

# Lifecycle Manager User's Guide

vCenter Lifecycle Manager 1.2

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# About This Book

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The *Lifecycle Manager User's Guide* describes the tasks that users can perform using VMware® vCenter Lifecycle Manager (LCM). LCM allows you to request, approve, deploy, operate, and decommission a virtual machine.

## Intended Audience

This book is intended for all LCM users who want to request, approve, deploy, operate, or decommission a virtual machine. LCM users are assigned specific roles that determine the tasks that they can perform. Depending on your assigned role, you might be able to perform all or some of the tasks described in this guide.

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# Overview of Lifecycle Manager

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VMware vCenter Lifecycle Manager (LCM) automates the process of creating virtual machines and removing them from service at the appropriate time. The tasks that you can perform depends on the role that the LCM Administrator has assigned to you. This guide describes the tasks that each role can perform. For information about the tasks that the LCM Administrator can perform, see the *Lifecycle Manager Administration Guide*.

This chapter includes the following topics:

- [“Lifecycle Manager Process,”](#) on page 7
- [“Lifecycle Manager Terminology,”](#) on page 7
- [“Lifecycle Manager Roles,”](#) on page 8
- [“Supported Browsers,”](#) on page 9
- [“Log In to LCM,”](#) on page 10

## Lifecycle Manager Process

The way that LCM handles requests to create virtual machines depends on how the LCM Administrator has configured the approval process. If approval is required, an email notification is sent to the LCM Approver user. If approval is not required, and there is no conflict with the request, the virtual machine is created. If there is a conflict, an LCM IT Staff user receives an email notification that a virtual machine is waiting to be created.

After a virtual machine is created, it can be used until the decommissioning date. Five days before the decommissioning date, an email notice is sent to the user who requested the virtual machine if email notifications are enabled. The user can perform one of the following actions:

- Request to extend the life of the machine.  
If the extension is not approved, the virtual machine is decommissioned and is archived or deleted. The LCM Administrator determines whether decommissioned virtual machines are archived.
- Manually decommission the virtual machine.

## Lifecycle Manager Terminology

LCM uses specific terminology to describe lifecycle events and attributes.

<b>Commission</b>	The creation of a requested virtual machine. The commission time is submitted during the request process.
<b>Decommission</b>	The requested machine reaches the end of its life. A decommission date is submitted during the request process. The decommissioned machine can be archived or deleted.

<b>Extension</b>	Extending the life of a virtual machine that is to be decommissioned. If approval is required, the request for extension must be approved before the owner of the virtual machine can continue to use it.
<b>Infrastructure</b>	Attributes such as the network, domain, and datastore affect where the requested virtual machine is placed in VMware Infrastructure.
<b>Criteria</b>	Attributes attached to a requested virtual machine that are selected during the request process, such as location, organization, server environment, service level, and performance. The LCM Administrator maps this information to the infrastructure.
<b>Template Profile</b>	The profile that is used when a requested virtual machine is cloned.
<b>Customization Template</b>	The template that determines the resources that the requested virtual machine uses, such as memory reservation, memory limit, CPU shares, and disk shares. Only the LCM IT Staff, LCM Tech Requester, and LCM Administrator can modify the customization template.
<b>Placing</b>	The requested virtual machine is created or moved into the infrastructure, based on the selected criteria and infrastructure.

## Lifecycle Manager Roles

The tasks that you can perform depend on the role that you have been assigned by the LCM Administrator. All roles can request a virtual machine.

LCM users who are not LCM Administrators can have one of the four LCM user roles.

- [LCM Requester Role](#) on page 8  
An LCM Requester makes virtual machine requests.
- [LCM Tech Requester Role](#) on page 9  
An LCM Technical Requester is an advanced LCM Requester.
- [LCM Approver Role](#) on page 9  
An LCM Approver approves or rejects requests.
- [LCM IT Staff Role](#) on page 9  
An LCM IT Staff user manually deploys approved virtual machines.

### LCM Requester Role

An LCM Requester makes virtual machine requests.

The LCM Requester can perform certain tasks when requesting virtual machines.

- Set the criteria.
- Select a template profile.
- Set the commissioning and decommissioning dates.
- Specify who can control and view virtual machines.
- View a list of the virtual machines that the LCM Requester has created.
- Request an extension to the life of a virtual machine.
- Manually decommission a virtual machine.

## LCM Tech Requester Role

An LCM Technical Requester is an advanced LCM Requester.

In addition to the tasks that an LCM Requester can perform, the LCM Tech Requester can customize the settings for the CPU, memory, and shares, of the virtual machine.

## LCM Approver Role

An LCM Approver approves or rejects requests.

