



Smart Software Manager satellite Enhanced Edition Installation Guide

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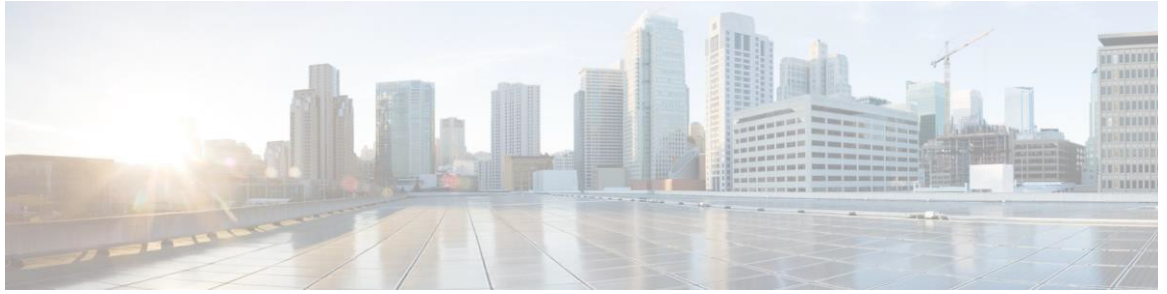
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Preface

This preface contains the following sections:

- [Audience, page iii](#)
- [Document Conventions, page iii](#)
- [Obtaining Documentation and Submitting a Service Request, page 4](#)

Audience

This guide is intended for site administrators who will manage Cisco Smart-enabled software installation and licensing.

Document Conventions

Command descriptions use the following conventions.

Convention	Description
bold	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 optional arguments (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.

Convention	Description
[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.
<code>variable</code>	Indicates a variable for which you supply values, in context where italics cannot be used.
<code>string</code>	A non-quoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
<code>screen font</code>	Terminal sessions and information the switch displays are in screen font.
boldface screen font	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.



Note

The pencil icon is an alert that the reader should special take note of the information provided in the noted section. Notes contain helpful suggestions or references to material not covered in the manual.



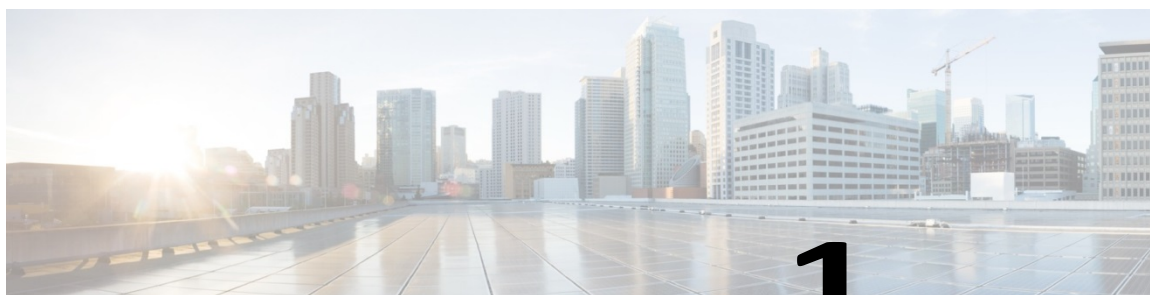
Caution

The caution icon is an alert to the reader that a section includes procedural information that must be followed carefully to avoid doing 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*, at: <http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>.

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CHAPTER 1

Overview

This chapter contains the following sections:

- [Device Terminology](#)
- [System Requirements](#)

Smart Software Manager satellite is a component of Cisco Smart Licensing. It works in conjunction with Cisco Smart Software Manager to intelligently manage customer product licenses, providing near-real-time visibility and reporting of Cisco licenses customers purchase and consume.

In a typical scenario, customers are able to view their installed base from the cloud-based Cisco Smart Software Manager using a highly secure Internet connection, protected by various levels of user authorization and encrypted passwords. However, for security-sensitive customers who do not want to manage their installed base with a direct Internet connection, Smart Licensing provides Smart Software Manager satellite software, which can reside on customer premises. Devices or software products self-register and report license consumption to the Smart Software Manager satellite as though it were a replicate of the Smart Software Manager.

