



# Smart Software Manager satellite Enhanced Edition User Guide

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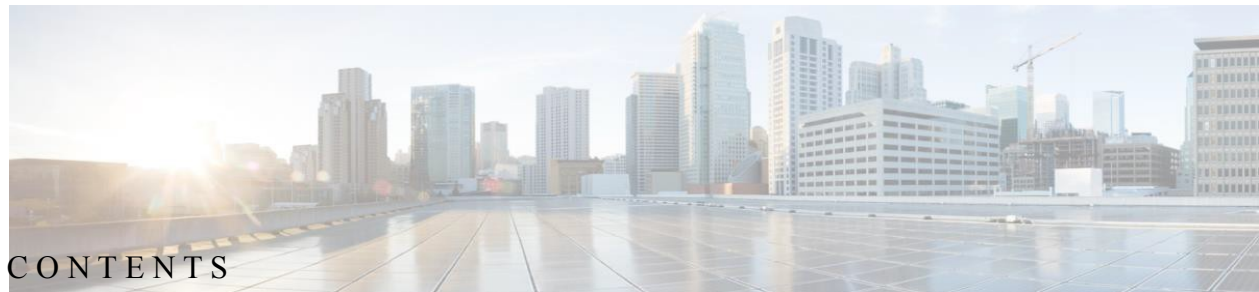
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## Preface

This preface describes the objectives and organization of this document and explains how to find additional information on related products and services.

## Objectives

This document provides an overview of software functionality that is specific to the Cisco Smart Software Manager satellite Enhanced Edition. It is not intended as a comprehensive guide to all of the software features that can be run, but only the software aspects that are specific to this application.

## Related Documentation

This section refers you to other documentation that also might be useful as you configure your Cisco Smart Software Manager satellite Enhanced Edition. This document covers important information for the Cisco Smart Software Manager satellite Enhanced Edition and is available online.

## Document Conventions

This documentation uses the following conventions:

Convention	Description
<b>bold</b>	Bold text indicates the commands and keywords that you enter literally as shown.
<i>Italic</i>	Italic text indicates arguments for which the user supplies the values.
[x]	Square brackets enclose an optional element (keyword or argument).
[x   y]	Square brackets enclosing keywords or arguments separated by a vertical bar indicate an optional choice.
{x   y}	Braces enclosing keywords or arguments separated by a vertical bar indicate a required choice.
[x {y   z}]	Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element.
variable	Indicates a variable for which you supply values, in context where italics cannot be used.
string	A non-quoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Examples use the following conventions:

Convention	Description
screen font	Terminal sessions and information the switch displays are in screen font.
<b>boldface screen font</b>	Information you must enter is in boldface screen font.
<i>italic screen font</i>	Arguments for which you supply values are in italic screen font.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.



This document uses the following call out conventions:



**Note**

Means reader take note. Notes contain helpful suggestions or references to material not covered in the manual.



**Caution**

Means reader be careful. In this situation, you might do something that could result in equipment damage or loss of data

**Obtaining Documentation and Submitting a Service Request**

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see [What's New in Cisco Product Documentation](#).

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the [What's New in Cisco Product Documentation RSS feed](#). RSS feeds are a free service.

## Introduction to Smart Software Manager satellite

**Cisco Smart Software Manager satellite** (SSM satellite) is an IT Asset Management solution that enables customers to administer Cisco products and licenses on their premises. It is designed as an extension of **Cisco Smart Software Manager** and provides a similar set of features

### Smart Software Manager satellite Classic Edition (CE):

Cisco Smart Software Manager satellite Classic Edition is designed to provide a limited set of Cisco Smart Software Manager's Account Administration's experience in Off-Line and Lab Environments. Its key features include

- Targeted for small enterprises
- Supports single local Accounts (single-tenant)
- Scales to 4,000 product instances
- Online or offline connectivity to Cisco

### Smart Software Manager satellite Enhanced Edition (EE):

Cisco Smart Software Manager satellite Enhanced Edition is designed to mirror Cisco Smart Software Manager's and local Account Administration's experience through a common user interface and similar feature. However, instead of being hosted on cisco.com, it is available as an 'on premise' version. It has two separate workspaces: Administration and Licensing:

- Smart Software Manager satellite Enhanced Edition is targeted for all customers who desire to manage their assets on premises
- Supports multiple local Accounts (multi-tenant)
- Scales to 10,000 product instances
- Online or offline connectivity to Cisco

Please note that existing features in satellite Classic 5.0.1 below are **not** available in this release and will be made available in future EE releases:

- MSLA (Utility billing)
- High Availability

### Smart Software Manager satellite Lite Edition (LE) (\*\* Future):

Cisco Smart Software Manager satellite Lite Edition will be a future offering which will allow you to extend your SSM satellite Enhanced Edition for locally administrated Off-Line and Lab Environments. Its key features will include:

- Cisco Smart Software Manager satellite LE is targeted for small enterprises
- Supports a single Local Virtual Account on SSM satellite Enhanced Edition (EE)
- Scales to 4,000 product instances
- Online or offline connectivity to SSM satellite Enhanced Edition



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**Note** The SSM satellite Lite Edition (LE) is not yet available at the time of this writing, but it will function similarly to today's Smart Software Manager satellite Classic.

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## System Requirements

### Cisco Smart Account Access

Ensure that you have access to a local Account before you proceed with the tasks mentioned in this section.

### Hardware based deployment requirements:

The Cisco Smart Software Manager satellite Enhanced Edition can be deployed on physical servers, such as the Cisco UCS C220 M3 Rack Server, or on Virtual servers which meet the following requirements:

Minimum	Recommend
200 GigByte Hard Disk	200 GigByte Hard Disk
8 Gig RAM	8 Gig RAM
x86 Dual Core	x86 Quad Core
1 Ethernet NIC	2 Ethernet NIC

### Virtual Machine based deployment requirements

The Cisco **Smart Software Manager satellite Enhanced Edition** supports following versions of VMware vSphere Web Client are supported:

- VMware vSphere Web Client 6.0
- VMware vSphere Web Client 5.5

When creating the Virtual Machine for deployment, ensure the **Guest-OS** is set to “Linux CentOS 7 64 bit” or “Linux Other 64 bit” and has the following configuration:

Minimum	Recommend
200 GigByte Hard Disk	200 GigByte Hard Disk
8 Gig RAM	8 Gig RAM
2 vCPUs	4 vCPUs
1 vNICs - VMXNET3 or virtio.	2 vNICs - VMXNET3 or virtio.

## System Limits and Scalability

### Product and User Scalability

- Up to 500 local Accounts
- Up to 1,000 local Virtual Accounts
- Up to 10,000 product instances

## Supported Web Browsers

The following web browsers are supported:

- Chrome 36.0 and later versions
- Firefox 30.0 and later versions
- Internet Explorer 11.0 and later versions



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**Note** Javascript must be enabled in your browser.

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# Smart Software Manager satellite Enhanced Edition

## Overview

**Smart Software Manager satellite Classic Edition** operates at the **Virtual Account** level within a customer's **Smart Account** managed by Cisco Smart Software Manager. Thus, one customer can have many satellites but each **Smart Software Manager satellite Classic Edition** cannot be used to manage multiple customers. Furthermore, for customers which need to deploy multiple **Smart Software Manager satellites**, each satellite must be deployed and managed independently as shown in Figure 1.

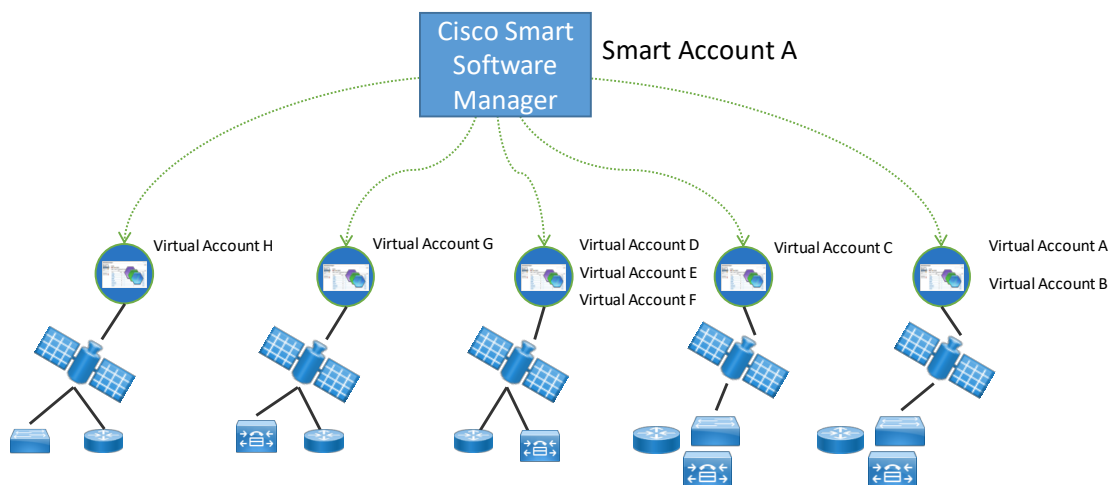


Figure 1 - Today's satellite structure (satellite Classic Edition)

With the introduction of **Smart Software Manager satellite Enhanced Edition**, though a single management workspace, customers are now able to support multiple local Accounts, each linked to a Cisco Smart Account/Cisco Virtual Account pair. This is shown in Figure 2 below.

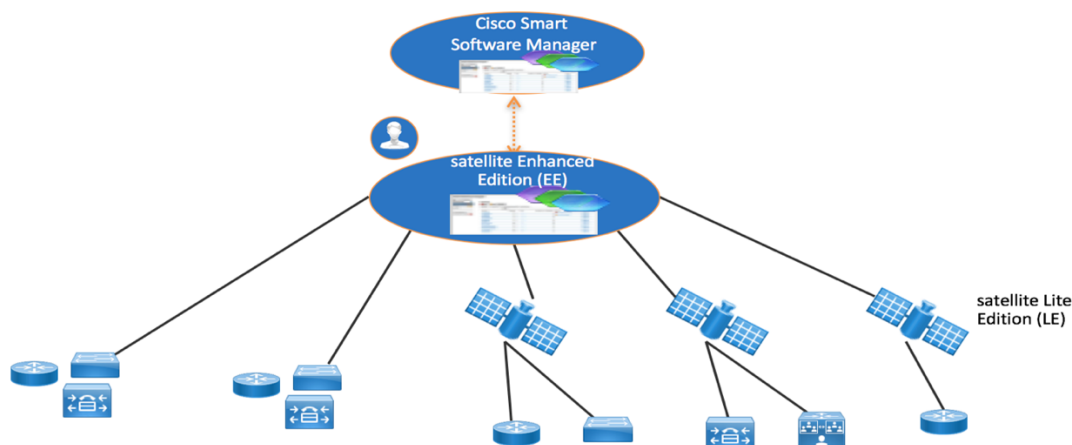


Figure 2- SSM satellite Enhanced Edition

**Smart Software Manager satellite Enhanced Edition** has new architecture from previous versions, as well as an updated user interface. It has containerized packaging with separate Licensing and Administration workspaces, multi-tenancy capability, new registration and synchronization procedures, new system roles and RBAC (Role Based Access Control) for license management, external authentication, syslog, proxy, and



other functions. Therefore, it is important to understand how the new system setup and operations have changed.

## Administration Workspace Features

The Smart Software Manager satellite Enhanced Edition has an Administration workspace separate from the Licensing workspace that allows for internal administrative functions such as: system user creation; local Account creation; registration; synchronization; network, system and security settings; and more. This administration workspace is restricted to only authorized users. The Administration Workspace is accessed via:

<https://<ip-address>:8443/admin>

## Licensing Workspace Features

The Smart Software Manager satellite Enhanced Edition has a Licensing workspace with similar functionality as [software.cisco.com](https://software.cisco.com) where users can manage their local Accounts, users, product instances, licenses, etc. The Licensing Workspace is accessed via:

<https://<ip-address>:8443>

## Key features of SSM satellite Enhanced Edition include the following:

<b>Multi-tenancy</b>	<b>Manage multiple customer local Accounts in a single management workspace</b>
<b>System Security Enhancements</b>	Smart Software Manager satellite Enhanced Edition is packaged as a deployable ISO with a CentOS 7 Security Harden Kernel and Nessus Scans with Critical and Major (CVE) issues addressed.
<b>LDAP Authentication</b>	A System Administrator can set the authentication method to be LDAP and OAuth2. If not specified, it will be using local authentication.
<b>LDAP Groups</b>	Group LDAP users so operations such as role assignment can be applied to multiple LDAP users within the group.
<b>User Groups</b>	Group users so operations such as role assignment can be applied to multiple users within the group instead of individual users.
<b>Account and Licensing Management</b>	Combined local Account and Licensing management in a single workspace with the same look-and-feel as Cisco Smart Software Manager and Virtual Account Administration.
<b>Multiple Network Interfaces</b>	Allows users to configure multiple interfaces for traffic separation between management and product instance registrations. ** Some restrictions apply
<b>Syslog support</b>	local Account events can be configured to be sent to a syslog server.
<b>Proxy support</b>	Allow for satellite to have a proxy between itself and Cisco Smart Software Manager for traffic separation.
<b>API Support</b>	Allow applications to call satellite APIs for virtual account, token, license, product instance, reporting, alerts and other operations.
<b>Virtual Account Tagging</b>	Allow local Virtual Accounts to be tagged for easy virtual account classification, grouping, locating and/or role assignment.
<b>License Tagging</b>	User can define and assign tags to licenses. They are useful for classifying, locating, and grouping licenses.

## Smart Software Manager satellite Enhanced Edition Quick Start

Following are the steps to get your satellite operational and access Smart Licensing functions:

1. **Kickstart Installation** – User follows the installation guide to deploy the satellite via the **Kickstart** procedure.
2. **Network Configuration** – User configures the IP address of the satellite using the **Network** option from the Administration workspace. Up to 2 interfaces can be configured.
3. **System Configuration** – User configures login message and banner, authentication method (LDAP, OAuth2, local).
  - After completing these steps, the Smart Software Manager satellite Enhanced Edition system is operational locally.
  - To access **Accounts** within the Licensing workspace, a user must request a new local Account or access to an existing local Account. For greenfield deployments, the user needs to request a new local Account.
  - For new local Account requests, the local Account must be registered to a Cisco Smart Account/Cisco Virtual Account pair (using CCO credentials). When the registration is complete, the Account can be used by the user to manage their licenses.
4. **Requesting a New Account** - User requests a new local Account after logging into the Licensing workspace at <https://<ip-address>:8443>. Once this is done, the request shows up under **Account Request** tab in the **Account** widget of the satellite Administration workspace. Another way to request a new local Account is by using **Accounts, New Account** options in the Administration workspace.
5. **Approve a new local Account** – The Administrator logs into the Administration workspace at <https://<ip-address>:8443/admin>, under **Accounts, Account Requests** to approve the request in #4. When the **Approve** action is completed, it is registered to Cisco Smart Software Manager and the satellite Licensing workspace is fully functional. The user can now use the **Smart Licensing** option.
6. **Request Access to an Existing Account**
  - a. User requests an access to an existing local Account after logging into the Licensing workspace at <https://<ip-address>>.
  - b. Approve access to an existing local Account – The Administrator logs into the Licensing workspace, select **Manage Account, Accounts Requests**, and see the **Pending** local Accounts waiting to be approved. Note that this workflow is different from a new local Account request in that it is performed in the Licensing workspace and does not go through the account registration process (the existing account is already registered to Cisco Smart Software Manager).

The user can now use Smart Licensing features such as register the product(s), create local Virtual Accounts or users, view/transfer product and license status, etc.

## Introduction to Administration Workspace

The Administration Workspace is used to setup the satellite system before it can be operational. It is accessible via <https://<ip-address>:8443/admin>.

The Smart Software Manager satellite Enhanced Edition Administration Workspace allows for system level functions such as:

- **Users** - Manage users such as creating system users with sysadmin, sysops, or user roles.
- **User Access Management** - configure authentication method and LDAP groups
- **System Settings** - Configure banner text, authentication method, and syslog parameters
- **Network** - Configure or change network IP, NTP, DNS server, default gateway addresses, proxy parameters, syslog configuration
- **Accounts** - Create or Approve request for local Accounts
- **Synchronization** - Synchronize Accounts with **Cisco Smart Software Manager**
- **API Toolkit** - enable creation of client and resource authentication credentials for accessing satellite API
- **Software Download** - An (optional) local software repository available to Smart Software Manager satellite Enhanced Edition users. The Admin uploads software images to this repository allowing users to download them from the Licensing workspace if they are entitled.



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**Note** The System Health display is automatically displayed and cannot be turned off at this time.

---

## User Role Based Access (RBAC)

Cisco Smart Software Manager satellite Enhanced Edition offers the ability to set different system role-based access control (RBAC) to restrict system access to authorized users.

### System Roles

The available **System Roles** are:

- **System Admin** (Full Access)
  - Full System access
  - Access to all Account(s)
- **System Operator** (Limited Access)
  - No ability to change system configurations
  - Access to all Account(s)
- **System User** (Restricted Access)
  - Limited to License Workspace Only
  - Access to Account(s) defined by Account RBAC

### Account Roles

In addition to the system roles which are set in the Administration Workspace, support for **Account Roles** can be set per account in the License Workspace. The available **Account Roles** are:

- **Account Administrator**
  - Manages all aspects of the Smart Account and its Virtual Accounts.
  - Also assign Smart Account Approver role
- **Account User**
  - Manages assets within all Virtual Accounts but cannot add or delete Virtual Accounts or manage user access.
  - Add Administrator role to specific Virtual Accounts for other System Users

- **Virtual Account Administrator**  
Allow User or Administrator access only to particular Virtual Accounts.  
Add Administrator role to specific Virtual Accounts for other System Users
- **Virtual Account User**  
Allow User or Administrator access only to particular Virtual Accounts.

## User Widget

The User widget allows the System Administrator or System Operator to create local users and configure advanced parameters such as password rules and auto lock features for the users to be created. When you create a user on the Administration workspace, it is added to the local authentication database (not LDAP, SSO, or another authentication server) with a default system role of System User (the lowest authority). An LDAP or SSO user is created within that authentication server and can login to the Licensing Workspace as long as the authentication method is configured accordingly. This user can request access to an existing local Account or a new local Account before he/she can use the satellite Licensing workspace for Smart Licensing functions.

To create a new user, use the following procedures:

- Click on **Users** from the Administration workspace.
- Click on **Create**.
- Fill in the information requested on the screen. The required fields (identified with \*) such as **User Name, Email, Password, Language**.
- Click **Add User**.



---

**Note** A local user created here has a default role of System User. A System Administrator can change that role to System Administrator or System Operator role.

---

A User can be disabled and removed by the System Administrator or System Operator role.

- “Disable” - User still exist in the database but is not able to login until re-enabled again. However, you can only remove a user after you disable that user.
- “Remove” - Option shows after the “Disable” action has been performed.



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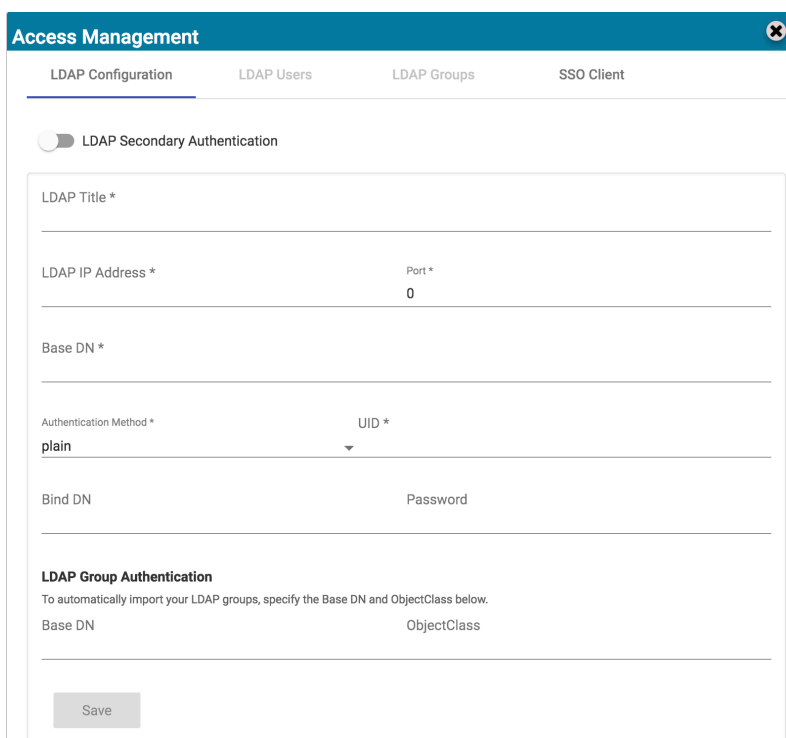
**Note** A System Administrator or System Operator cannot remove themselves.

---

## User Access Management Widget

The Access Management widget in the satellite Administration workspace provides the following access management functionality:

- **LDAP Configuration** – configure LDAP server for satellite to use as an external authentication mechanism.
- **LDAP Users** – As the LDAP Users login to satellite and authenticated, they are populated to the LDAP Users tab. Use this tab to see which LDAP users have access to satellite Accounts and local Virtual Accounts. Once these LDAP users log into satellite they can be assigned RBAC to the satellite Accounts/local Virtual accounts as needed.
- **LDAP Groups** – LDAP user groups are defined on the LDAP server and consists of groups of LDAP users. Satellite integration with LDAP allows it to assign RBAC of the accounts and local Virtual Accounts to these LDAP groups. So instead of assigning individual user one at a time the access to the Account and local Virtual Accounts in satellite “Users” tab, you can use the LDAP Groups tab in this widget to assign these resources to the LDAP user groups.
- **SSO Configuration** – Not supported.



The screenshot shows the 'Access Management' widget with the 'LDAP Configuration' tab selected. The interface includes a toggle for 'LDAP Secondary Authentication' and several input fields for LDAP configuration. The 'LDAP Title' field is empty. The 'LDAP IP Address' field is empty, and the 'Port' field is set to '0'. The 'Base DN' field is empty. The 'Authentication Method' dropdown is set to 'plain', and the 'UID' field is empty. The 'Bind DN' and 'Password' fields are empty. Below these fields is a section for 'LDAP Group Authentication' with a note: 'To automatically import your LDAP groups, specify the Base DN and ObjectClass below.' This section has two empty input fields for 'Base DN' and 'ObjectClass'. A 'Save' button is located at the bottom of the form.

### LDAP Configuration

To enable satellite to use an external LDAP server for external authentication, use LDAP Configuration option. Recall that there are 3 options when configuring authentication methods:

- None –using a local authentication database (not using an external authentication server)
- LDAP – using Lightweight Directory Access Protocol
- SSO – using Single Sign-On (not currently supported)

Depending which method is selected, you have to enter the appropriate parameters.

- For local authentication, select **None**

- For LDAP authentication enter the information below:
  - **LDAP Title:** Any title
  - **LDAP IP Address** – the IP address or FQDN of the LDAP server
  - **Port** - port to access LDAP service
  - **Base DN** – A DN is made up of attribute=value pairs, separated by commas, which consist of the basic elements;
    - **CN** – the **Common Name** of the object,
    - **OU** –**Organizational Unit**,
    - **DN** – **Distinguished Name**
  - **Authentication Method** – Currently only “Plain” is supported
  - **UID** – Name of User Identifier field
  - **Username** – user name to LDAP server
  - **Password** – password to the LDAP server
  - Click **Save**

## LDAP Users

The “LDAP Users” tab populates the LDAP user(s) after they log into the Licensing Workspace. In the example below, once testUser1 is logged in to the Licensing workspace, he is added under the LDAP Users tab. LDAP users can be added to the satellite and assigned RBAC (Account Administrator, Account User, Virtual Account Administrator, Virtual Account User) via the “User” option in the Licensing workspace.

Access Management

LDAP Configuration

LDAP Users

LDAP Groups

SSO Client

Search by Name

Name	Email	Role
testUser1	jogaff@cisco.com	System User

Showing All 1 Records

Click Update LDAP Data to get the users and user groups information from LDAP server to populate in satellite.

Each LDAP group can be assigned RBAC to the various resources (Account or Virtual Accounts). Below is an example of an LDAP group “users” given access as a satellite Account User role.

## Group Details: users

Accounts
Role
Add

Daves Test Account
Account User

Search by Name

Account Name	Role	Actions
No Records Found		

Save
Cancel

Below is an example of an LDAP group “users” given access as Virtual Account Admin access to a local Virtual Account.

Group Details: users

Accounts
Role
Add

Daves Test Account
Per Virtual Account
Remove...

Search by Name

Account Name	Role	Actions
Daves Test Account	Per Virtual Account	Remove...

Virtual Accounts
Role
Add

Daves Test VA
Virtual Account...

Virtual Accounts

Showing All 1 Records

Save
Cancel

## System Settings Widget

The **Settings** widget allows the System Administrator to configure various settings needed by the Smart Software Manager satellite Enhanced Edition, such as a system banner, authentication method, syslog parameters, and language settings.

## Messaging

**Messaging** tab allows the user to configure various messages

- Enter **Banner Text**.
- Click on **Display Message** and select Text/Background Colors.
- Type in **Login Page Message**.





## Syslog

Satellite syslog support allows for Smart Software Manager satellite Enhanced Edition Events to be sent to a remote syslog server.

To enable syslog support, use the following procedure:

- Select the **Enable Remote Logging** option for the events to be sent to the syslog server.
- Configure the **Syslog Server Address** and **UDP Port** number.

The software sends the events based on the following severities:

- INFO - General notifications and events
- WARN - Minor alerts
- ALERT - Major alerts

## Language

Today, we support only English.

## Email

You can configure the SMTP parameters to get email notifications from satellite.

- Enter SMTP Server URL, SMTP Port, and Hello Domain

## Time Settings

Today, you can set the time manually or allow it to synchronize with NTP. The time zone for your Smart Software Manager satellite Enhanced Edition system can also be set with UTC+0 which allows for all the timestamps to be displayed in UTC time. UTC+offset enables the timestamp to be displayed in local time of the system.

Under Time Settings, enter the following information:

- Select **Time Zone** from the drop down.
- Slide **Manually Set Time** to **On** to set it manually, or
- Turn on **Synchronize with NTP Server** and enter the **NTP Server Address**. Click on **Synchronize Time Now**.
- Click **Apply**.

## Console Message of The Day Settings

- This option allows the user to set the greeting message on the Smart Software Manager satellite Enhanced Edition console.
- **Message of the Day** is the display after the user logs in.
- **Before-login-Message** is the console display or greeting before the user is prompted to login.
- Click **Save**.

## Network Widget

**Satellite supports configuration of IPv4, dual stack IPv4 and IPv6 addressing schemes.** The Network widget allows users to configure network parameters such as IP address, netmask/prefix, default gateways, and proxy settings used by Smart Software Manager satellite Enhanced Edition. On the **General** tab, enter the Satellite Name, Default Gateway IP address, and DNS Settings.

Network
✕

General

Network Interface

Proxy

General

Enter the server name, DNS server and default gateway information.

Satellite Name:

**Default Gateway Settings:**

IPv4	IPv6
<input type="text" value="172.18.77.1"/>	<input type="text" value="fe80::2d0:2ff:fe85:8000"/>

**DNS Settings:**

Primary DNS

Alternate DNS

Alternate DNS

## Interface Support

Smart Software Manager satellite Enhanced Edition adds support for multiple interfaces (up to 4) to be configured and used for User management, Product Registration, and communications with Cisco Smart Software Manager. However, only 2 interfaces can use HTTPS. The number of interfaces listed in the **Network Interface** tab is dependent on the number of interfaces provisioned on the host.



### Note

While all interfaces will show up, only eth0 and eth1 can be used for strict HTTPS communication with products. The remaining interfaces can be used for either web access, or products which register with either HTTP, or that do not perform strict SSL checking.

## Interface Status

In the **Network Interface** tab, the interfaces have the following status:

- Connected - Interface has a connection and is configured with an IP address.
- Connected (Unconfigured) - Interface has a connection but is NOT configured with an IP address.
- Disconnected (Unconfigured) - Interface does not have a connection and therefore not configured with an IP address.

## Interface Zones

The firewall configuration provides for traffic separation and security control as needed:

- Product is for product registration.
- Management is for User Interface Management
- You can click on **Edit Interface** to modify specific configured parameters such as IP address, Subnet Mask, IP Gateway, Default Gateway, Firewall Ports Requirements.
- Click **Ok** to finish

## Proxy Support

A proxy server is a device in the network which acts as an intermediary for requests from devices with-in the customer network and external servers. There are two types of **proxy services supported by Smart Software Manager satellite Enhanced Edition**; explicit and **transparent**.

### Explicit proxy support:

Smart Software Manager satellite Enhanced Edition is explicitly configured to use a proxy server, meaning the satellite knows that all requests will go through a proxy. The satellite must be configured with the hostname/IP address of the proxy service. When information needs to be sent to Cisco, satellite connects to the proxy and sends the request to it. The Proxy then relays the information to Cisco servers.