The LCM Approver is notified by email about new requests if email notifications are enabled.

An LCM Approver can perform certain tasks.

- Review the catalog of requested virtual machines.
- Receive requests for new virtual machines. Each request is presented with the fixed cost of the virtual machine, so the LCM Approver can determine the cost per day of using the virtual machine.
- Receive requests to extend the life of an existing virtual machine.
- Receive requests to approve changes in the settings for CPU, memory, and shares of existing virtual machines.
- Generate reports.

## LCM IT Staff Role

An LCM IT Staff user manually deploys approved virtual machines.

The LCM IT Staff user is notified by email about new requests if email notifications are enabled. If the choice of criteria for a request is not resolved, the LCM IT Staff user can provide the missing placement or configuration information to complete the request.

An LCM IT Staff user can perform certain tasks.

- Modify virtual machine names.
- Approve or reject virtual machine customization settings for the CPU, memory, and shares.
- Retry placing a request that has previously failed.
- Validate a request after manual intervention.
- Generate reports.

## Supported Browsers

The LCM user interface requires a Web browser.

You must use one of the following browsers to connect to LCM.

- Microsoft Internet Explorer 6, 7, or 8
- Mozilla Firefox 3.0.19 or 3.6.x

To connect to a virtual machine through your browser, you must use the VMware WebCenter Remote MKS Plug-in, which is compatible with the following browsers and operating systems:

- Microsoft Internet Explorer 6 or 7 on Windows XP or Windows Server 2003
- Mozilla Firefox 3.0.19 or 3.6.x on Windows XP, Windows Server 2003, Windows Server 2008, Windows 7, or Linux

## Log In to LCM

You must use a Web browser to connect to LCM.

### Procedure

- 1 In your Web browser, type the URL provided by your LCM Administrator.  
The default is `http://server_name:8280/vmo/lifecycle/default.html`.
- 2 Type the user name and password provided by your LCM Administrator.  
The user interface options shown depend on the LCM role that you have been assigned.

# LCM Requester and LCM Tech Requester Tasks

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# 2

If you are an LCM Requester, you can request virtual machines and perform the basic LCM user tasks. If you are an LCM Tech Requester, you can perform all tasks that an LCM Requester can perform, and you can also modify customization attributes for your virtual machine requests.

This chapter includes the following topics:

- [“Request a Virtual Machine as an LCM Requester,”](#) on page 11
- [“Request a Virtual Machine as an LCM Tech Requester,”](#) on page 12
- [“Display Requested Virtual Machines,”](#) on page 14
- [“Check the Power State of a Virtual Machine,”](#) on page 15
- [“Power a Virtual Machine On or Off,”](#) on page 15
- [“Suspend a Virtual Machine,”](#) on page 16
- [“Connecting to a Virtual Machine,”](#) on page 16
- [“Create a Snapshot,”](#) on page 17
- [“Revert to a Snapshot,”](#) on page 17
- [“Request to Extend the Life of a Virtual Machine,”](#) on page 18
- [“Decommission a Virtual Machine Immediately,”](#) on page 18
- [“Request to Change the Virtual Machine Customization Attributes,”](#) on page 18

## Request a Virtual Machine as an LCM Requester

To obtain a virtual machine, you must submit a request. You can request a specific start date or accept the first available date.

### Procedure

- 1 Log in to LCM and click the **Requests** view.
- 2 Click **Request**.
- 3 (Optional) To specify a commissioning date, select **Yes** for **Set commissioning date?** and select a date.  
If you do not specify a commissioning date, the virtual machine is created at the first available opportunity after approval.
- 4 (Optional) To specify a decommissioning date, select **Yes** for **Set decommissioning date?** and select a date.  
If you do not specify a decommissioning date, the virtual machine remains in service until it is decommissioned manually.

- 5 (Optional) Specify who can control the virtual machine request.

If you do not specify a user or group, only you and the LCM Administrator have control.

- a From the **Virtual machine control by** drop-down menu, select **Group** or **User**.
- b Type the name of the user or group, or search from a list of available group or user names and descriptions.
- c Type the email address for the user or group if email notifications are enabled.

- 6 (Optional) Specify who can connect to and view the virtual machine when it is running.

If you do not specify a user or group, only you and the LCM Administrator can view the virtual machine.

- a From the **Virtual machine view by** drop-down menu, select **Group** or **User**.
- b Type the name of the user or group, or search from a list of available group or user names and descriptions.
- c Type the email address for the user or group if email notifications are enabled.

- 7 Click **Next**.

- 8 Select settings for the **Location**, **Organization**, **Server Environment**, **Service Level**, and **Performance** options.