The satellite version of Smart Licensing contains a subset of Cisco Smart Software Manager functionality and must communicate with the latter periodically to operate. Customers need to synchronize their local databases with the Cisco portal to make sure that the most recent purchases are reflected in their local copies. This may be initiated automatically or manually. The automatically scheduled synchronizations can be daily, weekly, or monthly, and, depending on the frequency, the data on the satellite can be as current as the portal on a daily basis. On the other hand, the manual synchronization involves a file transfer at least once a month and represents an air gap for high-security customers.

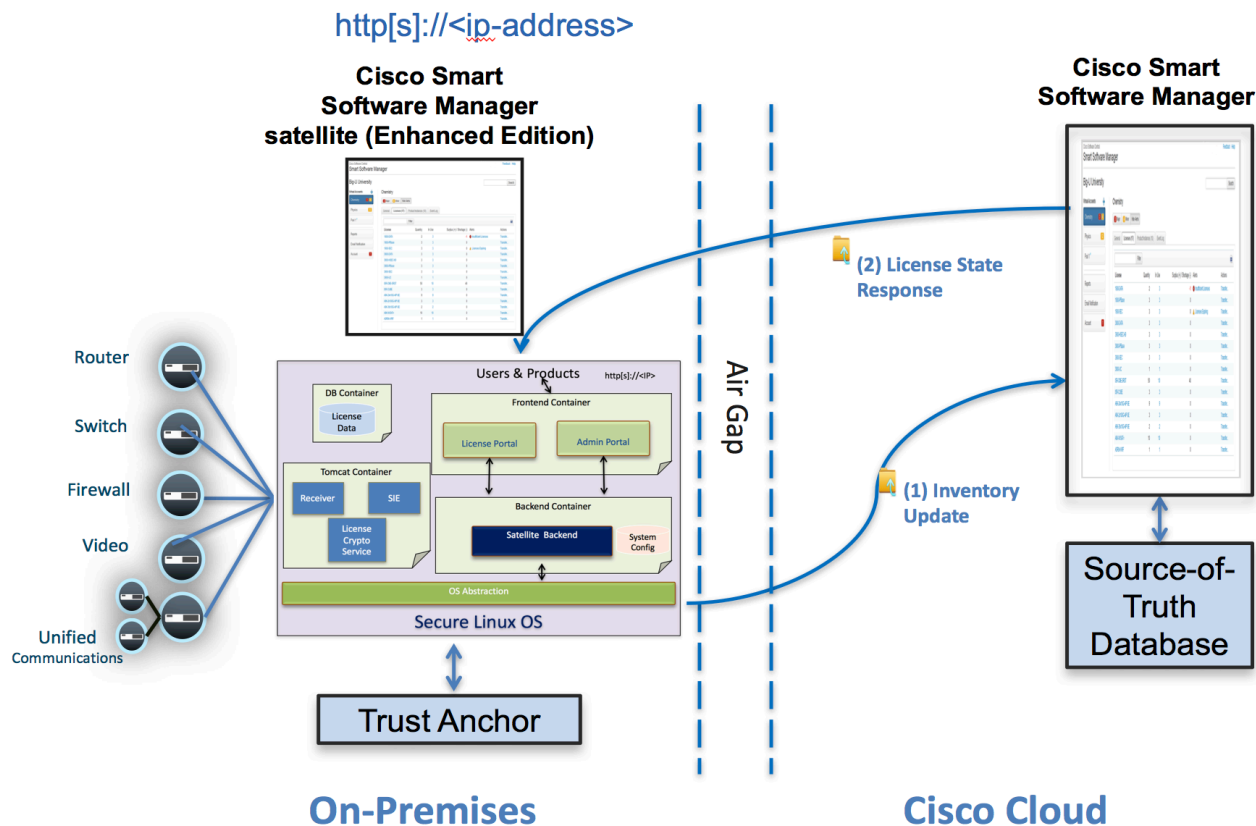


Figure 1 - Satellite Deployment

Device Terminology

Term	Description
ESXi	Virtualization platform used to create the virtual machines as a set of configuration and disk files.
ISO Image	International Organization for Standardization file is an archive file that contains a disk image called ISO 9660 file system format.
Virtual Machine (VM)	Virtualized x86 PC environment in which a guest operating system and associated application software can run. Multiple VMs can operate on the same host system concurrently.
vSphere Client	User interface that enables users to connect remotely to vCenter Server or ESXi from any Windows PC. You can use the primary interface for vSphere Client to create, manage, and monitor VMs, their resources, and the hosts. vSphere Client also provides console access to VMs.

