Cisco IMC Supervisor Installation Guide for VMware vSphere and Microsoft Hyper-V, Release 2.4

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CONTENTS

Preface

This preface contains the following sections:

Audience

This guide is intended primarily for data center administrators who use and who have responsibilities and expertise in one or more of the following:

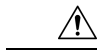
- Server administration
- Storage administration
- Network administration
- Network security
- Virtualization and virtual machines

Conventions

Text Type	Indication
GUI elements	GUI elements such as tab titles, area names, and field labels appear in **this font**. Main titles such as window, dialog box, and wizard titles appear in **this font**.
Document titles	Document titles appear in *this font*.
TUI elements	In a Text-based User Interface, text the system displays appears in `this font`.
System output	Terminal sessions and information that the system displays appear in `this font`.

Text Type	Indication
CLI commands	CLI command keywords appear in **this font**. Variables in a CLI command appear in *this font*.
[ ]	Elements in square brackets are optional.
{x | y | z}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
< >	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 Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the document.



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

Tip Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

Timesaver Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Warning IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.

SAVE THESE INSTRUCTIONS

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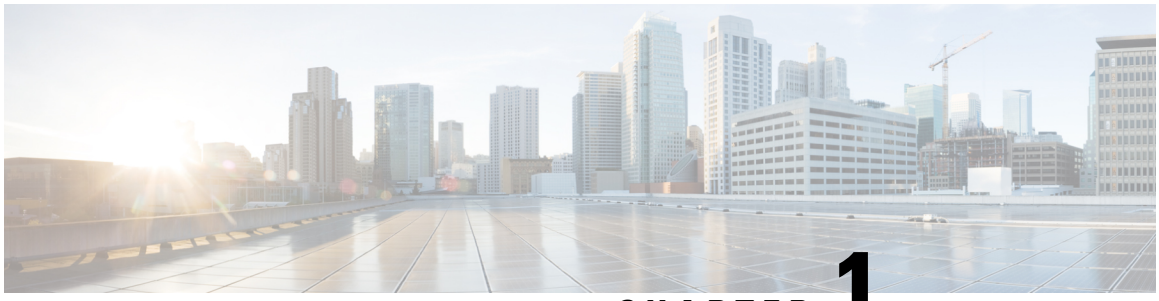


CHAPTER 1

Overview

This chapter contains the following topics:

About Cisco IMC Supervisor

Cisco IMC Supervisor is a management system that allows you to manage rack-mount servers on a large scale. It allows you to create groups of rack-mount servers for monitoring and inventory purposes.

You can use Cisco IMC Supervisor to perform the following tasks:

- Logically grouping servers and viewing summary per group
- Collecting inventory for the managed servers
- Monitoring servers and groups
- Managing firmware including firmware download, upgrade, and activation
- Provide Northbound REST APIs to discover, monitor and manage servers and perform firmware upgrades programmatically.
- Managing standalone server actions including power control, LED control, log collection, KVM launch, and CIMC UI launch.
- Restricting access using Role Based Access Control (RBAC)
- Configuring email alerts
- Configuring server properties using policies and profiles
- Defining schedules to defer tasks such as firmware updates or server discovery
- Diagnosing server hardware issues using UCS Server Configuration Utility
- Cisco Smart Call Home provides proactive diagnostics, alerts, and remediation recommendations
- Managing Cisco UCS S3260 Dense Storage Rack Server

- Configuring the DNS server and other network settings through the Network Configuration policy
- Assigning physical drives to server through the Zoning policy
- Setting up multiple diagnostic images across different geographic locations
- Customizing email rules to include individual servers within a group

Minimum System Requirements

Supported Server Models

- UCS C-220 M3, M4 and M5
- UCS C-240 M3, M4 and M5
- UCS C-460 M4
- UCS C-480 M5
- UCS C-22 M3
- UCS C-24 M3
- UCS C-420 M3
- UCS E-160S M3
- UCS C3160
- UCS S3260 M3, M4 and M5
- UCS EN120E M2
- UCS EN120S M2
- UCS EN140N M2
- UCS E-140S M2
- UCS E-160D M2
- UCS E-180D M2
- UCS E-140S M1
- UCS E-140D M1
- UCS E-160D M1
- UCS E-140DP M1
- UCS E-160DP M1
- UCS E-1120D M3
- UCS E-180D M3
- ENCS 5406

- ENCS 5408
- ENCS 5412
- HX220C-M5S
- HX220C-M4
- HX240C-M5SX
- HX240C-M4
- HXAF240C-M5SX
- HXAF220C-M5S
- HXAF240C-M4SX

Important Cisco IMC Supervisor supports up to 1000 UCS C-Series and E-Series servers. For more information about scalability, see Deployment and Scalability.

Minimum Firmware Versions

Servers	Minimum Firmware Version
UCS C-series Servers	1.5(4)
UCS E-series Servers	2.3.1
UCS S3260 Servers	2.0(13e)

Supported PCiE Cards

- Cisco UCS VIC 1225
- Cisco UCS VIC 1225T
- Cisco UCS VIC 1227
- Cisco UCS VIC 1227T
- Cisco UCS VIC 1385
- Cisco UCS VIC 1387
- Cisco UCS VIC 1455
- Cisco UCS VIC 1457

Supported Hypervisor versions

- ESXi 7.0
- ESXi 7.0 U1

- ESXi 7.0 U2
- ESXi 7.0 U3
- ESXi 8.0
- ESXi 8.0 U1
- ESXi 8.0 U2
- Windows 2016 with Hyper-V Role
- Windows 2019 with Hyper-V Role
- Windows 2022 with Hyper-V Role

Minimum Hardware Requirements

The Cisco IMC Supervisor environment must meet at least the minimum system requirements listed in the following table.

Element	Minimum Supported Requirement
vCPU	4
Memory	12 GB
Primary Disk (Hard Disk 1)	100 GB
Secondary Disk (Hard Disk 2)	100 GB
Minimum write speed for storage	10 MB/sec

Cisco IMC Supervisor Deployment and Scalability

Configuring Inframgr properties

1. Modify the following properties and values from the `/opt/infra/inframgr/service.properties` file:
   - threadpool.maxthreads.inventory=50
   - cimc.inventory.max.thread.pool.size=100
2. Go to Shell Admin and restart the services by stopping and starting the Cisco IMC Supervisor services.