### Transparent proxy:

The proxy server is typically deployed at gateway and the proxy service is configured to intercept traffic for a specified port (443 in this case). The Smart Software Manager satellite Enhanced Edition is unaware that traffic is being processed by a proxy. Traffic sent via HTTP port 443 is intercepted by the proxy server and routed to the Cisco server

The **Proxy Support** feature on Smart Software Manager satellite Enhanced Edition enables support an HTTPS **Explicit Proxy** between it and Cisco Smart Software Manager (products => satellite => HTTPS proxy => Cisco SSM), enabling customers to easily control or monitor traffic between satellite and Cisco Servers

### Procedure:

- Slide the **Use A Proxy Server to On**
- Enter the **Proxy Username** and **Proxy Password**.
- Click **Apply** or **Reset**



---

**Note** Proxy settings only affect communication to Cisco during account registration and synchronization.

---

## Accounts Widget

A new or existing Smart Software Manager satellite Enhanced Edition local Account must be available before Smart Licensing functions can be performed in the licensing workspace. Until this is completed, all other Smart Licensing options are grayed out.

Once the local Account has been requested, it must be registered to Cisco Smart Software Manager before it can be active and usable. Both network and manual registrations are supported.

During the Smart Software Manager satellite Enhanced Edition local Account registration, a Cisco. Smart Account/Virtual Account pair has to be specified. If the Cisco Virtual Account does not exist, Cisco Smart Software Manager creates it upon registration. Otherwise, it uses the existing Cisco Virtual Account.

## Account Request

A new local Account can (optionally) be created by a System Administrator or System Operator via the **Accounts** widget on the Administration workspace. Use the following procedure:

- Open the **Account** widget
- Click on **Accounts**
- Click on **New Account**
- Type in the information such as Account Name, Cisco. Smart Account, Cisco Virtual Account, and Email for Notification. The required fields are labeled with \*.
- Click **Submit**.
  - Enter the Cisco **Smart Software Manager** Smart Account and Cisco Virtual Account pair you wish the local Account to be registered to.
  - Note that the Cisco. Smart Account must have existed on Cisco Smart Software Manager. A Cisco Virtual Account is created if it does not exist on Cisco Smart Software Manager.
  - A message that a new Account request has been created, and ready to be registered to Cisco is displayed.
  - The Account request then appears on the **Account Requests** tab in the **Accounts** widget.

## Account Request Approval (Network Mode)

The local Account request shows up in **Account Requests** in the Administration workspace, awaiting the System Administrator to approve and register.

- The System Administrator clicks on **Approve** under **Actions** to register to the local Account to Cisco Smart Software Manager.
- Click **Next**.
- The System Administrator enters their CCO ID credentials when prompted for Cisco. Smart Account/Virtual Account access on Cisco Smart Software Manager.
- Click **Submit**.
- Smart Software Manager satellite Enhanced Edition provides a status of the registration progress.
- Upon successful registration, a message will show “Account was created successfully”.
- And the local Account shows up as **Active** under **Accounts** tab.
- The local Account is shown as a satellite registered on Cisco Smart Software Manager satellites pane. Note that the local Account name is the *satellite name* on the “**General**” tab, and the local Account name shows up under the “**Virtual Accounts**” tab.



---

**Note** Only one single Cisco Virtual Account is supported per Smart Software Manager satellite Enhanced Edition local Account.

---

If you add another Cisco Virtual Account to the Smart Software Manager satellite Enhanced Edition on Cisco Smart Software Manager under **Satellites** pane, only the Cisco Virtual Account originally registered is used to exchange license information during the synchronization. Additional Cisco Virtual Accounts will be ignored.

## Account Approval (Manual Mode)

You can select the **Manual Registration** instead of **Approve** to manually register the local Account to Cisco Smart Software Manager. While manual registration is supported, it's not recommended as you have to keep track of the specific registration request/authorization file(s) for each registration.

Use the following steps to manually register a local Account to Cisco Smart Software Manager:

- Select "**Manual Registration**" from the local Account name.
- Generate a local Account Registration File.
- Log into Cisco Smart Software Manager.
- Navigate to "**Satellites**".
- Click on "**New satellite**".
- Fill in satellite information.
- On "**Choose File**", select the file you created in the 2<sup>nd</sup> step above.
- Generate and Download the Authorization File.
- Upload the local Account Authorization File from Cisco Smart Software Manager onto the satellite by "**Choose File**" option.
- Click **Register Account**.

## Account Request Reject

The System Administrator can also "Reject" the local Account and provide a reason, which is included in the email to be sent to the requestor.

To Reject a local Account,

- Under **Actions**.
- Select "**Reject**".
- Enter a message or reason so it can be included in the email to be sent to the requestor.
- The local Account is not registered to Cisco Smart Software Manager.

## Account Deactivation

A local Account can be deactivated, activated or deleted once it's been registered with Cisco. The "Deactivate" option will disable access to the local Account in the Licensing workspace. The account is not removed from the Smart Software Manager satellite Enhanced Edition, and no User permissions are changed.

To Deactivate a local Account,

- Navigate to the local Account
- Under **Actions**, select **Deactivate**
- Enter a message or reason so it can be included in the email to be sent to the requestor.
- Select **Deactivate** or **Cancel**

## Account Deletion

In the case where the satellite local Account is registered to an incorrect Cisco. Smart Account/Virtual Account pair, it can be deleted. The following procedure on the Administration workspace must be followed exactly for it to work:

1. Remove all PIs on all local virtual accounts in the satellite local Account.
2. Synchronize with Cisco Smart Software Manager so that Cisco Smart Software Manager reflects that the PIs are longer on satellite. Note that the only way to remove PIs on satellite and have them reflected on Cisco Smart Software Manager is to synchronize satellite to Cisco Smart Software Manager after removing them from satellite because satellite is the source of truth for all PIs registered to it.
3. **Deactivate** the local Account.
  - a. Navigate to the local Account and click **Deactivate**.
  - b. The local Account shows as **Inactive**.
4. **Delete** the local Account
  - a. Under **Actions**, select **Delete** the local Account. Note the **Delete** option is only visible after the local Account has been deactivated.
  - b. Click **OK** to confirm Delete local Account or **Cancel**.
  - c. All registered product instances and local Virtual Accounts are removed from this local Account.
5. Go to Cisco Smart Software Manager and remove the satellite representing this local Account. At this point, the VAs associated with this satellite are empty because the PIs were removed in **Step 1**.
  - a. Navigate to **Satellites** pane
  - b. Select the satellite corresponding to this local Account
  - c. Select **Remove** from "**Actions**"
  - d. Confirm satellite removal.
6. After this action, the satellite is removed from Cisco Smart Software Manager and the local Account can be re-registered again to the correct Cisco. Smart Account/Virtual Account pair.

## Account Activation

The Activate option is available for any account which has been deactivated. When set back to active, the account will again show up on the Licensing workspace and will be available to any user which has authorization.

- To **Activate** and account, right click on Account Name
- Select "**Activate**"
- Enter a reason for activation
- Select **Activate** or **Cancel**

## Synchronization Widget

Once registered, a Smart Software Manager satellite Enhanced Edition local Account is recommended to be synchronized with Cisco Smart Software Manager periodically to ensure the licensing information between the Smart Software Manager satellite Enhanced Edition and Cisco Smart Software Manager is not out-of-sync.

Satellite support on-demand, scheduled, and manual synchronizations. When you click on the **"Synchronization"** widget on the Administration workspace, you can see a list of local Accounts and their status and available options.

Cisco Smart Software Manager is the source of truth for all license entitlements (purchases), Cisco Virtual Accounts, and metadata information. On the other hand, Smart Software Manager satellite Enhanced Edition is the source of truth for product instance registration and license consumption. This means that each system must take whatever is sent by the other system as an undeniable source. In addition, when a local Account synchronizes with Cisco Smart Software Manager, it gets a new ID certificate (1-year duration) allowing it to continue functioning.




---

**Note** A local Account not synchronized with Cisco Smart Software Manager for 1 year (365 days) is no longer operational and will need to be deleted (both on Cisco Smart Software Manager and satellite) and registered again. This means that all of the product instance and licensing information about that Smart Software Manager satellite Enhanced Edition is lost.

---

## Synchronization Types

**Smart Software Manager satellite** and Cisco Smart Software Manager operated on a **delta synchronization** model, which means that only incremental changes on product instances, license purchases and consumption would be sent and received. In the case where the **Smart Software Manager satellite** database is restored from a previous VM snapshot or backup, this incremental synchronization process can produce mismatched license entitlement/consumption and product instance counts.

A **full synchronization** is introduced when Cisco **Smart Software Manager** detects that it needs the **Smart Software Manager satellite** to compile and send a complete list of its data, regardless of when it was created.

In return, Cisco **Smart Software Manager** also gathers a complete list of its current source of truth elements and passes that along to the satellite. The **System Administrator** or **System Operator** can also initiate full or partial synchronizations.

## Synchronization Alerts

Below are the synchronization alerts for local Account non-synchronization with Cisco Smart Software Manager:

- Synchronization Overdue (minor alert) - synchronization hasn't happened for 30 to 90 days:

"Synchronization Overdue: local Account has not synchronized in X days." (X will be between 30<sup>th</sup> & 89<sup>th</sup> day, depending on last synchronization date)

- Synchronization overdue (major alert) - synchronization hasn't happened for 90 to 364 days:

"Synchronization Overdue: Satellite has not synchronized in X days." (X will be between 90<sup>th</sup> – 364<sup>th</sup> day, depending on last synchronization date)

- Re-registration Required (major alert) – synchronization has not happened in 365 days:

"Re-registration Required: Satellite was not synchronized for 365 days and must be re-registered with Cisco Smart Software Manager."

After 1 year of non-synchronization, the Smart Software Manager satellite Enhanced Edition local Account will still be present (not deleted) on the Cisco Smart Software Manager; however, the ID certificate would have expired and the satellite local Account can no longer synchronize. License counts on Smart Software Manager satellite Enhanced Edition and Cisco Smart Software Manager may be out-of-sync, and neither network or manual synchronization can be performed. Existing products will not get valid responses from the satellite, and no new products can be registered. However, it only affects this local Account. The only recourse is to delete the satellite Account, re-register it to Cisco Smart Software Manager, and re-register all of the product instances to the local Account (see Account Deactivation and Account Deletion on page 21-22).

## On-Demand Network Synchronization

Network synchronization assumes there is an Internet connection to Cisco Smart Software Manager from satellite. On each local Account, you can choose to perform either a **Standard Synchronization Now** or **Full Synchronization Now** for Network Synchronization.

When you click on the **Standard Synchronization Now** or **Full Synchronization Now**, you may be presented a login screen to the Cisco Virtual Account if it's the first time or if your session has expired and you need to be re-authenticated to Cisco Smart Software Manager.

### Procedure:

- Open the **Synchronization** widget.
- On the local Account, under **Actions**, select **Standard Synchronization Now** or **Full Synchronization Now**.
- Enter your **Cisco. Smart Account** credentials
- Click **Ok**
- Afterwards, the spinner appears and the **Alerts** column gives the status of the synchronization as it progresses.

Synchronization

Accounts

Schedules

0

Major

0

Minor

Search by Name

Name	Satellite Name	Last Synchronization	Synchronization Due	Alerts	Actions
<a href="#">Red_Hat_Account</a>	Red_Hat_Account	2018-Apr-26 20:48:31	2018-May-26 20:48:31	<a href="#">Synchronization Successful</a>	<a href="#">Actions</a>
<a href="#">Account_smart_license_init</a>		2018-Apr-26 20:43:45	-	<a href="#">Synchronization In Progress</a>	<a href="#">Actions</a>

Note that **Satellite Name** is the name of the **satellite on Cisco Smart Software Manager** and **Account Name** is the local Account Name on the satellite. They are typically the same. In the case where a user changes the





Satellite Name to something else on Cisco Smart Software Manager, satellite will reflect that new name in the Satellite Name field after it detects in a synchronization response.

If you click on the “Name” of the local Account, you will see the information about it in the **General** tab such as local Account Name, Cisco Virtual Account, Cisco Virtual Account, Cisco Satellite Name, UID, Date Registered, Last Synchronization and Synchronization Due date.

There are also event log entries that gives statuses of the various synchronization activities, successes, failures and associated reasons.

## On-demand Manual Synchronization

Manual synchronization is used when the customer network is not connected to the Internet and you need to ensure product instance counts, license usage, and license entitlements are the same on Cisco Smart Software Manager and Smart Software Manager satellite Enhanced Edition.

In this case, you can perform a manual synchronization which results in a Smart Software Manager satellite Enhanced Edition synchronization request file to be created, uploaded to Cisco Smart Software Manager, and a synchronization response file to be received on Smart Software Manager satellite Enhanced Edition to reflect the same license information.

You can click on “Manual Synchronization” and select Standard or Full Synchronization.

### Manual Synchronization procedure:

1. Click the **Synchronization** widget from the Administration workspace
2. Under **Accounts**, click on **Actions**
3. Select **Standard** or **Full Synchronization**
4. Click the **Download File** button to create and download the synchronization request file to your local hard disk.
  - a) A data file is generated and opens the local file directory to save.
  - b) Choose a location where you want to save the data file.
5. Login to the Cisco Smart Software Manager and click the **Satellites** tab.
6. In the **Satellites** page, locate the satellite for which you want data synchronization or click on the **New Satellite** to add a new satellite
7. If you are adding a new satellite, a screen appears so you can:
  - a) Input the new satellite name in the **Satellite Name** box.
  - b) Click on **Choose File** to select a registration file.
  - c) Select from a list of existing satellites or **New Local Virtual Account**.
  - d) If new Local Virtual Account, type the name of the Local Virtual Account and click **Add**.
8. If you are selecting an existing satellite from the list, click **File Sync** link against the satellite in the **Actions** column of this page.
9. In the **Synchronize Satellite** dialog box, click **Choose File** to upload the data file that was generated in the satellite step 4.
10. Click **Generate Response File** to generate a response file that has the data synchronized.
  - a) The **Synchronization Response File Generated** dialog displays.
  - b) Click **OK** to continue.
11. Click **Download Response File** to download to your local hard disk.
12. Go back to Smart Software Manager satellite Enhanced Edition in the **Synchronization** widget of the Administration workspace

13. Click **Browse** to select the synchronization response file you just downloaded in step 11.
14. Click **Upload** dialog box to upload the response file and complete the manual synchronization process.

After this step completes, the license entitlement and usage on both Cisco Smart Software Manager and local Account are identical. All of the licenses in the DEFAULT and local Virtual Accounts associated with the satellite local Account added together equal the count in the Cisco Virtual Accounts of the said satellite on Cisco Smart Software Manager.

## Scheduled Network Synchronization

In addition to manual synchronization per account, Smart Software Manager satellite Enhanced Edition provides the ability to **Schedule** all local **Accounts** to be checked to determine if they need to be synchronized with Cisco on a specified interval. The default schedule is once per 30 days, but the scheduled check for accounts which need to be synchronized can be done daily, weekly, or monthly, and, depending on the frequency, the data on the satellite can be as current as the workspace on a daily basis.

## Global Synchronizations Data Privacy Settings

In the **Schedules** tab, you can set the Global Data Privacy for all local Accounts. You can override these global parameters with the settings in the individual local Accounts:

- **Hostnames**—The host name of registered product instance. This data is excluded during transfer when you check this checkbox.
- **IP Addresses**—The IP Address of the registered product instance. This data is excluded during transfer when you check this checkbox.
- **MAC Addresses**—The Media Access Control (MAC) Address of the registered product instance. This data is excluded during transfer when you check this checkbox.

## Synchronizations Schedule

You can set schedule frequency (Daily, Weekly, Monthly) and Time of Day for checking to see which local Accounts need being synchronized. Any account which has not been synchronized within the past 30 days is considered as a candidate to be synchronized.



---

**Note** At this time, it is not possible to change the default 30-day synchronization requirement. If you need to synchronize an account sooner than 30 days, use the **Manual Synchronization procedure**:

---

Currently, there is not a way to disable the scheduled synchronizations globally. To disable scheduled synchronization for individual local Accounts, use the following procedure:

- Select the **Account**
- Click on **Disable Scheduled Synchronization**.

This will cause the scheduled synchronization for that local Account to be skipped.

## API Toolkit Widget

As an application, you need to authenticate prior to using the satellite APIs. This is done via the API Toolkit widget. You first need to create one or more credentials which can be used by your application. Your application will use the created credential when accessing APIs on the satellite Enhanced Edition. If this is not done, your application will receive “403 Access Restricted” error. We embedded an internal OAuth2 with the satellite software (<https://github.com/oauth-xx/oauth2>).

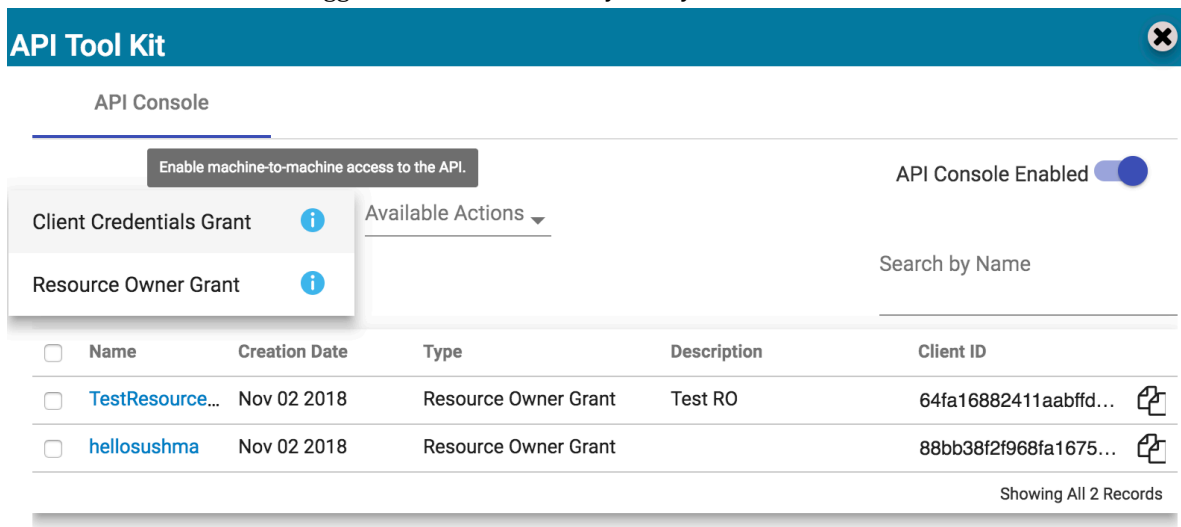
API Console Access must be enabled by the System Administrator. Once this is enabled, a System or SysOps user can create Client or Resource credentials to get the Access Token (from the embedded OAuth2 server) to invoke the APIs. There are two types of credentials: Client and Resource grants.

- Client Credentials Grant: Enable machine-to-machine access to the API so that it can issue the API call.
- Resource Owner Grant: Enable the user-to-machine access to the API so that it can issue the API call. This is the case of a remote system user trying to initiate an API call through some client application.

Once the Client ID and Client Secret have been generated, they need to be used by the application to request the OAuth2 server to generate the Access Token that is used as the header of the HTTP request(s) for the API endpoints.

## Enable API Console

The “API Console Enable” toggle must be turned on by the System Administrator.



**API Tool Kit**

API Console

Enable machine-to-machine access to the API.



API Console Enabled ☒

Client Credentials Grant *i*

Resource Owner Grant *i*

Available Actions ▾

Search by Name

<input type="checkbox"/>	Name	Creation Date	Type	Description	Client ID
<input type="checkbox"/>	TestResource...	Nov 02 2018	Resource Owner Grant	Test RO	64fa16882411aabffd... 
<input type="checkbox"/>	helloosushma	Nov 02 2018	Resource Owner Grant		88bb38f2f968fa1675... 

Showing All 2 Records

## Create OAuth2 Grants

The Client Credentials or Resource Owner Grants need to be generated to obtain the Access Tokens from the embedded OAuth2 server.

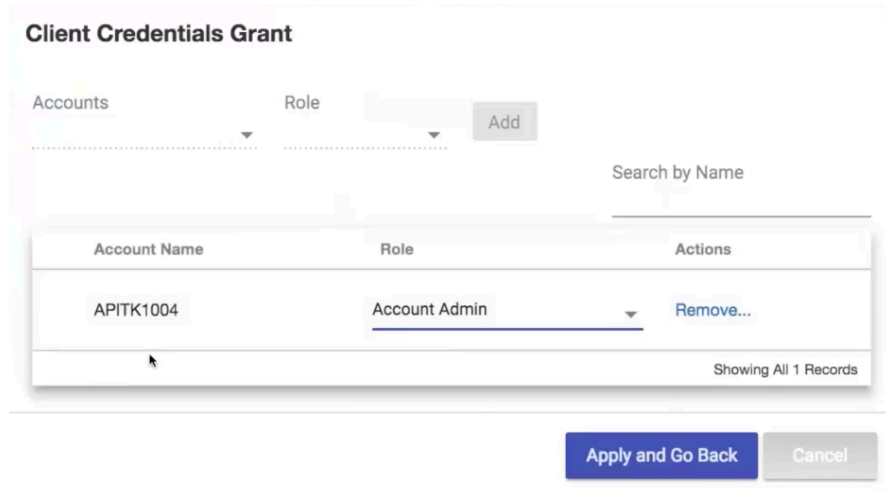
## Set API Access Control

Within the API Console, enable the Account and local Virtual Account access for the application that use the Client Credentials by selecting “Click here to set API Access Control”

Procedure:

1. Click on Accounts

2. Select Roles (Account Admin, Account User, Per Virtual Account) and click Add



This allows the application to access these resources in the API endpoint calls above.

## Get Access Tokens

Both Client Credentials Grant and Resource Owner Grant use the same URL to call the satellite: **POST** **"/backend/oauth/token"**.

Example:

```
Chloes-MacBook-Pro:oauth2 ccorrigan$ ./gen_token.sh
Enter 1 for a Client Credentials Grant, or 2 for Resource Owner Grant.1
Enter the Client IDa3b8dc4aa84032c36252b5d945e6f1ce7afb7133de927a5969eab50d23210d7e
Enter the Client Secretf3e35a2e0c7380b4e4c50642742087d7900ae4f6c877699155035321e404e971
Enter the IP Address of the ISO/QA Server. Ex: 172.18.77.90172.20.222.254
{"access_token":"72d6f18ad55e49f8cf8acde2e9f917e462ba75f908ce611ad1221160a19c9ebc","token_type":"Bearer","expires_in":3600,"created_at":1538676798}Chloes-MacBook-Pro:oauth2
ccorrigan$
```

## Using APIs

After receiving an access token in the previous step, the remote systems use that access token to call the satellite APIs. In the case of Client Credentials Grant, the executions of the API functions are authorized by roles granted to the OAuth Client Credential Grants (shown above in API Access Control). In the case of Resource Owner Grant, the executions of the API functions are authorized by the user's roles in the system.


## Software Download Widget

The Smart Software Manager satellite Enhanced Edition System Administrator can turn on **Show Software Downloads** in the **Software Download** widget. This action enables the **Software Download** menu (most left) to show up on the Licensing workspace.

UNCLASSIFIED - DO NOT DUPLICATE


Cisco
Logged In | Account | Log Out

Smart Software Manager satellite Enhanced Edition
Hello, Satellite Admin sync\_acting\_wierdly




**Download**

Software Download  
Download new software for your current products.



**License**

Smart Licensing  
Track and manage Smart Licensing.



**Administration**

Request an Account  
Get an Account for your organization.

Request Access to an Existing Account  
Submit a request for access to an Account.

Manage Account  
Modify the properties of your Accounts and associate existing User IDs with Accounts.

From the Licensing workspace, you can download the software that have been uploaded by the System Administrator for your local Account. The System Administrator can upload any software images available on CCO onto the Administration workspace **Software Download** widget. But first, he/she needs to download them from CCO to his computer and upload them to the Administration workspace as follows:

- Click on **New File**.
- Enter the Product information as it shows up on CCO download page.
- Browse the file from your computer
- Click **Save** to upload it to satellite Administration workspace.

After uploading, the Administration workspace Software Downloads looks like the following. You can click on the Product Name to get additional information about the specific uploaded image.

**Software Downloads**
✕

Show Software Downloads: ☒ Software ☐ Event Log

New File

Search by Product Name

Product Name	Description	Version	Release Date	Is Active	Actions
<a href="#">Product asr901_12c_prd</a>	Product asr901_12c_prd	4.0.1	2018-04-28	Yes	<a href="#">Actions...</a>
<a href="#">Cisco Unified Communication Manager</a>	V12.0	12.0	2018-04-24	Yes	<a href="#">Actions...</a>
<a href="#">Cloud Services Router 1000V</a>	CSR1kV	3.0.0	2018-04-28	Yes	<a href="#">Actions...</a>
<a href="#">ASR1k Small DNA ESS</a>	ASR1k Small DNA ESS	2.0.0	2018-05-26	Yes	<a href="#">Actions...</a>
<a href="#">ISR 1100-8P</a>	ISR 1100-8P	7.0.1	2018-10-06	Yes	<a href="#">Actions...</a>

Items per page: 5  
 1 - 5 of 6  
 < >

Once uploaded to the Administration workspace, these software images show up under the Licensing workspace for the local Account after the product successfully registers. That is, when each product is registered, the software ID of the registered product is checked against the images already loaded in the Administration workspace and made available to the user for download on the Licensing workspace.



## Introduction to Smart License Workspace

- Administration Workspace Features
- License Workspace Feature
- Software Download Features
- Product based License Features

## Administration Workspace Features

The Smart Software Manager satellite Enhanced Edition local Account can be requested from the Licensing workspace via the following options:

- Request an Account or
- Request Access to an Existing Account

### Request a local Account

To request a new local Account on the Licensing Workspace, perform the following steps:

- Click on Request an Account.
- Fill in the information such as **Email, Message** to Creator, local **Account Name, Cisco. Smart Account, Cisco Virtual Account**. The required information is labeled with \*.
- A valid **Cisco. Smart Account/Virtual Account** pair must be specified for registration to succeed.
- Click "Continue".

Once the submission is made, a System Administrator or System Operator will need to approve. Note that the local Account must have existed on Cisco Smart Software Manager. A Cisco Virtual Account is created if it does not exist on Cisco Smart Software Manager. Once this is submitted, the System Administrator, or System Operator can approve it in the Administration Workspace.

### Request Access to an Existing local Account

To request access to an existing local Account on the Licensing Workspace, perform the following steps:

- Click on Request access to existing Account.
- Fill in the local **Account Name**. The required information is labeled with \*.
- A correct **Cisco. Smart Account/Virtual Account** pair must be specified for registration to succeed.
- Click "Submit".

### Manage Account

Modify the properties of your Accounts, create local Virtual Accounts, and associate individuals with Accounts.

## Licensing Workspace Features

- Overview of Smart Software Manager License Workspace
- Account Management
- Licenses
- Product Instances
- Registration Tokens
- Local Virtual Accounts

## Overview of Smart Software Manager License Workspace

With **Smart Software Manager** License Workspace, you organize and view your licenses in groups called virtual accounts. You use **License Workspace** to transfer licenses between virtual accounts as needed.

**License Workspace** allows you to:

- **Create a Product Instance Registration Token.**  
Create and manage product instance registration tokens.
- **View Licenses in a Virtual Account.**  
Choose virtual accounts from the list of all virtual accounts that are accessible by the user.
- **View Alerts.**  
View alerts regarding status of licenses and product instances.
- **Run Reports.**  
Run reports against your virtual accounts.
- **Set Email Notifications.**  
Modify your email notification settings.
- **Monitor and Review Transactions.**  
Review license transactions.
- **View Accounts.**  
View overall account information.

### *Licenses*

Licenses are required for all Cisco products. The following types of product licenses vary depending on the Cisco product:

- **Term Licenses**-Licenses that automatically expire after a set amount of time: one year, three years, or whatever term was purchased.
- **Perpetual Licenses**-Licenses that do not expire.
- **Demo Licenses**-Licenses that expire after 60 days. Demo licenses are not intended for production use
- **Reporting only licenses**-Licenses that are zero-dollar base and bundled with the hardware. Once a device registers and reports the use of these reporting only licenses, Cisco Smart Software Manager will begin to show consumption of such licenses in the SA/VA to which the device is registered. Please note: Cisco Smart Software Manager will always show purchased quantity for such licenses equal to the in-use quantity and there will never be a surplus of reporting only licenses in the inventory.

### *Product Instances*

A product instance is an individual device with 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.



---

**Note** For details on Registration Tokens, see Managing Product Instance Registration Tokens..

---

Product instances must periodically connect to the **Smart Software Manager satellite Enhanced Edition** server during a specific renewal period. If a product instance fails to connect, it is marked as having a license shortage, but continues to use the license. If you remove the product instance, its licenses are released and made available within the virtual account.

### ***Registration Tokens***

A product requires a registration token until you have registered the product. Registration tokens are stored in the Product Instance Registration Token Table that is created with your local Account. Once the product is registered, the registration token is no longer necessary and can be revoked and removed from the table. Registration tokens can be valid from 1 to 365 days. Tokens can be generated with or without the export-controlled functionality feature being enabled.



