

Cisco Modeling Labs OVA Installation

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Configure Security and Network Settings



When configuring the Cisco Unified Computing System (Cisco UCS) hardware, you must enable Intel Virtualization Technology (Intel VT) in the BIOS for Cisco Modeling Labs to operate correctly.

Before You Begin

- Ensure that you have met the requirements as specified in the section Cisco Modeling Labs Server Requirements.
- Ensure that you have administrator access to the VMware ESXi server in which you plan to deploy the Cisco Modeling Labs open virtual appliance (OVA) in order to enable nested virtualization.
- **Step 1** Log in as administrator to the remote VMware ESXi server using the VMware vSphere client.
- Step 2 Click the Configuration tab.
- **Step 3** Choose **Software** > **Security Profile**.
- **Step 4** Click **Properties** to edit the properties associated with security services.
- **Step 5** The Services Properties dialog box is displayed. Enable SSH access, ESXi Shell, and Direct Console UIas follows:
 - a) Click Options.
 - b) Click the Start and stop with host radio button.
 - c) Click Start.

d) Click OK.

Figure 1: Services Properties

y default, remote clients are preven	ted from accessing services on this host, and local clients are prevented from
pless configured otherwise, daemon	ns will start automatically.
niebs connigar ca o a lei moey ademon	
abel	Daemon
/O Redirector (Active Directory Se.	Stopped
Network Login Server (Active Direc.	Stopped
btd	Running
урха	Stopped
ESXi Shell	Running
ocal Security Authentication Serv	Stopped
NTP Daemon	Stopped
SSH	Stopped
Direct Console UI	Stopped
CIM Server	Stopped
Caralas Davas Kas	
Service Properties	N
General	4
Service: SSH	
Package Information: esx-	-base
THIS	VID contains all of the base functionality of VSpriere ESAL
	Options

- Click OK. Step 6 Step 7 To add the two additional port groups FLAT or SNAT or both, and configure network settings, choose Hardware > Networking. Step 8 Click Add Networking.
- Step 9 In the Add Network wizard, make sure that the connection type is set to Virtual Machine.
- Step 10 Click Next.

Figure 2: Connection Type

Networking hardware	can be partitioned to accommodate each service that requires connectivity.
Connection Settings Summary	Connection Types Virtual Machine Add a labeled network to handle virtual machine network traffic. VHkernel The VMkernel TCP/IP stack handles traffic for the following ESXi services: vSphere vMotion, ISCSI, NFS, and host management.
2	

- Step 11 Click Network Access.
- **Step 12** In the right pane, click Use vSwitch0.
- Step 13 Click Next.

Figure 3: Virtual Machine Network Access



- **Step 14** Choose Connection Settings > Port Group Properties.
- Step 15 In the Network Label field, enter FLAT and assign a value, for example, 10, to the VLAN ID.
- **Step 16** Click Next. The new port group is displayed.

Figure 4: FLAT Port Group Assigned

onnection Settings				
state sectings	Network Label:	FLAT		
ummary	VLAN ID (Optional):	10	•	
1	Preview:	Physical Advances		
	FLAT	vmnic0		1
	VLAN ID: 10			
	VMkemel Port			
	VMkernel	<u>9</u> .+		
	Vmk1 : 172.16.150.229			
	VM Network	0.		

Step 17 Repeat Step 6 to Step 11 to add the port group **SNAT** and assign a value, for example, 20, to the **VLAN ID**. The VLAN ID values are arbitrary; assign adequate values for your deployment.

The new port group is displayed in the Preview pane.

Figure 5: SNAT Port Group Assigned

Virtual Machines - Conne Use network labels to id	ection Settings dentify migration compatible connec	ions common to two or more hosts.	
Connection Type Vetwork Access Connection Settings Summary	Port Group Properties	SNAT	•
	Preview: Virtual Machine Port Group SNAT VI AN ID: 20	Physical Adapters	
	- Wikernel Port VMkernel vmk1: 172.16.150.229 - Virtual Machine Port Group VM Network	<u>@</u>	
		~	

Step 18 Configure the port groups to allow promiscuous mode as follows:

- a) Under the **Configuration** tab, choose **Hardware** > **Networking** and click **Properties** of the port group for which you want to enable promiscuous mode.
- b) Select the applicable port group and click Edit.
- c) Click the Security tab.
- d) From the Promiscuous Mode drop-down list, choose Accept.
- Step 19 Click Finish.

Both FLAT and SNAT port groups are assigned as shown.

