Managing Lifecycles

This chapter contains the following sections:

Managing VM Power Settings

Before you begin

You must be logged in to the appliance to complete this task.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM on which you want to perform an action.

Step 5   Choose an action and the **VM Task** screen appears.

Name	Description
VM Name display-only field	The name of the VM that is the subject of the action.
Power Off display-only field	The task to power off the VM.
Power On display-only field	The task to power on the VM.
Suspend display-only field	The task to put the VM in a suspended state.
Shutdown Guest display-only field	The task to shut down the guest OS on the VM.

Name	Description
Standby display-only field	The task to move the VM into a standby state. **Note** Not supported in the RHEV KVM Connector.
Reset display-only field	The task to perform a hard reset of the VM. **Note** Not supported in the RHEV KVM Connector.
Reboot display-only field	The task to perform a soft reboot of the VM. **Note** Not supported in the RHEV KVM Connector.
Comments field	Enter any comments that help identify the VM.
Schedule Action radio button	The task to power on a VM now or later at a specific date and time.

Step 6   Click **Proceed**.

Managing VM Snapshots

This process includes the following tasks:

- Create Snapshot—You can create a snapshot of all the VM's resources in their current state.

- Revert Snapshot—If the VM crashes or malfunctions (For example, if the OS becomes corrupt), you can revert to the most recent snapshot of the VM. Where there are multiple snapshots for a VM, you can revert to a specific snapshot.

- Mark Golden Snapshot—You can mark a specific snapshot for a VM as a Golden Snapshot. This feature protects the snapshot from accidental deletion.

- Delete a Snapshot—You can delete a snapshot, if necessary. A Golden Snapshot must be first unmarked before it can be deleted.

- Delete All Snapshots—You can delete all snapshots for a VM. However, you cannot delete all snapshots if they include Golden Snapshots. You must first unmark any Golden Snapshot and then delete all snapshots.

Creating VM Snapshots

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM for which you want to create a snapshot.

Step 5   From the **More Actions** drop-down list, choose **Create Snapshot**.

Step 6   On the **Create Virtual Machine Snapshot** screen, complete the following fields:

Name	Description
Snapshot Name field	The snapshot name.
Snapshot Description field	The snapshot description.
Snapshot Memory check box	Check the check box to include the VM memory in the snapshot.
Quiesce Guest File System check box	Check the check box to take the snapshot in quiesce mode. **Note** Quiescing a file system brings the on-disk data of a physical or virtual computer into a state that is suitable for backups. This process might include operations such as flushing buffers from the operating systems in-memory cache to disk, or other higher-level application-specific tasks. To use this option, VMware Tools must be installed on the VM.

Step 7   Click **Proceed**.

Reverting to a Snapshot

Before you begin

You must be logged in to the appliance to complete this task.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM that you want to revert to a snapshot.

Step 5   From the **More Actions** drop-down list, choose **Revert Snapshot**.

Step 6   On the **Revert Snapshot Task** screen, check the name of the desired snapshot.

Step 7   Click **Proceed**.

Marking a Golden Snapshot

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM for which you want to mark a snapshot as golden.

Step 5   From the **More Actions** drop-down list, choose **Mark Golden Snapshot**.

Step 6   On the **Mark Golden Snapshot Task** screen, check the name of the desired snapshot.

Step 7   Check **Mark as Golden Snapshot**.

Step 8   Click **Proceed**.

Deleting a Snapshot

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM for which you want to delete a snapshot.

Step 5   From the **More Actions** drop-down list, choose **Delete Snapshot**.

Step 6   On the **Delete Snapshot Task** screen, check the name of the desired snapshot.

Step 7   Check **Delete Children** to delete child snapshots of the selected snapshot.

Step 8   Click **Proceed**.

Deleting All Snapshots

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM for which you want to delete all snapshots.

Step 5   From the **More Actions** drop-down list, choose **Delete All Snapshots**.

Step 6   On the **VM Snapshot Task** screen, enter an optional comment.

Step 7   Click **Proceed**.

Configuring the Lease Time for a Virtual Machine

A user can configure a lease expiration time for a selected virtual machine (VM). Once the lease time expires, the VM is powered down. The lease time end is a calendar selection.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM for which you want to configure the lease time.

Step 5   From the **More Actions** drop-down list, choose **Configure Lease Time**.

Step 6   On the **Configure Lease Time** screen, check **Set Lease Time**. Complete the following fields:

Name	Description
VM Name field	The name specified while creating the VM. Once entered, you cannot edit the name of the VM.
Lease Date/Time calendar, drop-down lists, radio buttons	The lease date and time for the VM. There are calendars for the Date, drop-down lists for the Time (hour and minute), and radio buttons for AM or PM.

