



# Smart Software Manager satellite Enhanced Edition Installation Guide

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## **Americas Headquarters**

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
<http://www.cisco.com>

Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 527-0883



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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. This preface contains the following sections:

### 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.

Convention	Description
<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:




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

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

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### 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 a Smart Licensing solution that enables customers to administer products and licenses on their premises, instead of having to directly connect Smart Licensed enabled product instances to **Cisco Smart Software Manager** hosted on cisco.com.

### Software Packaging

Your installation package of the universal ISO for Cisco Smart Software Manager satellite consists of the following components:

- CentOS 7
- Smart Software Manager satellite Enhanced Edition



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**Note** This universal ISO format allows it to be exported to various install media types. Exporting of the ISO image to other image types is the responsibility of the customers and is not supported by Cisco.

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### 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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## 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.

### Supported VMware Features and Operations

VMware supports various features and operations that allow you to manage your virtual applications and perform operations such as cloning, migration, shutdown and resume.

Some of these operations cause the runtime state of the VM to be saved and then restored upon restarting. If the runtime state includes traffic-related state, then on resumption or replaying the runtime state, additional errors, statistics, or messages are displayed on the user console. If the saved state is just configuration driven, you can use these features and operations without a problem.

The following VMware features and operations are not supported in all versions of the Cisco CSR 1000v, but can still be used or performed on non-supported versions at the risk of encountering dropped packets, dropped connections, and other error statistics:

- Cloning
- Migration



## **Increasing Performance on VMware ESXi Configurations**

You can improve performance on VMware ESXi configurations by performing the following:

- Disable VMware ESXi power management.
- Choose the High Performance setting to disable power management in VMware ESXi 5.0, 5.1, 5.5, or 6.0.

For more information, see the [VMware Documentation](#).





# Deploying SSM satellite Enhanced Edition Overview

Today, SSM satellite Classic operates at the *Virtual Account* level within a customer's *Smart Account* managed by Cisco Smart Software Manager. Smart Software Manager satellite EE has a new architecture and completely user interface from previous versions.

- The Licensing portal is accessed via <https://<ip-address>:8443>
- The Administration portal is accessed via <https://<ip-address>:8443/admin>

It has a new registration and synchronization procedures, new system roles and Role Based Access Control (RBAC) for license management, external authentication, syslog, proxy, and other functions. It is recommended you review the *Smart Software Manager satellite Enhanced Edition User Guide* to understand how the new system setup and operations have changed.

## Quick Start Overview

The following steps are needed to get your satellite operational and access Smart Licensing functions:

1. **Kickstart** – User follows the installation guide to deploy the satellite via the **ISO installation** procedure.
2. **Request a new local Account** - User requests a new local Account after logging into the **Licensing workspace**. An alternative method is to request a new local Account is by using **Accounts, New Account** options in the **Administration workspace**.
3. **Approve a new local Account** – Once a local Account has been requested, it will show up under **Account Request** tab in the **Account** widget of the satellite Administration workspace. When the **Approve** action is completed, you will select the method to complete the registration 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.

## Media Installation

To begin the installation, you must first download the ISO file from the Cisco Smart Software Manager satellite Enhanced Edition software package

## Manually Deploying on Hardware using the .iso File

<b>Step 1</b>	Make A bootable usb drive by transferring the downloaded iso file to usb using dd command
<b>Step 2</b>	Insert bootable USB in server and boot the system.
<b>Step 3</b>	Wait for the media to complete and proceed to the <b>SSM satellite EE Kickstart Installation</b> .

## Manually Creating VM Using the .iso File (VMware ESXi)

While the following procedure provides general guidance for how to deploy the Cisco CSR 1000v, the exact steps that you need to perform may vary depending on the characteristics of your VMware environment and setup. The steps and screen displays in this procedure are based on VMware ESXi 5.0.