Configuration	Summary	vSphere Standard Switch Properties	;	
vSwitch	120 Ports	Number of Ports:	120	
VM Network Management Net	Virtual Machine vMotion and IP Virtual Machine	Advanced Properties MTU:	1500	
SNAT Virtual Machine	Default Policies Security			
		Promiscuous Mode:	Accept	
		MAC Address Changes:	Accept	
		Forged Transmits:	Accept	
		Traffic Shaping		
		Average Bandwidth:		
		Peak Bandwidth:	-	
		Burst Size:		
		Failover and Load Balancing		
		Load Balancing:	Port ID	
		Network Failure Detection:	Link status only	
		Notify Switches:	Yes	
	1	Failback:	Yes	
Add	Edit Remove	Active Adapters:	vmnic0	

Figure 6: FLAT and SNAT Port Groups Assigned

What to Do Next

Deploy the Cisco Modeling Labs Open Virtual Appliance

Deploy the Cisco Modeling Labs Open Virtual Appliance

Before You Begin

• Ensure that you have configured the necessary security and network settings.

- **Step 1** To install the OVA, log in to the VMware ESXi server.
- **Step 2** From the vSphere client menu, choose **File** > **Deploy OVF Template**.

Figure 7: Deploying OVA

er beploy ovi remplate	
Weld	come to the Deploy OVF Wizard
This wiz	ard will guide you through the steps of deploying an OVF template.
	sding
vmware	
Help	< Back Next > Cancel

Step 3 Click Next.

- **Step 4** In the **Source** window, click **Browse** to navigate to the OVA package.
- **Step 5** In the dialog box displayed, click **Open**.
- Step 6 Click Next.

Figure 8: OVF Template Details

Deploy OVF Template OVF Template Details Verify OVF template details	i.			
Source OVF Template Details Name and Location Storage Disk Format Network Mapping Ready to Complete	Product: Version: Vendor: Publisher: Download size: Size on disk: Description:	VIRL.vCML7 No certificate present 1.8 GB 4.3 GB (thin provisioned) 39.1 GB (thick provisioned)		
Help			≤ Back Next >	Cancel

Information about the OVA you are about to deploy is displayed.

Step 7 In the Name and Location window, provide a name for the virtual machine, for example, Cisco Modeling Labs and click Next.

Figure 9: Name and Location Details

Deploy OVF Template Name and Location Specify a pame and loca	ation for the deployed template	
Source OVF Template Details Name and Location	Name: [Cisco Modeling Labs]	
Storage Disk Format Network Mapping Ready to Complete	The name can contain up to 80 characters and it must be unique within the inventory folder.	
Help	≤ Back Next ≥	Cancel

Step 8 In the **Storage** window, click the target data storage (Datastore) and click **Next**.

Figure 10: Target Datastore Details

<u>ce</u>	Select a destination st	orage for the virtua	I machine files:				
e and Location	Name	Drive Type	Capacity	Provisioned	Free	Туре	Thin Pro
rage	store-1-221	Non-SSD	925.25 GB	330.18 GB	635.31 GB	VMFS5	Support
Format	i store-2-221	Non-SSD	930.25 GB	79.08 GB	851.17 GB	VMFS5	Support
vork Mapping dy to Complete	istore-3-221	Non-SSD	930.25 GB	4.31 GB	925.94 GB	VMFS5	Support
	Disable Storage (DRS for this virtual r	nachine				Þ
	Disable Storage I Select a datastore: Name	DRS for this virtual r	nachine Capacity Pr	ovisioned	Frée	Туре	Ţ Thin Prov
	Disable Storage I Select a datastore: Name	DRS for this virtual r	nachine Capacity Pr	ovisioned	Frée	Туре	Thin Prov

Step 9 In the **Disk Format** window, choose the target data storage (Datastore) disk format, and click **Next**.

Figure 11: Disk Format Details

Deploy OVF Template				_ 🗆 🗡
Disk Format In which format do you	u want to store the virtual disks?			
Source OVF Template Details Name and Location Storage Dick Format	Datastore: Available space (GB):	store-1-221		
Vetwork Mapping Ready to Complete	Thick Provision Lazy Z Thick Provision Eager Thick Provision Thin Provision	eroed Zeroed		
Help			< Back Nevt	Cancel

Step 10 In the Network Mapping window, map the virtual networks FLAT and SNAT defined in the OVA, with those present in the host, and click Next.

