on smart licensing, see http://www.cisco.com/web/ordering/smart-software-licensing/index.html

You can have smart licensing and traditional licensing in your system at the same time. But only one type of licensing can be active. The following table describes the differences between traditional and smart licensing:

Traditional Licensing	Smart Licensing
Licenses are associated with registered domains.	Dynamic licensing. Licenses are associated with products and transferable within the virtual account.
You must obtain a license and manually download and install it on each device in Cisco UCS Central.	No license installation is necessary. The device initiates an HTTPS call home session and requests the licenses that it is configured to use.
Licenses are associated with specific domains.	License pools are account-specific. Any device in your company can use them.
Licenses are not easily transferable from one device to another.	Licenses can be transferred between product instances without any software installation. You can transfer unused licenses from one virtual account to another.

Smart Licensing

Smart licenses are server based licenses. You will purchase, deploy and track licenses for servers instead of domains. Instead of registering individual products with license files or PAKs, Smart Licensing provides the option to create a pool of licenses that can be used across your company's portfolio.

Smart licensing uses Virtual Accounts, Product Instances and Registration Tokens to procure, deploy and manage licenses in your environment.

Virtual Accounts

Virtual accounts are collections of licenses and product instances. You can create virtual accounts in Cisco Smart Software Manager to organize the licenses for your company into logical entities. You can use virtual accounts to organize licenses by business unit, product type, IT group, or whatever makes sense for your 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 a virtual account. You choose the virtual account when you register a product instance. You can transfer existing licenses or product instances from one virtual account to another.

For more information on creating virtual accounts in Cisco Smart Software Manager, see http://www.cisco.com/web/ordering/smart-software-manager/docs/smart-software-manager-user-guide.pdf.

Product Instances

A Cisco UCS Central product instance has a unique device identifier (UDI) that is registered using a product instance registration token. You can register several instances of a product with a single registration token. Each product instance can have one or more licenses that reside in the same virtual account.

Registration Tokens

Registration tokens are stored in the Product Instance Registration Token Table that is associated with your smart account. After you enable Smart Licensing in Cisco UCS Central, you can generate a new token in a virtual account on the Smart Software Licensing portal to register in Cisco UCS Central.
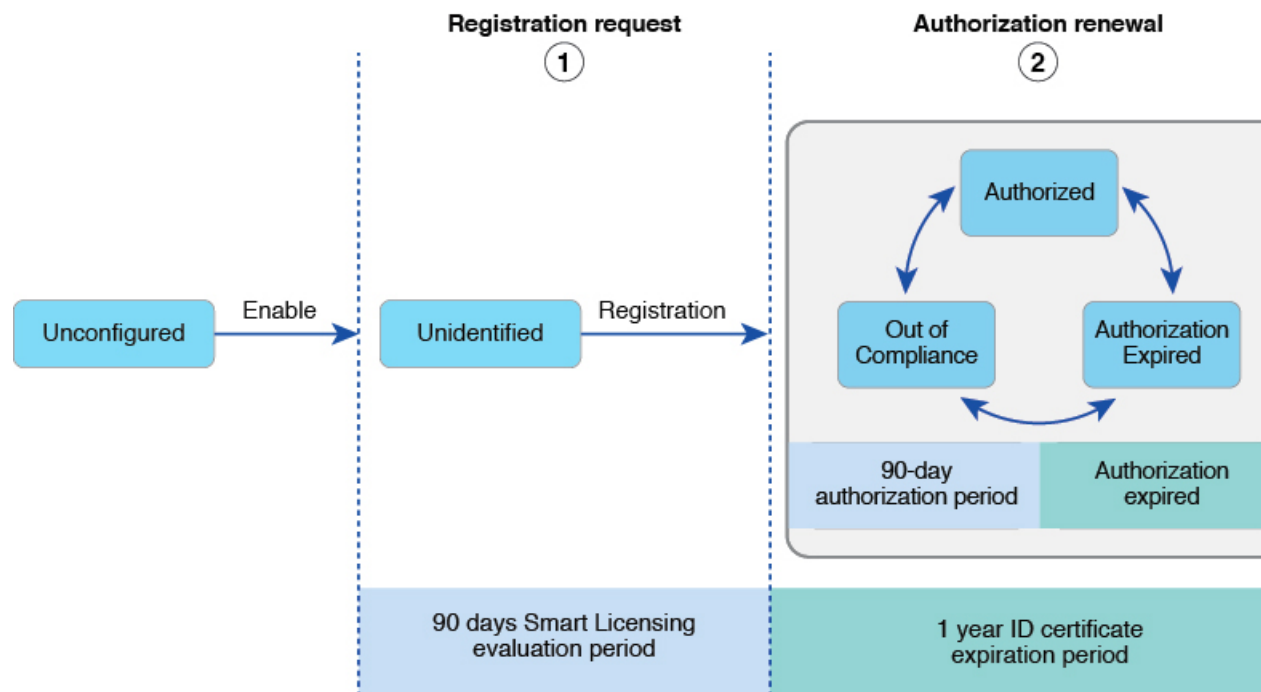
For more information on creating virtual accounts in Cisco Smart Software Manager, see http://www.cisco.com/web/ordering/smart-software-manager/docs/smart-software-manager-user-guide.pdf.

