

# Installing Cisco MSE in a VMware Virtual Machine

This chapter describes how to install and deploy a Cisco Mobility Services Engine (MSE) virtual appliance.

Cisco MSE is a prebuilt software solution that comprises one or more virtual machines (VMs) that are packaged, maintained, updated, and managed as a single unit. Cisco MSE is distributed as an Open Virtual Appliance (OVA) for installation on a virtual appliance and as an ISO image for installation on a physical appliance.

Cisco MSE acts as a platform (physical or virtual Cisco Mobility Services Engine [MSE] appliance) to deploy and run the Cisco services.

If you choose Location during installation, you will see the following services in Cisco CMX GUI.

- DETECT & LOCATE—Active for 120 day trial period unless either a CMX base or advanced license is added.
- ANALYTICS—Active for 120 day trial period unless a CMX advanced license is added.

If you choose Presence during installation, you will see the following services in the Cisco CMX GUI.

- CONNECT—Active for 120 day trial period unless either a CMX base license is added.
- PRESENCE ANALYTICS
- Virtualization Concepts, page 2
- Installation Overview, page 2
- Restrictions for Installing Cisco MSE in a VMware Virtual Machine, page 3
- Cisco MSE Virtual Appliance Deployment Checklist, page 3
- Prerequisites for Installing Cisco MSE in a VMware Virtual Machine, page 3
- Hardware Guidelines, page 4
- Release Upgrade Compatibility Matrix, page 4
- VM Alerts, page 6
- Downloading the Cisco MSE OVA File, page 7
- Deploying the Cisco MSE OVA File Using the VMware vSphere Client, page 8

- Installing a Cisco MSE Virtual Appliance, page 19
- Creating New Virtual Machines Using Hyper-V Manager, page 26
- Installing Cisco CMX Using Web Interface, page 27
- Upgrading from Cisco CMX 10.x to 10.4, page 30
- Verifying Installing Cisco MSE in a VMware Virtual Machine, page 31

# **Virtualization Concepts**

Refer to these documents for information on virtualization:

- Virtualization Overview
- Setting Up ESXi
- Virtualization Basics

### **Installation Overview**

The following table lists the Cisco MSE virtual appliance installation process and contains information about the sections providing details about them:

Step	Task	See
1	Review the deployment checklist and prepare for the installation of a Cisco MSE virtual appliance.	Cisco MSE Virtual Appliance Deployment Checklist, on page 3 and Hardware Guidelines, on page 4
2	Download the Cisco MSE Open Virtualization Archive (OVA) file from Cisco.com.	Downloading the Cisco MSE OVA File, on page 7
3	Deploy the Cisco MSE OVA file.	Deploying the Cisco MSE OVA File Using the VMware vSphere Client, on page 8
4	Configure the basic configurations and install the Cisco MSE virtual appliance.	Installing a Cisco MSE Virtual Appliance, on page 19
5	Set up the Cisco MSE virtual appliance.	Installing Cisco CMX Using Web Interface, on page 27

#### **Table 1: Installation Overview**

# Restrictions for Installing Cisco MSE in a VMware Virtual Machine

- Map size must be less than 5 MB in Cisco Prime Infrastructure.
- There must be less than 1000 access points on a single map.
- The Mobile Application Server and Wireless intrusion prevention system (wIPS) are not available.
- A common NTP server must be used to synchronize the time.
- Simple Mail Transfer Protocol (SMTP) Mail Server name and authentication mechanism must be used for the Cisco CMX mail notification system.
- Cisco CMX 10.2 does not render any data on Cisco Prime Infrastructure maps. To allow client display in Cisco Prime Infrastructure 1.4 or later, a parallel Cisco MSE 8.0 is also required.