Deployment Recommendations

Cisco IMC Supervisor recommends the following based on the scale of rack servers you manage:

Element	Small Deployment (1 - 250 rack servers)	Medium Deployment (251 - 500 rack servers)	Large Deployment (501 - 1000 rack servers)
vCPUs	4	4	8

Element	Small Deployment (1 - 250 rack servers)	Medium Deployment (251 - 500 rack servers)	Large Deployment (501 - 1000 rack servers)
CPU Reservation	10000 MHz	10000 MHz	10000 MHz
Cisco IMC Supervisor VM Memory Allocation	12 GB	16 GB	20 GB
Cisco IMC Supervisor VM Memory Reservation	12 GB	16 GB	20 GB
Inframgr Memory Allocation	6 GB	8 GB	10 GB
Database InnoDB BufferPool Config	1GB	2 GB	3 GB
Disk write Speed (Direct IO)	10 MB/sec	10 MB/sec	15 MB/sec

Allocating Inframgr Memory

1. Go to `/opt/infra/bin/` and open the `inframgr.env` file using vi editor.
2. Edit the values MEMORY_MIN and MEMORY_MAX.

   For example, if you are managing 1000 rack servers then inframgr memory allocation must be set to 10 GB. Hence, the MEMORY_MIN and MEMORY_MAX must be set to 10240m.

Note Inframgr memory allocation must be increased only if the memory allocated to the VM is increased. If not, this process may crash due to high load. Hence, increase memory for the IMCS VM using vCenter UI, reserve the whole memory, and then change this parameter.

3. Go to Shell Admin and restart the services by stopping and starting the Cisco IMC Supervisor services.

Configuring Database Buffer Pool

InnoDB buffer pool is the internal memory used by the mariadbd process inside the Cisco IMC Supervisor VM. You must increase the memory based on the load. To modify this pool size, perform the following procedure:

1. Go to `/etc/` and open the `my.cnf` file.
2. Navigate to the innodb_buffer_pool_size parameter.

   For example, if you are managing 1000 servers, then the value must be innodb_buffer_pool_size=3072M.
3. Go to Shell Admin and restart the services and database by stopping and starting the Cisco IMC Supervisor services and database.

Determining Direct Disk Input/Output Speed

1. After Cisco IMC Supervisor VM is deployed, go to the command prompt and enter the dd if=/dev/zero of=test.img bs=4096 count=256000 oflag=direct command. The following output for example, is displayed:

```
[root@localhost ~]# dd if=/dev/zero of=test.img bs=4096 count=256000 oflag=direct
256000+0 records in
256000+0 records out
1048576000 bytes (1.0 GB) copied, 44.0809 s, 23.8 MB/s
```

Note In the above example, 23.8 MB/s is the disk input/output speed.

Supported Firewall Ports

The list of applicable services and ports are listed in the following table.

Service	Port Number
Servers	Minimum Firmware Version
SSH Port	22
HTTP (S)	80/443
DHCP	UDP 67 & 68
Active Directory	TCP / UDP 389/636 & TCP 3268/3269
DNS	TCP/UDP 53
NTP	TCP/UDP 123
Database	3306
Cisco IMC Supervisor ↔ IMC Connectivity	TCP 80/443
Sun-RPC (Remote Procedure Call) Port used for executing NTP, FTP and other remote operations.	TCP/111
Adobe flash Socket Policy Server used by Cisco IMC Supervisor.	TCP/843
Webserver (/HTTP) port to access GUI and API in non-secure mode.	TCP/8080
Webserver (/HTTPS) port to access GUI and API in secure mode.	TCP/8443
The msgsrvr port internally connected with appliance.	TCP/8787

Note If these ports and protocols are blocked by a firewall, you may experience timeouts or internal error when you are upgrading Cisco IMC Supervisor.

Starting with Cisco IMC Supervisor Release 2.2(0.3), port 3306 is no longer an open port. Use the option in the Shell Admin console (Grant/Deny client access to Database port 3306) to decide the external clients that can connect to port 3306.

About Licenses

Cisco IMC Supervisor requires you to have the following valid licenses:

- A Cisco IMC Supervisor base license.
- A Cisco IMC Supervisor bulk endpoint enablement license that you install after the Cisco IMC Supervisor base license.
- A Cisco IMC Supervisor advanced license. You can add, edit, and delete policies and profiles with the base license but you cannot apply a policy or a profile to a server without the advanced license. An error occurs if this license is unavailable when you apply a policy.
- A default embedded Cisco IMC Supervisor evaluation license. The evaluation license is generated automatically when the end user installs Cisco IMC Supervisor and all the services start for the first time. It is applicable for 50 servers.

Important

- If you are using an evaluation license for Cisco IMC Supervisor, note that when this license expires (90 days from the date the license is generated), retrieving inventory and system health information, such as faults, will not work. You will not be able to refresh system data, or even add new accounts. At that point, you must install a perpetual license to use all features of Cisco IMC Supervisor.
- If the number of servers you have added during evaluation exceeds the number of server license purchased, inventory collection will go through fine for the servers already added during evaluation, but will prevent you from adding new servers. For example, if you have added about 100 servers during evaluation and you have purchased a 25 server license, once the evaluation license expires, you will be unable to add new servers. Also, you will be unable to perform configuration related operations without an advanced license.
- While discovering and importing servers, if the number of imported servers exceed the license utilization limit, Cisco IMC Supervisor imports servers only until the limit and displays an error for additional servers.
- Licenses for Cisco IMC Supervisor is based on the number of servers. Cisco UCS S3260 chassis is a 2-server node. As a result, in Cisco IMC Supervisor, the license utilization for this chassis is considered as 2 servers.

The process for obtaining and installing the licenses is the same. For obtaining a license, perform the following procedures:

1. Before you install Cisco IMC Supervisor, generate the Cisco IMC Supervisor license key and claim a certificate (Product Access Key).
2. Register the Product Access Key (PAK) on the Cisco software license site, as described in Fulfilling the Product Access Key, on page 8.
3. After you install Cisco IMC Supervisor, update the license as described in Updating the License, on page 33.
4. After the license has been validated, you can start to use Cisco IMC Supervisor.

For various other licensing tasks you can perform, see Licensing Tasks, on page 9.

Fulfilling the Product Access Key

Perform this procedure to register the Product Access Key (PAK) on the Cisco software license site.

Before you begin

You need the PAK number.

Procedure

Step 1 Navigate to the Cisco Software License website.

Step 2 If you are directed to the Product License Registration page, you can take the training or click **Continue to Product License Registration**.

Step 3 On the Product License Registration page, click **Get New Licenses from a PAK or Token**.

Step 4 In the **Enter a Single PAK or TOKEN to Fulfill** field, enter the PAK number.

Step 5 Click **Fulfill Single PAK/TOKEN**.

Step 6 Complete the additional fields in **License Information** to register your PAK:

Field	Description
Organization Name	The organization name.
Site Contact Name	The site contact name.
Street Address	The street address of the organization.
City/Town	The city or town.
State/Province	The state or province.
Zip/Postal Code	The zip code or postal code.
Country	The country name.

Step 7 Click **Issue Key**.