Step 7   Click **Submit**.

Managing VM Actions

After creating a VM, you can perform additional tasks on it, by using menus available in the user interface. You can access these menus in one of the following ways:

- Right clicking on a VM to view a list of limited options,

- Choosing a VM and clicking the down arrow option on the toolbar for a complete list of options.

Following are the other VM actions:

- View VM Details—You can access individual VMs to view details, such as summary reports, vNICs, disks, and snapshots.

- Stack View—You can view stacks of information about a particular VM including, OS, hypervisor, and infrastructure information.

- Delete a VM—You can delete a VM from the list. Only a powered-off VM can be deleted.

- Create a VM Disk—You can add an additional disk with a custom size to a VM.

- Delete a VM Disk—You can delete a disk.

- Add vNICs—You can add multiple vNICs to a VM. You also have the option to add or replace a vNIC in a VM. The options for vNICs depend on the network policy mapped to the VDC associated with the VM.

- Launch VM Client—You can set up and access either web access, remote desktop, or VMRC Console access for a VM.

- Launch VNC Console—You can set up and access the VM console using the VNC client.

- VMRC Console (HTML5)—You can launch a VMRC HTML5 console that is web browser and plug-in independent.

- Assign VM—You can assign a VM to a group or VDC and modify the category of the VM. You can set the provisioning time, termination time, and label for a VM.

- Access VM Credentials—You can access a VM's login credentials when it is set up for web or remote desktop access, but only if the administrator provides the privileges in the catalog from which the VM is provisioned.

- Inventory Collection Request for VM—You can choose a VM and request on-demand inventory collection.

- Test VNC—You can test VNC connectivity, for troubleshooting purposes.

- Clone—You can clone or make a copy of an existing VM to make a new VM with the same or similar qualities.

- Move a VM to VDC—You can move a VM to a VDC so that the rules of the VDC system policy are followed in the VM.

- VM Resync—You can choose to set the number of minutes to have a VM resynchronize its time periodically with Cisco UCS Director.

- Mount ISO Image as CD/DVD Drive—You can mount ISO images on the VM without using a physical drive. Once mounted in your virtual machine, you can open, extract, and use the files from a virtual CD/DVD drive without a physical disk.

- Unmount ISO Image as CD/DVD Drive—You can unmount an ISO image already attached to CD/DVD drive on the virtual machine.

Viewing VM Details

Step 1	Choose **Virtual** > **Compute**.
Step 2	On the **Compute** page, choose the cloud.
Step 3	On the **Compute** page, click **VMs**.
Step 4	Click the row with the VM for which you want to view the details.
Step 5	Click **View Details**.

Resizing VMs

Step 1	Choose **Virtual** > **Compute**.
Step 2	On the **Compute** page, choose the cloud.
Step 3	On the **Compute** page, click **VMs**.
Step 4	Click the row with the VM that you want to resize.
Step 5	From the **More Actions** drop-down list, choose **Resize VM**.
Step 6	On the **Resize VM** screen, complete the following fields:

Name	Description
VM Name field	The name of the selected VM.
Current Allocated CPU field	The number of allocated CPUs being used by the VM.
Current Allocated Memory (GB) field	The amount of memory allocated to the VM.
New CPU Count drop-down list	Choose the CPU required.
New Cores Per Socket drop-down list	Choose the cores per socket.
New Memory drop-down list	Choose the amount of memory.
Current CPU Cost (Currency: USD) field	Displays the current CPU cost per-hour. This value is calculated based on the currently allocated CPU for the VM.
Current Memory Cost (Currency: USD) field	Displays the current memory cost per-hour. This value is calculated based on the currently allocated memory for the VM.
New CPU Cost (Currency: USD) field	Displays the CPU cost per-hour based on the CPU count specified for the VM.
New Memory Cost (Currency: USD)	Displays the memory cost per-hour based on the memory specified for the VM.

Important If you checked the **Disable displaying cost details** check box while adding or modifying the VDC, then information on the current and new CPU cost and memory cost is not displayed.

Step 7 Click **Resize**.

Using the Stack View Option

Step 1 Choose **Virtual** > **Compute**.

Step 2 On the **Compute** page, choose the cloud.

Step 3 On the **Compute** page, click **VMs**.

Step 4 Click the row with the VM for which you want to view the stack view.

Step 5 Click **Stack View**.

The **Stack View** screen displays information on the selected VM.

Note	• If there are multiple components in the report, such as hard drives or network adapters, you can click the arrow displayed on each component and select a different component.
	• You can view additional information on each component by clicking the eye icon.