### **Cisco MSE Virtual Appliance Deployment Checklist**

- · Cisco Wireless Controller has IP connectivity to a Cisco CMX instance.
- Cisco Prime Infrastructure has IP connectivity to a Cisco CMX instance.
- Port 16113 is routable from Cisco WLC to the Cisco CMX IP address.
- Port 161 (for Simple Network Management Protocol [SNMP] traffic) is routable from Cisco WLC to the Cisco CMX IP address.
- SSH client to log in with the root access to the VM is present.
- A Secure Copy (SCP) client (on MAC native or installed on PC) or a Secure File Transfer Protocol (SFTP) exists to move files into Cisco CMX OVA (specifically, map files and images to upgrade).

# Prerequisites for Installing Cisco MSE in a VMware Virtual Machine

- VMWare vSphere client.
- Hostname IP address, netmask, default gateway, DNS IP address, and Network Time Protocol (NTP) Server IP address or name.
- Cisco WLC 7.6, 8.0 or later.
- IP address, type, the SNMP version, and the SNMP write community string of Cisco WLC.
- SNMP credentials of Cisco WLC (private key for V1 and V2, or username and password for V3).
- Mail server settings (port number and security settings) and email address.
- Cisco Prime Infrastructure 2.2, 3.0, or later with a hierarchy of maps in the order of campus, building, and floor.

- Existing exported map file from Cisco Prime Infrastructure.
- VMware virtualization environment ESXi 5.x, 6.0, and 6.5.

### **Hardware Guidelines**

The following table lists the hardware guidelines for the Cisco MSE virtual appliance.



If the hardware requirements are not met, the OVA deployment fails. Similarly, the Cisco MSE setup fails during installation when the other minimum requirements listed in the table below are not met.

#### Table 2: Hardware Guidelines

Hardware Platform	Basic Appliance	Standard Appliance	High-End Appliance
СРИ	8 vCPU (2.4 GHz core)	16 vCPU (2.4 GHz core)	24 vCPU (2.4 GHz core)
RAM	24 GB	48 GB	64 GB <sup>1</sup>
HDD	500 GB	500 GB	1 TB

<sup>1</sup> The high-end deployment VM (20 vCPU, 64 GB RAM) reserves 63.74 GB for itself and the rest of the RAM is used by ESXi.



We recommend you to allocate the required HDD space. For more information, see step 12 in Deploying the Cisco MSE OVA File Using the VMware vSphere Client section.

### **Release Upgrade Compatibility Matrix**

The following table lists the Cisco CMX releases available on Cisco.com.

#### Table 3: Cisco CMX Releases Available on Cisco.com

Cisco CMX Release	OVA	3365 ISO	Upgrade Option Only
10.1.0	cmx-v10-1-0.ova	—	—
10.1.1	—	10.1.1	—
10.1.1-2			cisco_cmx-10.1.1-2.tar.gz (cisco_cmx-10.1.1-2x86_64.pm and cisco_cmx_correct=101.1-20x86_64.pm)

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Cisco CMX Release	OVA	3365 ISO	Upgrade Option Only
10.1.2	—	—	cisco_cmx-10.1.1-2.tar.gz
10.2	10.2 OVA	10.2 ISO	10.2 backend upgrade (10.1 and 10.1.1 to 10.2) script and.CMX image file
10.3	10.3 OVA	10.3 ISO	—
10.4	10.4 OVA	10.4 ISO	_

#### Table 4: Node Types Supported Per Release

Release	Location and Analytics Node	Location and Connect Node	Location, Analytics, and Connect Node (L-Node)	Connect and Presence Node (P-Node)
10.1.0	Yes	—	—	—
10.1.1-2	Yes	Yes	Yes	—
10.1.2	Yes	Yes	Yes	_
10.2	Use the upgrade script to change Location and Analytics to Location, Analytics, and Connect internally.	Use the upgrade script to change Location and Connect to Location, Analytics, and Connect internally.	Yes	Yes
10.3	Use the upgrade script to change Location and Analytics to Location, Analytics, and Connect internally.	Use the upgrade script to change Location and Connect to Location, Analytics, and Connect internally.	Yes	Yes
10.48	Use the upgrade script to change Location and Analytics to Location, Analytics, and Connect internally.	Use the upgrade script to change Location and Connect to Location, Analytics, and Connect internally.	Yes	Yes