### Procedure

<b>Step 1</b>	Copy the software package onto the VM Datastore.
<b>Step 2</b>	In the VSphere client, select Create a New Virtual Machine option.
<b>Step 3</b>	Under Configuration, select the option to create a Custom configuration, and click Next. Under Name and Location, specify the name for the VM and click Next.
<b>Step 4</b>	Under Storage, select the datastore to use for the VM. Click Next.
<b>Step 5</b>	Under Virtual Machine Version, select Virtual Machine Version 8. Click Next.
<b>Step 6</b>	Under Guest Operating System, select Linux and the "Other 2.6x Linux (64-bit) setting" from the drop-down menu. Click Next.
<b>Step 7</b>	Under CPUs, select the following settings: 2 or 4 Cores NOTE: The number of cores per socket should always be set to 1, regardless of the number of virtual sockets selected. For example, a 4 vCPU configuration should be configured as 4 sockets and 1 core per socket.
<b>Step 8</b>	Under Memory, configure the supported memory size for your deployment.
<b>Step 9</b>	Under Network, allocate at least 1 virtual network interface cards (vNICs).
<b>Step 10</b>	Under SCSI Controller, select LSI Logic Parallel. Click Next. Under Select a Disk, click Create a new virtual disk
<b>Step 11</b>	Under Create a Disk, configure for a minimum of 200 Gig
<b>Step 12</b>	In the Hardware tab, click New CD/DVD Drive.
<b>Step 13</b>	Mount the software package from <b>Step 2</b>
<b>Step 14</b>	Boot the Virtual Machine
<b>Step 15</b>	Wait for the media to complete and proceed to the <b>SSM satellite EE Kickstart Instalation.</b>

## Cisco SSM satellite EE Kickstart Installation

The following steps shows the satellite installation workflow to install an ISO image:

### Procedure

<b>Step 1</b>	Download the ISO image from CCO																																								
<b>Step 2</b>	Deploy ISO per your Orchestration Environment																																								
<b>Step 3</b>	Enter the information requested on the Cisco SSM satellite EE Kickstart Installation UI <ul style="list-style-type: none"> <li>• Setup Hostname</li> <li>• Select System Profile</li> <li>• System Classification – The options are default Unclassified, Confidential, Secret, Top Secret. If you choose the option, this classification shows up on the console Message of the Day banner.</li> <li>• Security Content Automation Protocol (SCAP Profile) - Not changeable</li> <li>• FIPS 140-2 Mode - Not changeable</li> </ul>																																								
<b>Step 4</b>	Disk partitioning – User defaults <table border="1" data-bbox="386 730 1414 1064"> <thead> <tr> <th>PARTITION</th> <th>DEFAULT</th> <th>MIN</th> <th>MAX</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>ROOT</td> <td>25%</td> <td>15%</td> <td>40%</td> <td>Application File Storage</td> </tr> <tr> <td>TMP</td> <td>5%</td> <td>2%</td> <td>10%</td> <td>System Usage</td> </tr> <tr> <td>SWAP</td> <td>5%</td> <td>1%</td> <td>5%</td> <td>System Usage</td> </tr> <tr> <td>VAR</td> <td>50%</td> <td>25%</td> <td>60%</td> <td>Data File Storage</td> </tr> <tr> <td>LOG</td> <td>10%</td> <td>5%</td> <td>15%</td> <td>Log File Storage</td> </tr> <tr> <td>AUDIT</td> <td>5%</td> <td>0%</td> <td>5%</td> <td>Audit Log Storage</td> </tr> <tr> <td>SOFTWARE DOWNLOAD</td> <td>0%</td> <td>0%</td> <td>40%</td> <td>Storage for Software Download Feature</td> </tr> </tbody> </table>	PARTITION	DEFAULT	MIN	MAX	DESCRIPTION	ROOT	25%	15%	40%	Application File Storage	TMP	5%	2%	10%	System Usage	SWAP	5%	1%	5%	System Usage	VAR	50%	25%	60%	Data File Storage	LOG	10%	5%	15%	Log File Storage	AUDIT	5%	0%	5%	Audit Log Storage	SOFTWARE DOWNLOAD	0%	0%	40%	Storage for Software Download Feature
PARTITION	DEFAULT	MIN	MAX	DESCRIPTION																																					
ROOT	25%	15%	40%	Application File Storage																																					
TMP	5%	2%	10%	System Usage																																					
SWAP	5%	1%	5%	System Usage																																					
VAR	50%	25%	60%	Data File Storage																																					
LOG	10%	5%	15%	Log File Storage																																					
AUDIT	5%	0%	5%	Audit Log Storage																																					
SOFTWARE DOWNLOAD	0%	0%	40%	Storage for Software Download Feature																																					