The features for your license appear, and an email with the Digital License Agreement and a zipped license file is sent to the email address you provided.

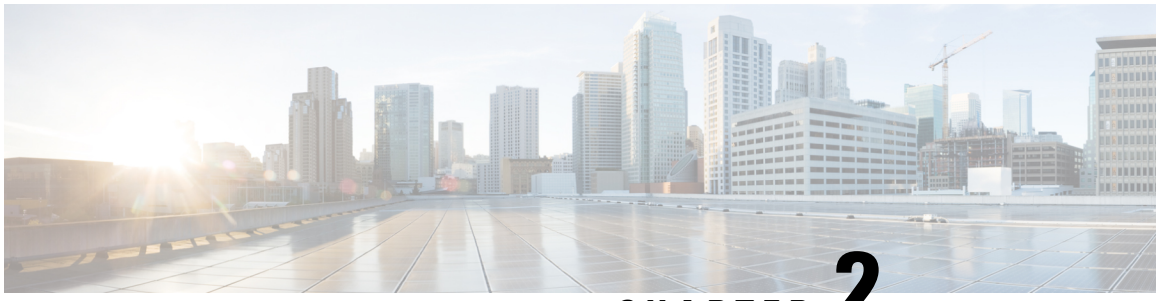
Licensing Tasks

You can use the **License** menu to view the license details and the usage of resources. The following licensing procedures are available from **Administration** > **License** menu.

Tab	Description
License Keys	This tab displays the details of the license used in Cisco IMC Supervisor. You can also use this tab to update, replace and migrate the license. You can update the license when a new version of Cisco IMC Supervisor is available.
License Utilization	This tab shows the licenses in use and details about each license, including license limit, available quantity, status, and remarks. License audits can also be run from this page. **Note** Licenses for Cisco IMC Supervisor is based on the number of servers. Cisco UCS S3260 chassis is a 2-server node. As a result, in Cisco IMC Supervisor, the license utilization for this chassis is considered as 2 servers.
Resource Usage Data	This tabs displays the details of the various resources used.
Deactivated Licenses	This tab displays a list of deactivated licenses.

Support for Third Party Software

Cisco IMC Supervisor has not tested or qualified any third software to be installed or used, such as security agents, etc. Such third party software installation of any kind may negatively affect the proper functioning of the product and is done at your own risk.



CHAPTER 2

Installing Cisco IMC Supervisor on VMware vSphere

Installing Cisco IMC Supervisor on VMware vSphere

Before you begin

You must have system administrator privileges for VMware vSphere or vCenter

Note If you want to use a static IP address rather than DHCP, you must know the following information:

- IP address
- Subnet mask
- Default gateway

Note VMware vSphere ESXi 7.0, EXSi 7.0 U1, EXSi 7.0 U2, ESXi 7.0 U3, EXSi 8.0, ESXi 8.0 U1, and ESXi 8.0 U2 are the qualified versions for OVA deployment. Ensure that the IP address of the source is different from the IP address of the target system.

Procedure

Step 1 Log in to VMware vSphere Client.

Step 2 In the **Navigation** pane, click the vSphere host on which you want to deploy.

Step 3 Choose **File** > **Deploy OVF Template**.

The **Deploy OVA Template** window appears.

Step 4 On the **Source** screen pane of the**Deploy OVF Template**, do one of the following to choose your OVA source location:

- If the OVA file is stored on your local computer, browse to the location, choose the file, and click **Open**.
- If the OVA file is stored on a server on your local area network, enter the location of the file including the IP address or fully qualified domain name of the server.

Step 5 On the **OVA Template Details** screen, verify the details and click **Next**.

Step 6 On the **Name and Location** screeen, do the following:

a) In the **Name** field, enter a unique name for the VM.
b) In the **Inventory Location** area, choose the location where you want the VM to reside.
c) Click **Next**

Step 7 Select a **compute resource** by selecting the **IP address** under which the VM has to be tagged and click **Next**.

Review the template details. Details about the publisher, Download size, the size on the disk and extra configuration will be displayed.

Step 8 On the **Storage** screen, choose the storage location for the VM and click Next.

Step 9 In the **Disk Format** pane, from the drop down options available, choose one of the following and click **Next**:

- **Thin Provisioned** format—To allocate storage on demand as data is written to disk.
- **Thick Provisioned (Lazy Zeroed)** format —To allocate storage immediately in thick format.
- **Thick Provisioned (Eager Zeroed)** format —To allocate storage in thick format. It might take longer to create disks using this option.

By default 100gb of data storage will be allocated.

Step 10 In the **Network Mapping** pane, choose network for VM and click **Next**.

Step 11 In the **Properties** pane, enter the following information and click **Next**:

- Gateway IP Address
- Management IP Address
- Management IP Subnet Mask
- Root Password

  Note The root password can be configured with any value during deployment.

- Shelladmin Password

  Note Shelladmin password can be configured with any value during deployment.

Step 12 In the **Ready to Complete** pane, verify the options selected, and click **Finish**.

Make sure you have sufficient vCPU and memory to power on the VM.

Step 13 After the appliance has booted up, copy and paste the Cisco IMC Supervisor IP address that appears into a supported web browser to access the **Login** page.

Step 14 On the **Login** page, enter `admin` as the username and `admin` for the login password.

What to do next

Update your license.

Configuring the Network Interface using Shelladmin

This procedure is optional.

Procedure

Step 1 Log in to the Cisco IMC Supervisor VM console using the Shell admin credentials configured during deployment.

Step 2 Choose `Configure Network Interface`.

Step 3 At the `Do you want to Configure DHCP/STATIC IP [D/S]` prompt, enter one of the following choices:

- If DHCP is enabled, enter **D** (IP addresses are assigned automatically)
- To configure static IP, enter **S**, and then choose the interface you want to configure at the next prompt followed by the option to select IPv4. This is followed by the confirmation of the interface selected and the version of IP for which you select **Y** to continue. Then enter the following details:
  - IP address
  - Netmask
  - Gateway
  - (Optional) DNS Server 1
  - (Optional) DNS Server 2

Step 4 Confirm when prompted.

Reserving System Resources

For optimal performance, we recommend reserving extra system resources for Cisco IMC Supervisor beyond the minimum system requirements.

Note For more information about how to reserve system resources, see the VMWare documentation.

Procedure

Step 1 Log into VMware vCenter.