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Upgrade Path 1 <sup>2</sup>	Location and Connect Node	Location and Analytics Node	Location, Analytics, and Connect Node (L-Node)	Connect and Presence Node (P-Node)
10.1.0 OVA to 10.2	10.2 backend script to upgrade image to10.2 and change Location and Connect to Location, Connect, and Analytics.	10.2 backend script to upgrade image to10.2 and change Location and Analytics to Location, Connect, and Analytics.	10.2 backend script to upgrade image to 10.2.	
10.1.1-2 tar.gz to 10.2	10.2 backend script to upgrade image to10.2 and change Location and Connect to Location, Connect, and Analytics.	10.2 backend script to upgrade image to10.2 and change Location and Analytics to Location, Connect, and Analytics.	10.2 backend script to upgrade image to 10.2.	
10.1.2 tar.gz to 10.2	10.2 backend script to upgrade image to10.2 and change Location and Connect to Location, Connect, and Analytics.	10.2 backend script to upgrade image to10.2 and change Location and Analytics to Location, Connect, and Analytics.	10.2 backend script to upgrade image to 10.2.	
10.2 OVA/ISO to 10.3	_		UI upgrade script to upgrade image.	UI upgrade script to upgrade image
10.3 OVA/ISO to 10.4	—	—	UI upgrade script to upgrade image.	UI upgrade script to upgrade image

#### Table 5: Upgrade Path by Node Type

 $^2$   $\,$  The path that is provided for upgrade is the same as that used for backup and restore.

### **VM Alerts**

The following table displays the alerts shown on the VM for the following conditions:

#### Table 6: VM Alerts

Hard Disk Status	Alert Shown
50 percent	Do Not Back Up
80 percent	System Is About To Run Out Of Space

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Hard Disk Status	Alert Shown
85 percent	All The Services Are Stopped

# Downloading the Cisco MSE OVA File

Step 1	Download the Cisco MSE image from Download Software on cisco.com.
Step 2	Save the Cisco MSE OVA installer to your computer and ensure that it is accessible.

# Deploying the Cisco MSE OVA File Using the VMware vSphere Client

To deploy the Cisco MSE OVA file using the VMware VSphere Client, follow these steps:

- **Step 1** Launch the VMware vSphere client application on your desktop.
- **Step 2** From the VMware vSphere Client application menu, choose **File** > **Deploy OVF Template**.
- **Step 3** In the **Deploy OVF Template** window that is displayed, click **Browse** and select the Cisco MSE OVA file that is stored locally on the machine.

#### Figure 1: Select CMX Image

Deploy OVF Template	
Source Select the source location.	
Source OVF Template Details End User License Agreement Name and Location	
Deployment Configuration Disk Format Network Macoing	Deploy from a file or URL
Ready to Complete	C: Users (rajbanga (Downloads (CISCO_ONX-10.2.0-213.ova ▼ Browse Enter a URL to download and install the OVF package from the Internet, or specify a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.
um 1	
nep	< Back Next > Cancel

**Step 4** Verify the **OVF Template Details** details, and click **Next**.

#### Figure 2: OVF Template Details

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Deploy OVF Template				
OVF Template Details Verify OVF template details.				
Source OVF Template Details End User License Agreement Name and Location Deployment Configuration Resource Pool Disk Format Ready to Complete	Product: Version: Vendor: Publisher:	<b>cisco-cmx</b> No certificate present		
	Download size: Size on disk:	5.4 GB 5.4 GB (thin provisioned) 50.0 GB (thick provisioned)		
	Description:			
Help			< Back Next >	Cancel

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**Step 5** Click Accept to accept the End User License Agreement and then click Next.