---

**Note** For details on creating a Registration Tokens, see [Creating a Product Instance Registration Token](#).

---

### ***Max Use Tokens***

The token will be expired when either the expiration or the maximum uses are reached



## Accounts Info & Selection

- Accounts Overview
- Viewing local Accounts

### Accounts Overview

**Accounts** are collections of **Local Virtual Accounts**. You can have access to multiple local Accounts to which you are assigned. A list of local Accounts for which you have access are displayed when you log in to the **Cisco Software Workspace**. You can view the following details in the local Account table.

Name	Description
<b>Account Name link</b>	Displays a list of local Accounts to which you have access. You can click the Account Name link to sort the local Accounts column in an alphabetical order. Click the link of the account name to view the details of all virtual accounts associated with that local Account.
<b>Account Domain Identifier link</b>	Displays the domain identity of the host associated with the local Account. You can click the Account Domain Identifier link to sort the account domain ID column in an alphabetical order.
<b>Major Alerts field</b>	Click the alert link to view the major alerts associated with this local Account. In the Alerts page, view the alert message and click the action links against the local Account to view and perform appropriate action.
<b>Minor Alerts field</b>	Click the alert link to view the minor alerts associated with this local Account. In the Alerts page, view the alert message and click the action links against the local Account to view and perform appropriate action.
<b>Note:</b> You can view alerts for those accounts for which you have access only.	
<b>Access Roles field</b>	Displays the types of user roles assigned to the local Account. The number of users assigned to the perform the role is displayed against the user role.

### Viewing local Accounts

#### Procedure

<b>Step 1</b>	In the <b>Smart Software Manager</b> screen, click the <b>Account Name</b> drop-down menu to display your local Accounts. <b>Note</b> The drop-down menu is only available if you have access to multiple local Accounts.
<b>Step 2</b>	Click the name of a <b>local Account</b> to display the <b>Local Virtual Accounts</b> associated with that local Account.

### Account Management

When you access the **Smart Software Manager satellite Enhanced Edition** through the **Licensing Workspace**, you see links to screens providing information on the following areas of local Account management

Link	Description
<b>Alerts</b>	The <b>Alerts</b> tab provides a compilation of all alerts issued for this <b>local Account</b> , as well as all alerts for <b>Virtual Accounts</b> managed under this <b>local Account</b> . <a href="#">Alerts</a> .
<b>Inventory</b>	In the <b>Inventory</b> tab provides access to all <b>Virtual Accounts</b> managed under this <b>local Account</b> .

<b>Reports</b>	The <b>Reports</b> tab provides options for generating reports on <b>Virtual Account</b> events and activities. <a href="#">Reports</a> .
<b>Email Notification</b>	The <b>Email Notification</b> tab provides options for selecting the types of events, such as informational events or alerts, for which you wish to receive email notifications. <a href="#">Preferences</a>
<b>Satellites</b>	The <b>satellites</b> tab provides options for viewing the details of the satellites that have been registered, as well as action options for syncing or removing satellites.
<b>Activity</b>	The <b>Activity</b> tab provides options for viewing <b>License Transactions</b> and <b>Event Log</b> information for <b>local Accounts</b> , including activity for all <b>Virtual Accounts</b> associated with that <b>local Account</b> . <a href="#">Activity</a> .

## Alerts Tab

- Alerts Overview
- local Account Alerts
- Virtual Account Alerts

## Alerts Overview

There are two levels of alert messages used in the Smart Software Manager:

- local Account alerts - local Account Alerts
- Virtual Account alerts - Virtual Account Alerts

## Alert Icons

Smart Software Manager uses alert icons to bring your attention to actions required to effectively manage your smart products and devices. Major alerts are noted in red icons, with the number of major alerts noted. Minor alerts are indicated by yellow icons, with the number of minor alerts noted.

In the local **Account alerts screen**, these icons provide a summary of the number of Major and Minor alerts listed.

In the local **Virtual Account alerts screen**, these icons are buttons to be used to toggle between displaying the Major or Minor alerts for that specific Virtual Account.

## Hide Alerts

In the **Virtual Account alerts screen** a **Hide Alerts** button allows you to collapse the details window for major and minor alerts.




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**Note** You will always be able to view the number of Major and Minor alerts for any Virtual Account by using the drop-down menu in the Virtual Account screen under the Inventory Tab. There you are able to see the Major and Minor Alert Summary window.

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## Account Alerts

When you click on the Alerts link in the **Smart Software Manager satellite Enhanced Edition** screen, you display a table that provides detailed information on all alerts generated for a specific local Account plus alerts generated for all Local Virtual Accounts managed under that local Account.

The local Account alerts table provides the following information and management options:

Name	Description
<b>Severity (Sev)</b>	The <b>Sev</b> column provides an icon that defines each alert listed as either of <b>Major</b> or <b>Minor</b> importance. The default sort on the alerts is to list the alerts in order of <b>Severity</b> , and then <b>Action Due</b> .
<b>Message</b>	<p>Alerts are generated for the following <b>License</b> and <b>Product Instance</b> events:</p> <ul style="list-style-type: none"> <li>• Insufficient Licenses</li> <li>• Product Instance Failed to Renew</li> <li>• Product Instance Failed to Connect</li> <li>• Updated Smart License Agreement</li> <li>• Synchronization Overdue</li> <li>• Satellite Unregistered and Removed</li> <li>• Smart Licensing Agreement Pending</li> <li>• Authorization Pending</li> <li>• Upcoming Cisco Smart Software Manager satellite Sync Deadline (30 Day)</li> <li>• Cisco Smart Software Manager satellite expired and removed (90 Days of no sync)</li> <li>• Satellite Authorization File Ready</li> <li>• Licenses Expired</li> <li>• Licenses Expiring</li> <li>• Reserved License Expired</li> <li>• Duplicate Licenses</li> <li>• Reserved Licenses Returned to Smart Account</li> </ul> <p>The message provides a description of what is required to address the alert, and may provide a link to <b>License</b> or <b>Product Instance</b> information. Refer to the <b>License Information</b> section below and <a href="#">Viewing Licenses in a Virtual Account</a> . Refer to the <b>Product Instance Information</b> section below and <a href="#">Viewing Product Instances in a Virtual Account</a>.</p>
<b>Source</b>	Provides a link to the <b>Smart Account</b> or <b>Virtual Account</b> information referenced by the alert.
<b>Action Due</b>	Identifies the time frame in which the alert must be addressed.
<b>Actions</b>	Provides drop down menu options for <b>Actions</b> that may be taken to address the alert.

## License Information

Click on a link in a "License" message to display a pop-up window with the following tabs:

Name	Description
<b>Overview</b>	<p><b>Description</b> provides a license description. <b>Virtual Account Usage</b> is displayed in a pie chart.</p> <p>The License Expiration section displays <b>Count</b>, <b>Type</b> and <b>Expiration Dates</b> for the licenses held by the Source group.</p>
<b>Product Instances</b>	Lists the licenses held by the Source group.
<b>Event Log</b>	In the <b>Event Tab</b> , you see the <b>Message</b> , the <b>Time</b> the message was recorded, and the <b>User</b> who generated the message.
<b>Order History</b>	The <b>Order History</b> tab provides the following details for each license:

	<ul style="list-style-type: none"> <li>• Order Number • Order line ID • Order Date</li> <li>• SKU</li> <li>• Quantity</li> <li>• Start Date</li> <li>• Expiration Date</li> </ul>
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## Product Instance Information

Name	Description
<b>Overview</b>	<p>In the <b>General</b> section a product description is provided.</p> <p>In the <b>General</b> section, the following product instance details are displayed:</p> <ul style="list-style-type: none"> <li>• Product Name</li> <li>• Product Number • Host Identifier</li> <li>• MAC Address</li> <li>• PID</li> <li>• Serial Number</li> <li>• Virtual Account</li> <li>• Registration Date • Last Contact</li> </ul> <p>The <b>License Usage</b> section displays the licenses in use and the number of each that are required.</p>
<b>Event Log</b>	In the <b>Event Tab</b> , you see the <b>Message</b> , the <b>Time</b> the message was recorded, and the <b>User</b> who generated the message.

## Alert Actions

Various categories of alert messages require that specific actions be taken to manage local Accounts effectively. The following table provides examples of Alert Actions, the Action that may be taken to address the alert, and the effect that Action has on the Behavior of the Alert message.

Alert	Action	Behavior
<b>Insufficient Licenses</b> - The Virtual Account "<pool>" has a shortage of <license> licenses. <count> license is required to return to compliance.	Select <b>Transfer Licenses</b> to display the transfer options for the license type, and the licenses in overage (available for transfer) in the Virtual Account pool.	The alert cannot be manually dismissed. It is automatically dismissed when the licenses are brought back into compliance.
<b>Updated Smart License Agreement</b> - The Cisco Smart Licensing Agreement has been updated and this new version must be accepted in order to continue using Smart Licensing.	Select <b>View/Accept Agreement</b> to display and accept license agreements.	The alert cannot be manually dismissed. It is automatically dismissed when the agreement signed.
	There are three types of Licenses - <b>Perpetual</b> , <b>Demo</b> , and <b>Term</b> - and each are valid for a different period of time. <b>Perpetual</b> licenses remain valid in an ongoing, while <b>Demo</b> Licenses must be renewed after 60 days, and <b>Term</b> Licenses remain valid for specified periods of 1 to 3 years. Licenses are removed from Virtual Accounts as they expire.	
<b>Licenses Expired</b> - <count> <license> licenses in the	Select <b>Dismiss</b> to hide the alert.	Use the <b>Dismiss</b> option in the <b>Actions</b> column to manual dismiss the alert.

virtual account "<pool>" expired on<date>.		
<b>Licenses Expiring</b> – <count> <license> licenses in the virtual account "<pool>" are set to expire in 30 days on <date>.	Select <b>Remind Later</b> to hide the alert until the next warning period.	Select the <b>Remind Later</b> option to suppress the alert until the next warning period expires after a set number of days (e.g., 90, 60, 30, 14, 7, 3, 2, 1). If a previous warning has not been dismissed, it will be automatically dismissed when a new alert is generated.
<b>Reserved License Expired</b> – a term license in the reservation has expired.	Click the <b>update the reservation</b> link to select a different term license from the available surplus or the <b>dismiss</b> link to remove the alert.	

The alert is dismissed when the Update Reserved Licenses process has been completed and validates the expiration of the selected term license or when the dismiss link is clicked.

Alert	Action	Behavior
<b>Product Instance Failed to Connect</b> – The product instance<instance> in the virtual account "<pool>" has not connected for its renewal period. The product instance may run in a degraded state if it does not connect within the next <days> days. If the product instance is not going to connect, you can remove it to immediately release the licenses it is consuming.	Select <b>Remove Instance</b> to remove the Product Instance, and get a confirmation of that action. Select <b>Remind Later</b> to hide the alert until the next warning period.	Select <b>Remind Later</b> to suppress the alert until the next warning period expires after a set number of days (e.g., 90, 60, 30, 14, 7, 3, 2, 1). If a previous warning has not been dismissed, it will be automatically dismissed when a new alert is generated.
<b>Duplicate Licenses</b> –when the same entitlement is present from different subscriptions within the same Virtual Account.	Either cancel the order in Cisco Commerce Workspace (CCW) and the entitlement will be removed from the Virtual Account or transfer the entitlement to another Virtual Account that should not already have the same entitlement.	The alert is removed when either action is performed.
<b>Reserved Licenses Returned to Smart Account</b> – when a device with a factory-installed reserved license that was originally assigned to a specific Smart Account and/or Virtual Account is directly connected to Cisco Smart Software Manager or Cisco Smart Software Manager satellite to a different Smart Account and/or Virtual Account, you will receive the following alert.	Click <b>Dismiss</b> to remove the alert..	The alert is removed.

The product instance "<PI Name>", which had licenses reserved, has been moved to another Smart Account. The licenses it was reserving will be returned to the original virtual account "<VA Name>". Licenses reserved: "<Ent 1>", "<Ent 2>".		
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**Note** Product Instances are validated for 90 days from the date and time when they are first established. Smart-enabled products register contacts with the Cisco cloud, or their satellite service, as the products are used. If a Product Instance does not contact Cisco for 30 days, a Minor Alert is sent to the License Administrator, indicating that there may be disruption of their Internet connection. Another Minor Alert is sent if the Product Instance does not contact Cisco for 60 days following its validation date. After 90 days, a Major Alert is issued. If the Product Instance does not connect with Cisco after that, the Product Instance is de-linked from the licenses used by the product. Those licenses are returned to the company's license Quantity pool to be used for another Product Instance.

<b>Product Instance Failed to Renew</b> – The product instance "<instance>" in the Virtual Account "<pool>" failed to connect during its renewal period and may be running in a degraded state. The licenses it was consuming have been released for use by other product instances.	Select <b>Remove Instance</b> to remove a Product Instance, which will generate a message confirming its removal.	Select <b>Manual</b> to dismiss the alert.
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## Virtual Account Alerts

To view Alerts for your Virtual Accounts, use the Inventory link in the Smart Software Manager screen. This displays the Virtual Accounts screen.

The default Virtual Account is listed next to a drop-down menu that provides links to:

- Other Virtual Accounts associated with this local Account - click on the Virtual Account to display details for that account
- A summary of alerts for the selected Virtual Account - these indicate the number of Major and Minor alerts requiring action
- A history of the events that have been associated with the selected Virtual Account - click on History to display the History screen for the selected Virtual Account.

## View Virtual Accounts

To view Major and Minor alerts for the selected Virtual Account, click on the buttons provided.

Clicking either button displays the appropriate Virtual Account alerts table, which provides the following information and management options:

Name	Description
<b>Severity (Sev)</b>	The <b>Sev</b> column provides an icon that defines each alert listed as either of Major or Minor importance. The default sort on the alerts is to list the alerts in order of Severity, and then Action Due.
<b>Message</b>	Alerts are generated for the following License and Product Instance events: <ul style="list-style-type: none"> <li>• Insufficient Licenses</li> <li>• Product Instance Failed to Renew</li> </ul>

	<ul style="list-style-type: none"> <li>• Product Instance Failed to Connect</li> <li>• Updated Smart License Agreement</li> <li>• Synchronization Overdue</li> <li>• Licenses Expired</li> <li>• Licenses Expiring</li> <li>• Reserved License Expired</li> <li>• Duplicate Licenses</li> <li>• Reserved Licenses Returned to local Account</li> </ul> <p>The message provides a description of what is required to address the alert, and may provide a link to License or Product Instance information. Refer to the License Information section below and Viewing Licenses in a Virtual Account . Refer to the Product Instance Information section below and Viewing Product Instances in a Virtual Account.</p>
<b>Source</b>	Provides a link to the local Account or Virtual Account information referenced by the alert.
<b>Action Due</b>	Identifies the time frame in which the alert must be addressed.
<b>Actions</b>	Provides drop down menu options for Actions that may be taken to address the alert.

### ***License Information***

Click on a link in a "License" message to display a pop-up window with the following tabs:

<b>Name</b>	<b>Description</b>
<b>Overview</b>	<p><b>Description</b> provides a license description.</p> <p><b>Virtual Account Usage</b> is displayed in a pie chart.</p> <p>The License Expiration section displays <b>Count</b>, <b>Type</b> and <b>Expiration Dates</b> for the licenses held by the Source group.</p>
<b>Product Instances</b>	Lists the licenses held by the Source group.
<b>Event Log</b>	In the <b>Event Tab</b> , you see the <b>Message</b> , the <b>Time</b> the message was recorded, and the <b>User</b> who generated the message.
<b>Order History</b>	<p>The Order History tab provides the following details for each license:</p> <ul style="list-style-type: none"> <li>• Order Number</li> <li>• Order line ID</li> <li>• Order Date</li> <li>• SKU</li> <li>• Quantity</li> <li>• Start Date</li> <li>• Expiration Date</li> </ul>

### ***Product Instance Information***

Click on a link in a "Product Instance" message line to display a pop-up window with the following tabs:

<b>Name</b>	<b>Description</b>
<b>Overview</b>	<p>In the General section a product description is provided.</p> <p>In the General section, the following product instance details are displayed:</p> <ul style="list-style-type: none"> <li>• Product Name</li> <li>• Product Number</li> <li>• Host Identifier</li> <li>• MAC Address</li> </ul>

	<ul style="list-style-type: none"> <li>• PID</li> <li>• Serial Number</li> <li>• Virtual Account</li> <li>• Registration Date</li> <li>• Last Contact</li> </ul> <p>The <b>License Usage</b> section displays the licenses in use and the number of each that are required.</p>
<b>Event Log</b>	In the <b>Event Tab</b> , you see the <b>Message</b> , the <b>Time</b> the message was recorded, and the <b>User</b> who generated the message.

### ***Alert Actions***

Various categories of alert messages require that specific actions be taken to manage Virtual Accounts effectively. The following table provides examples of Alert Actions, the Action that may be taken to address the alert, and the effect that Action has on the Behavior of the Alert message.



Alert	Action	Behavior
<b>Insufficient Licenses</b> - The virtual account "<pool>" has a shortage of <license> licenses. <count> license is required to return to compliance.	Select <b>Transfer Licenses</b> to display the transfer options for the license type, and the licenses in overage (available for transfer) in the Virtual Account pool.	The alert cannot be manually dismissed. It is automatically dismissed when the licenses are brought back into compliance.
<b>Updated Smart License Agreement</b> - The Cisco Smart Licensing Agreement has been updated and this new version must be accepted in order to continue using Smart Licensing.	Select <b>View/Accept Agreement</b> to display and accept license agreements.	The alert cannot be manually dismissed. It is automatically dismissed when the agreement signed.
There are three types of Licenses - <b>Perpetual</b> , <b>Demo</b> , and <b>Term</b> - and each are valid for a different period of time. <b>Perpetual</b> licenses remain valid in an ongoing, while <b>Demo</b> Licenses must be renewed after 60 days, and <b>Term</b> Licenses remain valid for specified periods of 1 to 3 years. Licenses are removed from Virtual Accounts as they expire.		
<b>Licenses Expired</b> - <count> <license> licenses in the virtual account "<pool>" expired on<date>.	Select <b>Dismiss</b> to hide the alert.	Use the <b>Dismiss</b> option in the <b>Actions</b> column to manual dismiss the alert.
<b>Licenses Expiring</b> - <count> <license> licenses in the virtual account "<pool>" are set to expire in 30 days on <date>.	Select <b>Remind Later</b> to hide the alert until the next warning period.	Select the <b>Remind Later</b> option to suppress the alert until the next warning period expires after a set number of days (e.g., 90, 60, 30, 14, 7, 3, 2, 1). If a previous warning has not been dismissed, it will be automatically dismissed when a new alert is generated.
<b>Reserved License Expired</b> - a term license in the reservation has expired.	Click the <b>update the reservation</b> link to select a different term license from the available surplus or the <b>dismiss</b> link to remove the alert.	The alert is dismissed when the Update Reserved Licenses process has been completed and validates the expiration of the selected term license or when the dismiss link is clicked.
<b>Product Instance Failed to Connect</b> - The product instance<instance> in the virtual account "<pool>" has not connected for its renewal period. The product instance may run in a degraded state if it does not connect within the next <days> days. If the product instance is not going to connect, you can remove it to immediately release the licenses it is consuming.	Select <b>Remove Instance</b> to remove the Product Instance, and get a confirmation of that action. Select <b>Remind Later</b> to hide the alert until the next warning period.	Select <b>Remind Later</b> to suppress the alert until the next warning period expires after a set number of days (e.g., 90, 60, 30, 14, 7, 3, 2, 1). If a previous warning has not been dismissed, it will be automatically dismissed when a new alert is generated.

<b>Duplicate Licenses</b> – when the same entitlement is present from different subscriptions within the same Virtual Account.	Either cancel the order in Cisco Commerce Workspace (CCW) and the entitlement will be removed from the Virtual Account or transfer the entitlement to another Virtual Account that should not already have the same entitlement.	The alert is removed when either action is performed.
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<b>Note</b>	<b>Product Instances are validated for 90 days</b> from the date and time when they are first established. Smart-enabled products register contacts with the Cisco cloud, or their satellite service, as the products are used. If a Product Instance does not contact Cisco for 30 days, a <b>Minor Alert</b> is sent to the License Administrator, indicating that there may be disruption of their Internet connection. Another <b>Minor Alert</b> is sent if the Product Instance does not contact Cisco for 60 days following its validation date. After 90 days, a <b>Major Alert</b> is issued. If the Product Instance does not connect with Cisco after that, the Product Instance is de-linked from the licenses used by the product. Those licenses are returned to the company's license Quantity pool to be used for another Product Instance.
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<b>Product Instance Failed to Renew</b> – The product instance "<instance>" in the Virtual Account "<pool>" failed to connect during its renewal period and may be running in a degraded state. The licenses it was consuming have been released for use by other product instances.	Select <b>Remove Instance</b> to remove a Product Instance, which will generate a message confirming its removal.	Select <b>Manual</b> to dismiss the alert.
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## Satellite Lite Edition Alerts

To view alerts for your Smart Software satellites, use the **satellite** link on the **Smart Software Manager** screen. This displays the satellite screen and the **satellite** information table.

The **satellites** table displays information in the following columns:

- Name
- Product Instances
- Last Synchronization
- Synchronization Due
- Alerts
- Actions

Click on the links provided in the **Alerts** column to display alert details for individual satellites.

## satellite Lite Edition Alert Messages

Alerts will be generated to notify you of the issues to be addressed to maintain each individual satellite:

Alert Message	Response
<b>Authorization Pending</b>	Use the <b>Alert</b> link to view the <b>Authorization Pending</b> message. A satellite <b>Authorization File</b> is required to complete the registration process. An email

	notification will be sent to your email address when the file has been generated and is ready to be downloaded.
<b>Authorization File Ready</b>	Use the <b>Alert</b> link to view the <b>Authorization File Ready</b> message. The <b>Authorization File</b> for this satellite has been generated and is ready to be downloaded. Click the <b>Download Authorization File</b> button. Save the downloaded file to your hard drive and then upload it to <b>Cisco Smart Software Manager satellite</b> using the setup utility.
<b>Synchronization Overdue</b>	Use the <b>Alert</b> link to view the <b>Synchronization Overdue</b> message. This provides details about the status of the satellite. Information under a <b>Troubleshooting</b> tab describes steps to be taken to synchronize the device. A <b>Details</b> tab provides satellite information including: <ul style="list-style-type: none"> <li>• Name</li> <li>• Hostname/IP</li> <li>• Address/UID</li> <li>• Software Version</li> <li>• Registered</li> <li>• Last Synchronization</li> <li>• Synchronization Due</li> </ul>
<b>Synchronization Failed</b>	Use the <b>Alert</b> link to view the <b>Synchronization Failed</b> message. Generate a new <b>Synchronization File</b> from your satellite and try the synchronization again. If the problem persists, contact Cisco Support." <p>Optionally, use the <b>Dismiss</b> button provided to dismiss the alert.</p>

## Inventory Tab

### Inventory: General Tab

The **General** tab displays information about the specific virtual account and the registration tokens that are associated with the virtual account. From the **General** tab, you can do the following:

- View information about the **Virtual Account**.
- Edit the **Virtual Account**.
- Make the virtual account as the default **Virtual Account**.
- View a list of existing **Product Instance** registration tokens.
- Create new **Product Instance** registration tokens.
- Copy, download, or revoke registration tokens. Revoked registration tokens can be left in the list or removed.

### General Tab Overview

The General tab displays information about the specific virtual account and the registration tokens that are associated with the virtual account. From the General tab, you can do the following:

- View information about the Virtual Account.
- Edit the Virtual Account.
- Make the virtual account as the default Virtual Account.
- View a list of existing Product Instance registration tokens.
- Create new Product Instance registration tokens.
- Copy, download, or revoke registration tokens. Revoked registration tokens can be left in the list or removed.

## Viewing Virtual Account Information

### Procedure

<b>Step 1</b>	In the <b>Smart Software Manager</b> screen, select <b>Inventory</b> from the menu options, and then select a virtual account from the <b>Virtual Account</b> drop-down menu.
<b>Step 2</b>	Click the <b>General</b> tab. A description of the selected <b>Virtual Account</b> displays, along with <b>Product Instance Registration Tokens</b> , which allows you to create a registration token.

## Creating a Product Instance Registration Token


**Product Instance Registration Tokens** are used to register and consume a product for smart licensing. You must generate a token to register the product and add the product instance to a specified virtual account. When you create a new token, it is added to the **Product Instance Registration Token** table of that virtual account in which the product will be registered.



**Note** You cannot create token for virtual accounts that belong to a satellite. You can create a registration token in the Cisco Smart Software Manager satellite for these virtual accounts

### Procedure

<b>Step 1</b>	In the <b>Smart Software Manager</b> screen, select <b>Inventory</b> from the menu options, and select an existing virtual account from the <b>Virtual Account</b> drop-down menu.
<b>Step 2</b>	On the <b>General</b> tab, click <b>New Token</b> .
<b>Step 3</b>	In the <b>Create Registration Token</b> dialog box, complete the following fields:

	<ul style="list-style-type: none"> <li>• <b>Virtual Account Field:</b> Displays the virtual account under which the registration token will be created.</li> <li>• <b>Description Field:</b> The description of the registration token. <b>Note</b> Specify a description that will help you identify the token</li> <li>• <b>Expire After Field:</b> The time limit for the token to be active up to 365 days.</li> </ul>
<b>Step 4</b>	<p>Check the check box to turn On the export-controlled functionality for tokens of a product instance you wish in this virtual account. By checking the checkbox and accepting the terms, you enable the tokens to use the restricted features on your product instances. You can uncheck the check box if you wish not to allow the export-controlled functionality to be made available for use with this token. This field is visible for only those local Accounts that are permitted to use this functionality.</p> <p> <b>Caution</b> Use this option only if you are compliant with the export-controlled functionality. Some export-controlled features are restricted by the United States Department of Commerce. These features are restricted for products registered using this token when you uncheck the check box. The export-controlled functionality is available for only those tokens that comply the regulations and policies of the United States Department of Commerce. Any violations are subjected to penalties and administrative charges.</p>
<b>Step 5</b>	Check the check box to indicate your agreement to the terms and conditions mentioned in the text box. Read them carefully before you choose your options.
<b>Step 6</b>	Click Create Token or Cancel to remove the data.

### Viewing Product Instance Registration Tokens

You can view the registration tokens for a virtual account. These registration tokens can be used to register new product instances in the virtual account.

#### Procedure

<b>Step 1</b>	In the <b>Smart Software Manager</b> screen, select <b>Inventory</b> from the menu options, and then select an existing virtual account from the <b>Virtual Accounts</b> dropdown menu..
<b>Step 2</b>	Click the <b>General</b> tab. This page has two sections: <b>Virtual Account</b> and <b>Product Instance Registration Tokens</b> .
<b>Step 3</b>	In the <b>Product Instance Registration Tokens</b> section, the following details are displayed in a table.

Name	Description
<b>Tokens field</b>	The token ID that was generated. You can click the link to view or press Ctrl+C to copy the entire length of the token string.
<b>Expiration Date field</b>	The time limit for the token to be active.
<b>Description field</b>	The description of the registration token.
<b>Created By field Export Controlled-Functionality field</b>	Specifies if the export-controlled functionality is enabled for the generated token. <b>Note</b> This field is visible for only for those local Accounts that are permitted to use this functionality.
<b>Created By field</b>	The user who created the token.
<b>Actions links</b>	Perform one of the following actions:

	<ul style="list-style-type: none"> <li>• <b>Copy</b>-Copy the token to your clipboard.</li> <li>• <b>Download</b>-Download the token to your local machine in a text file format.</li> <li>• <b>Revoke</b>-Revoke the token. Revoked tokens can no longer be used.</li> <li>• <b>Remove</b>-Remove a revoked token from the Product Instance Registration Token table.</li> </ul>
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## *Managing Product Instance Registration Tokens*

### **Procedure**

<b>Step 1</b>	In the <b>Smart Software Manager</b> screen, select <b>Inventory</b> from the menu options, and select an existing virtual account from the <b>Virtual Accounts</b> drop-down menu.
<b>Step 2</b>	On the <b>General</b> tab, locate the token in the <b>Product Instance Registration Token</b> table that you want to manage.
<b>Step 3</b>	In the <b>Product Instance Registration Token</b> table, perform one of the following actions: <ul style="list-style-type: none"> <li>• <b>Copy</b>-Copy the token to your clipboard.</li> <li>• <b>Download</b>-Download the token to your local machine in a text file format.</li> <li>• <b>Revoke</b>-Revoke the token. Revoked tokens can no longer be used.</li> <li>• <b>Remove</b>-Remove a revoked token from the Product Instance Registration Token table.</li> </ul>



## Inventory: License Tab

- License Tab Overview
- Viewing Licenses in a Virtual Account,
- License Tags
- Advanced Search
- Reserve Licenses
- Transferring a License
- Upgrade Licenses
- Exporting to CSV Files

### ***License Tab Overview***

The Licenses tab displays information about all of the licenses in your virtual account. From the Licenses tab, you can do the following:

- **Search**
  - Search Virtual Accounts by name or by tag
  - Search licenses by name or by tag
  - Perform advanced search for licenses using additional search criteria
- **View**
  - All licenses in the Virtual Account
  - Detailed license information by checking the **Show License Transactions** check box
  - Information about a specific license and which product is using it
  - Information about the alerts for specific licenses
- **Manage Tags**
  - Add, edit, and delete license tags for licenses and Virtual Accounts
  - Bulk assign/delete license tags at both the **Summary Level** and **License Transaction Detail Level** • **Reserve Licenses**
- **Transfer**
  - Transfer/bulk transfer licenses between Virtual Accounts
- **Reports**
  - Export license, license subscription, and product instance reports to Excel or .csv

### ***Viewing Licenses in a Virtual Account***

Selecting a Virtual Account, from the Inventory listed in the Smart Software Manager, displays a Licenses tab for the selected Virtual Account. Click the Licenses tab to display the Licenses table.