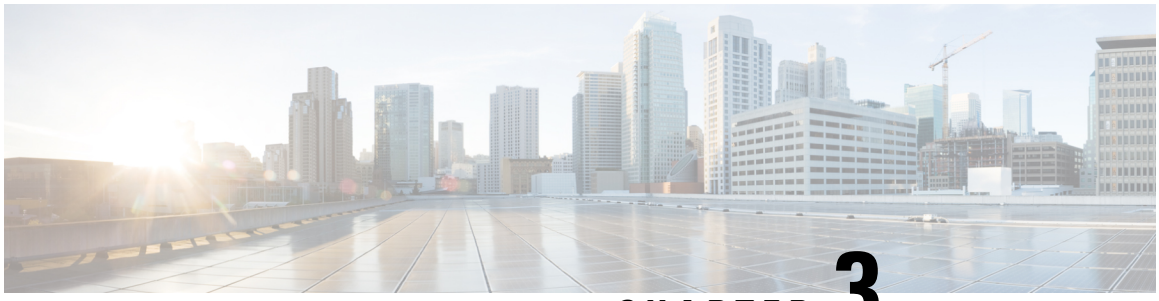
Step 2 Choose the VM for Cisco IMC Supervisor.

Step 3 Shut down the VM.

Step 4 In VMware vCenter, click the **Resource Allocation** tab to view the current resource allocations, and click **Edit.**

Step 5 In the **Virtual Machine Properties** pane, edit resource allocations by choosing a resource and entering the new values.

Step 6 Verify that the new resource allocations have been made.



CHAPTER 3

Installing Cisco IMC Supervisor on Microsoft Hyper-V

About Cisco IMC Supervisor for Hyper-V

Deploying Cisco IMC Supervisor in a Hyper-V environment is supported.

Note We recommend deploying Cisco IMC Supervisor on the Hyper-V Manager host, rather than the SCVMM console.

Cisco IMC Supervisor deployments are supported on Microsoft Hyper-V 2016, Microsoft Hyper-V 2019, and Microsoft Hyper-V 2022.

Prerequisites

- Installation of Hyper-V Manager
- Configured system administrator privileges
- Cisco IMC Supervisor installed on Hyper-V host

Installing Cisco IMC Supervisor on Microsoft Hyper-V

Before you begin

System administrator privileges for Hyper-V are required.

Note If you do not want to use DHCP, you need the following information: IP address, subnet mask, and default gateway.

Note Ensure that the IP address of the source is different from the IP address of the target system.

Procedure

Step 1 Log into the Hyper-V host.

Step 2 Choose **Start** > **Administrative Tools** to open **Hyper-V Manager.**

Step 3 In the **Hyper-V Manager** dialog box, choose **New** > **Virtual Machine**.

Step 4 In the **Before You Begin** pane, choose the custom configuration option and click **Next**.

Step 5 In the **Specify Name and Location** pane, in the **Name** field, edit the VM name and click **Next**.

Step 6 In the **Specify Name and Location** pane, check the **Store the virtual machine in a different location** checkbox and specify the alternate location or the virtual machine is stored in the default folder.

Step 7 Click **Next**.

Step 8 In the **Assign Memory** pane, enter the amount of memory to allocate to this VM (recommended12 GB) and click **Next**.

Step 9 In the **Configure Networking** pane, do not make any changes to the settings specified for the **Connection** field and click **Next**.

Step 10 In the **Connect Virtual Hard Disk** pane, select use an existing virtual hard disk or attach a virtual hard disk later and click **Next**.

Step 11 Click **Next**.

Step 12 In the **Completing the New Virtual Machine Wizard** pane, verify the settings and click **Finish**.

Step 13 In the **Hyper-V Manager** pane, right-click the new VM and choose **Settings**.

Step 14 In the **Navigation** pane, choose **IDE Controller 0**.

Step 15 In the **IDE Controller** pane, choose **Hard Drive** and click **Add.**

Note You need to add two hard drives as there are two separate VHD files - one for the OS and application, and the other for the database.

Step 16 In the **Hard Drive** pane, click **Browse**, choose the downloaded Cisco IMC Supervisor .vhd file and click **Open.**

Step 17 Click **Apply**.

Step 18 Review the virtual hard drive properties.

Step 19 In the **Navigation** pane, choose **Memory.**

Step 20 In the **Memory** pane, enter the recommended value (minimum 12 GB) and drag the **Memory weight** to **High**.

Step 21 In the **Navigation** pane, choose **Processor**.

Step 22 In the **Processor** pane, choose the recommended value (4 vCPU) and in the **Resource Control** pane, enter 100 in the **Virtual machine reserve (percentage)** field.

Step 23 In the **Navigation** pane, choose **Network Adapter**.

Step 24 Click **Remove** to remove the network adapter that was created when you created the new VM.

Step 25 In the **Navigation** pane, choose **Add Hardware**.

Step 26 In the **Add Hardware** pane, choose **Legacy Network Adapter** and click **Add**.

Step 27 In the **Legacy Network Adapter** pane, in the **Network** field, choose **Local Area Connection - Virtual Network** and click **Apply**.

Step 28 Verify that you have sufficient vCPU and Memory resources allocated.

For the minimum system requirements, see Minimum System Requirements.

Step 29 Click **OK**.

Step 30 Power on the VM.

Step 31 Optionally, you can configure network properties from the shelladmin. For more information about configuring network properties, see Configuring the Network Interface using Shelladmin, on page 13.

Step 32 After the appliance restarts, copy and paste the Cisco IMC Supervisor IP address that is displayed into a supported web browser to access the **Login** page.

Step 33 At the login prompt, enter `admin` for username and `admin` for the password to log into Cisco IMC Supervisor.

Note Change your administrator password after this initial login.

What to do next

Update your license.

Configuring the Network Interface using Shelladmin

This procedure is optional.

Procedure

Step 1 Log in to the Cisco IMC Supervisor VM console with the following credentials:

- User—shelladmin
- Password—changeme

If you have already logged into the shelladmin and changed the default password, use your new password instead.

After you have logged in, you can choose `Change shelladmin password` to change the default password.

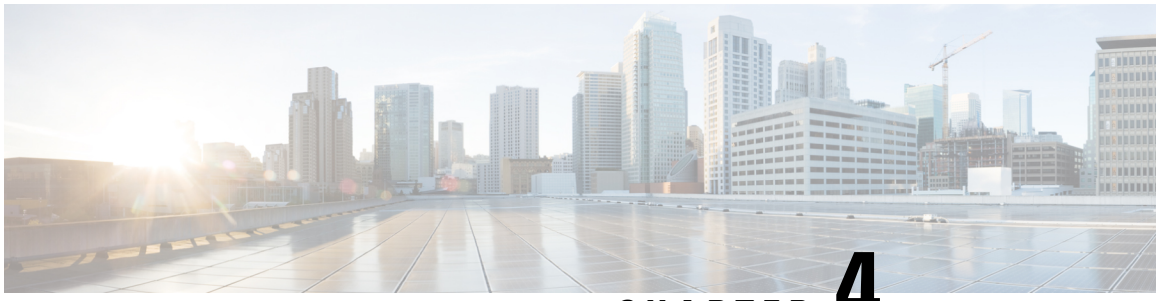
Step 2 Choose `Configure Network Interface`.