#### Figure 3: End User License Agreement

🛃 Deploy OVF Template		_ 🗆 🗙
End User License Agreement Accept the end user license agr	eements.	
Source OVF Template Details End User License Agreem Name and Location Deployment Configuration Host / Cluster Resource Pool Disk Format Ready to Complete	We will reserve part of the resources of CPU and memory based on your OVA selection. 	×
	Accept	¥
Help	< Back Next >	Cancel

**Step 6** Enter a name for the Cisco MSE VM and click **Next**.

#### Figure 4: Name and Location

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10.104.177.82 - vSphere Clien			444000000000000000000000000000000000000	
File Edit View Inventory Ad	dministration Plug-	ins Help		
🖾 🖸 🛕 Home 🕽 者	Inventory > []]	Inventory		-
<b>8</b> C		Deploy OVF Template		
B Cosent Tasks	Conthours Getting Ra What is A host is as ESX of CPU and Give writu connector You can one of The easi writual as machine installed system in Basic Tal Conton Conton System in Conton System in Conton Con	Name and Location Secolly a name and location Cont Terrolate Details Cont User License Assessment Harne and Location Disk Format Network Magping Ready to Complete	n for the deployed template           Name:	
Name	arget			
				g
				416
Tasks			< Back Next > Car	Cel Evaluation Mode: 28 days remaining root /

**Step 7** From the **Configuration** drop-down list, choose the VM configuration of your choice. The available options are **Low-end**, **Standard**, **High-end**.

#### Figure 5: Deployment Configuration

Deploy OVF Template		
Deployment Configuration Select a deployment configura	ation.	
Source OVF Template Details End User License Agreement Name and Location Deployment Configuration Disk Format Network Mapping Ready to Complete	Configuration: Tww-end The resources consumed by this configuration are: 8 vCPUs, 8000 Mhz will be reserved. 24GB Memory. 24GB will be reserved.	
Help	< Back Next >	Cancel

**Step 8** Check the format in which you want to store the virtual disk.

#### Figure 6: Format

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Deploy OVF Template				
Disk Format In which format do you war	nt to store the virtual disks?			
Source OVF Template Details End User License Agreement Name and Location Deployment Configuration Resource Pool Disk Format Ready to Complete	Datastore: Available space (GB): Thick Provision Lazy 2 Thick Provision Eager Thich Provision	datastore 1 1277.5 Reroed Zeroed		
Help			< Back	Next > Cancel

**Step 9** Map the networks used in the OVF template to the networks in your directory.

**Note** With CSCve21967, you cannot deploy the Cisco MSE OVA file with standard and high end VM types with the VMWare ESXi 6.x web client. The web client interface does not show the inventory items drop-down options (low end, standard, and so on) and the option to select VM type is not enabled on the Deployment Options window. However, you can use the VMWare vSphere desktop client from ESXI 5.x to successfully deploy standard and high end VM types to an ESXI 6.x. For more information, see

https://kb.vmware.com/selfservice/microsites/search.do?language=en\_US&cmd=displayKC&externalId=2121185.

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#### Figure 7: Network Mapping

Network Mapping What networks should the	deployed template use?			
Source OVF Template Details End User License Agreement	Map the networks used in this OVF template to networks in your inventory			
Name and Location	Source Networks Destination Networks			
Deployment Configuration Disk Format Network Mapping Ready to Complete	NAT	VM Network		
	✓ Description:	111		
	Logical network used by this appliance	e.		

**Step 10** Click **Finish**. Ensure that **Power On the Virtual Machine** is not checked.

#### Figure 8: Complete the Deployment

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Source OVF Template Details	When you click Finish, the deployment task will be started.				
Name and Location Deployment Configuration Resource Pool Disk Format Ready to Complete	Deployment Secting. Ovr File: Download size: Size on disk: Name: Deployment Configuration: Host/Clustar: Datastore: Disk provisioning: Network Mapping:	http://172.19.35.152:8080/view/CMX-Release/job/CMX-O 5.4 GB 50.0 GB cisco-cmxL Standard localhost. datastoreI Thick Provision Lazy Zeroed "NAIT" to "VM Network"			
	Power on after deployment				

Wait for the deployment to complete. This will take a few minutes.