Figure 12: Network Mapping Details

Source Networks Disk Format VM Network Vetwork Mapping Flat Ready to Complete SNAT	Destination Networks VM Network FLAT
isk Format VM Network etwork Mapping eady to Complete SNAT	VM Network FLAT
eady to Complete SNAT	FLAT
SNAT	
	SNAT 🗸
	<u>*</u>

- **Step 11** In the **Ready to Complete** window, ensure that the **Power on after deployment** check box remains unchecked to allow the virtual machine settings to be updated before it is powered on.
- **Step 12** Click **Finish** to start the OVA deployment.

Figure 13: Final Summary Page

Are these the options yo	ou want to use?		
urce /F Template Details	When you click Finish, the dep	loyment task will be started.	
prage	Deployment settings:	C:\Documents and Settings\@dministrator\Desktop\sml_o	
k Format	Download size:	 Documents and Seconds (Administrator (Desktop)(chil_0) CE 	
etwork Mapping eady to Complete "	Size op dick:	1.8 GB 39.1 GB	
	Name:	Cisco Modeling Labs	
	Host/Cluster:	localbost	
	Datastore:	store-1-221	
	Disk provisioning:	Thick Provision Lazy Zeroed	
	Network Mapping:	"VM Network" to "VM Network"	
	Network Mapping:	"Flat" to "Fl AT"	
	Network Mapping:	"SNAT" to "SNAT"	
	C Power on after deployment		

Step 13 After the OVA is deployed, navigate to the new virtual machine, right-click and select **Upgrade Virtual Hardware** if this is applicable to your VMware ESXi version.



E	172.16.150.221		CTECML2	
	CISCO MODELIN	Lans	Power	•
	CTECML2		Guest	•
			Snapshot	٠
		2	Open Console	
		5	Edit Settings	
			Upgrade Virtual Hardware	
			Add Permission Ctrl+P	
			Report Performance	
			Rename	

- Note To check if the upgrade is completed successfully, check under **Recent Tasks**.
- **Step 14** In the **Confirm Virtual Machine Upgrade** dialog box, click **Yes**.

- **Note** The option to upgrade the virtual hardware will not be displayed if the virtual machine is powered on, or if it already has the latest supported virtual hardware version.
- **Step 15** Use a terminal application, such as PuTTY, to connect to the VMware ESXi server using SSH.
 - Use the same IP address as your vSphere client.
 - Log in to the deployment using an account with administrator access.

Figure 15: Log In to the Deployed OVA

legoly.				
Session	Basic options for your PuTTY session			
	Specify the destination you want to connect to			
	Host Name (or IP address)	Port		
Bell	172.16.150.221	22		
- Features ⊡ Window	Connection type:	SSH Serial		
Appearance Behaviour Translation Selection Colours Connection Data Proxy Telnet Blogin	Load, save or delete a stored session Saved Sessions			
	Default Settings virl-demo-1	Load		
	virl-demo-4	Save		
		Delete		
SSH Serial	Close window on exit: Always Never On	nly on clean exit		

- **Step 16** After logging into the VMware ESXi server, complete the following steps:
 - a) Change the directory to /vmfs/volumes/ directory.

b) Select the datastore, as specified in Step 8.

Figure 16: Accessing the Datastore



- c) Select the name of the server as specified in Step 7.
- d) For VMware ESXi 5.0, add the following command to the /etc/vmware/config file: vhv.allow = "TRUE"
- e) Edit the .vmx file associated with the new virtual machine using a text editor for example, vi Editor. Add the following commands to enable support for nested hypervisors by the virtual machine:

- **Note** The **vhv.allow** command applies to *ESXi Version 5.0 only* and the **vhv.enable** command applies to *ESXi Version 5.1 and later*.
 - **Note** Choose the command that is appropriate to your VMware ESXi server version and add it to your .vmx file along with the other commands.

- **Step 17** Save the file and exit.
- **Step 18** To power on your Cisco Modeling Labs server for the first time, right-click **Cisco Modeling Labs** and choose **Power** > **Power On** in the vSphere client.

Figure 17: Powering On the Cisco Modeling Labs Server

CTEC	CML1	Power	•	Power O	Ctrl+B
A CTEC	CML2	Guest Snapshot Open Console Edit Settings Add Permission Ctrl+P	•	Power Off Suspend Reset Shut Down Guest Restart Guest	Ctrl+E Ctrl+Z Ctrl+T Ctrl+D Ctrl+R
		Report Performance Rename	ormance hine is an isolated computin virtual machines as desktop		
		Open in New Window Ctrl+Alt+N Remove from Inventory Delete from Disk	a tic)s	s testing environme ons. ts. The same host c	nts, or to an run

What to Do Next

Start the Cisco Modeling Labs Server.