#### **Procedure**

<b>Step 1</b>	In the <b>Smart Software Manager</b> screen, select <b>Inventory</b> from the menu options, and then select an existing virtual account from the <b>Virtual Accounts</b> drop-down menu. You can search Virtual Accounts <b>By Name</b> or <b>By Tag</b> by entering the first few letters in the <b>Search</b> field to limit the number of available Virtual Accounts that are displayed.
<b>Step 2</b>	Click the <b>Licenses</b> tab to display all the licenses in your <b>Virtual Accounts</b> .
<b>Step 3</b>	(Optional) You can export the license list to a .csv file from this pane. See: <a href="#">Exporting to CSV Files</a>

<b>Step 4</b>	Click the license ID to see detailed information about a license. The system displays the <b>License Detailed Information</b> dialog box. This dialog box has four tabs: <b>Overview</b> , <b>Product Instances</b> , <b>Event Log</b> , and <b>Order History</b> .
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## Licenses Table

Viewing the Licenses table can be done at the Summary Level or License Transaction Detail Level as defined below

View	Definition
<b>Summary Level</b>	Viewing the <b>Licenses</b> table at the <b>Summary Level</b> is the default top-level view. Each license at the <b>Summary Level</b> may be comprised of licenses from multiple sources (see <b>License Transaction Detail Level</b> below) and viewable only at the <b>License Transaction Detail Level</b> .
<b>License Transaction Detail Level</b>	Viewing the Licenses table at the License Transaction Detail Level is done by checking the Show License Transactions* check box. Click the plus (+) icon next to the license name to expand the view for each license. The license transaction details vary by source: <ul style="list-style-type: none"> <li>• Device Migration Product SKU, Product SN, Device Details, Product Family, Quantity Purchased, Expiration Date</li> <li>• DLC Device Migration Product SKU, Product SN, License Family, Quantity Purchased, Expiration Date</li> <li>• PAK Migration PAK #, License SKU, License Family, Quantity Purchased, Expiration Date</li> <li>• EA Migration Transaction ID, Customer Suite Name, License SKU, License Family, Quantity Purchased, Expiration Date</li> <li>• Manual Fulfillment License SKU, License Family, Quantity Purchased, Expiration Date</li> <li>• Order PO #, Cisco Order #, Line #, Customer Name, Ship To Country, License SKU, License SKU Family Name, Quantity Purchased, Expiration Date</li> <li>• Device Transfer Product SKU, Product SN, License Family, Quantity Purchased, Expiration Date</li> <li>• Device Request Product SKU, Product SN, License Family, Quantity Purchased.</li> </ul>

\*All license tags associated to the entitlements in your Virtual Account at the License Transaction Detail Level are displayed only if the License Transaction Details drop-down menu in the Preferences tab is set to Visible AND the Show License Transactions check box in the Licenses tab is checked.

The **Licenses** table provides the following information for each license you have for a Virtual Account.

Column Heading	Description
<b>License</b>	License identifier (name)
<b>Billing</b>	How the licenses are billed (Prepaid or By Usage)
<b>Column Heading</b>	Description
<b>Purchased</b>	Number (quantity) of licenses bought, which may include perpetual and/or term



	<p>If there are any upgrade pending licenses, they are identified by (+ quantity pending) in parenthesis () next to the available quantity. For example, if there are 10 regular entitlements and 5 pending upgrade entitlements in a Virtual Account, it would appear as 10 (+5 pending).</p> <p>Please note: licenses that are billed by usage do not have a predefined number purchased and is indicated by a dash (-) instead of a number. Hover over the dash to see the informational message.</p>
<b>In Use</b>	<p>Number of licenses currently in use along with number of licenses reserved (standard or reporting) in parenthesis ().</p> <p>Please note the following: The yellow warning icon appears when any reserved licenses are in transition. Hovering over the icon, the details of why the licenses in transition will be displayed along with the prompt on what to do to resolve so that the licenses are no longer in transition. In-transition licenses will display if a reservation has been updated to reduce the quantity originally reserved. However, when reservation of reporting only licenses has been updated to reduce the quantity, they will not be marked as “In transition.”</p> <ul style="list-style-type: none"> <li>For licenses synchronized from Smart Software Manager satellite, they are consumed and reflected here. If there are no licenses (by usage or prepaid) available in the Virtual Account, then an out of compliance alert will appear for that license</li> <li>When a device that requires usage-based entitlements is directly connected to Cisco Smart Software Manager, it will not allow the device to consume the by-usage entitlements but instead start consuming in prepaid mode</li> </ul>
<b>Balance</b>	<p>Number of licenses that indicates either a surplus (+), shortage (-), or zero (0)</p> <p>Please note: licenses that are billed by usage are billed monthly and therefore do not have an outstanding balance. Hover over the dash to see the informational message.</p>
<b>Alerts</b>	<p>Messages alerting the user about actions required (major, minor, informational).</p> <p>Upgrade Pending – A number of upgrade licenses have been purchased but will not be available until the licenses being replaced have been identified. Click the Upgrade Pending link which will open a modal to complete the upgrade process. The alert is removed when the license upgrade process is completed.</p>
<b>Actions</b>	<p>Possible options available:</p> <ul style="list-style-type: none"> <li>Transfer a number of licenses to/from another Virtual Account Upgrade licenses</li> </ul>

## License Details

Click on a license listed in the Licenses table to display detailed information on that Virtual Account license. The information is organized under the following tabs.

## Overview Tab

The Overview tab displays:

- Description of the license « A graphic illustration (pie chart) of Virtual Account usage of the license
- Licenses that are duplicates or are pending upgrade are not included in these quantities
- License expiration details, including the number of licenses, their type, the number of licenses reserved (even those reserved through factory preinstallation), their start/expiration date, and subscription ID (if any).

- License Types
  - Count (as well as duplicate licenses)  
If there are any upgrade licenses, they will appear as (pending) in this column
  - Type (Perpetual/Term)
  - Number of licenses reserved
  - Start date
  - Expiration date
  - Subscription ID (if any)




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**Note** There are three types of Licenses - Perpetual, Demo, and Term - and each are valid for a different period of time. Perpetual licenses remain valid in an ongoing, while Demo Licenses must be renewed after 60 days, and Term Licenses remain valid for specified periods of 1 to 3 years. Licenses are removed from Virtual Accounts as they expire.

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## Product Instances Tab

The Product Instances tab displays:

- Product instances
- Product names
- Number of licenses used for these Product Instances

## Event Log Tab

The Event Log tab displays details on events specific to the license for the selected Virtual Account:

- Messages describing events
- Times the events occurred
- Users associated with the event (either the account owner's CCO ID or "Cisco Support")




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**Note** To view information on the all of the events at the local Account level, including events for all **Virtual Accounts** associated with your **local Account**, use the **Activity** link on the **Smart Software Manager** screen, and then click on the **Event Log** tab in the **Activity** screen. To view information on the licensing events specific to a Virtual Account, use the **Inventory** link on the **Smart Software Manager** screen, select a **Virtual Account** from the drop-down menu, and then click on the **Event Log** tab to display event messages for that Virtual Account.

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## Licensing Events

The table below provides an overview of licensing events. Users receive the following event messages, referencing the number () of Licenses () and Virtual Accounts (), when licensing events occur in their local Account.

Event	Message
<b>New Licenses</b>	<n> new <license-name> licenses were added to the Virtual Account "<va-name>".
<b>Licenses Transferred</b>	<n> <license-name> licenses were transferred from the Virtual Account "<from-vaname>" to the Virtual Account "<to-vaname>".

<b>Licenses Expired</b>	<n> "<license-name>" licenses expired and were removed from the Virtual Account "<va-name>"
<b>Licenses Removed</b>	<n> "<license-name>" licenses were removed from the Virtual Account "<va-name>".
<b>Insufficient Licenses Detected</b>	The Virtual Account "<va-name>" reported a shortage of <n> <license-name> licenses.
<b>Licenses Reserved</b>	"The following licenses were reserved on product instance "XXXX" in Virtual Account "XXXX": <Quantity> "Ent 1" License(s) (<Quantity> expiring DD-MMM-YYYY, <Quantity> expiring DD-MMM-YYYY); <Quantity> "Ent 2" License(s) (<Quantity> expiring DD-MMM-YYYY, <Quantity> expiring DD-MMM-YYYY) and <Quantity> "Ent 3" license(s) (<Quantity> perpetual)."
<b>License Upgrade</b>	<n> new "<license-name>" term/perpetual licenses were added to the Virtual Account "<va-name>". These licenses will become available when the upgrade is completed by identifying the licenses to be replaced by the upgrade licenses.

## Order History

The Order History tab displays license order history including:

- Order Number
- Order Line ID
- Order Date
- SKU
- Quantity
- Start Date
- Expiration Date

## License Tags

License Tags are useful for classifying, locating, and grouping licenses. Adding, editing, and deleting license tags from the Inventory listed in the Smart Software Manager can be done through the Licenses tab within your Virtual Account(s) at both the Summary Level and License Transaction Detail Level.

## Adding License Tags

### Procedure

<b>Step 1</b>	In <b>Smart Software Manager</b> , choose <b>Inventory</b> from the menu and choose an existing Virtual Account from the <b>Virtual Account</b> drop-down menu. You can search Virtual Accounts <b>By Name</b> or <b>By Tag</b> by entering the first few letters in the <b>Search</b> field to limit the number of available Virtual Accounts that are displayed.
<b>Step 2</b>	Click the <b>Licenses</b> tab.
<b>Step 3</b>	<b>Summary Level</b> In the <b>Licenses</b> table, check the checkbox(es) to choose one or more licenses. Click <b>Available Actions</b> above the table and choose <b>Add Tags</b> . <b>License Transaction Detail Level</b>

	Above the <b>Licenses</b> table, check the <b>Show License Transactions*</b> check box and in the <b>Licenses</b> table, click the plus (+) icon to choose the individual lines of each license transaction. Click <b>Available Actions</b> above the table and choose <b>Add Tags</b> .
<b>Step 4</b>	In the <b>Add Tags to the Selected Licenses</b> window, click the tags to be added on all selected lines. The system populates the existing tags within the Virtual Account. Search for tag names by entering the first few letters in the field. You can also create a new tag by entering the name and click <b>Save</b> .
<b>Step 5</b>	Enter the new <b>Tag</b> name and click <b>Save</b> . <b>Note:</b> <ul style="list-style-type: none"> <li>• Multiple tags can be added to the licenses by providing tag names in comma-separated format.</li> <li>• Tag names are not case sensitive.</li> <li>• Duplicate tag names cannot be created; you will receive an error message.</li> </ul>

\*All license tags associated to the entitlements in your Virtual Account at the License Transaction Detail Level are displayed only if the License Transaction Details drop-down menu in the Preferences tab is set to Enable AND the Show License Transactions check box in the Licenses tab is checked.

## Removing License Tags

### Procedure

<b>Step 1</b>	In <b>Smart Software Manager</b> , choose <b>Inventory</b> from the menu and choose an existing Virtual Account from the <b>Virtual Account</b> drop-down menu. You can search Virtual Accounts <b>By Name</b> or <b>By Tag</b> by entering the first few letters in the <b>Search</b> field to limit the number of available Virtual Accounts that are displayed.
<b>Step 2</b>	Click the <b>Licenses</b> tab.
<b>Step 3</b>	<b>Summary Level</b> In the <b>Licenses</b> table, check the checkbox(es) to choose one or more licenses. Click <b>Available Actions</b> above the table and choose <b>Remove Tags. License Transaction Detail Level</b> Above the <b>Licenses</b> table, check the <b>Show License Transactions*</b> check box and in the <b>Licenses</b> table, click the plus (+) icon to choose the individual lines of each license. Click <b>Available Actions</b> above the table and choose <b>Remove Tags</b> .
<b>Step 4</b>	In the <b>Remove Tags from Selected Licenses</b> window, currently assigned tags are shown. Click the <b>x</b> to remove the tag(s) from selected licenses. Review the <b>Tags selected for removal</b> and click <b>Save</b> to remove the selected tag(s) from the licenses.

\*All license tags associated to the entitlements in your Virtual Account at the License Transaction Detail Level are displayed only if the License Transaction Details drop-down menu in the Preferences tab is set to Enable AND the Show License Transactions check box in the Licenses tab is checked.

### Advanced Search

The Advanced Search feature allows you to filter using additional criteria, for example by source, order number, customer, product family, expiration date, purchase order, ship-to country, PAK, and/or SKU.

#### Procedure

<b>Step 1</b>	In <b>Smart Software Manager</b> , choose <b>Inventory</b> from the menu options and choose an existing virtual account from the <b>Virtual Accounts</b> drop-down menu. You can search Virtual Accounts <b>By Name</b> or <b>By Tag</b> by entering the first few letters in the <b>Search</b> field to limit the number of available Virtual Accounts that are displayed.
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Step 2	Click the <b>Licenses</b> tab.			
Step 3	Check the <b>Show License Transactions*</b> check box and click the <b>Advanced Search</b> down arrow.			
Step 4	Enter one or more of the following search field parameters and click <b>Apply</b> :			
	<b>Search Field</b>	<b>Search Criteria</b>	<b>Type of Search</b>	<b>Type Ahead</b>
	<b>Source</b>	<b>Drop-down menu with the following values:</b> <ul style="list-style-type: none"><li>• Order</li><li>• Device Transfer</li><li>• DLC Device Migration</li><li>• Device Migration</li><li>• EA Migration</li><li>• PAK Migration</li><li>• Manual Entry</li></ul>	<b>Exact Match</b>	<b>No</b>
	<b>Order Number</b>	<b>SO# or WOID</b>	<b>Exact Match</b>	<b>No</b>
	<b>PO Number</b>	<b>PO Number</b>	<b>Exact Match</b>	<b>No</b>
	<b>End Customer</b>	<b>End Customer Name</b>	<b>Contains</b>	<b>No</b>
	<b>Ship To</b>	<b>Choose Country from drop-down menu.</b>	<b>Contains</b>	<b>No</b>
	<b>PAK</b>	<b>PAK #</b>	<b>Exact Match</b>	<b>Yes</b>
	<b>Product Family</b>	<b>License Product Family</b>	<b>Contains</b>	
	<b>SKU</b>	<b>License or Product SKU</b>	<b>Contains</b>	
	<b>Expires By</b>	<b>Date Picker on “Term End Date”</b>	<b>Any license that has an expiration date on or before the selected</b>	
Step 5	Click <b>Clear</b> to remove all search criteria.			

\*You can perform an Advanced Search only if the License Transaction Details drop-down menu in the Preferences tab is set to Enable AND the Show License Transactions check box in the Licenses tab is checked.

### Transferring a License

Licenses can be transferred between Virtual Accounts in a local Account. You can choose one or more licenses from the licenses table either at the **Summary Level** or **License Transaction Detail Level**.



**Note** Once an entitlement has been reserved, it cannot be transferred between Virtual Accounts. Once a reserved term license has expired, the available quantity has been reduced due to licenses being used to fulfill the expired reservation.

## Transfer Between Virtual Accounts — Summary Level

### Procedure

<b>Step 1</b>	In <b>Smart Software Manager</b> , choose <b>Inventory</b> from the menu options and choose an existing virtual account from the <b>Virtual Accounts</b> drop-down menu.
<b>Step 2</b>	Click the <b>Licenses</b> tab.

<b>Step 3</b>	In the <b>Licenses</b> table, check the checkbox(es) to choose one or more licenses. Click <b>Available Actions</b> above the table and choose <b>Transfer Between Virtual Accounts</b> .	
<b>Step 4</b>	In the <b>Transfer Between Virtual Accounts</b> window, complete the following fields:	
	<b>Name</b>	<b>Description</b>
	<b>Transfer To/From</b> drop-down menu	Choose one of the following: <ul style="list-style-type: none"> <li><b>Transfer To</b>-Licenses are transferred from the current virtual account to the selected virtual account.</li> <li><b>Transfer From</b>-Licenses are transferred from the selected virtual account to the current virtual account.</li> </ul>
	<b>Virtual Account</b> drop-down menu	Choose a <b>Virtual Account</b> to transfer the license(s) to/from.
	<b>License</b>	Shows the name of the license, the virtual account that it belongs to, and the number of licenses that are currently available.
	<b>Expires</b>	Shows the license expiration date. For permanent licenses, it will be shown as <b>Perpetual</b> .
	<b>Purchased</b>	Shows the number (quantity) of licenses purchased, which may include <b>Perpetual</b> and/or <b>Term</b> . <b>NOTE:</b> Licenses billed by usage do not have a predefined number purchased and is indicated by a dash (-) instead of a number. Hover over the dash to see the informational message.
	<b>In Use</b>	Shows the number of licenses currently in use, along with number of licenses reserved shown with the keyword <b>Reserved</b> .
	<b>Balance</b>	Shows the number of licenses available for transfer between Virtual Accounts.
	<b>Transfer</b>	Enter the number of licenses you want to transfer.
	You can view a summary of changes from the <b>Transfer Licenses</b> window after you complete the <b>Transfer To/From</b> and <b>Virtual Account Quantity</b> fields by clicking <b>Show Preview</b> .	
<b>Step 5</b>	Click <b>Transfer</b> to transfer the licenses or click <b>Show Preview</b> to view a summary of the changes or click <b>Cancel</b> to stop the license transfer. <b>NOTE:</b> When you click <b>Transfer</b> , a warning message will display alerting you that the association of license tags to the transferred licenses will be lost and the license tags will not be transferred along with license itself.	
<b>Step 6</b>	In the <b>Preview Transfer Licenses Between Virtual Accounts</b> window, do one of the following: <ul style="list-style-type: none"> <li>Click <b>Transfer</b> to transfer the licenses.</li> <li>Click <b>Hide Preview</b> to make more changes.</li> <li>Click <b>Cancel</b> to stop the license transfer.</li> </ul>	

## Transfer Between Virtual Accounts — License Transaction Detail Level

### Procedure

<b>Step 1</b>	In <b>Smart Software Manager</b> , choose <b>Inventory</b> from the menu options and choose an existing virtual account from the <b>Virtual Accounts</b> drop-down menu.
<b>Step 2</b>	Click the <b>Licenses</b> tab.
<b>Step 3</b>	In the <b>Licenses</b> table, check the checkbox(es) to choose one or more licenses. Click <b>Available Actions</b> above the table and choose <b>Transfer Between Virtual Accounts</b> .
<b>Step 4</b>	In the <b>Transfer Between Virtual Accounts</b> window, complete the following fields:

Step 5	Click <b>Transfer</b> to transfer the licenses or click <b>Show Preview</b> to view a summary of the changes or click <b>Cancel</b> to stop the license transfer. <b>NOTE:</b> When you click <b>Transfer</b> , a warning message will display alerting you that the association of license tags to the transferred licenses will be lost and the license tags will not be transferred along with license itself.	
Step 6	In the <b>Preview Transfer Licenses Between Virtual Accounts</b> window, do one of the following: <ul style="list-style-type: none"><li>Click <b>Transfer</b> to transfer the licenses.</li><li>Click <b>Hide Preview</b> to make more changes.</li><li>Click <b>Cancel</b> to stop the license transfer.</li></ul>	
	<b>Name</b>	<b>Description</b>
	<b>Transfer To/From</b> drop-down menu	Choose one of the following: <ul style="list-style-type: none"><li><b>Transfer To</b>-Licenses are transferred from the current virtual account to the selected virtual account.</li><li><b>Transfer From</b>-Licenses are transferred from the selected virtual account to the current virtual account.</li></ul>
	<b>Virtual Account</b> drop-down menu	Choose a <b>Virtual Account</b> to transfer the license(s) to/from.
	<b>License</b>	Shows the name of the license, the virtual account that it belongs to, and the number of licenses that are currently available.
	<b>Expires</b>	Shows the license expiration date. For permanent licenses, it will be shown as <b>Perpetual</b> .
	<b>Purchased</b>	Shows the number (quantity) of licenses purchased, which may include <b>Perpetual</b> and/or <b>Term</b> . <b>NOTE:</b> Licenses billed by usage do not have a predefined number purchased and is indicated by a dash (-) instead of a number. Hover over the dash to see the informational message.
	<b>In Use</b>	Shows the number of licenses currently in use, along with number of licenses reserved shown with the keyword <b>Reserved</b> .
	<b>Balance</b>	Shows the number of licenses available for transfer between Virtual Accounts.
	<b>Transfer</b>	Enter the number of licenses you want to transfer.
	You can view a summary of changes from the <b>Transfer Licenses</b> window after you complete the <b>Transfer To/From</b> and <b>Virtual Account Quantity</b> fields by clicking <b>Show Preview</b> .	
Step 7	Click <b>Transfer</b> to transfer the licenses or click <b>Show Preview</b> to view a summary of the changes or click <b>Cancel</b> to stop the license transfer. <b>NOTE:</b> When you click <b>Transfer</b> , a warning message will display alerting you that the association of license tags to the transferred licenses will be lost and the license tags will not be transferred along with license itself.	
Step 8	In the <b>Preview Transfer Licenses Between Virtual Accounts</b> window, do one of the following: <ul style="list-style-type: none"><li>Click <b>Transfer</b> to transfer the licenses.</li><li>Click <b>Hide Preview</b> to make more changes.</li><li>Click <b>Cancel</b> to stop the license transfer.</li></ul>	

\*You can view the license transactions details only if the **License Transaction Details** drop-down menu in the **Preferences** tab is set to **Visible** AND the **Show License Transactions** check box in the **Licenses** tab is checked.

## Manage Tags

The **Manage Tags** option makes changes to your license tags across your Virtual Account. The License tags are displayed alphabetically and show the number of licenses and license transactions that are associated with each tag.

## Editing License Tags

### Procedure

<b>Step 1</b>	In <b>Smart Software Manager</b> , choose <b>Inventory</b> from the menu and choose an existing Virtual Account from the <b>Virtual Account</b> drop-down menu. You can search Virtual Accounts <b>By Name</b> or <b>By Tag</b> by entering the first few letters in the <b>Search</b> field to limit the number of available Virtual Accounts that are displayed.
<b>Step 2</b>	Click the <b>Licenses</b> tab.
<b>Step 3</b>	Click <b>Manage Tags</b> .
<b>Step 4</b>	Each tag will be shown under the <b>License Tag</b> column and the details of the tag association are shown under the <b>Assigned To</b> column.
<b>Step 5</b>	Under the tag name, click <b>Edit</b> .
<b>Step 6</b>	Update the tag name and click <b>Save</b> . If the updated tag name already exists in the Virtual Account, an error message will display. To stop editing the tag, click <b>Cancel</b> . <b>Note:</b> Clicking <b>Save</b> will update the tag name on all the associated licenses and license transactions in your <b>Virtual Account</b> . Once Saved, <b>"Tag updated Successfully"</b> confirmation message will be displayed.
<b>Step 7</b>	Click <b>Close</b> .

## Deleting License Tags

### Procedure

<b>Step 1</b>	In <b>Smart Software Manager</b> , choose <b>Inventory</b> from the menu and choose an existing Virtual Account from the <b>Virtual Account</b> drop-down menu. You can search Virtual Accounts <b>By Name</b> or <b>By Tag</b> by entering the first few letters in the <b>Search</b> field to limit the number of available Virtual Accounts that are displayed.
<b>Step 2</b>	Click the <b>Licenses</b> tab.
<b>Step 3</b>	Click <b>Manage Tags</b> .
<b>Step 4</b>	Each tag will be shown under the <b>License Tag</b> column and the details of the tag association are shown under the <b>Assigned To</b> column.
<b>Step 5</b>	Under the tag name, click <b>Delete</b> to delete the tag. The following messages are displayed: "Are you sure you want to delete the tag?" and "Clicking on delete will delete the tag from all the associated summary lines and license transactions." Click <b>Yes, Delete It</b> to delete the tag from all associated summary lines and license transactions or click <b>Cancel</b> to cancel its deletion. <b>"Tag Delete Successful"</b> confirmation message will display once the tag is deleted.
<b>Step 6</b>	Click <b>Close</b> .



## Search Licenses by Name or by Tag

### Search by Name

#### Procedure

<b>Step 1</b>	In <b>Smart Software Manager</b> , choose <b>Inventory</b> from the menu and choose an existing Virtual Account from the <b>Virtual Account</b> drop-down menu. You can search Virtual Accounts <b>By Name</b> or <b>By Tag</b> by entering the first few letters in the <b>Search</b> field to limit the number of available Virtual Accounts that are displayed.
<b>Step 2</b>	Click the <b>Licenses</b> tab.
<b>Step 3</b>	In the Licenses table, click <b>By Name</b> above the <b>Search</b> field.
<b>Step 4</b>	Click inside the <b>Search</b> field and type the first few letters of a license name. A list of all matching entitlements within your Virtual Account is displayed. Choose the license from the list. To remove the selected license name, click x in the search text box

### Search by Tag

#### Procedure

<b>Step 1</b>	In <b>Smart Software Manager</b> , choose <b>Inventory</b> from the menu and choose an existing Virtual Account from the <b>Virtual Account</b> drop-down menu. You can search Virtual Accounts <b>By Name</b> or <b>By Tag</b> by entering the first few letters in the <b>Search</b> field to limit the number of available Virtual Accounts that are displayed.
<b>Step 2</b>	Click the <b>Licenses</b> tab.
<b>Step 3</b>	Click <b>By Tag</b> above the <b>Search</b> field.
<b>Step 4</b>	Click inside the Search field. A list of license tags available within the Virtual Account is displayed. Type the first few letters of a tag to filter the list. NOTE: All license tags associated to the entitlements in your Virtual Account at the License Transaction Detail Level are displayed only if the License Transaction Details drop-down menu in the Preferences tab is set to Enable AND the Show License Transactions check box in the Licenses tab is checked.
<b>Step 5</b>	Choose one or more tags. Only the entitlements associated to the selected tags are displayed. To remove selected license tags, click x against each tag.

### Change Virtual Account Assignment

Duplicate licenses can either be moved or copied to a different Virtual Account(s). These licenses become active if the target/selected Virtual Account(s) do not already contain the transferred licenses.

**Please note:** this option in the **Actions** drop-down menu is **only** available for By Usage entitlements.

#### Procedure:

<b>Step 1</b>	Identify the license to be moved or copied. Click on <b>Actions</b> and select <b>Change Virtual Account Assignment</b> .
<b>Step 2</b>	Select the <b>Subscription</b> for the license from the <b>Subscription ID</b> drop-down menu that should be transferred. Please note: The Subscription ID that correspond to the active entitlement is marked as <b>Enabled</b> . The Subscription IDs that correspond to duplicate entitlements are <b>Disabled</b> .

<b>Step 3</b>	<p>Select the Virtual Accounts(s) from the available list to move or copy the license. The Virtual Account(s) that are checked means the license is already there.</p> <p>To move the license, uncheck the Virtual Accounts that currently has the license and select the other Virtual Accounts.</p> <p>To copy the license, leave the Virtual Accounts that are checked as-is and select other Virtual Accounts to copy the license to. Click <b>Check All</b> if the license is to be copied to all available Virtual Accounts.</p> <p>Please note: the <b>Duplicate Licenses</b> alert appears:</p> <ul style="list-style-type: none"> <li>• When the selected Virtual Account(s) has duplicate licenses or</li> <li>• The Virtual Account(s) will have duplicate licenses once the license has been copied or moved</li> </ul> <p>Click <b>OK</b>.</p> <p>The license is copied or moved to the selected Virtual Account(s).</p>
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### ***Exporting to CSV Files***

You can export information pertaining to licenses, product instances, event logs or user information.

#### **Procedure**

<b>Step 1</b>	In the <b>Navigation</b> pane, click a virtual account.
<b>Step 2</b>	On the <b>License, Product Instances, Event Log, or Users</b> page, click the <b>CSV</b> icon in the upper right.
<b>Step 3</b>	Use the <b>File Save</b> dialog box to save the file on your hard drive.