#### Figure 9: Deploying the OVA



**Step 11** Click the deployed VM and choose **Edit Virtual Machine**.

#### Figure 10: Edit Virtual Machine

CISCO-CHIX	What is a Virtual Machine?
	A virtual machine is a software computer that, like a physical computer, runs an operating system and applications. An operating system installed on a virtu machine is called a guest operating system.
	Because every virtual machine is an isolated comput environment, you can use virtual machines as deskto workstation environments, as testing environments, o consolidate server applications.
	Virtual machines run on hosts. The same host can ru many virtual machines.
	Basic Tasks
	Power on the virtual machine

Step 12 (Optional) Click Hard disk and modify the Provisioned Size as per your requirement and capacity.

#### Figure 11: Edit Provisioned Size

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🚱 cisco-cmx - Virtual Machine Properties				
Hardware Options Resources		Virtual Machine Version: 7		
Show All Devices	Add Remove	Disk File [datastore1] cisco-cmx/cisco-cmx.vmdk		
Hardware Memory CPUs Video card VMCI device SCSI controller 0 Hard disk 1 (edited) Network adapter 1	Summary 24568 MB 8 Video card Restricted LSI Logic Parallel <b>Virtual Disk</b> VM Network	Disk Provisioning         Type:       Thick Provision Lazy Zeroed         Provisioned Size:       250 - GB •         Maximum Size (GB):       1419.37         Virtual Device Node       SCSI (0:0) Hard disk 1         SCSI (0:0) Hard disk 1       •         Mode       Independent         Independent       Undependent         Compensioned Size:       Persistent         Changes are immediately and permanently written to the disk.       Images to this disk are discarded when you power off or revert to the snapshot.		
Help		OK Cancel		

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#### **Step 13** (Optional) Click **Resources>CPU** and modify the reservations if your OVA fails to start because of insufficient resources.

💋 cisco-cmx - Virtual Machine Pr	roperties			- • ×
Hardware Options Resources			Virtua	al Machine Version: 7
Settings	Summary	Resource Allocat	ion	
CPU	12000 MHz	Charact	Normal	8000 -
Memory	24567 MB	Shares.		0000
Disk Advanced CPU	Normal	Reservation:		12000 🛨 MHz
Advanced Memory	NUMA Nodes: 2		▲	
		Limit:	1 [	18392 - MHz
			14. Charace	
				that
		A Linit Dased on	parent resource poor or curren	LINOSL
Help			OK	Cancel
			- OK	

#### Figure 12: Modify CPU Reservations

**Step 14** Power ON the VM. The first boot takes a while as the new disk has to be expanded.

#### File Edit View Inventory Administration Plug-ins Help Inventory Þ Inventory 0 Home G 1 13 00 Ch 1 100 172.19.35.196 8 🗐 cisco-cmx Alpha Servers Ŧ Getting Started source Allocat Θ Anurag Test ÷ Build Servers Ŧ Cisco-Power ٠ Ctrl+B Power On Guest ٠ Power Off Ctrl+E Snapshot ٠ Suspend Ctrl+Z 2 **Open Console** Reset Ctrl+T 5 Edit Settings... Shut Down Guest Ctrl+D Upgrade Virtual Hardware **Restart Guest** Ctrl+R Add Permission... Ctrl+P nts, as testing environments, or to plications. Report Performance... n hosts. The same host can run Rename Open in New Window... Ctrl+Alt+N Remove from Inventory **Delete from Disk** Power on the virtual machine Edit virtual machine settings

#### Figure 13: Power ON VM

### Installing a Cisco MSE Virtual Appliance

After the Cisco MSE is deployed, you can install and configure a Cisco MSE virtual appliance. Note the following points:

- Cisco MSE does not have a node install menu. However, there is a first-boot script that checks if a configuration exists on the device. If the script does not find a valid configuration, it launches the setup routine and initiates network configuration tasks using the CLI, followed by initial setup tasks on the browser.
- The new first-boot script determines if the initial configuration is completed, and then displays the normal login prompt. If the initial configuration is not completed, the default login prompt is displayed.