Creating a VM Disk

You can create a VM disk only if you checked **Allow Resizing of Disk** while configuring the storage policy that is mapped to the vDC.

Before you begin

The VM should be in the powered off state.

Step 1	Choose **Virtual** > **Compute**.
Step 2	On the **Compute** page, choose the cloud.
Step 3	On the **Compute** page, click **VMs**.
Step 4	Click the row with the VM on which you want to create a VM disk.
Step 5	From the **More Actions** drop-down list, choose **Create VM Disk**.
Step 6	On the **Create VM Disk** screen, complete the following fields:

Name	Description
VM Name field	The name of the VM. Once entered, the VM name cannot be edited.
New Disk Size (GB) field	The disk size for the VM, in GB. You must enter an integer in this field, and this integer should be within the range specified in the storage policy associated with this VM.
Select Disk Type drop-down list	Choose the disk type. It can be one of the following: • **System** • **Swap** • **Data** • **Database** • **Log**
Select Datastore/Datastore Cluster drop-down list	Specify if the VM disk should be created from a datastore or a datastore cluster.

Name	Description
Select Datastore field	Click **Select** and choose which datastore you want to use to create the VM disk. **Note** The available datastores depend upon the storage policy associated with the VDC. Only datastores that meet the criteria specified in the storage policy are available for the VM disk. This field is only available if you specify that the VM disk should be created from a datastore.
Select Datastore Cluster field	Click **Select** and choose which datastore cluster you want to use to create the VM disk. **Note** The available datastore clusters depend upon the storage policy associated with the VDC. Only datastore clusters that meet the criteria specified in the storage policy are available for the VM disk. This field is only available if you specify that the VM disk should be created from a datastore cluster.
Thin Provision check box	Check the check box to add a thin provisioned disk to the VM. **Note** Thin provisioning enables dynamic allocation of the physical storage capacity to increase VM storage utilization.
Compute New Disk Cost field	This option calculates and displays the disk cost, per hour, based on the new disk size and the datastore you have specified for the VM disk. **Important** If you checked the **Disable displaying cost details** check box while adding or modifying the VDC, then the **Compute New Disk Cost** field is not displayed.

Step 7 Click **Create**.

Resizing a VM Disk

Step 1 Choose **Virtual** > **Compute**.

Step 2 On the **Compute** page, choose the cloud.

Step 3 On the **Compute** page, click **VMs**.

Step 4 Click the row with the VM for which you want to resize the VM disk.

Step 5   From the **More Actions** drop-down list, choose **Resize VM Disk**.

Step 6   On the **Resize VM Disk** screen, complete the following fields:

Name	Description
VM Name field	The name of the VM. This name cannot be edited.
Select Disk drop-down list	Select the VM disk from the drop-down list.
Total Provisioned (GB) field	Displays the total provisioned space on the VM.
New Size (GB) field	The new size for the VM. Enter an integer in this field. This integer should be within the range or among the comma separated values specified in the storage policy associated with this VM and should be greater than the total provisioned size.
Current Disk Cost (Currency: USD) field	Displays the current disk cost per hour.
Compute New Disk Cost field	This option calculates the disk cost, per hour, based on the new disk size you specified.
New Disk Cost (Currency: USD) field	Displays the disk cost per hour for the new disk size specified for the VM.

Important If you checked the **Disable displaying cost details** check box while adding or modifying the VDC, then information on the current and new disk cost is not displayed.

Step 7   Click **Resize**.

Locking VMs in Cisco UCS Director

As an administrator in Cisco UCS Director, you can create a list of VMs that you would like locked. Locking VMs implies preventing actions from running on the specified VMs. These actions could be shutting down, resetting, or powering off VMs.

Step 1   Create an XML file titled `VMControls.xml` which is similar to the following:

```
<VMControlList>
--<VMControl>
    <ControlType>lock</ControlType>
    <MatchType>VM-IPAddress</MatchType>
    <MatchValue>19.19.19.19</MatchValue>
    <IsRegex>false</IsRegex>
    <ContactEmail>admin@admin.com</ContactEmail>
  --<Label>
     Do not shutdown or delete my machine.
  --</Label>
--</VMControl>
--<VMControl>
```

```
          <ControlType>lock</ControlType>
          <MatchType>VM-IPAddress</MatchType>
          <MatchValue>19.29.29.29*</MatchValue>
          <IsRegex>true</IsRegex>
          <ContactEmail>admin@admin.com</ContactEmail>
        --<Label>
            Do not shutdown or delete this machine.
        --</Label>
      --</VMControl>
      </VMControlList>
```

Step 2	Host this file on a server that is accessible from the system that is running Cisco UCS Director.
Step 3	Choose **Administration** > **System**.
Step 4	On the **System** page, click **System Parameters**.
Step 5	In the **Download VM Locking Controls From URL** field, enter the URL of the XML file.