System Requirements



Note Ensure that you have an assigned to a Smart Account before you proceed with the tasks mentioned in this section.

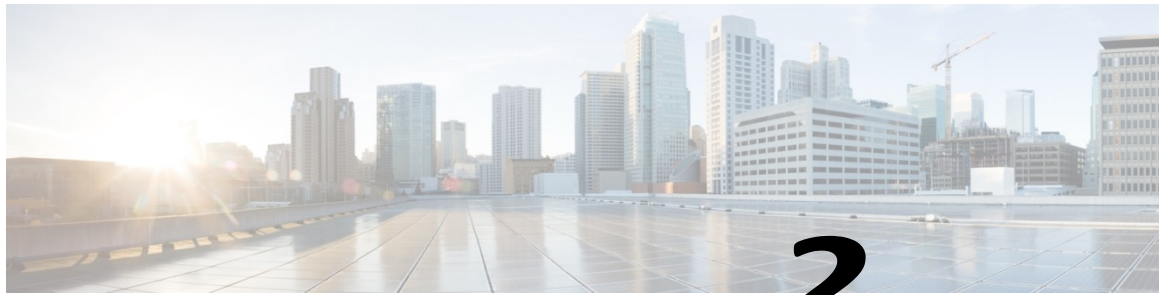
Ensure that the software image supplied for the installation of Smart Software Manager satellite has the following configuration:

Minimum	Recommended
200 GB Hard disk	200 GB Hard disk
8GB Memory	8GB Memory
2 vCPUs	4 vCPUs

Supported Web Browsers

Smart Software Manager satellite supports the following web browsers:

- Chrome 32.0 and later versions
- Firefox 25.0 and later versions
- Safari 6.0.5



CHAPTER 2

Deploying Smart Software Manager satellite

This chapter contains the following sections:

- [Introduction](#)
- [Smart Software Manager satellite Enhanced Edition ISO Installation](#)

Introduction

Cisco Smart Software Manager satellite Enhanced Edition software is delivered as a CentOS 7 ISO image that can be deployed on various virtualized platforms (i.e., bare metal, OVA, Hyper-V, KVM, etc.), using standard CentOS installation procedures.

Overview

[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](#) (Cisco SSM) hosted on cisco.com. [Smart Software Manager satellite](#) has multiple deployment models:

Smart Software Manager satellite Classic:

- Targeted for small enterprises
- Operates at the Local Virtual Account level, supporting a single Virtual Account on Cisco Smart Software Manager (single tenant)
- Scales to 4,000 product instances
- Online or offline connectivity to Cisco

Smart Software Manager satellite Enhanced Edition (EE):

- SSM satellite EE is targeted for service providers and/or partners who need to manage their customer's account.
- New architecture and infrastructure with higher scalability and usability
- Supports multiple Local Accounts (multi-tenant)
- Scales to 10,000 product instances
- Online or offline connectivity to Cisco
- Allows downstream satellites to register to it, forming a hierarchical satellite structure (future) with the SSM satellite Lite Edition (LE)

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

- SSM 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

Today, SSM satellite Classic 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 one SSM satellite Classic cannot be used to manage multiple customers. Furthermore, for customers with many Virtual Accounts, managing many satellites can be overwhelming as shown in Figure 1.