The **cmxctl node install** command is no longer valid.

To install and configure a Cisco MSE virtual appliance, follow these steps:

# Step 1Right-click the Cisco MSE VM and click Open Console.<br/>The console window is displayed with the following information:

CentOS release 6.6 (Final) Kernal 2.6.32-504.el6.x86\_64 on an x86\_64 localhost login: cmxadmin password: cisco Last login: Sun May 15 19:31:03 from 10.0.2.2

**Step 2** Enter the login name and password as prompted.

#### Figure 14: Console Window



**Step 3** Press **Enter** when prompted, as shown in the figure below.

#### Figure 15: Press Enter



**Step 4** Enter a new password for the root user and reconfirm it when prompted. The password should meet the minimum requirements listed.

- **Note** The root password is used only for root operating system configuration and not for the cmxadmin user functions.
- Step 5 Enter a new password for cmxadmin user and reconfirm it. The password should meet the minimum requirements listed.Note The cmxadmin password is used for logging in to the Cisco MSE account for future network admin configurations.

#### Figure 16: Set Passwords



**Step 6** In the Select Action window, click Device configuration.





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**Step 7** In the Select A Device window, click the eth0 interface.

#### Figure 18: Select A Device

	Select A Device
	(Hew Device)
<tab>z&lt;01t-Tal</tab>	5> between elements : (Space) selects : (F12> next screen

- **Note** With CSCux07068, CMX 10.2 and 10.2.1 installation fails when **New Device** option is selected under device configuration. We recommend that you do not select **New Device** option.
- **Step 8** In the Network Configuration window, toggle the Use DHCP field and then enter the Static IP address, Netmask, and Default gateway IP, and click Ok.

Note
 To set the hostname, see the Hostname field in Step 10. Changing the hostname through the CLI is not supported. After the initial setup, to change the hostname, use the cmxos reconfigure command to display the Network Configuration and DNS Configuration windows again.

- Do not change the Device field as this is automatically detected.
- Do not enter DNS details because the information entered here is not used by the system. These details can be entered in the DNS configuration step (Step 10) that follows.

#### Figure 19: Network Configuration

Network C	onfiguration
Name Device Use DHCP Static IP Netmask Default gateway IP Primary DNS Server Secondary DNS Serve	eth0 eth0 [ ] 172.19.25.125 255.255.254.0 172.19.24.1 Cancel
<tab>/<alt-tab> between elements  </alt-tab></tab>	<pre><space> selects   <f12> next screen</f12></space></pre>

**Note** Do not change the name of the interface. The default interface **Name** is eth0 and it should not be changed.

**Step 9** In the **Select Action** window, click **DNS Configuration**.



	Select Action	
	aveðQuit <b>Quit</b>	
(Tab)/(All-Tab) between eiem	ents I (Space) selects	∣ <f12> mext screen</f12>

Step 10 In the DNS configuration window, enter the Hostname, DNS, and DNS search path default domain.

Figure 21: DNS Configuration

	DMS configuration	
Hostnam Primary Seconda Tertiar DNS sea	e st.localdomain DMS 171.78.168.183 ry DMS y DMS rch path cisco.com	
	Cance1	
<tab>/<alt-tab> between element</alt-tab></tab>	nts i (Space) select	s   (F12) mext screen

#### Step 11 In the Select Action window, click Save&Quit.

#### Figure 22: Select Action

Note

Select Action Device configuration DMS configuration	
SavedQuit	
<pre><tab>&lt;<alt-tab> between elements   <space> selects   <f12></f12></space></alt-tab></tab></pre>	next screen

**Step 12** (Recommended) Enter the NTP server name or the IP address of the NTP server when prompted.

 After installation, changing the NTP information through the CLI or GUI is not supported. To change the NTP information, use the **cmxos reconfigure** command from the CMX CLI to to change the NTP information. Given below is a workaround.

```
cmxctl stop
cmxctl stop ?a
!Go to root user
su
!Run the timezone script
/opt/cmx/bin/tzselect
!Logout of the box
exit
!Log back in and check the timezone
date
!Restart the services
cmxctl start agent
cmxctl start
```

Figure 23: Configuring NTP



Step 13 Configure the time zone and save the changes.