Step 3 At the `Do you want to Configure DHCP/STATIC IP [D/S]` prompt, enter one of the following choices:

- If DHCP is enabled, enter **D** (IP addresses are assigned automatically)

- To configure static IP, enter **s**, and then choose the interface you want to configure at the next prompt followed by the option to select IPv4. This is followed by the confirmation of the interface selected and the version of IP for which you select **Y** to continue. Then enter the following details:
  - IP address
  - Netmask
  - Gateway
  - (Optional) DNS Server 1
  - (Optional) DNS Server 2

Step 4 Confirm when prompted.



CHAPTER 4

Upgrading Cisco IMC Supervisor From Older Versions

This chapter contains the following topics:

Upgrading Cisco IMC Supervisor

Supported Upgrade Paths for Cisco IMC Supervisor Release 2.4

- From Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.3(7.0) to Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.3(6.0) to Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.3(5.0) to Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.3(4.0) to Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.3(3.0) to Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.3(2.1) to Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.3(2.0) to Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.3(1.0) to Release 2.3(2.0) to Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.3(0.0) to Release 2.3(2.0) to Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.2(1.4) to Release 2.3(2.0) to Release 2.3(8.0) to Release 2.4(0.0)
- From Release 2.2(1.3) to Release 2.3(2.0) to Release 2.3(8.0) to Release 2.4(0.0)

Note From Release 2.2(1.3) or Release 2.2(1.4), migrate to Release 2.3(8.0), Post which migrate to 2.4(0.0)

Data Migration

Data Migration has two options

- Online Migration
- Offline Migration

Online Migration

Procedure

Step 1 Log into SSH with root credentials of the target system.

Step 2 Navigate to the migration folder with the following command:

```
cd /opt/infra/migration
```

Step 3 Run the **./performMigration.sh** script.

```
[root@localhost migration]# sh performMigration.sh
********************************************************************************
  ******************   IMC Supervisor 2.4.0.0 Migration  ******************
********************************************************************************

Current IMC Supervisor Version       :  2.4.0.0
Deployment Type                      :  standalone
Note: Before migrating data to the latest version of Cisco IMC Supervisor,
ensure that you run the CSA tool in the current version to identify and resolve the
incompatibilities.
Have you resolved the incompatibilities [y/n]?
```

Step 4 Enter y and press Enter.

The following sample information is displayed.

```
Please proceed to migration...................

Services will be stopped before migration. Any existing data in this appliance database
will be deleted as part of migration.
Do you want to continue [y/n]? :
```

Step 5 Enter y and press Enter.

Step 6 Specify the IP address and root password details of the source system and press Enter.

The following sample information is displayed:

```
Enter IMC Supervisor 2.3.8.0 appliance IP address : XX.XX.XX.XX
Enter root password for XX.XX.XX.XX               :
Trying to connect to database on XX.XX.XX.XX : UP

******************    STARTING MIGRATION STEP (1/8)          ********************
```

```
Checking for available free disk space to take database backup in 6.7.4.3/6.8.x.x appliance
Disk space required for backup in partition "/dev/mapper/centos-root" : 1737 MB
Available free space in partition "/dev/mapper/centos-root" on XX.XX.XX.XX : 81499 MB

Checking for available free disk space to restore database backup in 6.9.0.0 appliance
Disk space required for restore in both partitions "/dev/mapper/infradb_vg-infradb_lv" and
 "/dev/mapper/almalinux-root" : 1737 MB
Available free space in partition "/dev/mapper/almalinux-root" : 83565 MB
Available free space in partition "/dev/mapper/infradb_vg-infradb_lv" : 99190 MB

Initiating database backup on remote node. This process will take some time depending on
the database size.
.......... done
Extracting the database backup archive file to validate the DB files.
. done

Validating the exported file is complete.
Exported database successfully.

******************    COMPLETED MIGRATION STEP (1/8)         ********************
******************    STARTING MIGRATION STEP (2/8)          ********************

Started decrypting connector properties file using dynamic AES key... This will take some
time. Please wait...

...................... done

******************    COMPLETED MIGRATION STEP (2/8)         ********************
******************    STARTING MIGRATION STEP (3/8)          ********************

Restoring database. This process will take some time depending on the database size.
Extracting database backup archive /opt/infra/migration/backup-ucsd/database_backup.tar.gz...
Initializing Database...
....... done
Restoring data from db_private_admin*.sql
.......... done
Restoring data from confmgr_production.sql
. done
Database restored successfully.

******************    COMPLETED MIGRATION STEP (3/8)         ********************
******************    STARTING MIGRATION STEP (4/8)          ********************

Product name from old appliance: Cisco IMC Supervisor
Bigdata specific upgrade is not required
Migrated property files successfully.
Updating multisite xml file...
Restore Open automation files...
Changing Hostname for the appliance from savbu-pl-control-kvm-26-55.cisco.com to
localhost.localdomain
Changed Hostname Successfully
Hosts file updated successfully with localhost.localdomain

******************    COMPLETED MIGRATION STEP (4/8)         ********************
******************    STARTING MIGRATION STEP (5/8)          ********************

Running database migration scripts [ Source : 6.8.8.0 ]
Upgrading database query...
Ending database upgrade process...

******************    COMPLETED MIGRATION STEP (5/8)         ********************
******************    STARTING MIGRATION STEP (6/8)          ********************
```

```
The database schema initialization has been triggered. This will take some time. Please
wait until schema initialization is complete.
..................... done
Schema Initialization has been completed.

******************    COMPLETED MIGRATION STEP (6/8)         ******************
******************    STARTING MIGRATION STEP (7/8)          ******************

Workflows not applicable for Cisco IMC Supervisor. Skipping workflow migration step.
Started encrypting all password field using dynamic AES key.

..................... done
Completed encrypting all password field using dynamic AES Key.


******************    COMPLETED MIGRATION STEP (7/8)         ******************
******************    STARTING MIGRATION STEP (8/8)          ******************

Started updating DB Table MAILSETTINGS.
Completed updating DB Table MAILSETTINGS.
Starting services. Use the "Display Services Status" option to check the status.

******************    COMPLETED MIGRATION STEP (8/8)         ******************

Migration completed successfully.
Migration log file available at /var/log/ucsd/migrateAlmaLinux9.log
[root@savbu-pl-control-kvm-26-55 migration]
```

After the migration process is completed, the source system goes down and the target system is automatically powered on with the migrated information.

Offline Migration

Procedure

Step 1 Log into SSH with root credentials of the target system.