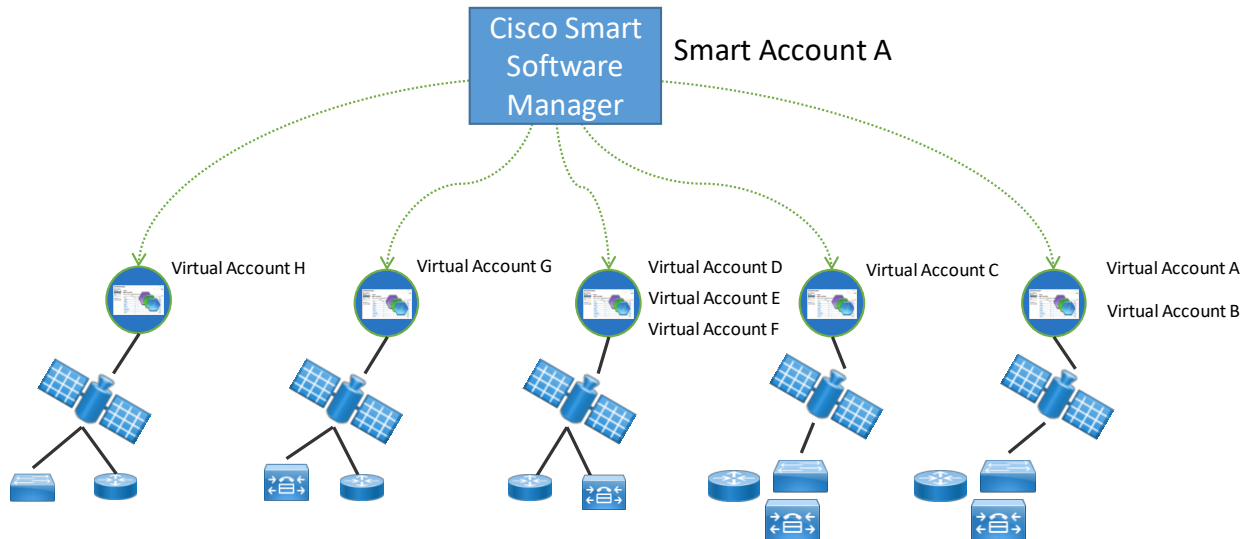


Figure 2 - Today's satellite structure (satellite Classic)

With the introduction of SSM satellite Enhanced Edition, though a single management portal, 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.

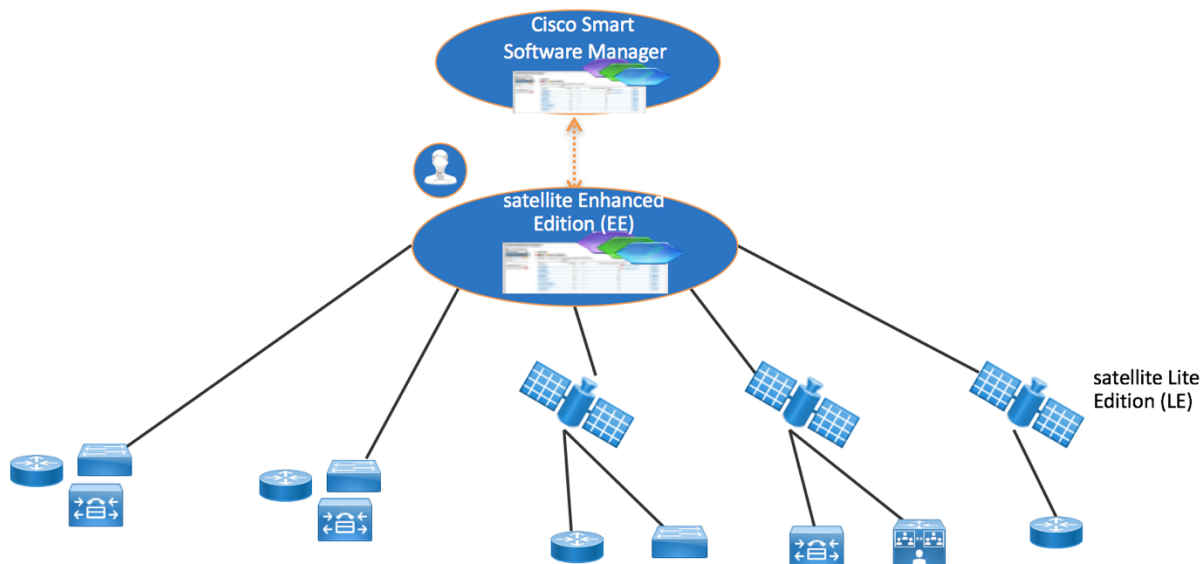


Figure 3- SSM satellite Enhanced Edition

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.