#### Figure 24: Configuring Time Zone



Step 14 Access the URL when prompted.

Figure 25: Access URL

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**Step 15** Open the URL http://<*ip-address*>:1984 when prompted in the browser. The Cisco Mobility Services Installation sign in page is displayed.

#### Figure 26: Welcome Menu

cisco 10.20-248	
=	
	Welcome to the Cisco Mobility Services Installation
	Username
	Password
	Sign in
	Please Login using your cmxadmin credentials
	© 2015 Cisco Systems, Inc.

Step 16 In the Cisco Mobility Services Installation sign in page, enter your cmxadmin credentials and proceed with the installation.
 Note Use steps 15-16 while installing a new MSE virtual appliance.

### **Creating New Virtual Machines Using Hyper-V Manager**

You can now run Cisco CMX on Microsoft Hyper-V virtualization hosts. This enables you to use Cisco CMX on virtual machines using any Hyper-V capable host running Windows Server 2008 R2 or later.

You can create a new virtual machine using Hyper-V Manager application. Ensure to specify 24 GB of memory or higher when creating the virtual machine in Hyper-V manager, and to subsequently increase the processor count for the virtual machine to 8 vCPU or higher before starting the new virtual machine.

If you are running Windows Server 2012 or later, we recommend you to convert the Cisco CMX .vhd disk image to .vhdx format before adding it to the new virtual machine.

To create a new virtual machine:

- **Step 1** Download the CMX .vhd file to the location on the drive where it will reside.
- **Step 2** (Optional) Convert the .vhd file to .vhdx format.
- Step 3Open the Hyper-V Manager application and verify the Hyper-V virtual network switch configuration.NoteTo configure a Hyper-V virtual network switch, click Virtual Switch Manager at the right side of the Hyper-V<br/>Manager window.

Step 4	To create a new VM, choose Action > New > Virtual Machine.
Step 5	Enter a name for the new virtual machine.
Step 6	Select to store the virtual machine in a different location, browse to the folder containing the .vhd or converted .vhdx file, and then click <b>Next</b> .
Step 7	Choose Generation 1 as the machine type, and then click Next. Note Only certain Windows guests support Generation 2.
Step 8	Specify 8192 or greater for the VM memory, and then click Next. Note Do not enable Dynamic Memory.
Step 9	Under Connections, choose the appropriate virtual network switch to connect the VM, and then click Next.
Step 10	Select Use an existing hard disk, and then navigate to the .vhd or .vhdx file on your hard disk.
Step 11	In the Summary window, click Finish.
Step 12	Edit the new VM settings and change the processor count to a minimum of 4.

# Installing Cisco CMX Using Web Interface

Launch the Cisco CMX user interface using Google Chrome 40 or later, and follow these steps:

**Step 1** In the Cisco CMX web interface, enter the login credentials for a Cisco CMX administrator and click **Sign in** to continue. The login username is **cmxadmin**. Use the password that was configured when the system was started for the first time.



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cisco 10.2.0-248		
Ξ		
	Welcome to the Cisco Mobility Services Installation	
	Username	
	Password	
	Sign in	
	Please Login using your cmxadmin credentials	
	© 2015 Cisco Systems, Inc.	

**Step 2** Choose the Cisco CMX type as either **Location** or **Presence**.

The installation is initiated and services are started. Note that this may take a few minutes.

0	Note Type	0	Services	3	Configuration	0	Stellip	•	Frish
						Status	Console		
			R Cache_638 R Cache_638 R Consul R Cache_637 R Cache_637 R Cache_637 R Cache_638 R Cache_638 R Cache_638	a S D D L Marr	42%	O Influid Cassar Metrice Haprox Config Isdoos Locatio Matab Wps Nimspit Hyperic	b dra y zation n engine postion		
			C	onfigu	ring Influxe	ib			

The sequence of events is as follows:

- 1 Consul Configuration
- 2 DB Installation
- 3 Schema Migration
- 4 InfluxDB Configuration
- 5 Cassandra Installation
- 6 Node Registration
- **Step 3** Click **Please click to continue setup** or press **Enter** to proceed to the main portal.
  - **Note** You can monitor the progress of the installation either through the graphical status display or the console output. Note that this console is for display only.