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**Note** The system uses a platform-dependent dialog box to save the file. The dialog box varies slightly

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## Inventory: Product Instances Tab

- Product Instances Tab Overview
- Viewing Product Instances in a Local Virtual Account
- Transferring a Product Instance
- Update Reserved Licenses
- Enter Confirmation Code
- Removing a Product Instance

### *Product Instances Tab Overview*

The Product Instances tab displays information about all of the product instances in your virtual account. From the Product Instances tab, you can do the following:

- View a list of all product instances.
- View information about specific product instances and what licenses it consumes.
- View information about the alerts for a specific product instance.
- Transfer a specific product instance between Local Virtual Accounts.




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**Note** You cannot transfer or remove product instances from Local Virtual Accounts associated with a satellite.

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- Remove a specific product instance from the Local Virtual Account which subsequently removes it from the local Account.
- Export a list of product instances to a .csv file.

### *Viewing Product Instances in a local Virtual Account*

Selecting a **Local Virtual Account**, from the **Inventory** listed in the **Smart Software Manager**, displays a **Product Instances** tab for the selected **Virtual Account**. Click the **Product Instances** tab to display the **Product Instances** table.

#### Procedure

<b>Step 1</b>	In the <b>Smart Software Manager</b> , click the link to a Local Virtual Account.
<b>Step 2</b>	Select Inventory from menu, and then click the Product Instances tab.
<b>Step 3</b>	(Optional) You can export the list of product instances to a .csv file. See Exporting to CSV Files .
<b>Step 4</b>	Click the product instance name to see detailed information about a product instance. Note A cluster setup icon by the right side of the product instance indicates a high availability of routers for that specific product instance. The system displays the Product Instance Details dialog box. This dialog box has two tabs: Overview and Event Log.

## Product Instances Table

The Product Instances table provides the following information for each product you have associated with a Virtual Account.

Column Heading	Description
<b>Name</b>	Product ID plus Product Instance name
<b>Product Type</b>	Product Identification Number
<b>Last Contact</b>	Date
<b>Alerts</b>	Messages alerting the user to actions required to maintain products
<b>Actions</b>	Option for <b>removing</b> a Product Instance, or <b>transferring</b> a Product Instance to another Virtual Account

## Product Instance Details

Click on a Product Instance (Device) listed in the Product Instance table to display detailed information on that Virtual Account product. The information is organized under the following tabs.

### Overview Tab

The Overview tab displays:

- Description of the license
- General Product Instance information including:
  - Name
  - Product
  - Host identifier
  - MAC Address
  - PID
  - Serial Number
  - Local Virtual Account
  - Registration Date
  - Last Contact
  - Authorization Code (available for download)\*
  - Update Reservation link \*Available only when the Product Instances have reserved licenses.
- License Usage, which includes the following columns:
  - License name of the licenses being consumed
    - For licenses synchronized from Smart Software Manager satellite, they are consumed and reflected here. If there are no licenses (**by usage** or **prepaid**) available in the Virtual Account, then an **out of compliance** alert will appear for that license
    - When a device that requires usage-based entitlements is directly connected to Cisco Smart Software Manager, it will not allow the device to consume the by-usage entitlements but instead start consuming in prepaid mode
  - Expires
    - **Expiration date** for term licenses
    - **Never** status for perpetual licenses

- **Multiple terms** (link) when there is a combination of perpetual and term licenses or terms with different expiration dates
- Quantity number of licenses reserved

## Event Log Tab

The Event Log tab displays details on events specific to the Product Instance for the selected Virtual Account:

- Messages describing events
- Times the events occurred
- Users associated with the event (either the account owner's CCO ID or "Cisco Support")

## Product Instance Events

The table below provides an overview of **Product Instance** events. Users receive the following event messages, referencing the number () of Product Instances () and Virtual Accounts (), when product instance events occur in their local Account.

Event	Message
<b>New Product Instance</b>	The product instance <instance-name> connected and was added to the Virtual Account "<va-name>".
<b>New Product Instance (with redundancy)</b>	The product instance <instance-name> was added to the Virtual Account "<va-name>" and configured for redundancy with the following Standbys: "<sb1-displayname>", "<sb2-displayname>".
<b>Product Instance Transferred</b>	The product instance <instance-name> was transferred from the Virtual Account "<from-vaname>" to the Virtual Account "<to-vaname>"
<b>Product Instance Removed</b>	The product instance "<instance-name>" was removed from Smart Software Manager.
<b>Product Instance Requested License</b>	The product instance <instance-name> in the Virtual Account "<va-name>" requested <n> "<license-name1>".
<b>Product Instance Renewed Certificate</b>	The product instance <instance-name> in the Virtual Account "<va-name>" connected and successfully renewed its identity certificate.
<b>Product Instance Connected (with redundancy)</b>	The product instance <instance-name> in the Virtual Account "<va-name>" connected and was configured for redundancy with the following Standbys: "<sb1-displayname>", "<sb2-displayname>".
<b>Failure to Connect Detected</b>	The product instance <instance-name> in the Virtual Account "<va-name>" failed to connect for its renewal period.
<b>Product Instance Added via satellite</b>	The product instance <instance-name> was added to the Virtual Account "<va-name>" via synchronization with the Satellite "<satellite-name>".
<b>Product Instance Requested License via satellite</b>	The product instance <instance-name> in the Virtual Account "<va-name>" requested <n> "<license-name1>" via synchronization with the satellite "<satellite-name>".
<b>Product Instance Removed via satellite</b>	The product instance <instance-name> was removed from the Virtual Account "<va-name>" via synchronization with the satellite "<satellite-name>".

<b>Product Instance Detached</b>	The product instance <instance-name> in the Virtual Account "<va-name>" was put in detached mode.
<b>Product Instance Reattached</b>	The product instance <instance-name> in the Virtual Account "<va-name>" was taken out of detached mode.
<b>Product Instance Failed to Detach</b>	The product instance <instance-name> in the Virtual Account "<va-name>" failed to go into detached mode.
<b>Product Instance Failed to Reattach</b>	The product instance <instance-name> in the Virtual Account "<va-name>" failed to be taken out of detached mode.

## Transferring a Product Instance



**Caution** Transferring a product instance from one Local Virtual Account to another Local Virtual Account does not result in the corresponding licenses being transferred. You will have to transfer the licenses separately.



**Note**

- You cannot transfer or remove product instances from Local Virtual Accounts associated with a satellite
- When transferring a product instance between Virtual Accounts, all the reserved licenses for that product instance will move to the destination Virtual Account

### Procedure

<b>Step 1</b>	In the <b>Smart Software Manager</b> , click the link to a Local Virtual Account.	
<b>Step 2</b>	Select <b>Inventory</b> from the menu, and then click the Product Instances tab.	
<b>Step 3</b>	In the <b>Product Instances</b> table, locate the product instance that you want to transfer.	
<b>Step 4</b>	In the <b>Actions</b> column, click the <b>Transfer</b> link for the product instance that you want to transfer.	
<b>Step 5</b>	In the <b>Transfer Product Instance</b> dialog box, complete the following fields:	
	<b>Name</b>	<b>Description</b>
	<b>Name field</b>	The name of the product instance and the product name should auto-display.
	<b>Transfer To drop-down list</b>	Choose the virtual account that you want to transfer the product instance to.
<b>Step 6</b>	Click <b>OK</b> to transfer the product instance.	

## Removing a Product Instance

When you remove a product instance from the software, you are removing it only from the table. The licenses that the product instance was using are still available and can be used by other products. You must re-register the product instance with the cloud so that it can communicate with the product again.

### Procedure

<b>Step 1</b>	In the <b>Smart Software Manager</b> , click the link to a Local Virtual Account.
<b>Step 2</b>	Select <b>Inventory</b> from the menu, and then click the Product Instances tab.



<b>Step 3</b>	In the <b>Product Instances</b> table, locate the product instance that you want to remove.
<b>Step 4</b>	In the <b>Actions</b> column, click the <b>Remove</b> link for the product instance that you want to remove.
<b>Step 5</b>	In the <b>Confirm Remove Product Instance</b> dialog box, click <b>Remove Product Instance</b> .

## Inventory: Event Log Tab

- Virtual Account Event Log Tab
- Virtual Account Event Log Tab Overview

### *Virtual Account Event Log Tab*

The Event Log tab displays information for all of the events in a virtual account. Events are actions that you have taken using **Smart Software Manager** such as Specific License Reservations\*, adding and removing licenses and products, adding and renaming virtual accounts, and so on. From the Event Log tab, you can do the following:

- View a detailed list of all events in the selected virtual account.
- List of Specific License Reservation events is available below
- Export the list to a .csv file.

\* The following Specific License Reservation events are displayed in the Event Log:

Event Description
A license is reserved
A product instance where reserved licenses is transferred between Virtual Accounts
Anytime a user enters the confirmation code to update (increase/decrease) the quantity of licenses reserved

### *Virtual Account Event Log Tab Overview*

The Event Log tab displays information about all of the events in a virtual account. Events are actions that you have taken using Smart Software Manager such as adding and removing licenses and products, adding and renaming virtual accounts, and so on. From the Event Log tab, you can do the following:

- View a detailed list of all events in the selected virtual account.
- Export the list to a .csv file.



## Convert to Smart Licensing Tab

Smart licensing let's you say goodbye to product activation keys (PAKs). As you upgrade from a version of a product using **Traditional Licensing** to a version using **Smart Licensing**, the device or product instance will need to have **Smart License Entitlements** available in Cisco Smart Software Manager **Smart Account**. There are various ways to make entitlements available:

1. Order **Smart** enabled SKUs which in turn deliver **Smart License Entitlements** (licenses) to Cisco Smart Software Manager **Smart Account**.
2. Migrate existing **Traditional Licensing** using the License Registration Workspace (LRP) or **Smart Software Manager** workspace.

In some cases, conversion of license may not be possible at **Smart Software Manager** workspace and must be converted at cisco to be converted by the device. Examples would be Right to User (RTU) license, Paper License, or PAK files which hare not listed in LRP or Cisco Smart Software Manager workspaces. To accommodate these license types, you can migrate from **Traditional Licensing** to **Smart Licensing** via Cisco **Smart Software Manager satellite** Enhanced Edition and **Device Lead Conversion** (DLC).

**DLC** allows the device/product instance to initiate the conversion of **Traditional Licensing** to **Smart Licensing** Licenses so that the entitlement can be reflected in Cisco Smart Software Manager. Products must be upgraded to a DLC-enabled version of software, connected directly to or **Smart Software Manager** , or **Smart Software Manager** satellite for this feature to work.

**DLC** can only convert a **Traditional Licensing** once if successful. That is, once a license has been converted and deposited in the Virtual Account (where the device registers) as a Smart-enabled license, Cisco Smart Software Manager will invalidate the corresponding **Traditional License** and will not allow the device to initiate the conversion again. If an attempt to convert an already converted license, the device will receive a "**License Already Converted**" status. The device itself remembers the status of the conversion across reboots and registrations and will only do one automatic conversion.

Prior to a conversion request from the device, a Smart Account administrator needs to configure which Virtual Accounts are allowed or disallowed for license conversion. On Cisco Smart Software Manager, use the following procedure:

### Procedure

<b>Step 1</b>	Log into the <b>Smart Software Manager</b> satellite
<b>Step 2</b>	<b>Click</b> the link to a <b>Software Licensing</b> .
<b>Step 3</b>	<b>Click</b> on <b>Convert to Smart Licensing</b> .
<b>Step 4</b>	<b>Click</b> on the Tab <b>Conversion Settings</b>
<b>Step 5</b>	Under the Tab for <b>Device Led Conversion to Smart Licensing</b> , either enable DLC for all Virtual accounts, or the specific Virtual Account associated with <b>the SSM satellite local Account</b> .
<b>Step 6</b>	<b>Click</b> Apply

### ***Conversion Workflow***

For device registered to satellite, following is a high-level workflow:

1. Device either automatically or manually initiates a migration after a successful registration
  - a. Migration can be initiated automatically as part of registration via the command `license smart conversion automatic`, or
  - b. A manual “`license smart conversion start`” command needs to be entered on the device to start the conversion.
2. Satellite receives one or multiple migration requests from one or multiple devices. It validates that the request comes from a registered device.
3. Satellite display an alert that the user should initiate a sync due to DLC request(s)
4. Satellite responds to the device and tells it to poll back in 1 hour (3600 seconds).
5. *Satellite saves the conversion data so it can send to Cisco Smart Software Manager on the next synchronization.*
6. Satellite passes the encoded conversion data to Cisco Smart Software Manager in the next sync (network, scheduled, or manual).
7. Satellite waits for a response from Cisco Smart Software Manager via the next sync (success or failure with a reason)
8. When device polls satellite for status, it will respond with the appropriate response (poll-me-later, agent-not-registered, migrate-success, migrate-failed, invalid message type)
9. Satellite keeps track of device conversion results and provides a report on its UI so users can know the status of the DLC requests/results.

### ***Conversion Reporting***

To see a report of the conversion, use the following procedures:

Step 1: Go To **Administration** tab

Step 2: Select **Conversion History**

Step 3: You can see the report showing Product Instance Name, Product Family, Conversion Status, and the Time of Conversion.

As the status changes (e.g., pending to success or failure), the report is updated.

### ***Backup/Restore and Conversion Results***

1. When a conversion request is initiated by the device and the license conversion data from the device has been sent to satellite. However, the user performs a satellite database restore to a time before the satellite receiving this information. When the device tries to poll again for status, satellite will return an error since it has no knowledge of the license conversion due to the restore operation. The device automatically retries the conversion.
2. If the device initiates a conversion and it is no longer registered (either as a direct result of a de-registration or a satellite database restore operation before the result comes back. Depending on when the satellite was restored to:
  - a. If satellite is restored to before the DLC request, then it wouldn't have knowledge of this request and the device needs to retry the DLC request.
  - b. If the satellite is restored to before the device registration, it has no knowledge of the device, so the device needs to re-register and retry the DLC request.



3. The device initiates a conversion, satellite sends the conversion data to Cisco Smart Software Manager, receives the conversion successful results, and notifies the device. If the satellite is restored to a point before the sync was started but after satellite receives the conversion data from the device, which means it thinks the request is pending. Satellite will send the DLC request and license data in the next sync with Cisco Smart Software Manager and when it receives a "ALREADY CONVERTED, it will update the UI report accordingly. The device doesn't have to do anything because it has already received its successful status.

## Reports

- Reports Overview
- Running Reports

### Reports Overview

The **Reports** window provides functions that allow you to run reports on all your virtual accounts and all your licenses within your local Account. The **Reports** table displays the following information for each supported report:

Name	Description
<b>Name</b> area	The name of the <b>Cisco Smart Software Manager</b> report. Click the link to view the specific report page.
<b>Description</b> area	The description of the <b>Report</b> .

### Running Reports

You can run reports on Licenses, License Subscriptions, and Product Instances.

#### Procedure

<b>Step 1</b>	In the <b>Smart Software Manager</b> , click the <b>Reports</b> tab.
<b>Step 2</b>	In the <b>Reports</b> window, click <b>Licenses</b> , <b>License Subscriptions</b> , or <b>Product Instances</b> .
<b>Step 3</b>	In the <b>Run License Report</b> window, complete the following:

#### Licenses and License Subscriptions Reports

Name	Description
<b>Name</b> field	Enter the name that you want to assign to the report.
<b>Description</b> field	(Optional) Enter the description that you want to use for the report.
<b>Local Virtual Accounts</b> drop-down menu	Choose All Virtual Accounts to run the report against all your Virtual Accounts. Choose Selected Virtual Accounts or Accounts with ALL of these Tags which allows you to select one or more Virtual Accounts and search By Name or By Tag.
<b>Licenses</b> drop-down menu	Choose one or more licenses from the drop-down menu. Choose between All Licenses, Licenses with ALL these License Tags, or Licenses with NO License Tags.

#### Product Instances Reports

Name	Description
<b>Name</b> field	Enter the name that you want to assign to the report.
<b>Description</b> field	(Optional) Enter the description that you want to use for the report.
<b>Local Virtual Accounts</b> drop-down menu	Choose one or more virtual accounts that you want to run the report against. Choose All Virtual Accounts to run the report against all virtual accounts.

<b>Product Type</b> field	The product type that you want to run the report against. You can choose one or more product families.
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<b>Step 4</b>	<p>Click the button for the type of report you wish to generate:</p> <ul style="list-style-type: none"><li>• Run Report</li><li>• Export to Excel • Export to CSV</li></ul> <p>Clicking <b>Run Report</b> opens the report in a new browser window. Clicking <b>Export to Excel</b> or <b>Export to CSV</b> opens a <b>File Save</b> dialog box.</p>
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## Satellite Lite Edition Support

- Satellite Overview
- Cisco Smart Software Manager satellite Setup
- Creating a New satellite
- Cisco Smart Software Manager satellite Management

## satellite Lite Edition Overview

**Cisco Smart Software Manager** satellite supports products that do not have connectivity to the Cisco network or have limited network access. **Cisco Smart Software Manager** satellite serves as a local data collector to access **the Smart Software** licenses in a disconnected mode. It collects and transfers the data that is stored at scheduled time intervals by communicating with Cisco.com.

## satellite Lite Edition Setup

To configure the satellite, complete the following setup functions:

- Register satellite
- Time Settings
- Synchronization Settings
- Summary

### Before You Begin

Ensure that you have installed and launched the satellite before you begin the setup process.




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**Note** For more details on the installation process, see Cisco Smart Software Manager satellite Installation Guide.

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## Procedure

<b>Step 1</b>	Launch the <b>Cisco Smart Software Manager satellite</b> using the URL: <code>http://&lt;ipaddress&gt;:8080</code>
<b>Step 2</b>	Log in to the Cisco Smart Software Manager satellite Setup page with the default username: admin and password: Admin!23. The Cisco Smart Software Manager satellite Setup page is displayed. On this page, the Register satellite step allows you to generate and save the registration file.
<b>Step 3</b>	Click <b>Generate Registration File</b> to generate and save the file to your local file directory. <b>Note</b> After this step, you are required to open a new tab in the browser and log into <b>Smart Software Manager</b> to authorize the registration file. Follow the steps 3-10 to log on and continue the process.
<b>Step 4</b>	Launch the <b>Smart Software Manager</b> using the URL: <b><i><a href="https://software.cisco.com/#SmartLicensing-Satellite">https://software.cisco.com/#SmartLicensing-Satellite</a></i></b>
<b>Step 5</b>	Log in to your <b>local Account</b> in <b>Smart Software Manager</b> using your local Account username and password.
<b>Step 6</b>	On the <b>Smart Software Manager</b> screen, click <b>satellites</b> .
<b>Step 7</b>	In the <b>satellites</b> page, click <b>New satellite</b> button.
<b>Step 8</b>	In the <b>New satellite</b> dialog box, enter the name of the <b>satellite</b> that requires registration.
<b>Step 9</b>	Click <b>Browse</b> , which is located next to the <b>Registration File</b> field, to select the registration file that was generated in the <b>Cisco Smart Software Manager satellite Setup</b> tool.

<b>Step 10</b>	In the <b>Local Virtual Accounts</b> field specify the Local Virtual Account in which you want to add the new satellite.
<b>Step 11</b>	In the text box next to <b>Contact Email Address</b> field, enter your email address. You will be notified to this email once the satellite file has been authorized.
<b>Step 12</b>	Click <b>Send Authorization Request</b> to proceed. A message is displayed stating that an authorization file is generated within 48 hours of the request and that you will receive an email notification to download the same. <b>Note</b> If the authorization file is not generated within 48 hours of your request or you do not receive an email notification, you can contact the Cisco support.
<b>Step 13</b>	Log into <b>Smart Software Manager</b> after you receive the email notification. Navigate to the <b>satellite</b> screen.
<b>Step 14</b>	In the <b>satellite</b> screen, search the satellite table to locate the new satellite that you created. You will see an alert message in the Alerts column displaying: <b>Authorization File Ready</b> and a link in the Actions column displaying: <b>Download Authorization File</b> for your new satellite.
<b>Step 15</b>	Click the <b>Download Authorization File</b> link and download the authorization file to your local file directory on your hard drive. <b>Note</b> After this step, you should revert to <b>Cisco Smart Software Manager</b> satellite and upload the authorized file. Perform the following steps to continue the setup process.
<b>Step 16</b>	In the <b>Cisco Smart Software Manager</b> satellite, at the <b>Register satellite</b> step, click Browse and navigate to the location where the authorized satellite file was downloaded.
<b>Step 17</b>	Click <b>Upload</b> to upload the authorized satellite file.
<b>Step 18</b>	Click <b>Next</b> to proceed.
<b>Step 19</b>	On the <b>Time Settings</b> tab, ensure that the time on the satellite is accurate to synchronize with the Cisco licensing cloud. If the time varies, make sure that the JEOS platform on which the satellite is running is in sync with the NTP server.
<b>Step 20</b>	Click <b>Next</b> to proceed to the <b>Synchronization Settings</b> page. A periodical synchronization must happen between the satellite and the Cisco licensing servers to update the licenses and reauthorize any product instances.
<b>Step 21</b>	Choose one of the following methods to set up the synchronization. This section allows you to set up the connection between the Cisco Smart Software Manager satellite and the Cisco.com cloud workspace to synchronize at different time intervals using the following mode options: <ul style="list-style-type: none"> <li><b>Network Synchronization-Data</b> is synchronized and updated at scheduled time periods in this mode. You can choose this mode if you are able to connect to Cisco.com periodically. This type of synchronization is suitable for network enabled environments.</li> </ul> <b>Note:</b> Port 443 must be enabled for communications between the Cisco Smart Software Manager satellite and the Smart Manager. <ul style="list-style-type: none"> <li><b>Manual Synchronization-Data</b> is transferred through a file download and upload process in a manual synchronization mode. You can choose this mode if you do not have network connectivity or cannot establish a connection to communicate with Cisco Smart Software Manager. Refer to the Synchronization procedure provided following this table.</li> </ul>

	<b>Note:</b> You can modify this setting and schedule synchronization timing later in the Synchronization page of the Cisco Smart Software Manager satellite workspace. For more details, see Scheduling Synchronization for satellites.
<b>Step 22</b>	Click <b>Next</b> to view the <b>Summary</b> page.
<b>Step 23</b>	Review the summary details and click <b>Configure satellite</b> to complete the satellite configuration and navigate to the <b>Cisco Smart Software Manager satellite</b> screen or click <b>Back</b> to edit the previous page settings. This completes the satellite configuration process. You can now navigate to the <b>Smart Software Manager</b> and view the details of the satellite. Refer to the other sections of the user guide to view or perform various tasks of smart licensing.

### ***satellite Lite Edition Synchronization***

Once the satellite Status is no longer pending, you must execute the following procedure to synchronize the satellite.

<b>Step 1</b>	Download the <b>Authorization File</b> and save it to your computer.
<b>Step 2</b>	Upload the <b>Synchronization File</b> generated by the <b>Cisco Smart Software Manager satellite</b>
<b>Step 3</b>	Click Generate Response File. Note A message will display indicating that the "Synchronization Response File Generation is in Progress". This process may take some time. The status of this process may be viewed under the Alerts column for this satellite. When the file is ready, a link to download the file will replace the status message.
<b>Step 4</b>	When the file is ready, you will receive a message on the Email Notification screen. In the sync file processed email click the "Ok" button to close the message and to display the satellites screen.
<b>Step 5</b>	Click the "Download Response File" link. If the synchronization fails, you will receive an alert message. Generate a new synchronization from the Cisco Smart Software Manager satellite and repeat steps 2 through 5.

### ***Verifying Time Sync with the NTP***

You can use the following procedure to verify time sync with the NTP.

<b>Step 1</b>	Login to the console using the default user ID <b>admin</b> and the password <b>Admin!23</b> . Use the following commands to verify the time sync with NTP. admin# <b>timesync</b>
<b>Step 2</b>	Synchronize Appliance Time by identifying the NTP Server Address [pool.ntp.org] : <b>171.68.38.65</b>
<b>Step 3</b>	Would you like to synchronize time with '171.68.38.65' (y n)? <b>y</b>
<b>Step 4</b>	Review the message indicating that you have successfully updated the NTP and identifying the sync interval admin#.

### **Creating a new satellite Lite Edition**

#### **Before You Begin**

Ensure that you have generated the registration file using the Cisco Smart Software Manager satellite set up process.



## Procedure

<b>Step 1</b>	In the <b>Smart Software Manager</b> screen, select <b>satellites</b> from the menu options.	
<b>Step 2</b>	On the satellites screen, click New satellite tab and complete the following:	
	<b>Name</b>	<b>Description</b>
	<b>Satellite Name</b>	The name you want to assign to the new satellite.
	<b>Registration File</b>	Click on the Browse tab to locate the registration file that was generated using the Cisco Smart Software Manager satellite setup process. On selection, the filename is displayed beside the Browse button.
	<b>Local Virtual Accounts</b>	Click on the drop-down list arrow to choose a virtual account that you want to associate the satellite with. Optionally, you can add a new virtual account by selecting the New Virtual Account from the drop-down list. Click Add tab to include the new virtual account in the table. <b>Note</b> You have to select or add a virtual account to continue this process.
	The Local Virtual Account details such as the name, description and action fields are updated and displayed in the virtual account table.	
	<b>Contact Email Address</b>	The email address to receive a notification about the authorization file being generated and due for download.
<b>Step 3</b>	Click the <b>Send Authorization Request</b> to proceed. A message is displayed stating that an authorization file is generated within 48 hours of the request and that you will receive an email notification to download the same.	
<b>Step 4</b>	Save this file and upload it to <b>Cisco Smart Software Manager satellite</b> using the setup utility to complete the registration process.	

## *satellite Lite Edition Management*

The satellites screen allows you to view the details of the satellites that you have registered. The satellite screen includes the following:

- Alert Bar
- Satellite information table




---

**Note** The number of major and minor alerts associated with the satellites are displayed on the satellites tab in the left navigation pane of the Cisco Smart Software Manager.

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## *Alert Bar*

Any satellite that has not been authorized or synchronized in due time creates an alert. The Alert Bar provides a summary of the alerts in the satellite. Alerts are listed in the tables on the satellite pane and are summarized in the Alert Bar.

If you choose the Major or Minor button to view alerts, the Alert Bar, which appears below the alert buttons, shows one row per alert. If there are no alerts, the alert buttons are hidden.

The main portion of an alert contains the alert description. On the right of an alert are notifications or links to appropriate actions. For example, the alert satellite Authorization File Ready has links to the Download File dialog box and to a Dismiss dialog box.

On the right of the alert is the Action Due field, which shows how much time remains for you to act on the alert.

- The **Major** button enables you to view all major alerts and specifies the due time to act upon.
- The **Minor** button allows you to view all minor alerts and act on a specific alert. Minor alerts are promoted to major alerts if not acted upon within their time limit. With minor alerts, you have the following options:
  - **Remind Later** - Notifications are dismissed until half of the time that is displayed in the Action Due field has passed.
  - **Dismiss** - Notifications are displayed until the next time that the error is generated.
- The Hide Alerts button allows you to collapse the alerts.

### ***New satellite Lite Edition Tab***

You can create new satellites in this pane using the New satellite tab.

### ***satellite Lite Edition Information Table***

The following satellite details are displayed on the satellites page:

Column Heading	Description
<b>Name</b>	The name of the satellite Lite Edition.
<b>Product Instances</b>	The number of product instances associated with the satellite Lite Edition.
<b>Last Synchronization</b>	The time when the most recent synchronization was successfully completed.
<b>Synchronization Due</b>	The sync up time that is due for the next data transfer to occur.
<b>Alerts</b>	<p>The following are the type of alerts that can be generated by the system.</p> <ul style="list-style-type: none"> <li>• <b>Synchronization Overdue</b>-Any instance of the satellite that has not synchronized with Cisco for over a period of 66 days will receive this overdue alert. Clicking the alert will provide you with the following two tabs that can help you find solutions to clear the alert:               <ul style="list-style-type: none"> <li>• Troubleshooting • Details</li> </ul> <p>Follow the instructions provided to troubleshoot the alert. You can also view the satellite information by clicking the Details tab.</p> </li> <li>• <b>Synchronization Attempt Failed</b>-This type of alert is displayed when you attempt to synchronize data from Smart Software Manager to Cisco and the network connection fails.</li> </ul>
<b>Actions</b>	<p>The following actions can be performed:</p> <ul style="list-style-type: none"> <li>• <b>File Synchronization</b>-You can choose this action and follow the instructions below to synchronize the satellite file.               <ul style="list-style-type: none"> <li>• Click Browse to upload the synchronization file that was generated by the smart software satellite.</li> <li>• Click the Generate Response File button to generate a synchronization response file. A confirmation message is displayed. Download the file to your local desktop and upload the same file to the smart software satellite to complete the synchronization process.</li> </ul> </li> <li>• <b>Remove</b>-You can choose to remove all the product instances registered with this satellite by using this action button.</li> </ul>

## **Activity**

- Activity Overview
- License Transactions
- local Account Event Log

### **Activity Overview**

**Activity**, in **Smart Software Manager**, is defined to include license transactions and a variety of event messages.

As with Alerts, **Activity** in **Smart Software Manager** is organized into local Account and the Virtual Account levels.

#### **local Account Event Logs**

Use the Activity link in Smart Software Manager to display two tabs:

- License Transactions
- Event Log

The messages listed in the **Event Log** of the **Activity** link are a compilation of all **local Account** events, and all events associated with all **Virtual Accounts** managed under the local Account.