The URL will look similar to this: `<ip_address>:8000/VMControls.xml`.

Step 6	Click **Save**.
Step 7	On the **System** page, click **System Tasks**.
Step 8	Search for and select the **VM Control List Poller Task**.
Step 9	Click **Run Now**.

This system task downloads the `VMControls.xml` file and saves it in the inventory database. After this system task is run, actions such as powering off, or shutting down are prevented from running on VMs that match the IP addresses specified in the XML file.

Adding vNICs

Note   When you add a vNIC VM, the values of the **Port Group Name** and **Adapter Type** parameters are modified. The IP address of the VM is changed only if DHCP is enabled on the selected port group. However, the IP address is not modified if it is sourced from a static pool policy.

Step 1	Choose **Virtual** > **Compute**.
Step 2	On the **Compute** page, choose the cloud.
Step 3	On the **Compute** page, click **VMs**.
Step 4	Click the rwo with the VM to which you want to add a vNIC.
Step 5	From the **More Actions** drop-down list, choose **Add vNICs**.
Step 6	On the **Add VM vNICs** screen, choose **Add** from the **Operation** drop-down list.

This addition is not allowed if the vNIC limit configured in the network policy will be exceeded.

Step 7	Expand the **VM NETWORKS** list.
Step 8	Click **Add (+)**.
Step 9	On the **Add Entry to VM Networks** screen, complete the following fields:

Name	Description
NIC Alias drop-down list	Choose a NIC alias from the list.
Port Group Type display-only drop-down list	Choose a port group from the list.
Port Group Name drop-down list	Choose a port group name from the list.
Adapter Type display-only drop-down list	Choose the adapter type. The choice is available only if the NIC alias does not have **Copy Adapter Type from Template** chosen in the network policy.
DHCP check box	If this field is checked, then the IP is assigned using DHCP.
Static IP Pool field	The static IP address pool.
Network Mask field	The network mask.
Gateway IP Address field	The gateway IP address.

Note   The **NIC Alias**, **Port Group Name**, **Adapter Type**, **DHCP**, and **Static IP Pool** choices depend on the settings in the network policies associated with the VM (VM's VDC). For more information about multiple NIC network policies, see Managing Policies.

The VM is powered down to perform this action. The VM will power up once the action is completed.

Step 10   Click **Submit**.

Replacing a vNIC

Note   When you replace a vNIC VM, the values for the **Port Group Name** and **Adapter Type** parameters are modified. The IP address of the VM is changed only if DHCP is enabled on the selected port group. However, the IP address is not modified if it is sourced from a static pool policy.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM for which you want to replace a vNIC.

Step 5   From the **More Actions** drop-down list, choose **Add vNICs**.

Step 6   On the **Add VM vNICs** screen, choose **Replace** from the **Operation** drop-down list.

This replacement is not allowed if the additional vNIC limit configured in the network policy will be exceeded.

Step 7   Choose a vNIC.

Step 8   On the **Add vNIC** screen, complete the following fields:

Name	Description
NIC Alias drop-down list	Choose a NIC alias. Only the vNICs configured in the network policy are visible here.
Port Group Name drop-down list	Choose a port group name from the list.
Adapter Type display-only drop-down list	Choose the adapter type. The choice is available only if the choice of the NIC alias does not have **Copy Adapter Type from Template** chosen in the network policy.
DHCP check box	Check the check box if you want the IP assigned using DHCP.
Static IP Pool field	The static IP address pool.
Network Mask field	The network mask.
Gateway IP Address field	The gateway IP address.

Step 9   Click **Submit**.

Note   The VM is powered down to perform this action. The VM is powered up once the action is completed. The **Replace** task removes all existing vNICs from the VM and replaces them with the vNICs that were added.

The **NIC Alias**, **Port Group Name**, **Adapter Type**, **DHCP**, and **Static IP Pool** choices depend on the settings in the network policy associated with the VM (VM's VDC). For more information about multiple NIC network policies, see Managing Policies.

Launching the VM Client

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM for which you want to launch the VM client.

Step 5   Click **Launch VM Client**.

Step 6   On the **Launch Client** screen choose an access scheme for the VM Client.

If a VM is provisioned through Cisco UCS Director, the access schemes displayed in this dialog box are defined by the options enabled in the catalog used to provision the VM.