Step 2 Navigate to the migration folder with the following command:

```
cd /opt/infra/migration
```

Step 3 Execute the **/performMigration.sh offline copyMigrationScript** command to copy the migration script **(/opt/infra/migration)** of the target system to the source system **(opt/infra/migration)**.

```
******************   IMC Supervisor 2.4.0.0 Migration  ******************
********************************************************************************

Current IMC Supervisor Version       :  2.4.0.0
Deployment Type                      :  standalone
Note: Before migrating data to the latest version of Cisco IMC Supervisor,
ensure that you run the CSA tool in the current version to identify and resolve the
incompatibilities.
Have you resolved the incompatibilities [y/n]?
```

Step 4 Enter y and press Enter.

```
Please proceed to migration..................
```

Step 5 Specify the IP address and root password details of the source system and press Enter.

The following information is displayed.

```
Enter IMC Supervisor 2.3.8.0 appliance IP address : XX.XX.XX.XX
Enter root password for XX.XX.XX.XX               :
******************    STARTING MIGRATION STEP (1/1)          ********************

Transferred Almalinux 9 migration files successfully.

******************    COMPLETED MIGRATION STEP (1/1)         ********************
[root@savbu-pl-control-kvm-26-55 migration]#
```

Step 6 SSH into the source system and navigate to the /**opt/infra/migration** folder.

Step 7 Executing the command backs up the data **./performMigration.sh offline backup**. The following command is displayed:

```
******************   IMC Supervisor 2.4.0.0 Migration  ********************
********************************************************************************

Current IMC Supervisor Version       :  2.3.8.0
Deployment Type                      :  standalone
Note: Before migrating data to the latest version of Cisco IMC Supervisor,
ensure that you run the CSA tool in the current version to identify and resolve the
incompatibilities.
Have you resolved the incompatibilities [y/n]?
```

Step 8 Enter y and press Enter.

The following command is displayed.

```
Please proceed to migration..................
Services will be stopped before migration. Do you want to continue [y/n]? :
```

Step 9 Enter y and press Enter.

The following command is displayed.

```
******************    STARTING MIGRATION STEP (1/2)          ********************

hostname Stored Successfully
Copying config files...
Starting config file migration...
No Open Automation feature found in existing appliance.
Disk space required for backup in partition "/dev/mapper/centos-root" : 1737 MB
Available free space in partition "/dev/mapper/centos-root": 81498 MB
Initiating database backup on remote node. This process will take some time depending on
the database size.
Taking backup of db_private_admin database..... done
Taking backup of confmgr_production database.... done
Creating database backup archive... done
Database backup archive: /opt/infra/migration/backup-ucsd/database_backup.tar.gz
LOG_FILE=/var/log/ucsd/migrateAlmaLinux9.log
Extracting the database backup archive file to validate the DB files.
. done

Validating the exported file is complete.
Exported database successfully.
Migrating script module process...
Generated /opt/infra/migration/backup-ucsd/backup-ucsd.tar.gz file with the backup contents.

******************    COMPLETED MIGRATION STEP (1/2)         ********************
```

```
******************    STARTING MIGRATION STEP (2/2)          ********************

Do you want to copy the IMC Supervisor backup file to a remote location [y/n]?
```

Step 10 Specify the transfer mode and press Enter.

```
Specify the transfer mode [FTP/SFTP/SCP]:
```

Step 11 Specify the IP and login credentials, and press Enter.

The following command is displayed.

```
Specify the login credentials

Server IP Address: XX.XX.XX.XX
Server Login: root
Server Password:
Sub-directory (from Home directory) to store the file. Press enter to select the Home
directory: /tmp
File is copied successfully

******************    COMPLETED MIGRATION STEP (2/2)         ********************
[root@localhost migration]#
```

Step 12 Login to SSH with root credentials of the target system.

Step 13 Navigate to the folder **/opt/infra/migration**.

Step 14 Execute the command **./performMigration.sh offline restore**.

Step 15 Remote backup file copy is prompted.

The following command is displayed.

```
[root@localhost migration]# sh performMigration.sh offline restore
********************************************************************************
  ******************   IMC Supervisor 2.4.0.0 Migration  ********************
 ********************************************************************************

Current IMC Supervisor Version       :  2.4.0.0
Deployment Type                      :  standalone

Note: Before migrating data to the latest version of Cisco IMC Supervisor,
ensure that you run the CSA tool in the current version to identify and resolve the
incompatibilities.
Have you resolved the incompatibilities [y/n]?
```

Step 16 Enter y and press Enter.

The following command is displayed.

```
Please proceed to migration...................

Services will be stopped before migration. Any existing data in this appliance database
will be deleted as part of migration.
Do you want to continue [y/n]? :
```

Step 17 Enter y and press Enter.

The following command will be displayed.

```
******************    STARTING MIGRATION STEP (1/8)          ********************
Do you want to copy the IMC Supervisor backup file from a remote location [y/n]? :
```

Step 18 Enter y and press Enter.

Step 19 Specify the transfer mode and press Enter.

```
Specify the transfer mode [FTP/SFTP/SCP]:
```

Step 20 Enter y and press Enter.

The following command is displayed.

```
Please proceed to migration...................

Services will be stopped before migration. Any existing data in this appliance database
will be deleted as part of migration.
Do you want to continue [y/n]? :
```

Step 21 Specify the IP and login credentials, and press Enter.