**Note** **SOFTWARE DOWNLOAD** partition must have space allocation set or the **Software Download** feature can not be enabled. The percentage you choose will be based on the amount of disk you will need for local image storage. If you do not **need Software Download** option then this should remain set to 0%.

<b>Step 5</b>	Click on “ <b>Network Configuration</b> ”
<b>Step 6</b>	Enter <b>IPv4</b> and/or <b>IPv6</b> network values per your network environment. Required values are: <ul style="list-style-type: none"> <li>• Address</li> <li>• Netmask / Prefix</li> <li>• Gateway</li> </ul>
<b>Step 7</b>	Configure <b>DNS</b>
<b>Step 8</b>	Click <b>OK</b>

Once the network settings are entered, your now ready to complete the installation of Cisco Smart Software Manager satellite

<b>Step 9</b>	Click <b>OK</b>
<b>Step 10</b>	The Popup for <b>Configure System Password</b> will be displayed. Enter a secure Linux SSH password for SHELL access. (Note: This is different than the UI admin password. Please keep in a safe location as there is no password recovery option.)

<b>Step 11</b>	Reenter the <b>Password</b>
<b>Step 12</b>	Click <b>OK</b>

Initial setup is now complete, wait for the installation completes (approximately 10-15 mins). It is recommended you dismount the ISO image from the system after installation and reboot the server. The SSM satellite system automatically boots up.

Next proceed to log into your satellite Administration Workspace and registering your first account

## Registering SSM satellite Enhanced Edition

Go into Administration Portal <https://<ip-address>:8443/admin>

5. Launch the satellite from a browser using the configured IP address
6. Login with default credentials (*admin/CiscoAdmin!2345*)




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**Caution** For Security reasons, it is recommended you immediately change the “admin” password, or disable the account after you create a new local account to be used for administration.

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## Request a new local Account

In order to use the Smart Software Manager satellite Enhanced Edition, it will be necessary to register with Cisco Smart Software Manager (<https://software.cisco.com>). To complete this process, ensure you have the following:

- Access to a Smart Account
- A valid CCO User ID and Password which has permission to access the Smart Account
- Either an eligible existing Virtual Account, a new one can be used.

Once you obtain these requirements, you will be able to proceed with registration.

### Procedure

<b>Step 1</b>	In the <b>Smart Software Manager satellite</b> Administration Portal <a href="https://&lt;ip-address&gt;:8443/admin">https://&lt;ip-address&gt;:8443/admin</a> Where “ip-address” is the value used during installation
<b>Step 2</b>	Open the <b>Accounts</b> widget
<b>Step 3</b>	Click on <b>New Account</b> Enter the required information; local <b>Account Name</b> , Cisco <b>Smart Account</b> , Cisco <b>Virtual Account</b> , and <b>Email</b> for Notification. The required fields are labeled with *
	 <p><b>Note</b> The Cisco <b>Smart Account</b> must exist on CSSM. A Cisco <b>Virtual Account</b> will be created if it does not exist on CSSM. Only one satellite can be registered to a <b>Virtual Account</b> on CSSM.</p>
<b>Step 4</b>	Click <b>Submit</b> .
<b>Step 5</b>	The Account request then appears on the <b>Account Requests</b> tab in the <b>Accounts</b> widget.

## Approve a new local Account

Once the Account has been requested above, the local **Account request** will show up in **Account Requests** Tab in the **Accounts Widget** in the Administration workspace, awaiting the System Administrator to approve and register. As the final step in the registration procedure, you will need to decide if the satellite will be used in an online (**Network Mode**) or offline (**Manual Mode**), and access to your Smart Account.