For a VM that is discovered, the options, **Remote Desktop**, **Web Access**, **VMRC Console (Browser Plug-in)**, and **VMRC Console (Standalone Plug-in)** are displayed.

Step 7   Click **Proceed**.

Enabling the VNC Console on a VM

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM for which you want to configure VNC.

Step 5   From the **More Actions** drop-down list, choose **Configure VNC**.

Step 6   On the **Configure VNC** screen, choose a keyboard mapping language from the drop-down list.

- French (Switzerland)

- Japanese

- US English

- Italian

- Icelandic

- UK English

- French (Belgium)

- German (Switzerland)

- German

- Spanish

- Norwegian

- Finnish

- Polish

Step 7   Click **Submit**.

Step 8   Click **OK**.

The system automatically configures VNC console access to a VM when a request is submitted.

Automatically Unconfiguring the VNC Console on a VM

You can enable the VMware Monitor VNC Port Task to enable automatic unconfiguration of VNC consoles. This task runs every 30 minutes and unconfigures VNC ports that are open for more than a default of 60 minutes. VNC is unconfigured on the ports, and the ports are released for future allocation.

You can modify the frequency in which the task is run by clicking **Manage System Task** and selecting the duration from the drop-down list.

You can modify the port wait time by editing the `unConfigureVNCPortWaitTime` parameter in the `/opt/infra/inframgr/vmware.properties` file.

Step 1 Choose **Administration** > **System**.

Step 2 On the **System** page, click **System Tasks**.

Step 3 Click the **VMware Standard Tasks** arrow to expand its tasks.

Step 4 Click the row with the **VMware Monitor VNC Port Task** system task.

Step 5 Click **Manage Task**.

Step 6 From the **Task Execution** drop-down list, choose **Enable**.

Step 7 Click **Submit**.

Accessing VM Console Using VNC Client

The VNC client is an Ajax-based application that provides access to a VM console. The console window can be launched by using any standalone web browser. It does not require a dedicated browser plug-in and it provides full VM control capabilities. However, you must disable popup blockers in the browser for the VNC console to launch.

Before you begin

- You must configure ESX/ESXi server for VNC access to VM console. For more information, see Configuring ESX/ESXi Server for VNC Access to VM Console, on page 16.

- Cisco UCS Director provides automatic configuration of the VM console access using VNC client. To configure, you must open ports 5901-5964 in the ESX/ESXi server to the Cisco UCS Director appliance.

- Import a self-signed certificate or a CA certificate using Cisco UCS Director admin shell. Importing a certificate enables secured access to the VM console using the VNC client. For more information on importing certificates, see the Cisco UCS Director Shell Guide

- Disable popup blockers in your browser.

Note VMware with ESX 4.x, ESXi 5.x, and ESXi 6.0 versions is supported for configuring VM console access using the VNC client.

Step 1 Choose **Virtual** > **Compute**.

Step 2 On the **Compute** page, choose the cloud.

Step 3 On the **Compute** page, click **VMs**.

Step 4 Click the row with the VM for which you want to launch the VNC console.

Step 5 Click **Launch VNC Console**.

Step 6 On the **Launch VNC Console** screen, choose the keyboard mapping layout, and click **Submit**.

> **Tip** If the screen is blank, click in the black area and press **Enter**.

Configuring ESX/ESXi Server for VNC Access to VM Console

VMware with ESX 4.x and ESXi 5.x versions is supported to configure VNC access to the VM console.

Step 1 Log in to ESXi5.x host.

Step 2 Using the shell, disable the firewall configuration.

Step 3 Copy and paste the following XML configuration to the `vnc.xml` file.

```
 # cat /etc/vmware/firewall/vnc.xml
<!-- Firewall configuration information for VNC -->
<ConfigRoot>
  <service>
   <id>VNC</id>
    <rule id='0000'>
    <direction>inbound</direction>
     <protocol>tcp</protocol>
     <porttype>dst</porttype>
     <port>
     <begin>5901</begin>
     <end>5964</end>
     </port>
    </rule>
    <rule id='0001'>
     <direction>outbound</direction>
     <protocol>tcp</protocol>
     <porttype>dst</porttype>
     <port>
      <begin>0</begin>
      <end>65535</end>
     </port>
    </rule>
    <enabled>true</enabled>
    <required>false</required>
  </service>
</ConfigRoot>
```

> **Note** This `vnc.xml` file is available when VNC is enabled for the host. If this file is not available, then create a `vnc.xml` file, add the configuration lines mentioned in this procedure, and save the file.