Obtaining Licenses

To obtain licenses using smart licensing, you will have to do the following:

- Generate tokens in Cisco Smart Software Manager virtual accounts.
- Register licenses for product instances in Cisco UCS Central.

The following illustrations explains the smart licensing process:

1	**Registration request**	The Smart Licensing 90-evaluation period starts when the product instance begins using the licensing feature. It not renewable. When the evaluation period expires, the agent sends a notification to the platform.
2	**Authorization renewal**	Authorization requests can result in an **Authorized** or **Out of Compliance (OOC)** response, or in an error due to a communication failure. Authorization periods are renewed every 30 days as long as authorization requests return **Authorized** or **Out of Compliance (OOC)** responses. When the authorization period expires, the agent continues to retry renewal with authorization requests. If successful, a new authorization period starts. If ID cert renewal (authorization renewal) fails, the product instance moves to an Unidentified state and begins consuming the evaluation period.

Enabling Smart Licensing

Before You Begin

You must enable Smart Call Home before you can enable Smart Licensing. See Configuring Smart Call Home for more information.

Procedure

	Command or Action	**Purpose**
Step 1	UCSC # **connect policy-mgr**	Enters resource manager mode.
Step 2	UCSC(policy-mgr)# **scope org**	Enters into the organization.
Step 3	UCSC (policy-mgr) /org # **scope device-profile**	Enters device profile mode.
Step 4	UCSC (policy-mgr) # **scope smart-license**	Enters Smart License mode.
Step 5	UCSC (policy-mgr) /smart-license # **set smart-license** *enable*	Enables Smart Licensing.
Step 6	UCSC (policy-mgr) /smart-license* # **commit-buffer**	Commits the transaction to the system configuration.

Step 7	UCSC (policy-mgr) /smart-license # **show smart-license**	Shows the smart license status. For example:
		`Smart License Status`
		`====================`
		`Smart License: Enable`

This example shows how to enable Smart Licensing.

```
UCSC # connect policy-manager
UCSC(policy-mgr) # scope org
UCSC(policy-mgr) /org # scope device-profile
UCSC(policy-mgr) /org/device-profile # scope smart-license
UCSC(policy-mgr) /org/device-profile/smart-license # set smart-license enable
UCSC(policy-mgr) /org/device-profile/smart-license* # commit-buffer
UCSC(policy-mgr) /org/device-profile/smart-license # show smart-license
```

Disabling Smart Licensing

Procedure

	Command or Action	**Purpose**
Step 1	UCSC # **connect policy-mgr**	Enters resource manager mode.
Step 2	UCSC (policy-mgr)# **scope org**	Enters into the organization.
Step 3	UCSC (policy-mgr) /org/device-profile # **scope device-profile**	Enters device profile mode.
Step 4	UCSC (policy-mgr) /org/device-profile # **scope smart-license**	Enters Smart License mode.
Step 5	UCSC (policy-mgr) /org/device-profile/smart-license # **set smart-license** *disable*	Disables Smart Licensing.

	Command or Action	Purpose
Step 6	UCSC (policy-mgr) /org/device-profile/smart-license* # **commit-buffer**	Commits the transaction to the system configuration.

Step 7	UCSC (policy-mgr) /org/device-profile/smart-license #**show smart-license**	Shows the smart license status. For example:
		```Smart License Status```
		```====================```
		```Smart License: Disable```

This example shows how to disable Smart Licensing.