Features

The SSM satellite EE has a Licensing portal with similar functionality as software.cisco.com where users can manage their local Accounts, users, product instances, licenses, etc. The SSM satellite EE has an Administration portal separately from the Licensing portal that allows for internal administrative functions such as system user creation, local Account creation, registration/synchronization, network, system and security settings, etc. This administration portal is restricted to only authorized users.

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

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

Key features of SSM satellite EE include the following:

Multi-tenancy - manage multiple customer Local Accounts in a single management portal

Separate Licensing and Administration portals

SSM satellite EE has two different portals for licensing management and system administration. SSM satellite Administration portal functions separately from the Licensing portal and allows for internal administrative functions such as user control, local Account creation, registration, synchronization, along with network, system and security settings, etc. This administration portal is restricted to only authorized users.

ISO Packaging

Satellite EE is packaged as a universal ISO which allows it to be exported to various image types as shown below:

- *OVA image* - An Open Virtualization Archive that contains a compressed, "installable" version of a virtual machine.
- *Hyper-V image* - Allows customers to install on a Hyper-V virtualized host of Microsoft Windows Server 2012.
- *KVM (Kernel-based Virtual Machine) image* - Allows customers to install on a virtualized Linux environment supporting Ubuntu and CentOS.

Note: Exporting of the ISO image to other image types is the responsibility of the customers and is not supported by Cisco.

System Security Enhancements

SSM satellite EE is packaged as a deployable ISO with CentOS 7 Security Harden Kernel and Nessus Scans with Critical and Major (CVE) issues addressed.

User Authentication Control (LDAP & OAuth2)

A *System Administrator* can set the authentication method to be LDAP and OAuth2. If not specified, it will be using local authentication.

License Hierarchy

Enable borrowing of a higher-tier license to be fulfilled when a lower tier license is not available.

Local Account Administration and Licensing Management

Combined local Account administration and licensing management in a single portal with the same look-and-feel as Cisco Smart Software Manager and Virtual Account Administration.

Multiple Network Interfaces

Allows users to configure multiple interfaces for traffic separation between management and product instance registrations. **** Some restrictions apply**

Syslog support

Local Account events can be configured to be sent to a syslog server.

Proxy support

Allow for satellite to have a proxy between itself and Cisco Smart Software Manager for traffic separation.

Application Redundancy support - For application redundancy enabled products, to prevent double counting of licenses on active/active or active/standby or fail- over scenarios.

Export Control support - Allow customers located outside EULF/ENC to which US Export restriction apply to request specific export control licenses and associated quantity.

API Toolkit – Allow applications to call satellite APIs for virtual account, token, license, product instance, reporting, and alert operations.

User Groups - Group users so operations such as role assignment can be applied to multiple users within the group instead of individual users.

LDAP Groups – Group LDAP users so operations such as role assignment can be applied to multiple LDAP users within the group.

Custom Virtual Account Tagging – Allow local Virtual Accounts to be tagged for easy virtual account classification, grouping, locating and/or role assignment.

License Tagging - User-defined tags that can be created and tagged to licenses. They are useful for classifying, locating, and grouping licenses.

Virtual Account Search – Search local Virtual Accounts by Name or by Tag

Advanced License Search – Search Licenses based on detailed information such as SKU, Product Family, Expiration Date, or PAK (PAK # of a classic license that has been converted to Smart)

Bulk Operations - Enable transfer of multiple licenses between local virtual accounts

Configurable Banners and Login Information

Headers and footers and user login page on the satellite portal are configurable enabling them to be customized with meaningful classifications and information.

Scalability

- Up to 500 Local Accounts
- Up to 10K product instances

SSM satellite EE is designed to mirror Cisco Smart Software Manager's and Local Account Administration's experience through a common user interface and similar features. But instead of being hosted on cisco.com, it is available as an on-prem version. It has two separate portals: Administration and Licensing:

- The Licensing portal functions similarly to Cisco Smart Software Manager and Local Account administration.
- The Administration portal is used for system management functions mentioned above (network configuration, user creation, registration, synchronization, authentication setting, etc.). It also has other features not available on Cisco Smart Software Manager such as syslog and proxy support. In the future, we will also be adding other features such as backup/restore, upgrade, security, high availability, and usage-based billing.