Step 4 Refresh the firewall rules and verify that the new configuration is accurately loaded.

```
~ # esxcli network firewall refresh
~ # esxcli network firewall ruleset list | grep VNC
VNC    true #****************************************
```

Step 5 Repeat these steps on all ESXi hosts in an ESXi cluster.

Assigning a VM

You can assign a resource or a VM to a user group. If the resource or VM is in a VMWare cloud, then you can also assign it to a specific end user in Cisco UCS Director.

Step 1 Choose **Virtual** > **Compute**.

Step 2 On the **Compute** page, choose the cloud.

Step 3 On the **Compute** page, click **VMs**.

Step 4 Click on the row with the VM that you want to assign.

Step 5 From the **More Actions** drop-down list, choose **Assign VM**.

Step 6 On the **Assign VM** screen, complete the following fields:

Name	Description
VM Name field	The name of the VM.
VM Ownership Section	
Customer Organizations radio button	Select this radio button to assign the VM to a specific group.
Cutomer Organizations field	Click **Select** to choose the specific user group to which you want to assign the VM. This field is visible only when you select the **Customer Organizations** radio button. **Note** Only groups that have valid vDCs are displayed.
User radio button	Select this radio button to assign the VM to a specific user.
User field	Click **Select** to choose the user to whom you want to assign the VM. This list is populated with users from groups that allow resource assignment to users.
VM Access Sharing Section	
Users with Access Privilege field	Click **Select** to choose users who can only access VM information. The selected users can only access the VM. They cannot perform any administrative actions This option is only available if the **User** radio button is selected and you have selected a specific user for this VM.
Users with Manage Privilege field	Click **Select** to choose users who can only manage the VM. The selected users can perform administrative tasks on the VM. This option is only available if the **User** radio button is selected and you have selected a specific user for this VM.
General Assignment Information Section	

Name	Description
VDC drop-down list	Choose the VDC.
Category drop-down list	Choose the category for the VM.
VM User Label field	The VM label if required.
Set Provision Time check box	Check the check box to set a specific provisioning time for the VM.
Provision Date/Time calendar, drop-down lists, radio buttons	The VM's provisioning date and time. There are calendars for the Date, drop-down lists for the Time (hour and minute), and radio buttons for AM or PM. This option appears when **Set Provision Time** is checked.
Comments field	Add any comments about the task, if necessary.

Step 7   Click **Assign**.

VM Credentials

The web or remote access login credentials for a VM can only be viewed if the administrator provides the necessary privileges in the Catalog from which the VM is provisioned.

Viewing VM Credentials

Before you begin

You must be logged in to the appliance to complete this task.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM for which you want to view the credentials.

Step 5   From the **More Actions** drop-down list, choose **Access VM Credentials**.

Initiating Inventory Collection for a VM

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM for which you want to request an inventory collection.

Step 5   From the **More Actions** drop-down list, choose **Inventory Collection Request for VM**.

Step 6   Click **Submit**.

Testing VNC Connectivity

Testing VNC connectivity is used for troubleshooting purposes. A successful test for VNC connectivity displays the host node IP address and VNC port number. For example: `VNC connectivity intact at 172.16.0.1:5921`.

However if connectivity fails, a failure message displays. For example: `VM is not configured for VNC yet`.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM on which you want to test VNC connectivity.

Step 5   From the **More Actions** drop-down list, choose **Test VNC**.

Step 6   On the **Test VNC Connectivity** screen, click **Submit**.

Step 7   Use the result to troubleshoot VNC connectivity.

> **Note**   If connectivity fails, then there is no VNC port assigned to the VM IP address. For more information, see Enabling the VNC Console on a VM, on page 14.

Cloning a VM

Cloning a VM allows you to create a new VM in the system by using some of the parameters defined in an existing VM. The cloning option helps you create a VM faster, especially if you want to modify only a few parameters of an existing VM. The name that you specify for the cloned VM is defined by the system policy.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM that you want to clone.

Step 5   From the **More Actions** drop-down list, choose **Clone**.

Step 6   On the **Clone VM: Select Group** screen, complete the following fields:

Name	Description
Select Group list	Expand the list to choose a predefined group to clone and click **Select**. The **Default Group** is chosen by default.