```
UCSC # connect policy-manager
UCSC(policy-mgr)# scope org
UCSC(policy-mgr)/org # scope device-profile
UCSC(policy-mgr)/org/device-profile # scope smart-license
UCSC(policy-mgr)/org/device-profile/smart-license # set smart-license disable
UCSC(policy-mgr)/org/device-profile/smart-license* # commit-buffer
UCSC(policy-mgr)/org/device-profile/smart-license # show smart-license
```

Registering an ID Token

Procedure

	Command or Action	Purpose
Step 1	UCSC # **connect resource-mgr**	Enters resource manager mode.
Step 2	UCSC (resource-mgr) # **scope smart-license**	Enters smart license mode.
Step 3	UCSC (resource-mgr) /smart-license # **register-idtoken** *ID token*	Registers an ID token.
Step 4	UCSC (resource-mgr) /smart-license* # **commit-buffer**	Commits the transaction to the system configuration.

This example shows how to register an ID token:

```
UCSC # connect resource-mgr
UCSC(resource-mgr)# scope smart-license
UCSC(resource-mgr) /smart-license # register-idtoken
UCSC(resource-mgr) /smart-license* # commit-buffer
```

Refreshing the License Server State

The system automatically updates the Authorization state from the License Server daily. When the Authorization state is Eval, you have the option of manually receiving the Authorization state from the Smart License server. With the following commands, you can check the time remaining in the Eval period.

Procedure

	Command or Action	Purpose
Step 1	UCSC # **connect resource-mgr**	Enters resource manager mode.
Step 2	UCSC (resource-mgr) # **scope smart-license**	Enters smart license mode.
Step 3	UCSC (resource-mgr) /smart-license # **refresh-state**	Refreshes the count of Smart License Server entitlements.
Step 4	UCSC (resource-mgr) /smart-license* # **commit-buffer**	Commits the transaction to the system configuration.

This example shows how to refresh the license server state:

```
UCSC # connect resource-mgr
UCSC(resource-mgr)# scope smart-license
UCSC(resource-mgr)/smart-license # refresh-state
UCSC(resource-mgr)/smart-license* # commit-buffer
UCSC(resource-mgr)/smart-license #
```

Renewing an Entitlement (Authorization)

Procedure

	Command or Action	Purpose
Step 1	UCSC # **connect resource-mgr**	Enters resource manager mode.
Step 2	UCSC (resource-mgr) # **scope smart-license**	Enters smart license mode.
Step 3	UCSC (resource-mgr) /smart-license # **renew-entitlement**	Renews entitlement (authorization)
Step 4	UCSC (resource-mgr) /smart-license* # **commit-buffer**	Commits the transaction to the system configuration.

This example shows how to renew an entitlement:

```
UCSC # connect resource-mgr
UCSC(resource-mgr)# scope smart-license
UCSC(resource-mgr)/smart-license # renew-entitlement
UCSC(resource-mgr)/smart-license* # commit-buffer
UCSC(resource-mgr)/smart-license #
```

Renewing an ID Certificate (Registration)

Procedure

	Command or Action	Purpose
Step 1	UCSC # **connect resource-mgr**	Enters resource manager mode.
Step 2	UCSC (resource-mgr) # **scope smart-license**	Enters smart license mode.
Step 3	UCSC (resource-mgr) /smart-license # **renew-id-certificate**	Renews an ID certificate (registration).
Step 4	UCSC (resource-mgr) /smart-license* # **commit-buffer**	Commits the transaction to the system configuration.

This example shows how to renew an ID certificate:

```
UCSC # connect resource-mgr
UCSC(resource-mgr) # scope smart-license
UCSC(resource-mgr)/smart-license # renew-id-certificate
UCSC(resource-mgr)/smart-license* # commit-buffer
UCSC(resource-mgr)/smart-license* #
```

Deregistering Smart Licensing

Procedure

	Command or Action	Purpose
Step 1	UCSC # **connect resource-mgr**	Enters resource manager mode.
Step 2	UCSC (resource-mgr) # **scope smart-license**	Enters smart license mode.
Step 3	UCSC (resource-mgr) /smart-license # **deregister**	Deregisters Smart Licensing.
Step 4	UCSC (resource-mgr) /smart-license* # **commit-buffer**	Commits the transaction to the system configuration.

Step 5	UCSC (resource-mgr) /smart-license #**show license status**	Shows the smart license registration status. For example:
		`UCSC(resource-mgr) /smart license # show license status`
		`Smart Licensing Status`
		`====================`
		`Smart License: Enable`
		`Registration`
		`====================`
		`Registration Status: Not Registered <<<<`

	Command or Action	Purpose

This example shows how to deregister smart-licensing:

```
UCSC # connect resource-mgr
UCSC(resource-mgr)# scope smart-license
UCSC(resource-mgr)/smart-license # deregister
UCSC(resource-mgr)/smart-license* # commit-buffer
UCSC(resource-mgr)/smart-license #
```

Traditional Licensing

Traditional PAK-based licensing uses domain-based licenses instead of the product-based license that Smart Licensing offers. You can manage domain licenses through the Cisco UCS Central GUI or CLI.

You have a 120 day grace period to evaluate Cisco UCS Central at no cost. The grace period is measured from the day you register your first Cisco UCS domain and is stored in the system. Unregistering a domain from the system does not reset the grace period. For example, if you register a domain, use 40 days of the grace period, and then unregister after 40 days, the system records the 40 days in association with that domain. If you register this Cisco UCS domain again, the grace period for the domain resumes and indicates that you have used 40 days.

You must obtain and install a valid domain license before the grace period expires. If you do not the system generates multiple faults as a reminder to procure a license.

Downloading and Installing a License

Using the Cisco UCS Central CLI, you can download a license to Cisco UCS Central from a remote file system.

Note If you have the license file saved in your local file system, use Cisco UCS Central to download the license file into Cisco UCS Central.

Before You Begin

To download a license from the local file system to Cisco UCS Central, make sure you have the following:

- Obtained the license from Cisco and saved it to your local system or remote file system.

- Administrative permission for Cisco UCS Central to perform this task.

Procedure

	Command or Action	Purpose
Step 1	UCSC # **connect service-reg**	Enters the service registry mode.

	Command or Action	Purpose
Step 2	UCSC (service-reg) # **scope license**	Enters the licensing configuration mode.
Step 3	UCSC (service-reg) /license # **download license** *protocol:// license file location*	Downloads the license using the specified protocol to connect to the location of the license. You can specify FTP, SFTP, TFTP or SCP as the protocol. For example, in the command `download license scp://user@1.2.3.4/a.lic`, SCP is the protocol specified, and 1.2.3.4 is replaced with the IP address of the server where the license file, a.lic file is saved. If you specify TFTP, then you are not prompted to enter the user name and the password.
Step 4	UCSC (service-reg) /license # **install file** *license file name*	Installs the license.

The following example shows how to download and install a license using the Cisco UCS Central CLI:

```
UCSC # connect service-reg
UCSC (service-reg) # scope license
UCSC (service-reg) /license # download license
scp://UCS-A@1.2.3.4/ws/ucsa-sjc/license_file/newFiles/DOMAIN_REG_2.lic
Password: *****
myPassword(service-reg) /license #
UCS-A(service-reg) /license # install  file DOMAIN_REG_2.lic
```

Uninstalling a License

After a license file is cleared, the license count is automatically adjusted.

Before You Begin

You can remove or clear a license file that is not in use.

Procedure

	Command or Action	Purpose
Step 1	UCSC # **connect service-reg**	Enters service registration mode.
Step 2	UCSC (service-reg) # **scope license**	Enters licensing configuration mode.
Step 3	UCSC (service-reg) /license # **clear file** *license file name*	Uninstalls the specified license.

This example shows how to clear a license.
```
UCSC # connect service-reg
UCSC (service-reg) # scope license
UCSC (service-reg) /license # clear file DOMAIN_REG_2.lic
UCSC (service-reg) /license* # commit-buffer
UCSC (service-reg) /license #
```

Deleting a License

You can delete a license that is not associated with a registered UCS domain, from Cisco UCS Central. If you want to delete a license that is associated to a UCS domain, make sure to unregister the domain before deleting the license. When you delete a license, the system automatically adjusts the available license count.

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Important   Deleting a license from Cisco UCS Central removes only the license file from the system. If you try to download the same license after deleting it from the system, you might encounter a download license error. So when you delete a license, you must delete the associated download task for that license.

Procedure

	Command or Action	Purpose
Step 1	UCSC # **connect service-reg**	Enters service registry mode.
Step 2	UCSC (service-reg) # **scope license**	Enters licensing configuration mode.
Step 3	UCSC (service-reg) /license # **clear file** *license file name*	Deletes the specified license from the system.
Step 4	UCSC (service-reg) /license # **commit-buffer**	Commits the transaction to the system. **Note** Continue with the following steps to delete the download-task.
Step 5	UCSC (service-reg) /license # **delete download-task** *license file name*	Deletes the download task associated with the specified license file.
Step 6	UCSC (service-reg) /license # **commit-buffer**	Commits the transaction to the system.

The following example shows the process to clear a license file and delete the download task from Cisco UCS Central CLI:

```
UCSC # connect service-reg
UCSC (service-reg) # scope license
UCSC (service-reg) /license # clear file UCSC_123_ini.lic
UCSC (service-reg) /license* # commit-buffer
UCSC (service-reg) /license # delete download-task UCSC_123_ini.lic
UCSC (service-reg) /license* # commit-buffer
```