The available settings for these options are specified by the LCM Administrator.

- 9 Type the requester email and click **Next**.

- 10 Select the server type.

- 11 (Optional) To start the virtual machine as soon as it is provisioned, select **Yes** for **Start virtual machine**.

- 12 Click **Next**.

- 13 Type comments about the virtual machine, which are viewed in the approval process.

- 14 Click **Submit**.

The virtual machine is deleted on the decommissioning date. You cannot retrieve it, unless the LCM Administrator has configured LCM to archive the virtual machine. If virtual machines are archived, contact your LCM Administrator to retrieve it.

## Request a Virtual Machine as an LCM Tech Requester

To obtain a virtual machine, you must submit a request. You can request a specific start date or accept the first available date.

You can modify virtual machine parameters like CPU, memory, and shares, when you request the virtual machine. The options available are determined by the LCM Administrator. The modifications affect only the virtual machine that you are requesting at the time.

### Prerequisites

Review the customization template attributes to verify that you understand the default values. For more information, see [“Customization Template Attributes,”](#) on page 14.

### Procedure

- 1 Log in to LCM and click the **Requests** view.
- 2 Click **Request**.

- 3 (Optional) To specify a commissioning date, select **Yes** for **Set commissioning date?** and select a date.  
If you do not specify a commissioning date, the virtual machine is created at the first available opportunity after approval.
- 4 (Optional) To specify a decommissioning date, select **Yes** for **Set decommissioning date?** and select a date.  
If you do not specify a decommissioning date, the virtual machine remains in service until it is decommissioned manually.
- 5 (Optional) Specify who can control the virtual machine request.  
If you do not specify a user or group, only you and the LCM Administrator have control.
  - a From the **Virtual machine control by** drop-down menu, select **Group** or **User**.
  - b Type the name of the user or group, or search from a list of available group or user names and descriptions.
  - c Type the email address for the user or group if email notifications are enabled.
- 6 (Optional) Specify who can connect to and view the virtual machine when it is running.  
If you do not specify a user or group, only you and the LCM Administrator can view the virtual machine.
  - a From the **Virtual machine view by** drop-down menu, select **Group** or **User**.
  - b Type the name of the user or group, or search from a list of available group or user names and descriptions.
  - c Type the email address for the user or group if email notifications are enabled.
- 7 Click **Next**.
- 8 Select settings for the **Location, Organization, Server Environment, Service Level, and Performance** options.  
The available settings for these options are specified by the LCM Administrator.
- 9 Type the requester email and click **Next**.
- 10 Select the server type.
- 11 (Optional) To start the virtual machine as soon as it is provisioned, select **Yes** for **Start virtual machine**.
- 12 Select the customization template.
- 13 (Optional) To modify the customization template, select **Yes** for **Would you like to customize the attributes of this template?** and change the attribute values as needed.
- 14 Click **Next**.
- 15 Type comments about the virtual machine, which are viewed in the approval process.
- 16 Click **Submit**.

The virtual machine is deleted on the decommissioning date. You cannot retrieve it, unless the LCM Administrator has configured LCM to archive the virtual machine. If virtual machines are archived, contact your LCM Administrator to retrieve it.

## Customization Template Attributes

If you are an LCM Tech Requester, you can assign custom values for template attributes.

**Table 2-1.** Customization Template Attributes

Attribute	Values
Memory reservation (MB)	Minimum is 0 (default is 256)
Memory limit/size (MB)	Minimum is -1; must be a multiple of 4 (default is 1024); must be greater than the Memory reservation value Selecting -1 maintains the same memory as the vCenter Server template.
Memory shares	<b>low</b> , <b>normal</b> , or <b>high</b> (default is normal)
CPU reservation (MHz)	Minimum is 0 (default is 200)
CPU limit (MHz)	Minimum is -1 (default is 2000); must be greater than the CPU reservation value Selecting -1 maintains the same CPU number as the vCenter Server template.
CPU count	1, 2, 3, or 4 (default is 1)
CPU shares	<b>low</b> , <b>normal</b> , or <b>high</b> (default is normal)
Disk shares	<b>low</b> , <b>normal</b> , or <b>high</b> (default is normal)

## Display Requested Virtual Machines

You can use filters to view the status of virtual machines that you have requested.

### Prerequisites

Review the descriptions of the filters to verify that you understand the different filter criteria. For more information, see [“Catalog View and Request View Filters,”](#) on page 14.

### Procedure

- 1 Log in to LCM.
- 2 Click **Catalog** or **Requests**.
- 3 Select a filter.
- 4 Click a virtual machine request in the left pane to see a summary of the configuration and status information.