Feature Gaps from Previous Releases

Please note that existing features in satellite Classic 5.0. below are NOT available in this release and will be made available future satellite EE releases:

- DLC (Device-Led Conversion),
- 3rd party integration (Apple Push Notification and Text-To-Speech),
- GUI Shut Down/Restart
- Utility billing,
- Backup/Restore,
- High Availability

Please refer to satellite Enhanced Edition User Guide for how to use its features.

Smart Software Manager satellite Enhanced Edition ISO Installation

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

1. Download the ISO image from CCO

2. Create a VM using vSphere Client
3. Mount the ISO image on a VM Manager
4. Enter the information requested on the Cisco SSM satellite EE Kickstart Installation UI
 - Setup Hostname
 - Select System Profile
 - 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.
 - SCAP Profile - Not changeable
 - FIPS 140-2 Mode - Not changeable
5. Disk partitioning – Use defaults

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

6. Disk partitioning – SOFTWARE DOWNLOAD allocation

- SOFTWARE DOWNLOAD should be set for Software Download function to work. The percentage you choose will be based on the amount of disk you will need for local image storage. Note the total space can not exceed 100%, so you will need to reduce /var/data provide space for files you later upload.
- If you do not need Software Download option then this will be defaulted to 0%.

The screenshot shows the 'Cisco SSM satellite PE/LE Kickstart Installation' window. It includes a menu bar (File, View, VM) and a toolbar. The main content is divided into sections:

- System Settings:**
 - Hostname: CiscoSatellite
 - System Profile: SSM satellite PE
 - System Classification: UNCLASSIFIED
 - SCAP Profile: DISA STIG
 - FIPS 140-2 Mode: Enabled
- Hardware Settings:**
 - CPU Model: Intel(R) Xeon(R) CPU E5-4650 0 @ 2.70GHz
 - CPU Threads: 4
 - Architecture: 64-bit
 - Total System Memory: 8175676 kB
 - Free Memory: 5592928 kB
- Disk Partitioning:**
 - Available Disks: ☒ sda (200Gb)
 - Encrypt Drive with LUKS: Disabled
 - Required Disk Partitioning Percentage:

ROOT (/) 10%	HOME (/home) 10%	TMP (/tmp) 10%	SWAP 5%
VAR (/var) 5%	DATA (/var/data) 40%	LOG (/var/log) 10%	AUDIT (/var/log/audit) 10%
 - Optional Partitioning:
 - SOFTWARE DOWNLOAD (/var/download) 0%

Note: Disk Partitions should add up to 100% or less before proceeding. **Currently Used: 100%**

Buttons at the bottom: Network Configuration, Help, OK.

5. Click on “Network Configuration”
 - On Configure Management Network, configure IP address for Eth0 and Eth1
 - Configure DNS – Provide a DNS IP address

6. If you click on the “Help” icon, the following information will show up:

Install Help

- All Disk partitions need to take less than or equal to 100% of the Volume.
- Pressing OK prompts for a password to encrypt Disk (LUKS), GRUB, and admin password.
- The sshusers group controls remote access, wheel group is for root users, and isso group is for limited root with auditing permissions.
- To access root remotely via ssh you need to create a user and add them to the wheel and sshusers groups.
- Minimum password length is 15 characters, using a strong password is recommended.

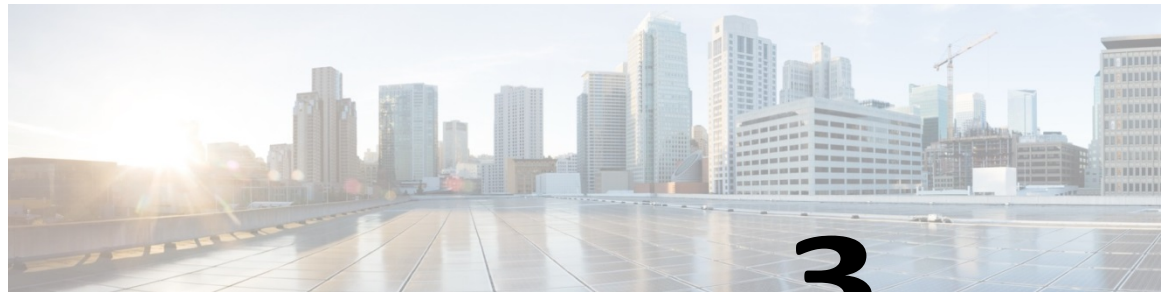
OK

7. Configure System Password – Accept the default (admin/CiscoAdmin!2345) or change it. This is the password for SSH only.