Event Log messages specific to each Local Virtual Account are accessed under the **Inventory** link under Smart Software Manager.

### **License Transactions**

The view you have when using the **License Transactions** tab depends upon your role as a **Cisco Administrator**, **Smart Licensing Administrator**, or **Virtual Account Administrator**. You can view the Licensing Information for which you have authorized access.

The **Smart Licensing Administrator** and **Local Virtual Account Administrator**, for instance, has access to local Account information provided under the following tabs:

- Transaction History
- Event Log

A **Cisco Administrator** has access to information provided under a different set of tabs:

- Transaction Dates
- Transaction ID
- Transaction Type
- Order ID
- Order Line ID
- License SKU
- Licenses
- License Expiration
- Count

Under the **License Transactions** tab, the **Cisco Administrator** also has the option to:

- Add licenses by clicking the Add License button
- Remove licenses by using the Remove Licenses option found under the Action heading in the License Transactions table.

### **Account Event Log**

The event log shows the event message, the time of the event, and the user (if any) associated with the event. The following events are captured on the **local Account Event Log**:

- Changes to local Account level attributes/properties
- Events for acceptance of legal agreements at local Account level
- Events for generation of tokens (Restricted Or Un-restricted)
- Events for satellites (New satellite created, satellite renamed, satellite failed to sync and removed, satellite removed, satellite synchronized via network, satellite file synchronization)

#### Procedure

<b>Step 1</b>	In the <b>Smart Software Manager</b> , click the link to a Local Virtual Account.
<b>Step 2</b>	Select <b>Activity</b> from menu, and then click the <b>Event Log</b> tab. <b>Note:</b> You can filter the event log to display either by license type or product instance. Enter a value in the Filter combo box and click Filter to limit the number of entries that are displayed.
<b>Step 3</b>	(Optional) You can export the event list to a .csv file from this pane. See Exporting to CSV Files

### Local Virtual Accounts

Virtual accounts are collections of licenses and product instances. You can create virtual accounts in 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.

There is exactly one default virtual account. You can access the default account by clicking the star icon next to the virtual account name. You can also re-assign the default status between your virtual accounts.




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**Note** You cannot assign a virtual account associated with a satellite as the default virtual account.

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### Local Satellite Accounts

Local Virtual Accounts that are associated with the satellites are identified by the satellite icon next to the virtual account name.




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**Note** Satellite is a standalone application that support products which have partial or no connectivity to Cisco network.

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Note that the following points that apply to satellite virtual accounts:

- The registration tokens used for satellite virtual accounts, should be created in the Cisco Smart Software Manager satellite tool. This data must be synchronized with the Smart Software Manager to view the changes in the software.
- You cannot assign a virtual account associated with a satellite as the default virtual account.
- Virtual accounts can be added to a satellite but cannot be deleted. However, note that virtual accounts are disassociated when the satellite is removed.

## Registering a Product Instance

Once the satellite is operational, smart-enabled product instances can register to the satellite and report license consumption. This registration is between the product instances to the SSM satellite and is different from the registration between the satellite and Cisco Smart Software Manager.

In order to register a product instance to the satellite, you will need the following information:

1. **<SATELLITE-URL>:** The *<SATELLITE-URL>* is the FQDN, hostname, or IP address of the satellite, as entered in the Common Name (CN) of the satellite's certificate.
2. **Smart Call-Home URL:** Smart-enabled product instances need to be configured to send the registration request to satellite. This is accomplished by setting the "destination http" URL in the Smart Call-Home configuration section of product configuration  
`https://<SATELLITE-URL>:443/Transportgateway/services/DeviceRequestHandler`
3. **<TOKEN-ID>:** The *<TOKEN-ID>* is use to associate the Product to the Specific Account and Local Virtual Account you have selected on the SSM satellite.
4. **Configuration Guide:** Smart-enabled product instances vary in how they register to satellite via CLI or GUI depending on the product. For complete instructions for configuring a product instance to communicate with the satellite, see the documentation for your product.



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**Note** Products which support *Strict SSL Cert Checking* require the **<SATELLITE-URL>** to match the SSM satellite Common Name. The common name is provided as the 'hostname' in the Networking Widget.

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## Software Download Features

If the **Software Download** feature is enabled, the **System Admin** has the ability to upload and store Cisco Software associated with license available on SSM satellite. Once uploaded to SSM satellite, System Users who have a license in their Account will be able to download the software from SSM satellite.

## Cisco License Features

This section describes the Cisco Smart Software Manager license features.

- **Application Redundancy Support**  
Application Redundancy (or Application High Availability) is a method to achieve high availability of applications within the product instance. In the application redundancy model, the role of an application can be different from the role of the system (product instance), i.e. an application can be in Standby state on an Active system (product instance) or vice-a-versa.
- **Export Control (EC)**  
Export control allows Smart License enabled products that connect to the satellite to generate restricted tokens for category A and B customers and activate restricted functionality according to Export Control laws.
- **Device-Led Migration (DLC)**  
Today, classic to Smart license conversion takes place on LRP or CSSM portals based on information available in the SWIFT database. Device-Led Conversion (DLC) allows the device/product instance to initiate a conversion of classic licenses (such as RTU) to Smart licenses that are not on the SWIFT. Upon conversion, these Smart Licenses are deposited into CSSM. Products must be upgraded to a DLC-enabled version, connected to a DLC-enabled CSSM or satellite for this feature to work
- **Third-Party Software Support (TPL)**  
Support 3<sup>rd</sup> party software (such as Speech View in Unity Connection and Apple Push Notification (APNs) in Unified Communication Manager) to authorize Smart License enabled Cisco products to use their services.
- **Managed Service License Agreement (MSLA)**  
MSLA support allows for the aggregates usage-based measurements from product instances and relays them to Software Billing Platform (SBP) for rating and billing.

## Application Redundancy Support

### Overview

Application Redundancy (or Application High Availability) is a method to achieve high availability of applications such as Zone-Based Firewall (ZBFW), Network Address Translation (NAT), VPN (Virtual Private Network), Session Border Controller (SBC), etc. within the product instance. In the application redundancy model, the role of an application can be different from the role of the system (product instance), i.e. an application can be in Standby state on an Active system (product instance) or vice-a-versa.

Currently product High Availability assumes that redundancy and fail-over occurs at a Product Instance (mapped to a serial number or UUID) level, and that any given product instance will have a single, consistent state – either active, standby, or in some cases, a member of a High Availability (HA) cluster. In this model, the product assumes that there can only be a single active product instance within the HA cluster, and license consumption is reported only by the active product instance.

In an application redundancy enabled product, to prevent double counting of licenses on a fail- over, the application making an entitlement request must provide additional information beyond what is needed for non-redundant applications.

- An indicator that this is an application redundant configuration
- Role: Active or Standby
- Peer information

- An application unique identifier (UID) so Cisco SSM or satellite can match up multiple usages of the same license.

With this additional information, Cisco SSM and satellite will know a particular license in-use is being shared between two applications and it will know the Unique Device Identifier (UDI)s of the devices hosting those applications.

With this additional information Cisco SSM and satellite shows the following:

- In a normal configuration of Active and Active peers, license usage instances are shown as being consumed by both applications.
- In a normal configuration of Active and Standby peers, license usage instances are shared between an active/standby application.
  - On a fail-over, the Standby peer would use the license count from the previous active to avoid double counting.
  - Show which licenses in-use on a device that is being shared.


## Application Redundant Enabled Product Instance Workflow

1. Register product instances to satellite
2. Configure one application as Active and its peer as Standby (Active/Standby) or Active (Active/Active) on product instances with the appropriate commands and peer information (refer to the associated product documentation for the correct configuration)
  - a. Configure the Active peer to point to the Standby peer and vice versa. For example, DeviceA, [DeviceA, TagA, ApplicationA, ID1, Active], reports using 1 license and has peer of [DeviceB, TagB, ApplicationB, ID2, Standby]
  - b. Configure the Active/Active peers with similar information.
3. Request licenses on both Active and Standby (or Active/Active) peers. Since Cisco SSM and satellite has the information on Application Redundant peers, it would show in the Product instance, High Availability tab that Active peer is consuming license(s) and the Standby is not.
  - a. Active Peer information on satellite

**csr176**

Overview High Availability Event Log

demoActive

 There is only one application instance configured for this application.


Application Instance	Identifier	License	Status	Licenses Used When Active	Licenses Currently Used
csr176:demoActive	1	CSR 1KV ADVAN...	ACTIVE	1	1

- b. Standby Peer information on satellite

csr177

Overview High Availability Event Log

demoStandby

 There is only one application instance configured for this application.

Application Instance	Identified	License	Status	Licenses Used When Active	Licenses Currently Used
csr177:demoStandby	2	CSR 1KV ADVAN...	STANDBY	1	0

- In an Active/Standby configuration, if the Active application fails, the Standby peer needs to specifically reconfigure (via a set of product specific commands) and declare itself an Active application (without a peer) so that Cisco SSM or satellite would be able to show that the license is now consumed by the new Active (old Standby).

## Synchronization File Changes for Application Redundancy

Satellite needs to add the Application Redundancy information to the synchronization request when it synchronizes with Cisco SSM ensure that Cisco SSM has the same peer information. This way, the Cisco SSM's Product and License tabs would match the satellite. An example of the Application Redundancy is shown below:

```

1  :ha_attributes:
2      :application_name: Scott
3      :app_role: ACTIVE
4      :app_id: '1'
5      :peer:
6      - :name: Schrute
7        :role: STANDBY
8        :id: '2'
9        :product_instance_identifier: 250cafe6-a06d-48fd-8b5f-8a58806fbacd

```

## Reporting for Application Redundant Enabled Products

The Product Instances and Licenses tabs have additional subtabs to reflect peer information. You will see the updated Overview, High Availability, and Events under the Product Instances tab as shown above.



## Export Control Support

### Overview

Previous export control support on satellite includes the ability to use export restricted functionality for customers that are located inside the EULF/ENC set of countries, roughly US, Canada, EU, Japan, Australia and New Zealand (85% of Cisco customers), and non-public sector customers located outside of the EULF/ENC that require screening to ensure that they are, in fact, non-public sector (approx. 14% Cisco customers). A local Account representing the customer is classified as to whether or not they are subject to Export restrictions. If a customer is classified in the above categories, they can generate an export-control-allowed registration tokens such that after registration, the product registered to this customer via this token can turn on export-controlled functionality.

There is a small set of customers (less than 1%), roughly public sector (including government, military, and government owned enterprises) located outside of the EULF/ENC to which US export restrictions apply. These customers are not allowed to generate export-control-allowed tokens today. However, they can apply and receive special permissions for Export Licenses and turn on specific restricted functionality authorized by those Export Licenses.

### Updated Export Control Authorization Workflow

At a high level, the new Export Control support on satellite includes:

1. The Product generates a “Not-allowed” registration token from a local Virtual Account on satellite and registers to it. Note that this type of customers cannot generate an “Allowed” registration token (i.e., this option is not available on the Licensing workspace for them).
2. The Product requests a restricted license and quantity from satellite via a command or Graphical User Interface (GUI) action, which need to be authorized from Cisco Smart Software Manager (Cisco SSM).
3. When a request is received from a product for a restricted license, it notifies the product to poll it for status, once per hour.
4. Satellite updates its GUI under the “Products Instance Tab” to indicate the status of the request (License Authorization Pending).
5. When a synchronization is done on satellite, it sends the restricted license request it receives from the product to Cisco SSM
  - a. If the satellite is in manual mode, there is a dismissible alert in the Administration workspace to remind the user to perform a manual synchronization so that the Cisco SSM authorization can come down to satellite.
  - b. If the satellite is in network mode, the next synchronization request to Cisco SSM will contain the export control restricted license authorization response.
6. When satellite receives the response from Cisco Smart Software Manager, it processes the request, updates the alerts accordingly with the success or failure message and the associated reason(s).
  - a. If authorized, satellite updates its Product Instance tab indicating the correct reserved export license count.
  - b. If not authorized due to the license not available, a status is reflected on the satellite Product Instances tab. If there are other types of errors such as bad format, invalid export control tag, etc., these statuses are sent to the products only and not available on the satellite GUI.
7. If the export license is no longer needed, the feature can be disabled and the product will send a cancellation/return of the Export Control Authorization, returning the license to the local Virtual Account for use by other product instances. The cancellation request works similarly to the original authorization request in that the satellite would get the cancellation request from the product, informs the product to check in later for the cancellation authorization status, and sends it along for authorization from Cisco SSM.

## New Export Control Alerts

There are several new alerts in the “Product Instances” tab on the satellite GUI when an export control license is requested.

- License Request Pending = when a product requests an Export Control license and is waiting for an authorization from Cisco SSM.
- License Return Pending = when a product requests a cancellation of an Export Control license and is waiting for an authorization from Cisco SSM.
- Failed to Connect = when the product either fails to send an ID certificate renew (365 days) or when a de-registration is successful but the de-authorization fails, resulting in the export control license not being released.
- Failed to Renew = when a device consuming both restricted and non-restricted licenses (regular authorization) and non-restricted authorization renew is expired.
- Export License Not Available = when an Export Control license has been requested by the product, but none is available in the local Virtual Account.
- Export License Not Sufficient = when an Export Control license has been requested by the product, but only some is available (not sufficient in quantity) in the local Virtual Account.

## Product Instance and License Transfer Behaviors

Product Instance and License transfer behaviors are different when a license is export restricted. Note that this behavior is only for local Virtual Account on satellite. Recall the following product instance (PI) and license transfer.

### Product Instance Transfer

Satellite PI transfer between **local** virtual accounts works similarly as Cisco Smart Software Manager.

- Non-restricted licenses being consumed by PI.
  - PI is transferred and the in-use quantity is transferred to the destination local Virtual Account. If the destination has no available licenses, it will render the destination local VA Out-of-Compliance (OOC). You'll get a warning "License Shortage" message.
  - The available license(s) (Purchased Qty) in "From local VA" are not transferred with the PI transfer. You have to transfer the available licenses (Purchased Qty) from the "From local VA" yourself to the destination to resolve the OOC.
- Export-restricted licenses being consumed by PI.
  - The PI transfer opens to a new modal with has additional verbiage shown below:

### Transfer Product Instance

? ×

Name: UDI\_PID:pid\_pid\_008; UDI\_SN:sn\_pid\_008; UDI\_VID:vid\_pid\_008;  
(CSR1KV)

Transfer

i The following licenses that contain restricted encryption technology are currently assigned to this product instance.  
This license assignment will continue after the instance is transferred.

License	Description	Expires	Quantity
BAT_Export_test	BAT_Export_test	- never -	1


Transfer
Cancel

- The transfer operation reflects both the In-use and the available licenses (Purchased Qty) to the destination VA because the PI would not have been able to consume a controlled license in the 1st place if it didn't have available licenses. So, the destination VA will never go OOC.

*The fundamental difference between the transferring a PI verses a License for Export Control is the available (Purchased Qty) licenses go with the PI transfer to avoid an OOC condition which is not allowed for Export Control.*

### License Transfer

Recall that Cisco SSM is the source of truth for all license entitlements and satellite is the source of truth for product instance registrations and license consumption. This dictates that licenses cannot transfer outside of Cisco Smart Software Manager. However, on satellite, since all licenses in the local Virtual Accounts are not visible to Cisco SSM, the license transfer behavior between local VAs in satellite is similar to Cisco Smart Software Manager. During a synchronization of satellite to Cisco SSM, all product instances and licenses are aggregated across all satellite local Virtual Accounts and updated in Cisco SSM and vice versa. Cisco Smart Software Manager and satellite have following behaviors for license transfer:

- Non export-restricted license transfers
  - Only purchased quantity licenses is transferred (not in-use quantity) on Licenses Tab. If all licenses are in-use (e.g., Purchased = 5, In-use=5, Balance =0), and you transfer all the purchased quantity (maximum allowed), it will render the "From local VA" OOC.
  - You cannot transfer licenses if the VA is already OOC. The Transfer/Preview button is grayed out.
- Export-restricted license transfers
  - Case 1: If there are available restricted licenses and no in-use restricted licenses, Cisco SSM/satellite allows the license transfer for available quantity (balance) and does NOT add any export control verbiage.
  - Case 2: If there are available restricted licenses and some in-use restricted licenses, Cisco SSM/satellite allows the license transfer for available quantity (balance) WITH export control verbiage as shown:
    -  Because this license enables restricted encryption technology, instances of the license that are currently assigned to product instances cannot be transferred. Those licenses must be removed from the product instances before they will be available for transfer.
  - Case 3: If there are available restricted licenses and they are ALL in-use, Cisco SSM/satellite does NOT allow the license transfer because allowing that would render the "From VA" OOC and we do not allow OOC for Export Control. The Transfer/Preview is grayed out

# Smart Software Manager satellite APIs

## Overview

There are 21 APIs that have been available on Cisco SSM previously. More detailed information on these Cisco SSM APIs can be found at:

<https://anypoint.mulesoft.com/apiplatform/cisco-stage/#/workspaces/organizations/a4479091-a60c-4c9c-97ab-068d54235cea/apis/4824776/versions/95443/pages/293810>

Of these APIs, only 14 are available on satellite as we do not support local Account or SLR/PLR feature. Cisco SSM APIs are as follows:

### 1. Virtual Account

- a. Create a Virtual Account - allow users to create Virtual Accounts under the given local Account domain
- b. List Virtual Accounts - list all the Virtual accounts in the specified local Account domain for which the requesting user has access to.
- c. Delete a Virtual Account - allow users to delete a Virtual Account under the given local Account domain.

### 2. Tokens

- a. Create a new token - Generate a new token within a specified local Account/Virtual Account user for product registration. User needs to have necessary Admin or User access privileges either at the local Account level or at the specified Virtual Account level.
- b. List tokens - Get existing active tokens within a specified local Account/Virtual Account.
- c. Revoke tokens - Revoke the valid tokens available for the given local Account domain and the Virtual Account. The User can pass an array of the Tokens that they want to revoke.

### 3. Licenses

- a. Smart License Usage - Give the licenses usage in the specified local Account Domain and the optional Virtual Accounts.
- b. License Subscriptions Usage - Return the License Subscriptions on the specified local Account Domain and the optional Virtual Accounts.
- c. Transfer Licenses - Transfer the available licenses from one virtual account to another virtual account with in the same local Account Domain.
- d. Reserve Licenses - Allow you to reserve Universal and Specific licenses. The API accepts an array of both Universal and Specific reservation requests in combination. Once the reservations are done, the response will be the Authorization codes for each of the submitted request. If any reservation didn't go through, appropriate error message will be given. **Not applicable on satellite.**
- e. Update SLR Reservation - Update the license quantity for the reservation already done for a given Virtual Account and License. This API accepts device details along with the license details to be updated. With this API, you can only update the quantity for the reservations

done on a license in the given Virtual Account. The response is an authorization code for the license request. **Not applicable on satellite**

#### 4. **Devices/Product Instances**

- a. Product Instance Usage - List the device usage on the specified local Account Domain and the optional Virtual Accounts specified. Based on access you have on the local Account, the available devices will be fetched and returned.
- b. Product Instance Search - List the available devices and their specific details (udiPid, serial number, product tag ID, etc.) on the specified local Account Domain and Virtual account so that these details can be passed in the Product Instance Removal API.
- c. Product Instance Transfer - This API is used to transfer the available product instances from one virtual account to another virtual account within the same local Account Domain.
- d. Product Instance Removal - Users can invoke this method to remove devices that are registered in their local Account. This will enable the users to automate device removal as part of their network operations. The User needs to have the necessary admin access privilege within the local Account/virtual account to perform this request.

#### 5. **Alerts**

Allow users to view the Alerts that are available for the Smart Entitlements. There are 13 alerts as follows.

1. Update License Agreement (not applicable on satellite)
2. Insufficient Licenses
3. Licenses Expired
4. Licenses Expiring
5. Licenses Not Converted
6. Licenses Converted
7. Product Instance Failed to Renew
8. Product Instance Failed to Connect
9. Satellite Unregistered and Removed
10. Synchronization Overdue
11. Authorization Pending
12. Authorization File Ready
13. Synchronization Failed

Once authentication has been setup, the application can call the API endpoints above.



## Local Virtual Account

### Create a local Virtual Account

#### Input Required:

- Satellite Account Name

#### Example Method Call:

- HTTP Method: POST
- Request <ip-address of satellite>:/api/v1/accounts/{account name}/virtual-accounts

#### Request Body:

```
{ "name": "Test VA", "description": "Test VA Creation" }
```

#### Response:

The created local Virtual Account

##### **Response Code: 200 OK**

```
{
  "status": "SUCCESS",
  "statusMessage": "Virtual Account 'Test VA' created successfully"
}
```

##### **Response Code: 422**

```
{
  "status": "ERROR",
  "statusMessage": "The specified name 'Test VA' for the virtual account is already in use."
}
```

##### **Response Code: 403**

```
{
  "status": "ERROR",
  "statusMessage": "Not Authorized to access Virtual Accounts in local Account"
}
```

## List local Virtual Accounts

#### Input Required:

- Satellite Account Name

#### Response:

- The local Virtual Accounts list for which the user is having access to.

#### Example Method Call:

- HTTP Method: GET
- Request <ip address of satellite>:/api/v1/accounts/{account name}/virtual-accounts

**Response Code: 200 OK**

```
{
  "status": "SUCCESS",
  "statusMessage": "",
  "virtualAccounts": [
    {
      "name": "Default",
      "description": "Default virtual Account",
      "isDefault": "Yes"
    },
    {
      "name": "Test Virtual Account",
      "description": "Test VA",
      "isDefault": "No"
    }
  ]
}
```

```
{
  "status": "ERROR",
  "statusMessage": "Not Authorized to create Virtual Accounts within local Account '{SA Domain Name}'"
```

## Delete A local Virtual Account

**Input Required:**

- satellite Account Name: satellite Account for which the user wants to search the devices.
- Local Virtual Account Name: The local Virtual Account Name from which you would like to remove.

**Response:**

- The status of the delete virtual account request.

**Example Method Call:**

- HTTP Method: POST
- Request <ip-address of satellite>:*api/v1/accounts/{account name}/virtual-accounts/{virtual account name}/delete*

**Response Code: 200 OK**

```
{
  "status": "SUCCESS",
  "statusMessage": "Virtual Account '{virtual account name}' deleted successfully"
}
```





## Tokens

### Create A Token

#### Input Required:

- Satellite Account Name
- Local Virtual Account Name
- Description
- Expiration Days

#### Response:

- The Token list for which the user has access to.

#### Example Method Call:

- HTTP Method: POST
- Request <ip-address of satellite>: */api/v1/accounts/{account name}/virtual-accounts/{virtual account name}/tokens*

#### Request Body:

```
{ "expiresAfterDays": 100, "description": "Test VA Creation" }
```

**Response Code: 200 OK**

```
{
  "status": "SUCCESS",
  "statusMessage": "A valid, active token was generated.",
  "tokenInfo": {
    "token": "OGVjMDk4YjktNGUwNS00OTc0LTk0YjQtNWZkZTI5ZTU2ZjFjLTE0Nzc1Mjc2%0ANTA2NTZ8M0wvcmdBWMJnbVR1akdaa0xjTU9ldDRFbXVFQjh3L3k1aHAzdTBD%0ANzIYbz0%3D%0A",
    "expirationDate": "2016-10-26T20:20:50",
    "description": "this is Ben September 23",
    "createdBy": "bvoogd"
  }
}
```

### List All Tokens

This API will list all existing active tokens within a specified Account/local Virtual Account. The tokens successfully read can be used for other Product Registration needs. User needs to have necessary access privileges either at the Account level or at the specified local Virtual Account level.

#### Input Required:

- Account: satelliteAccount from which the user wants to fetch the tokens.
- Virtual Account Name: The local Virtual Account of the Account from which tokens are to be fetched.

#### Response:

- List of all the active Tokens within the specified local Virtual Account. For every active token, tokenString, tokenExpirationDate, tokenDescription, createdBy

### Example Method Call:

- HTTP Method: GET
- Request <ip-address of satellite>: */api/v1/accounts/{account name}/virtual-accounts/{virtual account name}/tokens*

### Response Code: 200 OK

```
{
  "status": "SUCCESS",
  "statusMessage": "Successfully read active tokens.",
  "tokens": [
    {
      "token": "OWI2YmE2ZDgtYTBhZi00MGQyLWE1NDYtZThkMWZjMDUzYzM1LTE0NzcyNjA1%0AMj12NTh8cUhjaEtiaGlXalRLeFNseHFqQXpMUnpiZXVvZ0VybkNacU91L1Vq%0AbDc0ST0%3D%0A",
      "expirationDate": "2016-10-23T22:08:42",
      "description": "this is Ben September 23",
      "exportControl": "Not Allowed",
      "createdBy": "bvoogd"
    },
    {
      "token": "YWQwZjE2MmUtMWI4NS00YmM4LWlyZTAtYjA1OGJjMGI1MTkzLTE0NzcyNDMy%0AMTgyMTF8K0djaEJOZWg2S3NIMHhURUI2aWFKOEgxQ0w0Wm41MXZlZHRsbVp3%0AOUFZO0%3D%0A",
      "expirationDate": "2016-10-23T17:20:18",
      "description": "this is Ben September 23",
      "exportControl": "Not Allowed",
      "createdBy": "bvoogd"
    },
    {
      "token": "OTI2M2I5YmYtYjRjMy00ZjcyLWE1OTEtOTUwZDY5ZWY3NWRlLTE0NzcyNDMw%0ANDAA0NTZ8U1pRVEJKNFh5a1VTWFprb2FMclh0bjBEVDNrVnNoUzVOdjdmZTJJ%0AZklZYz0%3D%0A",
      "expirationDate": "2016-10-23T17:17:20",
      "description": "test ben",
      "exportControl": "Allowed",
      "createdBy": "bvoogd"
    }
  ]
}
```

### Response Code: 403

```
{
  "status": "ERROR",
```



```
"statusMessage": "Not Authorized to view the Tokens"
}
```

## Revoke A Token

Users can invoke this method to revoke the valid tokens available for the given satellite Account and the local Virtual Account. The user can pass an array of the tokens they want to revoke.

### Input Required:

- Account: The satellite Account from which user wants to revoke the token.
- virtualAccountName: The local Virtual account of the satellite Account which the user wants to revoke the token.

### Response:

- The revoke token status for each of the requested tokens.

### Call-outs:

- The maximum tokens user can revoke per request are 10.

### Example Method Call:

- **HTTP Method:** POST
- **Request URL:** <ip address of satellite>:*api/v1/accounts/{smartAccountDomain}/virtual-accounts/{virtualAccountName}/tokens/revoke*

### Request Body:

```
{
  "tokens": [
    "OGVjMDk4YjktNGUwNS00OTc0LTk0YjQtNWZkZTI5ZTU2ZjFjLTE0Nzc1Mjc2%0ANTA2NTZ8M0wvcmdBW
    mJnbVR1akdaa0xjTU9ldDRFbXVFQjh3L3k1aHAzdTBD%0ANzIYbz0%3D%0A",
    "ZGQ1ZmQ2ZWQtNjE4YS00NjA5LTlhODMtN2JmNzgyMTU2OTc5LTE0OTU3OTQ4%0ANzE5MTJ8UitTTXIZU
    GRwb3d5QXB5WExoM01RU1grU1hzYWNjTEo3MzhjOHRt%0AK3dPaz0%3D%0A"
  ]
}
```

### **Response Code: 200 OK**

```
{
  "status": "SUCCESS",
  "statusMessage": "{count} tokens revoked successfully"
  "tokenRevokeStatus": [
    {
      "status": "SUCCESS",
      "statusMessage": "Token-
      'ZTBkYjZkZGQ1ZmQ2ZWQtNjE4YS00NjA5LTlhODMtN2JmNzgyMTU2OTc5LTE0OTU3OTQ4%0ANzE5MTJ8UitTTXIZU
      WF1QVQzK3VuNVNSN3hNTDNUUG5XMkjITS9jMGxMVzNq%0AZVV2TT0%3D%0A' revoked successfully",
      {
        "status": "SUCCESS",
```



```
    "statusMessage": "Token-  
'ZTBkYjkzOGMtOWY3Yi00ZThjLThkOTAtYTljZmlwZTA5ZWVjLTE1MDU0MTcw%0AMzE2NzJ8Y1dZMkRGU  
WF1QVQzK3VuNVNSN3hNTDNUUG5XMkjiTS9jMGxMVzNq%0AZVV2TT0%3D%0A' revoked successfully"}  
  ]  
}
```

#### Response Code: 200 OK

```
{  
  "status": "WARNING",  
  "statusMessage": "2 tokens succesfully revoked.",  
  "tokensRevokeStatus": [  
    {  
      "status": "ERROR",  
      "statusMessage": "The token  
MmFkMzgyNmMtMDQ2Zi00NjU2LThiZmMtMTk4YWZkNDVhNGU5LTE1MDU0MTcw%0AMjI0ODF8WjduNW  
5ObVd0L1BGZmFvOWZYenJiaGJyRVE4T0R5NFJheW90V2hq%0AQkRSND0%3D%0A has already been  
revoked."  
    },  
    {  
      "status": "SUCCESS",  
      "statusMessage": "Token-  
'ZTBkYjkzOGMtOWY3Yi00ZThjLThkOTAtYTljZmlwZTA5ZWVjLTE1MDU0MTcw%0AMzE2NzJ8Y1dZMkRGU  
WF1QVQzK3VuNVNSN3hNTDNUUG5XMkjiTS9jMGxMVzNq%0AZVV2TT0%3D%0A' revoked successfully"  
    }  
  ]  
}
```

#### Response Code: 403

```
{  
  "status": "ERROR",  
  "statusMessage": "Not Authorized to revoke tokens for Virtual Account '{virtualAccountName}' ."  
}
```



## Licenses

### License Usage

#### Request Parameters:

- **Satellite Account:** satellite Account being searched.