Node Type	2	Services	3	Configuration	•	Startup	3	Finish
					St	atus Console		
		✓ Consul ✓ Confd			🛢 Cassand 🌣 Metrics	dra		
		Database			P Haproxy	ration		
		Cache_6379			✓ lodocs			
		Cache_6380			Analytic 91 ocation	5		
		Cache_6382			Matlabe	angine		
		Qlesspywork	er		A Nmsplb			
		Influxdb			Connect	st sation		
		-		80%				
		Ple	ase clic	k to continue	setup			
	6	The ma	in Cisco Mo e although	obility Services U some services ha	ser Interface i ve not started	may be d. Please		
	e	start th	ese service	is using the CLI. [	Nmsplb]			

The installation is complete. If this is a reinstallation, the **Cisco CMX Welcome** window is displayed. If this is a fresh installation, the user is automatically authenticated and the **Cisco CMX Welcome** is skipped.

**Step 4** Log in with the username **admin** and password **admin**.

#### Figure 28: Welcome Screen

CISCO 10.2.0-bets	a 663	
	Welcome to CMX	
	admin	
	Sign in	
	© 2015 Cisco Systems, Inc.	

#### What to Do Next

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A **Setup Assistant** window is displayed, from where you can complete the initial configuration. You must now set a password for the admin user, import Cisco WLC details and maps from Cisco Prime Infrastructure, and configure and test mail server settings.

Use https://<ip address> for all subsequent logins to the web user interface. Use https:// <ip-address>:1984 only for initial configuration.

սիսիս առ	<b>Q</b>	2	<b>0</b> %	4		·	
SETUP ASSISTANT							
	Welcome t	o CMX					ICS.
Sy Set New Password	Please proceed through	h this setup assi	stant to get you	r system up and runni	ng.		2
Maps and Controllers						- 1	
Mail Server							
Done!							
L							
Ci							
					Cancel	Next	
		Active	Inactive				

#### Figure 29: Setup Assistant

### Upgrading from Cisco CMX 10.x to 10.4

There are three options to upgrade from Cisco CMX 10.x to Cisco CMX 10.4:

- Option 1—Copy the Cisco CMX image into the Cisco CMX node, and then use the **cmxos upgrade** <*cmx-file*> command from the command line to perform the upgrade.
- Option2—Use the web installer on port 1984, and choose **Remote File** to download the Cisco CMX image from a hosted site, for example, the Cisco CMX image may be available in an internal web server for download.
- Option 3—Use the web installer on port 1984, and choose Local File to upload the Cisco CMX image from your local machine through the web browser.



We recommend either option 1 or 2.

Upload of the Cisco CMX image might fail if you use option 3. This is due to a memory leak with a third-party library used in the installer. However, this library will be fixed in subsequent versions of the installer. If you chose option 3 and the upload fails, restart the installer program by using the **cmxos adminui stop** command and then the **cmxos adminui start** command. Option 3 might succeed after several tries.

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# **Verifying Installing Cisco MSE in a VMware Virtual Machine**

You can verify the overall system health and status of the Cisco MSE services using the **System** tab in the Cisco MSE user interface. Ensure that all the services, memory, and CPU indicate a healthy status (green) for each Cisco MSE and Cisco CMX node, and that there is at least one active Cisco WLC.

The System tab contains the following subtabs:

- Dashboard—Provides an overall view of the system.
- Alerts—Enables you to view live alerts.
- **Patterns**—Enables you detect patterns of various criteria, such as Client Count, CPU Usage, Memory Usage, and so on..
- Metrics—Enables you to view system metrics.

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