The following command is displayed.

```
Specify the login credentials

Server IP Address: XX.XX.XX.XX
Server Login: root
Server Password:
Remote Backup File (Absolute Path to File backup-ucsd.tar.gz ):
/opt/infra/migration/backup-ucsd/backup-ucsd.tar.gz

File is fetched successfully.
Extracting the backup archive file....
Required DB disk space : 1737 MB
Available free space in DB disk : 99189 MB
Available free space in /opt/infra/migration/backup-ucsd : 85395 MB

********************    COMPLETED MIGRATION STEP (1/8)         ********************
********************    STARTING MIGRATION STEP (2/8)          ********************

Started decrypting connector properties file using dynamic AES key... This will take some
time. Please wait...

......................... done

********************    COMPLETED MIGRATION STEP (2/8)         ********************
********************    STARTING MIGRATION STEP (3/8)          ********************

Restoring database. This process will take some time depending on the database size.
Extracting database backup archive /opt/infra/migration/backup-ucsd/database_backup.tar.gz...
Initializing Database...
... done
Restoring data from db_private_admin*.sql
......... done
Restoring data from confmgr_production.sql
. done
Database restored successfully.
Migrating config files...
Product name from old appliance: Cisco IMC Supervisor
Bigdata specific upgrade is not required
Migrating open automation files...
Changing Hostname for the appliance from localhost.localdomain to localhost.localdomain
Changed Hostname Successfully
Hosts file updated successfully with localhost.localdomain

********************    COMPLETED MIGRATION STEP (3/8)         ********************
********************    STARTING MIGRATION STEP (4/8)          ********************

Running database migration scripts [ Source : 6.8.8.0 ]
Upgrading database query...
Ending database upgrade process...
```

```
******************    COMPLETED MIGRATION STEP (4/8)         ******************
******************    STARTING MIGRATION STEP (5/8)          ******************

The database schema initialization has been triggered. This will take some time. Please
wait until schema initialization is complete.
.......................... done
Schema Initialization has been completed.

******************    COMPLETED MIGRATION STEP (5/8)         ******************
******************    STARTING MIGRATION STEP (6/8)          ******************

Workflows not applicable for Cisco IMC Supervisor. Skipping workflow migration step.

******************    COMPLETED MIGRATION STEP (6/8)         ******************
******************    STARTING MIGRATION STEP (7/8)          ******************

Started encrypting all password field using dynamic AES key.

......................... done
Completed encrypting all password field using dynamic AES Key.


******************    COMPLETED MIGRATION STEP (7/8)         ******************
******************    STARTING MIGRATION STEP (8/8)          ******************

Started updating DB Table MAILSETTINGS.
Completed updating DB Table MAILSETTINGS.
Starting services. Use the "Display Services Status" option to check the status.

******************    COMPLETED MIGRATION STEP (8/8)         ******************
Migration completed successfully.
Migration log file available at /var/log/ucsd/migrateAlmaLinux9.log
[root@savbu-pl-control-kvm-26-55 migration]#
```

Note

- Migration is performed by exporting the backed up data from the source system to the target system, **/opt/infra/migration/backup-ucsd/backup-ucsd.tar.gz**, to backup the data located in the target system during the backup process.
- If you missed exporting the backup data from the source machine to the target machine during the backup operation, you can use the above mentioned option to move backed up data from remote location.

Migration Checklist

As part of Cisco IMC Supervisor 2.4(0.0) Release migration you will be migrating all configurations and data from source system to target system and below mentioned exceptions would not migrate for IMCS 2.4(0.0).

- Diagnostics ISO Images
- Local Firmware Upgrade ISO Images
- IMC Supervisor Patch Images
- Host Mapping Images
- Server Diagnotics Report
- Techsupport Report

Table 1: List of Exceptions

Menu	Module	Component	Migration Status
Systems	Firmware Management	Images Local	Not Applicable
Systems	Firmware Management	Firmware Upgrades	Not Applicable
Systems	Firmware Management	Host Image Mapping	Not Applicable
Systems	Server Diagnostics	SCU Image Profiles	Not Applicable
Systems	Server Diagnostics	Server Diagnostics	Not Applicable
Systems	Inventory and Faults	Rack Servers – Tech Support	Not Applicable
Administration	Update IMCS	IMCS Update Report	Not Applicable

Digitally Signed Images

From Cisco IMC Supervisor release 2.2(1.2) images are delivered in digitally signed zip files. These signed zip files are wrapped in a container zip file that includes the following:

- Digitally signed zip file—Contains the Cisco IMC Supervisor installation or upgrade image
- Verification program—Verifies the certificate chain and signature. During certificate chain validation, the program verifies the authenticity of the end-entity certificate using Cisco's SubCA and root CA certificates. Then, the authenticated end-entity certificate is used to verify the signature.
- Digital signature file—Contains the signature that you can verify before installation or upgrade.
- Certificate file—Enables you to verify the digital signature. This Cisco-signed x.509 end-entity certificate contains a public key that can be used to verify the signature. This certificate is chained to the Cisco root posted on http://www.cisco.com/security/pki/certs/crcam2.cer.
- ReadMe file—Provides the information and instructions required to verify the digitally signed zip file.

Verify the image offline. Once the image is verified, you can begin the installation or upgrade of Cisco IMC Supervisor.

Requirements for Verifying Digitally Signed Images

Before you verify a Cisco IMC Supervisor digitally signed image, ensure that you have the following on your local machine:

- Connectivity to https://www.cisco.com during the verification process.
- Python 3.6.8
- OpenSSL

Verifying a Digitally Signed Image

Before you begin

Download the Cisco IMC Supervisor image from Cisco.com.

Procedure

Step 1 Unzip the file you downloaded from Cisco.com and verify that it contains the following files:

- ReadMe file
- Digitally signed zip file.
- Certificate file, for example `UCS_GENERIC_IMAGE_SIGNING-CCO_RELEASE.cer`
- Digital signature generated for the image.
- Signature verification program, for example `cisco_x509_verify_release.py3`

Step 2 Review the instructions in the ReadMe file.

Note If there are any differences between these instructions and those in the ReadMe, follow the ones in the ReadMe.

Step 3 Run the signature verification program from the directory where you have unzipped the downloaded content.

Example: Signature Verification for VMware OVA Installation

```
python3 cisco_x509_verify_release.py3 -e UCS_GENERIC_IMAGE_SIGNING-CCO_RELEASE.cer -i
CIMCS_2_4_0_0_69049_VMWARE_GA.zip -s  CIMCS_2_4_0_0_69049_VMWARE_GA.zip.signature -v dgst
-sha512
```

Step 4 Review the output and ensure that the verification has succeeded.

Example: Expected Output

```
Retrieving CA certificate from http://www.cisco.com/security/pki/certs/crcam2.cer ...
Successfully retrieved and verified crcam2.cer.
Retrieving SubCA certificate from http://www.cisco.com/security/pki/certs/innerspace.cer
...
Successfully retrieved and verified innerspace.cer.
Successfully verified root, subca and end-entity certificate chain.
Successfully fetched a public key from UCS_GENERIC_IMAGE_SIGNING-CCO_RELEASE.cer.
Successfully verified the signature of CIMCS_2_4_0_0_69049_VMWARE_GA.zip using
UCS_GENERIC_IMAGE_SIGNING-CCO_RELEASE.cer
```

Applying a Patch to Cisco IMC Supervisor

Choose this option to apply a patch to the appliance in **shelladmin**.

Note The patch file (zip file) is provided by Cisco IMC Supervisor. Before applying a patch:

- Review the patch release notes and the Readme file.
- Take a snapshot of your VM.
- Make a backup of your database prior to taking the patch. The **Apply Patch** option enables you to make a backup as part of the **Apply Patch** procedure; but the best practice is to create a backup immediately before using the **Apply Patch** option.
- Stop the appliance services.

Before you begin

- Download the patch file.
- Place the file in a web server or an FTP server.
- Choose **Apply Patch** from the Cisco IMC Supervisor Shell menu.
- Provide patch URL (http://WebServer/TestPkg.zip)

Procedure

Step 1 From the **Cisco IMC Supervisor Shell Menu**, choose **Apply Patch** and press **Enter**.