Name	Description
Assign To User check box	Check the box to assign the VM to a specific user.
	This option is visible only if resource assignment to users is enabled for the group share policy that is applied to the selected user group. For more information on creating a group share policy, see Creating a Group Share Policy.
User drop-down list	Choose the user to whom this VM is assigned.
	Note Currently, only VMs that are in a VMware cloud can be assigned to a specific user.
Use Linked Clone check box	Check the box to clone a VM from a linked clone.
	Note A linked clone is a copy of a virtual machine that shares virtual disks with the parent VM. A linked clone is made from a snapshot of the parent VM. A linked clone must have access to the parent VM. Without access to the parent VM, a linked clone is disabled.
	Linked Clone or Full Clone depends on the Linked Clone selection in the Storage Policy.
Select Snapshot Type drop-down list	Choose the type of snapshot that is associated with the linked clone.
	You can choose one of the following:
	• **Existing Snapshot**
	• **New Snapshot**
Select Existing Snapshot list	Expand the list to choose an existing snapshot and click **Select**.
	Note This field appears only when you select **Existing Snapshot**.
Snapshot Name field	Enter a name for the new snapshot.
	Note This field appears only when you select **New Snapshot**.
Use ReadyClone check box	Check the box to ensure that VMs are deployed using ReadyClones.
	When this box is checked, the **Use Linked Clone** check box is hidden.

Step 7   Click **Next**.

Step 8   On the **Clone VM: Customization Options** screen, complete the following fields:

Name	Description
Category list	Expand the list to choose the required VM category and click **Select**.
Credential Options drop-down list	Choose to allow or disallow users to retrieve VM access credentials (shared). The following options are available: • **Do not share** • **Share after password reset** • **Share template credentials** The **Do not share** option is chosen if the administrator wants to send the credentials privately to another user outside Cisco UCS Director.
User ID field	Enter the user ID. This field is available only if a choice is made to share under **Credential Options**.
Password field	Enter the user password. This field is available only if a choice is made to share under **Credential Options**.
Provision all disks in a single datastore check box	Check the box to provision all VM disks in the previously configured single datastore.
Perform deployment assessment check box	Check the box to assess the budget allocation, resource limits, and resource availability prior to cloning a VM. After you check this box, the summary of the assessment is displayed on the **Deployment Assessment** screen. **Note** This option is visible only for VMware clouds.
Automatic Guest Customization Enable check box	This box is checked.
Post Provisioning Custom Actions Enable check box	Check the box to enable execution of an orchestration workflow after VM provisioning. The chosen workflow initiates when provisioning starts.
Workflow drop-down list	Choose a defined workflow for provisioning. **Note** This field appears when **Post Provisioning Custom Actions Enable** is checked. Any workflow input values are entered on the **Clone VM: Custom Workflow** screen.
VM App Charge Frequency drop-down list	Choose **Hourly** or **Monthly**.
Active VM Application Cost field	Enter the cost for the application that is included in the template.

Name	Description
Inactive VM Application Cost field	Enter the cost to this catalog of a VM in inactive state, per hour or month.

Step 9   Click **Next**.

Step 10   On the **Clone VM: Deployment Configuration** screen, complete the following fields:

Name	Description
Select VDC drop-down list	Choose a VDC containing the policies you want for the VM.
Comment field	Optionally, enter a description of the VDC.
Provision drop-down list	Choose **Now** to provision the VDC now or choose **Later** to provision the VDC later. If you choose **Later**, then fields to specify the date and time appear.
Lease Time check box	Check the box to configure a lease expiration time.
Days field	Enter the number of days for the lease time. **Note** This field appears only when **Lease Time** is checked.
Hours field	Enter the number of hours for the lease time. **Note** This field appears only when **Lease Time** is checked.

Step 11   Click **Next**.

Step 12   On the **Clone VM: Custom Specification** screen, complete the following fields:

Name	Description
CPU Cores drop-down list	Choose the CPU cores for the VM being provisioned.
Cores Per Socket drop-down list	Choose the cores per socket for the VM being provisioned. The number of cores per socket available is specified in the VM computing policy.
Memory drop-down list	Choose the amount of memory for the VM being provisioned.

Step 13   Click **Next**.

Step 14   On the **Clone VM: Custom Workflow** screen, enter any workflow input values, if applicable.

Step 15   Click **Next**.

Step 16   On the **Clone VM: Select Datastores** screen, expand **VM Disks** to assign any applicable datastores to the applicable disk.

Step 17   Click the row of the disk to which you want to assign a datastore.

Step 18   Click **Edit selected entry in the table below**.

Step 19   On the **Edit VM Disks Entry** screen, complete the following fields:

Name	Description
Disk Name	The name of the VM disk to which datastores are assigned.
Disk Type	Choose the VM disk type. For example, **System**.
Selected Datastores	Choose the datastores that you want for this VM disk. The available datastore choices are from the data storage policy associated with the VDC.
Do not resize check box	Check this box if you do not want the disks resized before cloning the VM. If you check this box, then the **Size** drop-down list is hidden.
Size drop-down list	Choose the new size of the disk while cloning the VM. **Note** You can edit the size of the disk only if you enabled **Allow Resizing of Disk** in the storage policy.