#### Response:

- The license usage for the requested domain and optional request parameters.

#### Example Method Call:

- **HTTP Method:** POST
- **Request <ip address of satellite>:** `/api/v1/accounts/{Account}/licenses`

#### Request Payload

- **virtualAccounts:** An optional list of local virtual accounts for which users intend to fetch the available licenses. If not specified, all the licenses from the domain for which the user has access to will be returned.
- **limit:** Number of records to return; Represents the page size for pagination. If all the data is required without pagination the limit can be set to -1. Default limit will be 50.
- **offset:** The start offset to fetch data from for pagination. To retrieve data for the first page with a limit of 50, the offset will be 0, for the second page the offset will be 50 and for the third page the offset will be 100 and so on.

```
{
  "virtualAccounts": ["Physics", "Zoology"],
  "limit": 50,
  "offset": 0
}
```

#### **Response Code: 200 OK**

```
{
  "status": "SUCCESS",
  "statusMessage": "",
  "totalRecords": 7,
  "licenses": [
    {
      "license": "UC Manager Essential License (12.x)",
      "virtualAccount": "Physics",
      "quantity": 4,
      "inUse": 6,
      "available": 0,
      "status": "In Compliance",
      "ahaApps": false,
      "pendingQuantity": 0,
      "reserved": 0,

```

```

    "isPortable": false,

    "licenseDetails": [
      {
        "licenseType": "Term",
        "quantity": 4,
        "startDate": "2017-05-18",
        "endDate": "2018-05-17",
        "subscriptionId": "Sub905308"
      }
    ],
    "licenseSubstitutions": [
      {
        "license": " UC Manager Essential License (12.x)",
        "substitutedLicense": "UC Manager Enhanced License (12.x)",
        "substitutedQuantity": 2,
        "substitutionType": "Substitution From Higher Tier"
      }
    ]
  },
  {
    "license": "UC Manager Basic License (12.x)",
    "virtualAccount": "Physics",
    "quantity": 14,
    "inUse": 16,
    "available": 0,
    "status": "In Compliance",

    "ahaApps": false,
    "pendingQuantity": 0,
    "reserved": 0,
    "isPortable": false,
    "licenseDetails": [
      {
        "licenseType": "Term",
        "quantity": 10,
        "startDate": "2017-05-18",
        "endDate": "2017-11-14",
        "subscriptionId": ""
      },
      {
        "licenseType": "Perpetual",
        "quantity": 4,
        "startDate": "",
        "endDate": "",
        "subscriptionId": ""
      }
    ]
  },

```

```

"licenseSubstitutions": [
  {
    "license": " UC Manager Basic License (12.x)",
    "substitutedLicense": "UC Manager Enhanced License (12.x)",
    "substitutedQuantity": 2,
    "substitutionType": "Substitution From Higher Tier"
  }
],
{
  "license": "UC Manager Enhanced License (12.x)",
  "virtualAccount": "Physics",
  "quantity": 10,
  "inUse": 0,
  "available": 6,
  "status": "In Compliance",
  "ahaApps": false,
  "pendingQuantity": 0,
  "reserved": 0,
  "isPortable": false,

  "licenseDetails": [
    {
      "licenseType": "Term",
      "quantity": 10,
      "startDate": "2017-05-18",
      "endDate": "2017-11-14",
      "subscriptionId": ""
    }
  ],
  "licenseSubstitutions": [
    {
      "license": " UC Manager Basic License (12.x)",
      "substitutedLicense": "UC Manager Enhanced License (12.x)",
      "substitutedQuantity": 2,
      "substitutionType": "Substitution To Lower Tier"
    },
    {
      "license": " UC Manager Essential License (12.x)",
      "substitutedLicense": "UC Manager Enhanced License (12.x)",
      "substitutedQuantity": 2,
      "substitutionType": "Substitution To Lower Tier"
    }
  ]
},
{
  "license": "UC Manager Enhanced Plus License (12.x)",
  "virtualAccount": "Physics",

```

```

"quantity": 10,
"inUse": 21,
"available": -1,
"status": "Out Of Compliance",
"licenseDetails": [
  {
    "licenseType": "Term",
    "quantity": 10,
    "startDate": "2017-05-18",
    "endDate": "2017-11-14",
    "subscriptionId": ""
  }
],
"licenseSubstitutions": [
  {
    "license": "UC Manager Enhanced Plus License (12.x)",
    "substitutedLicense": "UC Manager CUWL License (12.x)",
    "substitutedQuantity": 10,
    "substitutionType": "Substitution From Higher Tier"
  }
]
},
{
  "license": "UC Manager CUWL License (12.x)",
  "virtualAccount": "Physics",
  "quantity": 10,
  "inUse": 0,
  "available": 0,
  "status": "In Compliance",
  "ahaApps": false,
  "pendingQuantity": 0,
  "reserved": 0,
  "isPortable": false,

  "licenseDetails": [
    {
      "licenseType": "Perpetual",
      "quantity": 10,
      "startDate": "",
      "endDate": "",
      "subscriptionId": ""
    }
  ],
  "licenseSubstitutions": [
    {
      "license": "UC Manager Enhanced Plus License (12.x)",
      "substitutedLicense": "UC Manager CUWL License (12.x)",
      "substitutedQuantity": 10,

```



```

        "substitutionType": "Substitution To Lower Tier"
    }
]
},
{
    "license": "CSR 1KV AX 100M",
    "virtualAccount": "Zoology",
    "quantity": 11,
    "inUse": 0,
    "available": 11,
    "status": "In Compliance",
    "ahaApps": false,
    "pendingQuantity": 0,
    "reserved": 0,
    "isPortable": false,

    "licenseDetails": [
        {
            "licenseType": "Term",
            "quantity": 1,
            "startDate": "2017-05-24",
            "endDate": "2020-05-23",
            "subscriptionId": ""
        },
        {
            "licenseType": "Demo",
            "quantity": 10,
            "startDate": "2017-05-22",
            "endDate": "2017-07-21",
            "subscriptionId": ""
        }
    ],
    "licenseSubstitutions": []
},
{
    "license": "CSR 1KV SECURITY 1G",
    "virtualAccount": "Zoology",
    "quantity": 5,
    "inUse": 7,
    "available": -2,
    "status": "Out Of Compliance",
    "ahaApps": false,
    "pendingQuantity": 0,
    "reserved": 0,
    "isPortable": false,

    "licenseDetails": [
        {

```

```

        "licenseType": "Perpetual",
        "quantity": 5,
        "startDate": "",
        "endDate": "",
        "subscriptionId": ""
    }
],
    "licenseSubstitutions": []
}
]
}

```

#### Response Code: 200 OK

```

{
    "status": "SUCCESS",
    "statusMessage": "The requested virtual account '<VA name1, va name 2>' doesn't belong to the account '<Account Name>'. Hence returning the response for eligible virtual accounts.",
    "totalRecords": 1,
    "licenses": [
        {
            "license": "150 Mbps vNAM Software Release 6.2",
            "virtualAccount": "July10_VA2",
            "quantity": 18,
            "inUse": 9,
            "available": 18,
            "status": "In Compliance",
            "licenseDetails": [
                {
                    "licenseType": "PERPETUAL",
                    "quantity": 18,
                    "startDate": null,
                    "endDate": null,
                    "subscriptionId": null
                }
            ],
            "licenseSubstitutions": [
                {
                    "license": "150 Mbps vNAM Software Release 6.2",
                    "substitutedLicense": "A9K 2x100G MPA Consumption Model LC license",
                    "substitutedQuantity": 9,
                    "substitutionType": "Substitution From Lower Tier"
                }
            ]
        }
    ]
}

```

**Response Code: 403**

```
{
  "status": "ERROR",
  "statusMessage": "Not Authorized to access licenses for specified virtual accounts"
}
```

**Response Code: 422**

```
{
  "status": "ERROR",
  "statusMessage": "Invalid limit or offset value"
}
```

## License Subscription Usage

**Request Parameters:**

- **Account:** satellite Account being searched.

**Response:**

- The available License Subscriptions usage for the request submitted.

**Example Method Call:**

**HTTP Method:** POST

**Request URL:** <ip-address of satellite>:api/v1/accounts/{smartAccountDomain}/license-subscriptions

**Request Payload**

- **virtualAccounts:** An optional list of virtual accounts for which users intend to fetch the available licenses. If not specified, all the licenses from the domain for which the user has access to will be returned.
- **status:** The status of the subscriptions to be fetched. Valid values are 'Active','Canceled','Expired'
- **limit:** Number of records to return; represents the page size for pagination. If all the data is required without pagination the limit can be set to -1. Default limit will be 50.
- **offset:** The start offset to fetch data from for pagination. To retrieve data for the first page with a limit of 50, the offset will be 0, for the second page the offset will be 50 and for the third page the offset will be 100 and so on.

```
{
  "virtualAccounts": ["Physics", "Zoology"],
  "status": ["Active", "Expired", "Canceled"],
  "limit": 50,
  "offset": 0
}
```

**Response Code: 200 OK**

```
{
```

```

"status": "SUCCESS",
"statusMessage": "",
"totalRecords": 3,
"licenseSubscriptions": [
  {
    "virtualAccount": "Physics",
    "license": "CSR 1KV UCSD VIRTUAL CONTAINER",
    "quantity": "500",
    "startDate": "2016-12-04",
    "endDate": "2019-12-03",
    "status": "Active",
    "subscriptionId": "Sub905825"
  },
  {
    "virtualAccount": "Physics",
    "license": "ASR 9000 4-port 100GE Advanced IP Lic for SE LC",
    "quantity": "50",
    "startDate": null,
    "endDate": null,
    "status": "Canceled",
    "subscriptionId": "Sub905308"
  },
  {
    "virtualAccount": "Zoology",
    "license": "CSR 1KV UCSD VIRTUAL CONTAINER",
    "quantity": "10",
    "startDate": "2016-11-29",
    "endDate": "2019-11-28",
    "status": "Active",
    "subscriptionId": "Sub905309"
  }
]
}

```

#### Response Code: 403

```

{
  "status": "ERROR",
  "statusMessage": "Not Authorized to access license subscriptions for specified virtual accounts"
}

```

#### Response Code: 403

```

{
  "status": "ERROR",
  "statusMessage": "Not Authorized to access license subscriptions for local Account {SA Domain}"
}

```

### Response Code: 422

```
{
  "status": "ERROR",
  "statusMessage": "Invalid limit or offset value"
}
```

## License Transfer

### Request Parameters:

- **Account:** account from which the user intends to do the license transfer
- **VirtualAccountName:** The name of the local Virtual Account from which the user intends to perform the License transfer.

**Response:** A list of transfer responses for each of the list of transfer requests submitted.

### Call-outs:

- There is a threshold of 10 licenses transfer which user can do in a single request.

### Example Method Call:

- **HTTP Method:** POST
- **Request URL:** <ip address of satellite>:api/v1/accounts/{smartAccountDomain}/virtual-accounts/{virtualAccountName}/licenses/transfer

### Request Payload

- **TargetVirtualAccount:** The target local Virtual Account to which you wish to transfer the License to.
- **Quantity:** The quantity to transfer. This quantity should always be less than the available quantity for the specified license in the local Virtual Account the licenses are being transferred from.
- **Precedence:** Optional attribute specifying the precedence order in which transfers will take place in the case of term-based licenses. Valid values are LONGEST\_TERM\_FIRST and LONGEST\_TERM\_LAST. By default, if this attribute is not specified it will default to LONGEST\_TERM\_FIRST. As an example, assume there are 2 term-based licenses for CSR 1KV SECURITY 10M in local Virtual Account Chemistry and the first term-based license has a term of 90 days and the second has a term of 60 days. If the precedence is LONGEST\_TERM\_FIRST then the 90 days license will be processed first for the transfer followed by the 60 days license.
- **LicenseType:** The type of license the user wishes to transfer. Valid values are 'TERM' and 'PERPETUAL'. Please note that all the non 'PERPETUAL' licenses like 'DEMO', 'SUBSCRIPTION' will be treated as 'TERM'.
- **License:** The name of the license which the user wishes to transfer.

```
{
  "licenses": [
    {
      "license": "CSR 10KV SECURITY 10M",

```

```
"licenseType": "PERPETUAL",
"quantity": 50,
"targetVirtualAccount": "Physics"
},{
"license": "CSR 1KV SECURITY 10M",
"licenseType": "TERM",
"precedence": "LONGEST_TERM_FIRST",
"quantity": 50,
"targetVirtualAccount": "VA2"
},{
"license": "CSR 1KV SECURITY 10M",
"licenseType": "PERPETUAL",
"quantity": 10,
"targetVirtualAccount": "Physics"
}]
}
```

**Response Code: 200 OK**

```
{
  "status": "WARNING",
  "statusMessage": "{license count} licenses transferred successfully. ",
  "licensesTransferStatus": [
    {
      "status": "SUCCESS",
      "statusMessage": "50 'CSR 1KV SECURITY 10M' licenses successfully transferred from Virtual Account 'VA1' to Virtual Account 'Physics'."
    },
    {
      "status": "ERROR",
      "statusMessage": "Failed to find 'CSR 1KV SECURITY 10M' license in Virtual Account 'VA1'."
    },
    {
      "status": "ERROR",
      "statusMessage": "You do not have access to 'VA9'."
    }
  ]
}
```

**Response Code: 200 OK**

```
{
  "status": "SUCCESS",
  "statusMessage": "{license count} licenses transferred successfully.",
  "licensesTransferStatus": [
    {
      "status": "SUCCESS",
      "statusMessage": "50 'CSR 1KV SECURITY 10M' licenses successfully transferred from Virtual Account 'VA1' to Virtual Account 'Physics'."
    }
  ]
}
```

```

},
{
  "status": "SUCCESS",
  "statusMessage": "50 'CSR 10 KV SECURITY 10M' licenses successfully transferred from Virtual Account 'VA1' to Virtual Account 'va2'."
}
]
}

```

#### Response Code: 422

```

{
  "status": "ERROR",
  "statusMessage": "All licenses failed to transfer.",
  "licensesTransferStatus": [
    {
      "status": "ERROR",
      "statusMessage": "Failed to find Virtual Account '{vaName}'."
    }
  ]
}

```

#### Response Code: 422

```

{
  "status": "ERROR",
  "statusMessage": "All licenses failed to transfer."
  "licensesTransferStatus": [
    {
      "status": "ERROR",
      "statusMessage": "Invalid \"licenseType\" or \"precedence\" value."
    }
  ]
}

```

#### Response Code: 422

```

{
  "status": "ERROR",
  "statusMessage": "All licenses failed to transfer."
  "licensesTransferStatus": [
    {
      "status": "ERROR",
      "statusMessage": "Quantity to transfer is greater than the available quantity for license 'CSR 1KV SECURITY 10M' license in Virtual Account '{vaName}'."
    }
  ]
}

```

#### Response Code: 403

```

{
  "status": "ERROR",
  "statusMessage": "All licenses failed to transfer."
}

```

```

"licensesTransferStatus":[
{
  "status": "ERROR",
  "statusMessage": "Not Authorized to access Virtual Accounts '{vaName}' or 'Physics'."
}}
}

```

**Response Code: 403**

```

{
  "status": "ERROR",
  "statusMessage": "Not Authorized to access Virtual Account '{Source VA Name}'."
}

```

## Devices/Product Instances

### Product Instance Usage

List the available information on the Product Instances on the specified Account and local Virtual Account so that this information can be included easily in the PI Remove API.

#### **Input Required:**

- Account Name: Account for which the user wants to search the devices.

#### **Request Payload:**

- Satellite Accounts: An optional list of local Virtual Accounts for which users intend to fetch the available licenses. If not specified, all the licenses from the domain for which the user has access to will be returned.
- limit: Number of records to return; Represents the page size for pagination. If all the data is required without pagination the limit can be set to -1. Default limit will be 50.
- offset: The start offset to fetch data from for pagination. To retrieve data for the first page with a limit of 50, the offset will be 0, for the second page the offset will be 50 and for the third page the offset will be 100 and so on.

```

{
  "virtualAccounts": ["Physics", "Zoology"],
  "limit": 50,
  "offset": 0
}

```

#### **Response:**

- The available Product Instances for the request submitted.

#### **Example Method Call:**

- HTTP Method: POST
- Request URL: <ip-address of satellite>:api/v1/accounts/{account name}/devices

**Response Code: 200 OK**



```
{
  "status": "SUCCESS",
  "statusMessage": "",
  "totalRecords": 2,
  devices: [{
    "virtualAccount": "Physics",
    "hostName": "ucbu-aricent-vm107",
    "sudi": {
      "suvi": "",
      "uuid": "062f582e30844ed2b8d005c14c425b06",
      "hostIdentifier": "",
      "udiPid": "Cisco Unity Connection",
      "udiSerialNumber": "062f582e30844ed2b8d005c14c4",
      "udiVid": "",
      "macAddress": ""
    },
    "productName": "Cisco Unity Connection (12.0)",
    "productDescription": "Cisco Unity Connection",
    "productTagName": "regid.2014-04.com.cisco.ASR_9000,1.0_577f0b47-7ba4-4cae-a86e-77b64604d808",
    "productType": "UNICONN",
    "status": "In Compliance",
    "registrationDate": "2017-05-23T12:34:35Z",
    "lastContactDate": "2017-05-23T12:54:22Z",
    "licenseUsage": [{
      "license": "Unity Connection Enhanced Messaging User Licenses (12.x)",
      "quantity": 7
    }, {
      "license": "Unity Connection Basic Messaging User Licenses (12.x)",
      "quantity": 2
    }
  ]
}, {
  "virtualAccount": "Zoology",
  "hostName": "infy-lm05-lnx",
  "sudi": {
    "suvi": "",
    "uuid": "ba8892ae89bf45688ce00302d1db8a35",
    "hostIdentifier": "",
    "udiPid": "UCM",
    "udiSerialNumber": "b8a35",
    "udiVid": "",
    "macAddress": ""
  },
  "productName": "Unified Communication Manager (12.0)",
  "productDescription": "Unified Communication Manager",

```

```

    "productTagName": "regid.2014-04.com.cisco.ASR_9000,1.0_577f0b47-7ba4-4cae-a86e-77b64604d808",
    "productType": "UCL",
    "status": "Out Of Compliance",
    "registrationDate": "2017-05-18T12:34:35Z",
    "lastContactDate": "2017-06-02T12:54:22Z",
    "licenseUsage": [{
      "license": "UC Manager Basic License (12.x)",
      "quantity": 4
    }, {
      "license": "UC Manager Enhanced License (12.x)",
      "quantity": 10
    }
  ]
}
]
}
]
}

```

## Product Instance Transfer

### Request Parameters:

- **satelliteAccount:** satellite Account from which the user wants to transfer the Product Instances.
- **VirtualAccountName:** The name of the local Virtual Account from which the user intends to perform the device transfer.

### Response:

- A list of transfer responses for each of the list of transfer requests submitted.

### Call-outs:

- There is a threshold of 10 devices transfer which user can do in a single request.

### Example Method Call:

- **HTTP Method:** POST
- **Request URL:** <ip address of satellite>:api/v1/accounts/{smartAccountDomain}/virtual-accounts/{virtualAccountName}/devices/transfer

### Request Payload

```

{
  "productInstances": [{
    "sudi": {
      "suvi": null,
      "uuid": null,
      "hostIdentifier": null,
      "udiPid": "N77-C7710",
      "udiSerialNumber": "JPG3032006T",
      "udiVid": null,
      "macAddress": null
    },
  ],
}

```



```
"productTagName": "regid.2015-09.com.cisco.Nexus_7000,1.0_6e2b6ed8-fe9b-48e0-a71f-74eaf1bcc991",
"targetVirtualAccount": "Physics"
},
{
  "sudi": {
    "suvi": null,
    "uuid": null,
    "hostIdentifier": null,
    "udiPid": "N77-C7711",
    "udiSerialNumber": "JPG3032004T",
    "udiVid": null,
    "macAddress": null
  },
  "productTagName": "regid.2015-39.com.cisco.Nexus_7000,1.0_6e2b6ed8-fe9b-48e0-a71f-74eaf1bcc991",
  "targetVirtualAccount": "Maths"
}]
}
```

#### Response Code: 200 OK

```
{
  "status": "WARNING",
  "statusMessage": "{device count} product instances transferred successfully."
  "productsTransferStatus": [
    {
      "status": "SUCCESS",
      "statusMessage": "Device 'N77-C7711' successfully transferred from Virtual Account '{vaName}' to Virtual Account 'Physics'."
    },
    {
      "status": "ERROR",
      "statusMessage": "Failed to find device 'N897-C0987' in Virtual Account '{vaName}'."
    }
  ]
}
```

#### Response Code: 200 OK

```
{
  "status": "SUCCESS",
  "statusMessage": "{device count} product instances transferred successfully."
  "productsTransferStatus": [
    {
      "status": "SUCCESS",
      "statusMessage": "Device 'N77-C7711' successfully transferred from Virtual Account '{source VA Name}' to Virtual Account '{target VA Name}'."
    },
  ],
}
```



```
{
  "status": "SUCCESS",
  "statusMessage": "Device 'N77-c5644' successfully transferred from Virtual Account '{source VA Name}' to Virtual Account '{target VA Name}'."
}
```

#### Response Code: 422

```
{
  "status": "ERROR",
  "statusMessage": "all the product instances failed to transfer"
  "productsTransferStatus": [
    {
      "status": "ERROR",
      "statusMessage": "Failed to find device with specified information in Virtual Account \"{target VA Name}\"."
    }
  ]
}
```

#### Response Code: 422

```
{
  "status": "ERROR",
  "statusMessage": "all the devices failed to transfer"
  "productsTransferStatus": [
    {
      "status": "ERROR",
      "statusMessage": "Failed to find Virtual Account '{target VA Name}'."
    }
  ]
}
```

#### Response Code: 422

```
{
  "status": "ERROR",
  "statusMessage": "Failed to find Virtual Account 'Physics'."
}
```

#### Response Code: 403

```
{
  "status": "ERROR",
  "statusMessage": "Not Authorized to access Virtual Account '{Source VA Name}'."
}
```

## Product Instance Search

List the available information on the Product Instances on the specified Account and local Virtual account so that this information can be included easily in the Product Instance Removal API.

**Input Required:**

- Satellite Account Name: Account for which the user wants to search the devices.
- Local Virtual Account Name: The Virtual Account Name from which you would like to fetch the instance names.
- Instance Name: The instance name from the order- Hostname, UDI Serial Number, Host Identifier, Mac Address, IP Address, SUVI, UUID, whichever is available first.

**Input Optional:**

- Limit: Number of records to return; Represents the page size for pagination. If all the data is required without pagination the limit can be set to -1. Default limit will be 50.
- Offset: The start offset to fetch data from for pagination. To retrieve data for the first page with a limit of 50, the offset will be 0, for the second page the offset will be 50 and for the third page the offset will be 100 and so on.

**Response:**

- The available Product Instances for the request submitted.

**Example Method Call:**

- HTTP Method: GET
- Request URL: */api/v1/accounts/:logical\_account\_name/virtual-accounts/:license\_pool\_name/devices*

**Response Code: 200 OK**

```
{
  "status": "SUCCESS",
  "statusMessage": "",
  "totalRecords": 2,
  "devices": [{
    "virtualAccount": "Physics",
    "hostName": "ucbu-aricent-vm107",
    "sudi": {
      "suvi": "",
      "uuid": "062f582e30844ed2b8d005c14c425b06",
      "hostIdentifier": "",
      "udiPid": "Cisco Unity Connection",
      "udiSerialNumber": "062f582e30844ed2b8d005c14c4",
      "udiVid": "",
      "macAddress": ""
    },
    "productName": "Cisco Unity Connection (12.0)",
    "productDescription": "Cisco Unity Connection",
    "productTagName": "regid.2014-04.com.cisco.ASR_9000,1.0_577f0b47-7ba4-4cae-a86e-77b64604d808",
    "productType": "UNICONN",
    "status": "In Compliance",
    "registrationDate": "2017-05-23T12:34:35Z",
    "lastContactDate": "2017-05-23T12:54:22Z",
    "licenseUsage": [{
      "license": "Unity Connection Enhanced Messaging User Licenses (12.x)",
```

```

        "quantity": 7
      }, {
        "license": "Unity Connection Basic Messaging User Licenses (12.x)",
        "quantity": 2
      }
    ]
  }, {
    "virtualAccount": "Zoology",
    "hostName": "infy-lm05-lnx",
    "sudi": {
      "suvi": "",
      "uuid": "ba8892ae89bf45688ce00302d1db8a35",
      "hostIdentifier": "",
      "udiPid": "UCM",
      "udiSerialNumber": "b8a35",
      "udiVid": "",
      "macAddress": ""
    },
    "productName": "Unified Communication Manager (12.0)",
    "productDescription": "Unified Communication Manager",
    "productTagName": "regid.2014-04.com.cisco.ASR_9000,1.0_577f0b47-7ba4-4cae-a86e-77b64604d808",
    "productType": "UCL",
    "status": "Out Of Compliance",
    "registrationDate": "2017-05-18T12:34:35Z",
    "lastContactDate": "2017-06-02T12:54:22Z",
    "licenseUsage": [{
      "license": "UC Manager Basic License (12.x)",
      "quantity": 4
    }, {
      "license": "UC Manager Enhanced License (12.x)",
      "quantity": 10
    }
  ]
}
]
}

```

## Product Instance Removal

Users can invoke this method to programmatically remove devices that are registered in their satellite Account. This will enable the users to automate device removal as part of their network operations. The User needs to have the necessary admin access privilege within the satellite Account/local Virtual Account to perform this request.

### Input Required:

- Account Name: Account for which the user wants to search the devices.



- Virtual Account Name: The local Virtual Account Name from which you would like to fetch the instance names.
- SUDI of Device
- Software/Product Tag Identifier

**Response:**

The Virtual Accounts list for which the user is having access to.

**Call-outs:**

- The provided SUDI details must match a product instance in the provided virtual account.  
Example Method Call:

**HTTP Method: POST**

- Request <ip-address of satellite>:*/api/v1/accounts/cisco.com/virtual-accounts/testVA/devices/remove*

**Response Code: 200 OK**

```
{
  "status":"SUCCESS",
  "statusMessage":"The Product Instance DHR_3000 was successfully removed."
}
```



## Alerts

This API will allow users to view the Alerts that are available for the Smart entitlements.

### Request Parameters:

- **Account:** satellite Account for which the user wants to fetch the alerts.

### Response:

- The available Alerts for the submitted request.