Information similar to the following is displayed:

```
Applying Patch...
Do you want to take database backup before applying patch (y/n)?
```

Step 2 If you entered **y**, enter the requested FTP server IP address and login data, then press **Enter**.

```
y
Backup will upload file to an FTP server.
Provide the necessary access credentials.
   FTP Server IP Address:
   FTP Server Login:
```

Step 3 If you entered **n**, enter the mode of transfer, and press **Enter** and provide the required information, as follows:

- SFTP—Enter the SFTP server IP address, server login name and password, and the path to the location where you have stored the upgrade file.
- SCP—Enter the SCP server IP address, server login name and password, and the path to the location where you have stored the upgrade file.
- FTP—Enter the FTP server IP address, server login name and password, and the path to the location where you have stored the upgrade file. For example,

  ftp://username:password@hostname\IP_address/software_location_and_name.
- HTTP—Enter the URL for the location where you stored the upgrade file.

• FILE—Enter the path to the local directory where you have stored the upgrade file.

```
n
User selected option not to take backup, proceeding with applying patch
Specify the Transfer mode [SFTP/SCP/FTP/HTTP/FILE]: SFTP
Server IP Address: XXX.XX.XXX.XXX
Server Username: XXXXX
Server Password:
SFTP Path to Patch Zip file:TestPkg.zip
Applying the Patch TestPkg.zip [y/n]? y
```

Note Refer to the Readme file for information about the patches.

Step 4 If you are prompted to confirm that you want to apply the patch, enter **y**, then press **Enter**.

Step 5 Follow the onscreen prompts to complete the process.

What to do next

After the patch is applied, choose **Stop Services** and **Start Services**.

Applying a Signed Patch to Cisco IMC Supervisor

Procedure

Step 1 From the Cisco IMC Supervisor Shell menu, choose **Apply Signed Patch** and press Enter.

The following information is displayed:

```
Applying Patch...
Services will be stopped before upgrade. Do you want to continue? [y/N]:
```

Step 2 Enter **y** and press **Enter**.

The following information is displayed:

```
Stopping services...
Do you want to take database backup before applying patch? [Y/n]:
```

Step 3 If you entered **Y** and press **Enter** the backup process starts. Enter the transfer mode and press **Enter**.

```
The backup process creates a <filename>.tar.gz file on the system running Cisco IMC
Supervisor.
You can copy this file to another server using the FTP/SFTP/SCP mode.
Specify the transfer mode and login credentials
Specify the transfer mode [FTP/SFTP/SCP]:
```

Note Refer to the ReadMe file for information about the patches.

Step 4 If you entered **n**, enter the desired patch file download protocol and press **Enter** and provide the required information, as follows:

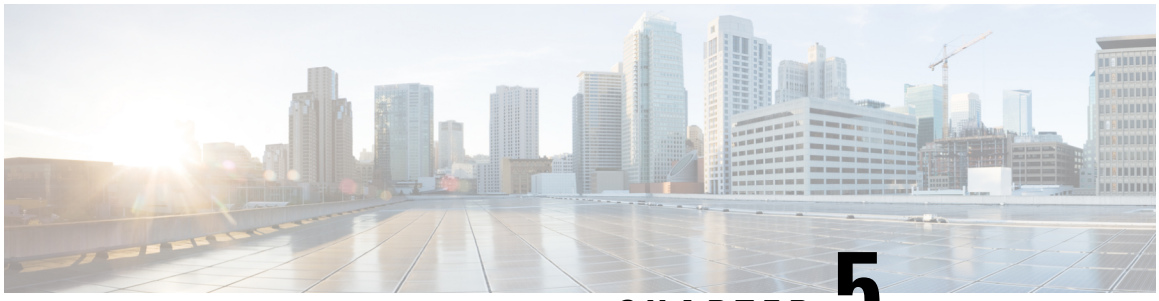
- SFTP—Enter the SFTP server IP address, server login name and password, and the path to the location where you have stored the signed zip file.
- SCP—Enter the SCP server IP address, server login name and password, and the path to the location where you have stored the signed zip file.
- FTP—Enter the FTP server IP address, server login name and password, and the path to the location where you have stored the signed zip file. For example, **ftp***://username:password@hostname\IP_address/software_location_and_name*.
- HTTP—Enter the URL for the location where you stored the signed zip file.
- FILE—Enter the path to the local directory where you have stored the signed zip file.

```
n
User selected option not to take backup, proceeding with applying patch.
Enter patch file download protocol [SFTP/SCP/FTP/HTTP/FILE]: SCP
Server IP Address: 172.29.109.134
Server Username: root
Server Password:
Full Patch to Patch Zip File: /opt/mytest123/cimcs_patch_2_4_2_0_xxxx_signed.zip
Apply the patch '/opt/mytest123/cimcs_patch_2_4_2_0_xxxx_signed.zip? [y/N]:
```

Step 5 If you are prompted to confirm that you want to apply the patch, enter **y**, then press **Enter**.

The following information is displayed:

```
y
Checking if database is running ...yes
Downloading the patch...
Successfully Connected to 172.29.109.134
Completed downloading the patch.
Verifying patch signature...
Successfully verified the signature of patch file
/opt/mytest123/cimcs_patch_2_4_2_0_xxxx_signed.zip
Proceeding with patch installation
```



CHAPTER 5

Post-Installation Tasks

Changing the Default Password

Procedure

Step 1 From the menu choose **Administration** > **Users**.

Step 2 Click the **Login Users** tab.

Step 3 Choose **admin** from the list of Login Users.

Step 4 Click **Change Password**.

Step 5 In the **Change Password** dialog box, enter the new password and confirm it.

Step 6 Click **Save**.

Updating the License

You must perform the following procedure to update the license before you start using Cisco IMC Supervisor. For the list of valid licenses, see About Licenses, on page 7. You must generate a license key, claim and register the Product Access Key. After installing Cisco IMC Supervisor, the license is validated and you can start using Cisco IMC Supervisor.

Before you begin

If you received a zipped license file by email, extract and save the **.lic** file to your local machine.

Procedure

Step 1 Choose **Administration** > **License**.

Step 2 On the **License** page, choose **License Keys**.

Step 3 On the **License Keys** page, click **Update License**.

Step 4 On the **Update License** screen, do one of the following:

- To upload a **.lic** file, click **Browse**, navigate to and select the **.lic** file, then click **Upload**.
- For a license key, check the **Enter License Text** check box then copy and paste the license key only into the **License Text** field. The license key is typically at the top of the file, after Key ->.

  You can also copy and paste the full text of a license file into the **License Text** field.

Step 5 Click **Submit**.
The license file is processed, and a message appears confirming the successful update.