### Account Request Approval (Network Mode)

You can select the **Network Registration** using the **Approve** option. Using this method will register the local account to Cisco Smart Software Manager over your Network. This is the recommended method for registration request. Use the following steps to register the local Account to Cisco Smart Software Manager

#### Procedure

<b>Step 1</b>	Clicks the <b>Approve</b> under <b>Actions</b> .
<b>Step 2</b>	Click <b>Next</b> .
<b>Step 3</b>	Enter your <b>CCO ID</b> credentials when prompted to allow Cisco <b>Smart Account/Virtual Account</b> access on CSSM.
<b>Step 4</b>	Click <b>Submit</b> . <ul style="list-style-type: none"> <li>SSM satellite EE provides a status of the registration progress.</li> <li>Upon successful registration, a message will show “Account was created successfully”.</li> </ul>
	Verify local Account shows up as <b>Active</b> under <b>Accounts</b> tab.

The local Account is shown as a satellite registered on Cisco Smart Software Manager **Satellite** 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.

### 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.

#### Procedure

<b>Step 1</b>	Clicks the <b>Manual Registration</b> under <b>Actions</b>
<b>Step 2</b>	Click Generate <b>Account 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 3</b>	Launch the <b>Smart Software Manager</b> using the URL <i><a href="https://software.cisco.com/#SmartLicensing-Satellite">https://software.cisco.com/#SmartLicensing-Satellite</a></i>
<b>Step 4</b>	Log in to your <b>local Account</b> in <b>Smart Software Manager</b> using your local Account username and password.
<b>Step 5</b>	On the <b>Smart Software Manager</b> screen, click <b>satellite</b> .
<b>Step 6</b>	In the <b>satellite</b> page, click New <b>satellite</b> button.
<b>Step 7</b>	In the <b>New satellite</b> dialog box, enter the name of the <b>satellite</b> that requires registration.

<b>Step 8</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 9</b>	In the <b>Virtual Accounts</b> field specify the Virtual Account in which you want to add the new satellite.
<b>Step 10</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 11</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 12</b>	Log into <b>Smart Software Manager</b> after you receive the email notification. Navigate to the <b>satellite</b> screen.
<b>Step 13</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 14</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 15</b>	In the <b>Cisco Smart Software Manager satellite</b> , at the <b>Register satellite</b> step, click <b>Browse</b> and navigate to the location where the authorized satellite file was downloaded.
<b>Step 16</b>	Click <b>Upload</b> to upload the authorized satellite file.
<b>Step 17</b>	Click <b>Next</b> to proceed.
<b>Step 19</b>	Click <b>Next</b> to proceed to the <b>Synchronization Widget</b> . A periodical synchronization must happen between the satellite and the Cisco licensing servers in order to update the licenses and reauthorize any product instances.

## Next Steps

Smart Software Manager satellite EE account is now registered with CSSM and you can now use Smart Licensing features on it.

Please refer to the *Smart Software Manager Satellite Enhanced Edition User Guide* for instructions on completing the following essential next steps and performing other important actions.

- 1) Proceed to the **Synchronization Widget** and perform a synchronization.




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**Note** A periodic synchronization must happen between the satellite and the Cisco licensing servers to update the licenses and reauthorize any product instances.

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- 2) Register product instances to the satellite. See the “Registering Product Instances to the Satellite” section in the satellite user guide and the documentation for your product..

## 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 CSSM
  - 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 SSM satellite EE 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 SSM satellite EE
4. When a user logs in to the Licensing workspace, they cannot see their SSM satellite EE 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 SSM satellite EE?
  - User Interface: HTTPS (Port 8443)
  - Product Registration: HTTPS (Port 443), HTTP (Port 80)
  - CSSM: 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



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**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.

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## 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`
- Ensure port 443 (HTTPS) is allowed through your firewall.
  - `cloudsso.cisco.com`
  - `api.cisco.com` (Prior to 6.2.0)
  - `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.