Step 20   Click **Submit**.

Step 21   Click **Next**.

Step 22   On the **Clone VM: Select VM Networks** screen, click the **VM Networks** pencil icon to edit a VM network.

  Note   The **Clone VM: Select VM Networks** screen is empty unless **Allow end user to select optional NICs** is chosen in the network policy.

Step 23   On the **Select** screen, choose the clouds that you want associated with the VM.

Step 24   Click **Submit**.

Step 25   Click **Next**.

Step 26   Required: If you checked **Perform deployment assessment** on the **Clone VM: Customization Options** screen, then review the report of the assessment displayed on the **Deployment Assessment** screen.

  If this assessment report identifies errors, return to the previous screens and rectify the errors before submitting the request. If the assessment report shows no errors, then you can continue.

Step 27   Click **Next**.

Step 28   Review the cloned VM information on the **Clone VM: Summary** screen.

Step 29   Click **Submit**.

  The cloned VM gets its new name from the VDC policy.

Moving a VM to VDC

A VM is moved to a VDC so that the rules of the VDC system policy are followed in the VM. The existing VM is replaced by the one that is moved to the VDC.

Note   The old VM is deleted. The new VM name is given according to the system policy.

Before you begin

You must be logged in to the appliance to complete this task.

Step 1   On the menu bar, choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM that you want to move to a VDC.

Step 5   From the **More Actions** drop-down list, choose **Move VM to VDC**.

Step 6   On the **Move VM to VDC** screen, you can make modifications to the VM that you are moving in the same way you did when cloning a VDC.

See .

Resynchronizing a VM

Before you begin

You must be logged in to the appliance to complete this task.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, click **Clouds**.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM that you want to resynchronize.

Step 5   From the **More Actions** drop-down list, choose **Resync VM**.

Step 6   On the **Resync VM** screen, choose the number of minutes from 0 to 30 from the **Max Wait Time** drop-down list.

Step 7   Click **Submit**.

Applying a Tag to a VM

With the introduction of tagging support for a VM, you can manage tags in Cisco UCS Director to categorize and identify specific VMs as firewall VMs or as load balancer VMs.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, choose the cloud.

Step 3   On the **Compute** page, click **VMs**.

Step 4   Click the row with the VM to which you want to add tags.

Step 5   From the **More Actions** drop-down list, choose **Add Tags**.

Step 6   On the **Add Tags** screen, complete the following fields:

Field	Description
Tag Name drop-down list	Choose the tag that you want to apply to the VM. This drop-down list displays all the tags that you have previously created. You can choose a tag from this list, or create a new tag. For information on creating a tag, see Creating a Tag.
Tag Value drop-down list	Choose a value for the tag.

Step 7   Click **Submit**.

What to do next

You can create a tag-based cost model for the VMs. For more information, see Creating a Tag-Based Cost Model.

Mounting an ISO Image as a CD/DVD Drive

An ISO is a disk image. You can mount ISO images on the VM without using a physical drive. Once mounted in your virtual machine, you can open, extract, and use the files from a virtual CD/DVD drive without a physical disk.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, click **VMs**.

Step 3   Click the row with the VM on which you want to mount an ISO image.

Step 4   From the **More Actions** drop-down list, choose **Mount ISO Image As CD/DVD Drive**.

Step 5   On the **CD/DVD Drive Mount ISO** screen, choose the ISO image from the list of available images.

Step 6   Choose one of the following options:

- **Create New CD/DVD Drive** and check **Power OFF VM**.
- **Use Existing CD/DVD Drive** and choose the drive from the **Select DVD/DVD Drive** drop-down list.

Step 7   Click **Submit**.
The new or existing CD/DVD drive is mapped to your VM. You can log into the VM to view the mapped drive.

Unmounting an ISO Image as a CD/DVD Drive

You can unmount an ISO image already attached to CD/DVD drive on the virtual machine.

Step 1   Choose **Virtual** > **Compute**.

Step 2   On the **Compute** page, click **VMs**.

Step 3   Click the row with the VM on which you want to unmount an ISO image.

Step 4   From the **More Actions** drop-down list, choose **UnMount ISO Image As CD/DVD Drive**.

Step 5   On the **CD/DVD Drive UnMount ISO** screen, choose the CD/DVD drive to unmount from the **Select CD/DVD Drive** drop-down list.

Step 6   Click **Submit**.