8. Wait until the installation completes (approximately 10-15 mins)
9. Once you get the following prompt, it means that the satellite has successfully been deployed.

```
CiscoSatellite login: admin
Password:
Last login: Mon Jan 29 15:58:50 EST 2018 from 10.150.21.99 on pts/0
Last login: Thu Feb 1 08:43:34 on tty1
[admin@CiscoSatellite ~]$
```


10. Dismount the ISO image so the system doesn't boot from there
11. Satellite system automatically boots up
12. Launch the satellite from a browser using the configured IP address
13. Login with default credentials (*admin/Cisco.Admin!2345*)
14. Register a satellite Enhanced Edition account to Cisco SSM
 - **Request an account** on Smart Licensing portal and tie it to a Cisco Smart Account (must exist on Cisco SSM). The VA can be an existing or a new one
 - Go into Administration Portal *https://<ip-address>:8443/admin*
 - Approve the account request on **Account Requests** tab by selecting **Approve** under **Actions**
 - Enter your CCO/SSO Credentials for the Smart Account
 - You will get a successful registration message.
 - Smart Software Manager satellite EE account is now registered with CSSM and you can now use Smart Licensing features on it.
15. Please refer to the Smart Software Manager satellite Enhanced Edition User Guide for instructions on how to use it.



CHAPTER

3

Migration to Smart Software Manager satellite Enhanced Edition

For customers who wish to migrate from satellite Enhanced Edition 6.0.1 to this release, please use the 6.1.0 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 6.1.0. However, you can use the following procedures to manually migrate from a previous satellite Classic release to satellite Enhanced Edition (EE).

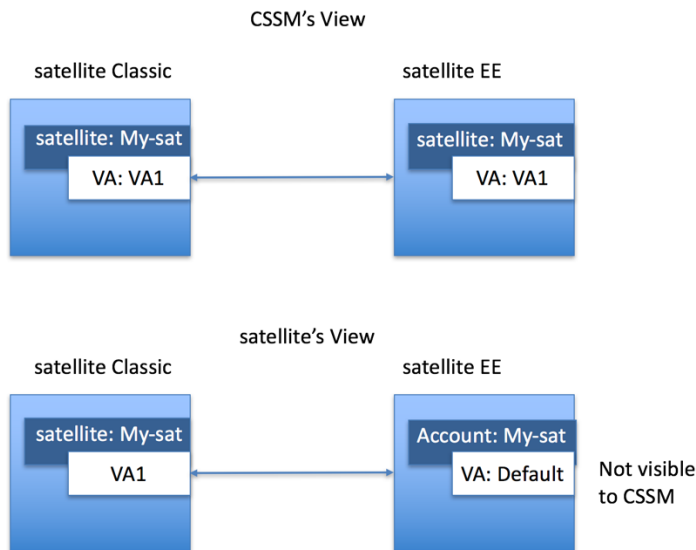
Procedures:

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 CSSM.
 - b. Go to "Satellites" pane.
 - c. Under Action, select "Remove".
 - d. Confirm the Removal message by selecting OK.
5. Deploy a satellite EE system.
6. Login to satellite EE Administration Portal.
 - a. Create a "New Account". This account will have a local *Default* VA associated with it automatically on satellite EE.

- b. This “New Account” workflow automatically registers the Account with Cisco Smart Software Manager Smart Account/Virtual Account pair.

7. Single VA satellite

- a. Re-register all our PIs to the local *Default* Virtual Account on satellite EE.
- b. Re-create users under the satellite EE Licensing Portal 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 EE Licensing Portal to match that structure as shown in 8.d.
- b. On CSSM, 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 EE.
- c. Register satellite EE Account to CSSM Smart Account/Virtual Account pair. The virtual account on CSSM in this example is *My-sat-VA*. All of the entitlements from *My-sat-VA* are added to local *Default* VA on satellite EE 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 EE.
- 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 EE Licensing Portal and re-assign their roles to the corresponding VAs.