### Example Method Call:

- **HTTP Method:** POST
- **Request URL:** <ip address of satellite>:*api/v1/accounts/{Account}/alerts*

### Request Payload

- **virtualAccounts:** An optional list of local Virtual Accounts for which users intend to fetch the available licenses. If not specified, all the alerts from the domain for which the user has access to will be returned.
- **severity:** Optional list of numeric values for severity of the alerts. If not specified defaults to both Major and Minor alerts.
- **limit:** Number of records to return; Represents the page size for pagination. If all the data is required without pagination the limit can be set to -1. If the limit is set to -1, first 1000 alerts matching the request criteria will be fetched. If limit is not specified, default limit will be 50.
- **offset:** The start offset to fetch data from for pagination. To retrieve data for the first page with a limit of 50, the offset will be 0, for the second page the offset will be 50 and for the third page the offset will be 100 and so on.

```
{
"virtualAccounts": ["Physics", "Zoology"],
"severity": ["Major", "Minor"],
"limit": 50,
"offset": 0
}
```

### Response Code: 200 OK

```
{
  "status": "SUCCESS",
  "statusMessage": "",
  "totalRecords": 13,
  "alerts": [
    {
      "virtualAccount": "",
      "message": "Please review and indicate acceptance of the updated Cisco Smart Software Licensing Agreement's terms and conditions.",
      "severity": "Major",
      "messageType": "Updated Smart Software Licensing Agreement",
      "actionDue": "Now",
      "source": "",
      "sourceType": "Account Agreement"
    }
  ]
}
```



```

    },
    {
      "virtualAccount": "Physics",
      "message": "The Virtual Account \"Physics\" has a shortage of \"CSR 1KV SECURITY 10M\" licenses. 1
license is required to return to compliance.",
      "severity": "Major",
      "license": "CSR 1KV SECURITY 10M",
      "messageType": "Insufficient Licenses",
      "actionDue": "Now",
      "source": "Physics",
      "sourceType": "Virtual Account"
    },
    {
      "virtualAccount": "Physics",
      "message": "10 \"CSR 1KV ADVANCED 50M\" demo licenses in the Virtual Account \"Physics\" expired
on May 24, 2017",
      "severity": "Minor",
      "license": "CSR 1KV ADVANCED 50M",
      "messageType": "Licenses Expired",
      "actionDue": "Now",
      "source": "Physics",
      "sourceType": "Virtual Account"
    },
    {
      "virtualAccount": "Physics",
      "message": "10 \"CSR 1KV STANDARD 50M\" demo licenses in the Virtual Account \"Physics\" are set
to expire in 43 days on Jul 15, 2017",
      "severity": "Minor",
      "license": "CSR 1KV STANDARD 50M ",
      "messageType": "Licenses Expiring",
      "actionDue": "43 days",
      "source": "Physics",
      "sourceType": "Virtual Account"
    },
    {
      "virtualAccount": "Physics",
      "message": "The product instance \"1491321888000\" was successfully registered to the Virtual
Account \"Physics\" however an eligible Smart Software License could not be identified to for the conversion
of one or more licenses. Please contact Cisco Support for conversion assistance",
      "severity": "Minor",
      "productInstanceHostName": "1491321888000",
      "messageType": "Licenses Not Converted",
      "actionDue": "None",
      "source": "Physics",
      "sourceType": "Virtual Account"
    },
    {
      "virtualAccount": "Physics",

```

```

    "message": "The product instance \"hiDLCShe3\" was successfully registered to the Virtual Account
    \"Physics\" but one or more traditional licenses that were installed on it failed to be converted to Smart
    Software Licenses.",
    "severity": "Minor",
    "productInstanceHostName": "hiDLCShe3",
    "messageType": "Licenses Converted",
    "actionDue": "None",
    "source": "Physics",
    "sourceType": "Virtual Account"
  },
  {
    "virtualAccount": "Physics",
    "message": "The product instance \" ucbu-aricent-vm107\" in the Virtual Accountlocal Virtual Account
    \"Physics\" failed to connect during its renewal period and may be running in a degraded state. The licenses
    it was consuming have been released for use by other product instances.",
    "severity": "Major",
    "productInstanceHostName": "ucbu-aricent-vm107",
    "messageType": "Product Instance Failed to Renew",
    "actionDue": "Now",
    "source": "Physics",
    "sourceType": "Virtual Account"
  },
  {
    "virtualAccount": "Physics",
    "message": "The product instance \" ucbu-aricent-vm108\" in the Virtual Account \"Physics\" has not
    connected for its renewal period. The product instance may run in a degraded state if it does not connect
    within the next 2 days. If the product instance is not going to connect, you can remove it to immediately
    release the licenses it is consuming.",
    "severity": "Minor",
    "productInstanceHostName": "ucbu-aricent-vm108",
    "messageType": "Product Instance Failed to Connect",
    "actionDue": "2 days",
    "source": "Physics",
    "sourceType": "Virtual Account"
  },
  {
    "virtualAccount": "Zoology",
    "message": "The Smart Software Manager satellite \"TestSatellite\" failed to synchronize within 90 days
    and was removed from Smart Software Manager. All of the product instances registered through the satellite
    were also removed from the associated virtual accounts and may be running in a degraded state.",
    "severity": "Major",
    "satelliteName": "TestSatellite",
    "messageType": "Satellite Unregistered and Removed",
    "actionDue": "Now",
    "source": "TestSatellite",
    "sourceType": "Satellite"
  },
  {

```

```

    "virtualAccount": "Zoology",
    "message": "The Smart Software Manager satellite \ "test-may5\" has not synchronized for 28 days. If it
is not synchronized within 62 days, this satellite will be removed from Smart Software Manager and all of the
product instances registered through the satellite may run in a degraded state.",
    "severity": "Major",
    "satelliteName": "test-may5",
    "messageType": "Synchronization Overdue",
    "actionDue": "Now",
    "source": "test-may5",
    "sourceType": "Satellite"
},
{
    "virtualAccount": "Zoology",
    "message": "The Smart Software Manager satellite \ "TestSat\" has been created but requires a satellite
Authorization File to complete the registration process. An email notification will be sent to \ "att-
admin@att.com\" when the file has been generated and is ready to be downloaded.",
    "severity": "Minor",
    "satelliteName": "TestSat",
    "messageType": "Authorization Pending",
    "actionDue": "Now",
    "source": "TestSat",
    "sourceType": "Satellite"
},
{
    "virtualAccount": "Zoology",
    "message": "The Authorization File for Smart Software Manager satellite \ "TestSat123\" has been
generated and is ready to be downloaded. To complete the registration process, save this file and upload it to
Smart Software Manager satellite using the satellite setup utility.",
    "severity": "Minor",
    "satelliteName": " TestSat123",
    "messageType": "Authorization File Ready",
    "actionDue": "Now",
    "source": "TestSat123",
    "sourceType": "Satellite"
},
{
    "virtualAccount": "Zoology",
    "message": "An error occurred while processing the Synchronization File for the satellite. Try generating
a new Synchronization File from your satellite and synchronizing again. If the problem persists, contact Cisco
Support.",
    "severity": "Major",
    "satelliteName": " Thera",
    "messageType": "Synchronization Failed",
    "actionDue": "Now",
    "source": "Thera",
    "sourceType": "Satellite"
}
]

```

```
}
```

**Response Code: 403**

```
{  
  "status": "ERROR",  
  "statusMessage": "Not Authorized to access alerts for specified virtual accounts"  
}  
{  
  "status": "ERROR",  
  "statusMessage": "Not Authorized to access alerts for local Account '{local Account Domain}'"  
}
```

**Response Code: 422**

```
{  
  "status": "ERROR",  
  "statusMessage": "Invalid limit, offset or severity value"  
}
```

# Troubleshooting

- Account Registration Issues
- Product Registration Issues
- Manual Synchronization Issues
- Network Synchronization Issues

## Account Registration Issues

1. The Smart Licensing and Manage local Account options are grayed out on the Licensing workspace
  - You need to request a new or access to an existing local Account
  - Register it to Cisco Smart Software Manager
  - Log back into the Licensing workspace and your local Account will show up on the upper right-hand side
  - Once a local Account is created and registered, these options are enabled.
2. I cannot add a user
  - Verify you have the appropriate authentication method configured in the Administration workspace
  - If you are using LDAP, the user must log into Smart Software Manager satellite Enhanced Edition Licensing workspace first before they can be found in the “Add User” screen
3. I cannot register a product
  - Verify you have a token which has not expired
  - Verify the URL on the product points to the proper host name or IP address for Smart Software Manager satellite Enhanced Edition
4. When a user logs in to the Licensing workspace, they cannot see their Smart Software Manager satellite Enhanced Edition local Account
  - Ensure the user has been assigned a role for (access to) the local Account. The available roles are *local Account Administrator*, *local Account User*, *Local Virtual Account Administrator*, *Local Virtual Account User*
5. What ports are used in Smart Software Manager satellite Enhanced Edition?
  - User Interface: HTTPS (Port 8443)
  - Product Registration: HTTPS (Port 443), HTTP (Port 80)
  - Cisco Smart Software Manager: Ensure port 443 (HTTPS)
    - cloudsso.cisco.com
    - api.cisco.com (Prior to 6.2.0)
    - swapi.cisco.com (6.2.0 and later)

## Product Registration Issues

If you experience issues with the product registration process, take the following actions:

- Ensure that the satellite configuration is correct.
- Verify the **Network** settings are properly configured.
- Verify the time on the satellite is correct.
- Verify that the Call-Home configuration on the client points to the satellite.
- Verify the token has been generated from the satellite used in the call-home configuration.
- Your firewall settings should allow traffic to and from satellite for the following:
  - Product interaction with SSM satellite IP address uses ports 443 and 80
    - 443 if using HTTPS
    - 80 if using HTTP

- User browser to SSM satellite IP address uses port 8443



---

**Note** Products which support *Strict SSL Cert Checking* require the hostname for SSM satellite to match the “destination http” URL address configured for the product.

---

## Manual Synchronization Issues

If you experience issues with the manual synchronization process, take the following actions:

- Verify the time on the satellite is correct.
- Verify the licenses in the associated virtual account.
- Make sure that you are uploading and downloading the YAML (request and response) files from the correct satellite Account. You can do this by verifying that the file names include the name of the satellite that you are synchronizing.
- You may be requested to re-perform a full manual synchronization after a standard manual synchronization as explained previously.

## Network Synchronization Issues

If you experience issues with the network synchronization process, take the following actions:

- Verify that the satellite can reach [cisco.com](https://cisco.com)
- Ensure port 443 (HTTPS) is allowed through your firewall.
  - [cloudsso.cisco.com](https://cloudsso.cisco.com)
  - [api.cisco.com](https://api.cisco.com) (Prior to 6.2.0)
  - [swapi.cisco.com](https://swapi.cisco.com) (6.2.0 and later)
- Verify that the satellite can reach the configured DNS server.
- Verify that the time on the satellite is correct.

# Appendix

## A1. Manual Backup/Restore

Cisco Smart Software Manager satellite Enhanced Edition supports on-demand backup and restore operations. **Backup/Restore** allows you to backup and later restore the satellite to a prior operational state or migrate data from one system to a new deployment.

You can initiate an on-demand **Backup** at any time by performing the following manual procedure.

### Backup

#### Procedure

<b>Step 1</b>	Login in to SSM satellite Enhanced Edition via shell.
<b>Step 2</b>	Elevate your permissions using the command: <b>sudo -s</b>
<b>Step 3</b>	Then run below command: <b>docker exec -it atlantis_db_1 /bin/bash</b>
<b>Step 4</b>	Inside container, run: <b>pg_dumpall -c -U postgres &gt; /var/lib/postgresql/data/atlantis_complete_backup</b>
<b>Step 5</b>	Exit container and verify backup: <b>ls -l /var/data/atlantis_complete_backup</b>
<b>Step 6</b>	Backup the certificates on the host: <b>cd /home/deployer/ssl</b> <b>tar -zcvf atlantis_certificates_backup.tar.gz *</b>



#### Note

While its possible to leave the backup files: **atlantis\_complete\_backup** and **atlantis\_certificates\_backup.tar.gz**; it is recommended they be copied from the satellite and moved to a secure storage location of your choice

### Restore

The **Restore** action allows you to return a satellite to a previous operational state, or migrate data from one system to a new one system running the same version. The **Restore** operation requires you to a previously downloaded backup file. A system restarts and synchronize will be required when the **Restore** is complete.

Before you begin a **Restore**, you must copy to prior backup files onto the satellite, if they were copied off as part of the **Backup** process above.

#### Procedure

<b>Step 1</b>	Login to SSM satellite Enhanced Edition via shell
<b>Step 2</b>	Elevate your permissions using the command: <b>sudo -s</b>
<b>Step 3</b>	Stop All containers:

	Make sure atlantis_backend_1,atlantis_frontend_1 ,atlantis_redis_1,atlantis_ipv6nat_1and atlantis_tomcat_1 containers are stopped by executing: <b>DOCKER_ORG=atlantis-docker BUILD_ENV=prod TMP=/var/tmp /usr/local/bin/docker-compose -f /home/deployer/atlantis/docker-compose-up.yml stop backend frontend tomcat redis ipv6nat</b>
<b>Step 4</b>	Verify only the database container is running: <b>docker ps</b>
<b>Step 5</b>	Then run below command as sudo: <b>docker exec -it atlantis_db_1 /bin/bash</b>
<b>Step 6</b>	In the container, execute the following: <b>psql -f /var/lib/postgresql/data/atlantis_complete_backup -U postgres</b>
<b>Step 7</b>	After completion, exit the container
<b>Step 8</b>	Stop db container: <b>DOCKER_ORG=atlantis-docker BUILD_ENV=prod TMP=/var/tmp /usr/local/bin/docker-compose -f /home/deployer/atlantis/docker-compose-up.yml stop db</b>
<b>Step 9</b>	Verify the DB container has stopped by executing: <b>docker ps</b>
<b>Step 10</b>	Restore the certificates from backup process: <b>cd /home/deployer/ssl. tar -xvf atlantis_certificates_backup.tar.gz</b>
<b>Step 11</b>	Run below command on the host: <b>chown -R deployer:deployer /home/deployer/ssl</b>  verify ownership:
<b>Step 12</b>	Start the application by executing: <b>systemctl start satellite</b>



**Note** Once registered, a Smart Software Manager satellite Enhanced Edition has been restored, it must be synchronized with Cisco Smart Software Manager to ensure the licensing information between the Smart Software Manager satellite Enhanced Edition and Cisco Smart Software Manager is not out-of-sync.



**Caution** Restore only works on a backup generated using the same version ONLY. Attempting to use a backup file created for a different software version, unexpected results may occur.



## A2. Product Compatibility Notice

Before the satellite can accept registrations from product instances, it has to register with Cisco Smart Software Manager. Previously, satellite to Cisco Smart Software Manager registration requires a 10-day wait because someone has to manually sign the Certificate Signing Request (CSR) from satellite to Cisco Smart Software Manager. This means that if products want to connect to satellite, it has to wait 10 days for satellite to be fully registered and functional.

Over a year ago, this manual signing of the CSR was automated so that the CSR from satellite to Cisco Smart Software Manager is now signed immediately. However, there are changes that must be made to the product smart agents, satellite and Cisco Smart Software Manager for this trust chain to work in an automated way. The previous trust chain consisted of 3 levels of certificates (i.e., 3-tier) from the device to satellite to Cisco Smart Software Manager. In the new implementation to automate the trust chain validation, additional certificates were added and we had 4-levels of certificates (i.e., 4-tier). These changes also must be backward compatible so that older devices that do not have this updated level of smart agent, satellite, and Cisco Smart Software Manager code would continue to function.

In the new implementation, smart agents, satellite and Cisco Smart Software Manager must exchange a new message type to know if it supports a 3-tier or 4-tier certificate. Products that have not implemented the latest smart agent code (1.4+) needing to register with satellite will need to wait 10 days as satellite needs to get the 3-tier certificate from Cisco Smart Software Manager before it can register the product. Product teams can decide to implement Smart Agent code 1.4+ at their own schedules, so we don't always know what version of Smart Agent they embed. At the time of this writing, these 3-tier products are listed below. To know what version of the Smart Agent, simply issue the command "license smart status".

We have the following cases:

- **Devices with new Smart Agent registering to the latest satellite release**  
Devices that have implemented the latest Smart Agent code register successfully with latest satellite using multi-tier certificate hierarchy.
- **Devices with new Smart Agent registering to a back-level satellite**  
Devices that have implemented the latest Smart Agent code dynamically validate the certificate chain (from device to satellite to Cisco Admin).
- **Devices with old Smart Agent registering to the latest satellite release**  
When you install the latest satellite release, its registration with Cisco Smart Software Manager is instantaneous. During this process, the satellite also requests a previous three-tier certificate. When devices with older Smart Agent registers with the satellite, you get a registration failure message that informs you to wait 10 business days and perform a network or manual synchronization to get the backward compatible (three-tier) certificate and re-register. Afterwards, these devices can successfully register to the satellite.

In this case, as HTTPS is used for device to satellite communication, you need to ensure following steps:

- Smart Call Home profile uses HTTPS as the transport
- After the satellite (with the multi-level certificate hierarchy function) registers successfully to Cisco Smart Software Manager, the product instance (with back-level smart agent) which tries to register with satellite fails with the following error message:

Compatibility Error: The satellite is not currently compatible with the Smart Licensing Agent version on this product. If it has been 10 days since the satellite was registered, synchronize the satellite with Cisco's licensing servers to enable compatibility with older agent versions and then try the registration again.

- User waits for 10 business days
- User runs an on-demand network or manual sync between satellite and Cisco SSM.
- User re-registers the product instance to satellite.

If you perform a fresh 3.1.x satellite installation, after registration and upon logging, you will see the following message:



Version Compatibility Note — Temporarily, this satellite will only be able to register Product Instances that are using the Smart Licensing Agent version 1.5 or later (use the "show license" commands on the Product Instance to see the agent version). To enable registration of Product Instances using older versions of the agent, wait two business days after the satellite's initial registration and then synchronize the satellite.

This means that after 2 business days, the three-tier certificate will be obtained by satellite from Cisco SSM during the sync to support three-tier smart agents.

Following are the current 3-tier products:

Smart Agent C			
Product	Product Version	Agent Version Supported	POC
ASAv	9.9.1	1.6.14_rel/129	Hidde Beumer (hibeumer)
FMC	6.2.2	1.6.14	Vineet Jain (vinjain)
CBR8	IOS XE 3.15	1.5	Scott Raaf (raafs)
Cisco 5921 (ESR)	15.6(3)M1	1.6.10_rel/106	Ahmed Abu Sharkh (ahmabush)
Smart Agent Java			
Product	Product Version	Agent Version Supported	POC
vCUSP	9.1.7	1.3	John Vickroy (jvickroy)

## A.3 Product Registration Example: Cisco Cloud Service Router (CSR)

For complete instructions for configuring the **Cisco Cloud Service Router (CSR)** product instance to communicate with the satellite, see the CSR Smart Licensing configuration, please refer to <http://www.cisco.com/c/en/us/td/docs/routers/csr1000/software/configuration/csr1000Vswcfg/licensing.html>

Ensure you have the following commands configured in the respective router platforms:

- For IOS-XR platforms, Crl optional
- For IOS/XE platforms, use revocation-check none.

### Sample SCH Profile to Use Smart Software Manager satellite on the Cloud Service Router Procedure

1. **enable**  
Enables privileged EXEC mode. Enter your password if prompted.
2. **configure terminal**  
Enters global configuration mode.
3. **call-home**  
Enters call-home configuration mode.
4. **contact-email-addr** *email address*  
Specify a valid email ID.
5. **profile** *name*  
Specify the profile name.  
**Note:** CiscoTAC-1 is the default profile.
6. Choose **destination transport http** or **destination transport https**.  
Sets the transport to HTTP or HTTPS. Additionally, depending on your choice, use either example a (for HTTP) or example b (for HTTPS) below.
  - a) For **destination address http** use *http from TG*.  
Accesses the SCH Transport Gateway URL.  
**Note:** The destination URL is:  
`http://<ip-address>:80/Transportgateway/services/DeviceRequestHandler`
  - b) For **destination address https** use *https from TG*.  
Accesses the SCH Transport Gateway URL.  
  
**Note:** The destination URL is:  
`https://<ip-address>:443/Transportgateway/services/DeviceRequestHandler`
7. **active**  
Activates the profile specified in step 5.
8. **exit**  
Saves and exits the current configuration mode and returns to privileged EXEC mode.
9. **end**  
Returns to privileged EXEC mode.
10. **wr**  
Saves the configuration.

The following configuration is only a sample for CSR for HTTP. Please see platform specific configurations for the call-home profile config.

**Example:**

```
Router#configure terminal
Router(config)#call-home
Router(cfg-call-home)#contact-email-addr aaa@cisco.com
Router(cfg-call-home)#profile CiscoTAC-1
Router(cfg-call-home-profile)#active
Router(cfg-call-home-profile)#destination transport-method http
Router(cfg-call-home-profile)#no destination transport-method email
Router(cfg-call-home-profile)#destination address http
Router (cfg-call-home-
profile)#http://172.19.76.177:80/Transportgateway/services/DeviceRequestHandler
```

The following configuration is only a sample for CSR for HTTPS. Please see platform specific configurations for the call-home profile config. Starting with satellite 3.0.x port # and URL are not needed.

**Example:**

```
Router# configure terminal
Router(config)#call-home
Router(cfg-call-home)#contact-email-addr aaa@cisco.com
Router(cfg-call-home)#profile CiscoTAC-1
Router(cfg-call-home-profile)#active
Router(cfg-call-home-profile)#destination transport-method http
Router(cfg-call-home-profile)#no destination transport-method email
Router(cfg-call-home-profile)#destination address https
Router(cfg-call-home-
profile)#https://172.19.76.177:443/Transportgateway/services/DeviceRequestHandler
```

For ASR9K and CSR, ensure you remove the URL for Cisco SSM as follows:

**no destination address** <https://tools.cisco.com/its/service/oddce/services/DDCEService>

Add the URL for satellite and the following command:

***revocation-check none***

## A4. Migration to SSM satellite Enhanced Edition

For customers who wish to migrate from satellite Enhanced Edition 6.0.1 to this release, please use the 6.2.0 patch when it is posted.

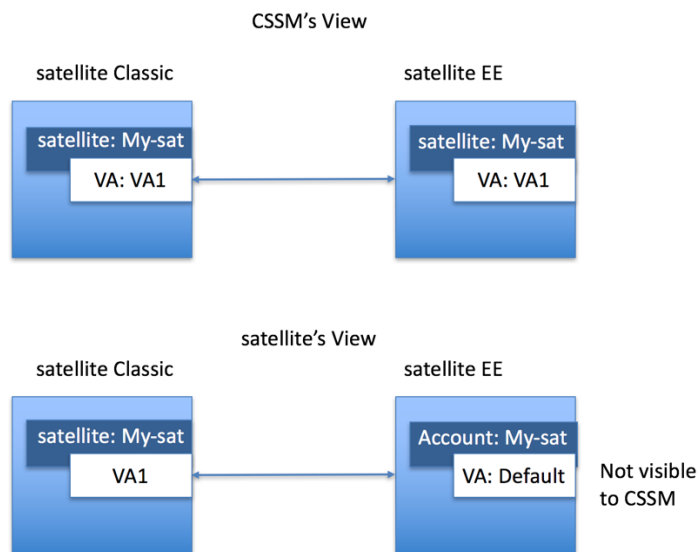
There is no direct upgrade path from satellite Classic (3.x, 4.x, or 5.x) to satellite Enhanced Edition 6.2.0.

However, you can use the following procedures to manually migrate from a previous satellite Classic release to satellite Enhanced Edition (EE).

**Procedures:**

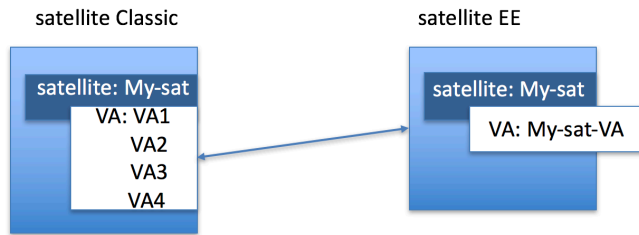
1. Backup your satellite Classic system.
2. Remove all the Product Instances (PIs) that are registered to the satellite Classic.
3. Synchronize the satellite Classic with Cisco SSM.
4. Remove the satellite Classic that is currently registered to Cisco SSM with the following steps. Note that a satellite can be removed only if there are no PIs registered to it. Satellite can be removed while containing licenses in it.
  - a. Login into Cisco Smart Software Manager.
  - b. Go to "Satellites" pane.
  - c. Under Action, select "Remove".

- d. Confirm the Removal message by selecting OK.
5. Deploy a satellite Enhanced Edition system.
6. Login to satellite Enhanced Edition Administration Workspace.
  - a. Create a “New Account”. This account will have a local *Default* VA associated with it automatically on satellite Enhanced Edition .
  - b. This “New Account” workflow automatically registers the Account with Cisco Smart Software Manager Account/Virtual Account pair.
7. Single VA satellite
  - a. Re-register all our PIs to the local *Default* Virtual Account on satellite Enhanced Edition .
  - b. Re-create users under the satellite Enhanced Edition Licensing Workspace and re-assign their roles to the Default VA.
  - c. If the satellite Classic has one VA, here is what it looks like after the migration.

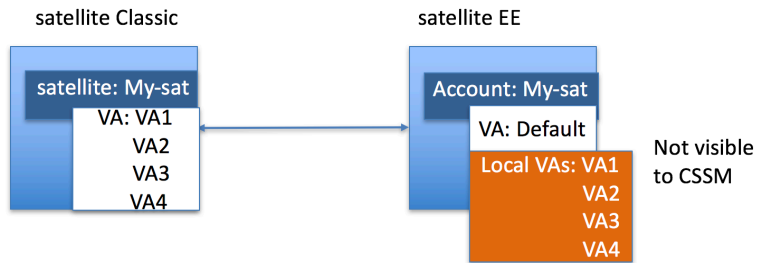


8. Multiple VA satellite
  - a. If satellite Classic has more than one VAs, then create additional local VAs under the satellite Enhanced Edition Licensing Workspace to match that structure as shown in 8.d.
  - b. On Cisco Smart Software Manager, move the licenses from the virtual accounts linked to satellite Classic (*VA1*, *VA2*, *VA3*, *VA4*) to the virtual account (*My-sat-VA*) linked to satellite Enhanced Edition .
  - c. Register satellite Enhanced Edition Account to Cisco Smart Software Manager Account/Virtual Account pair. The virtual account on Cisco Smart Software Manager in this example is *My-sat-VA*. All of the entitlements from *My-sat-VA* are added to local *Default* VA on satellite Enhanced Edition after the registration.
  - d. Create the local virtual accounts *VA1*, *VA2*, *VA3*, *VA4*.
  - e. Register your PIs to the matching local VAs (*VA1*, *VA2*, *VA3*, *VA4*) on satellite Enhanced Edition .
  - f. Transfer your licenses from the local *Default* VA to the local VAs created in 8.d (*VA1*, *VA2*, *VA3*, *VA4*) to replicate the same structure you had on satellite Classic before.
  - g. Re-create users under the satellite Enhanced Edition Licensing Workspace and re-assign their roles to the corresponding VAs.

### CSSM's View



### Satellite's View



## Obtaining Support

Cisco provides around-the-clock, award-winning technical support services, online and over the phone to all customers, partners, resellers, and distributors who hold valid Cisco service contracts.

To best meet customer's needs, TAC provides two types of support:

<u>Cisco TAC Web Site</u>	<a href="https://www.cisco.com/tac">https://www.cisco.com/tac</a>
<u>License Registration</u>	<a href="https://slexui.cloudapps.cisco.com/SWIFT/LicensingUI/Home">https://slexui.cloudapps.cisco.com/SWIFT/LicensingUI/Home</a>
<u>Smart Software Manager</u>	<a href="https://software.cisco.com/module/SmartLicensing">https://software.cisco.com/module/SmartLicensing</a>
<u>ELA Workspace</u>	<a href="https://software.cisco.com/3module/ELA">https://software.cisco.com/3module/ELA</a>
<u>Via email/phone</u>	<a href="https://www.cisco.com/c/en/us/support/web/tsd-cisco-worldwide-contacts.html">https://www.cisco.com/c/en/us/support/web/tsd-cisco-worldwide-contacts.html</a>

Please have your Cisco.com User ID, Contract and Serial number(s) ready when you contact Cisco Support to prevent any delays with your support request.

## Opening a Case with TAC

Cisco Technical Assistance Center (TAC) provides unparalleled technical support service to Cisco customers, partners, and resellers. When you need help from the TAC, you have three options for opening a case with the TAC:

### 1. Web Access

The TAC Service Request Tool automates the process of opening a case with TAC. The Service Request Tool is available around-the-clock at the following URL:

<http://tools.cisco.com/ServiceRequestTool/create/launch.do>

The TAC Service Request Tool automatically suggests solutions during the case open process. This provides the opportunity for you to resolve your issue before you actually open a case. If you must open a case, the TAC Service Request Tool allows you to check its status and add updates.

You can also use Technical Documentation and Support web site, a detailed collection of tools and technical documents written by TAC engineers, to analyze common issues and provide solutions that is available at the following URL: <http://www.cisco.com/en/US/support/index.html>

### 2. Email Access

A case may also be opened via email by sending a message to [tac@cisco.com](mailto:tac@cisco.com).

### 3. Phone Access

There are several different phone numbers to use when calling the TAC depending on your location in the world.



## Opening a Case with Global Licensing Operations (GLO)

### Traditional Licensing

Go to the [License Registration Portal](#) to either generate, resend, or re-host your existing PAK-based licenses.

- Under “**Manage**”, go to “**Devices**”, then “**Add Device**” (if not already added)
- Select the device, then “**Actions**” and select the required function.

### Smart Software Licensing

Go to [Smart Software Manager](#) to track and manage your Smart Licenses.

- Under “**License Conversion**”, you can convert PAK-based licenses to Smart Licenses (if applicable)

### Smart Accounts

Go to the “**Administration**” section of [Cisco Software Central](#) to manage existing Smart Accounts or to request a new one.

- Go to [Request Access to an Existing Smart Account](#) for getting access to your company’s account.
- Training and documentation are available [here](#).

### Enterprise License Agreements (ELA)

Go to the [ELA Workspace](#) to manage licenses from ELA.

Other self-serve licensing functions are available. Please go to our [Help page](#) for how-to videos and other resources.

For urgent requests, please contact us by [phone](#).

To update your case, either send attachments or updates to [attach@cisco.com](mailto:attach@cisco.com) and include the case number in the **Subject** line of your email. Please **do not** include [licensing@cisco.com](mailto:licensing@cisco.com) in your email with the engineer.