## Catalog View and Request View Filters

You can use filters to view only virtual machines that meet a certain criteria.

In the **Catalog** view, you can use the following filters to view only virtual machines that meet the criteria.

**Table 2-2.** Catalog View Filters

Filter	Description
All	Displays the virtual machines that you requested.
Creating	Displays the virtual machines that you requested that are being created.
Available VM	Displays the available virtual machines that you created.
Rejected	Displays the virtual machines that you requested that were rejected.
Decommissioned	Displays the virtual machines that you created that have been decommissioned.
Canceled	Displays the virtual machines that you created and then canceled.

**Table 2-2.** Catalog View Filters (Continued)

Filter	Description
Errors	Displays the virtual machines that you created that have errors.
Waiting For Approval	Displays the virtual machines that you requested that are waiting for approval.
Waiting For Placement	Displays the virtual machines that you requested that are waiting to be correctly placed.
End Of Life	Displays the requested virtual machines that you requested that are decommissioned, archived, rejected, or canceled.
All Except End Of Life	Displays the requested virtual machines that you requested that are not decommissioned, archived, rejected, or canceled.

In the **Requests** view, you can use the following filters to view only virtual machines that meet the criteria.

**Table 2-3.** Request View Filters

Filter	Description
All Requests	Displays the virtual machines that you requested.
Waiting For Creation	Displays the virtual machines that you requested that are waiting to be created.
Waiting For Approval	Displays the virtual machines that you requested that are waiting for approval.
Waiting For Placement	Displays the virtual machines that you requested that are waiting to be correctly placed.
Creating	Displays the virtual machines that you requested that are being created.
End Of Life	Displays the requested virtual machines that you requested that are decommissioned, archived, rejected, or canceled.
All Except End Of Life	Displays the requested virtual machines that you requested that are not decommissioned, archived, rejected, or canceled.

## Check the Power State of a Virtual Machine

You can check whether a virtual machine is powered on or off or suspended.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.

The icon to the left of the virtual machine indicates its power state.

- A green triangle indicates that the virtual machine is powered on.
- A red square indicates that the virtual machine is powered off.
- Two parallel yellow bars indicate that the virtual machine is suspended.

## Power a Virtual Machine On or Off

Power commands are available to the users and groups that are given control when the virtual machine is requested. The LCM Administrator also has rights to control any virtual machine.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.

- 4 In the right pane, click **Commands**.
- 5 Click **Power on** or **Shut down**.

## Suspend a Virtual Machine

Users and groups who were given control when the virtual machine was requested can suspend the virtual machine. The LCM Administrator also has rights to suspend any virtual machine.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Suspend**.

## Connecting to a Virtual Machine

You can connect to a virtual machine from your Web browser or using an RDP client application.

Only users and groups who were given control when the virtual machine was requested can connect to the virtual machine. The LCM Administrator also has rights to connect to the virtual machine.

- [Open a Virtual Machine in a Web Browser](#) on page 16  
From your Web browser, you can connect to a virtual machine running any guest operating system.
- [Use Remote Desktop to Connect to a Virtual Machine](#) on page 16  
You can open a Windows virtual machine using an RDP client application.

## Open a Virtual Machine in a Web Browser

From your Web browser, you can connect to a virtual machine running any guest operating system.

### Prerequisites

To connect via your browser, you must have the VMware WebCenter Remote MKS Plug-in installed in your browser.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Open console**.

The virtual machine's desktop appears in a new browser window.

## Use Remote Desktop to Connect to a Virtual Machine

You can open a Windows virtual machine using an RDP client application.

### Prerequisites

The client software must be installed on your computer.

**Procedure**

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Connect**.

Your RDP application opens and the virtual machine's desktop appears in the RDP client.

## Create a Snapshot

You can create a snapshot that captures the state of a virtual machine's hard drives. A snapshot does not capture the virtual machine's memory and power state.

Snapshot commands are available to the users and groups who were given control when the virtual machine was requested. The LCM Administrator can also use snapshots. You can access only one snapshot at a time. If you need to revert to a snapshot earlier than the most recent one, contact your LCM Administrator.

**Procedure**

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Snapshot**.

## Revert to a Snapshot

You can use the snapshot to return to the saved state.

Snapshot commands are available to the users and groups who were given control when the virtual machine was requested. The LCM Administrator can also use snapshots. You can access only one snapshot at a time. If you need to revert to a snapshot earlier than the most recent one, contact your LCM Administrator.

**Procedure**

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Revert to snapshot**.

The virtual machine returns to the state it was in when the snapshot was taken.

## Request to Extend the Life of a Virtual Machine

If you want to continue using a virtual machine beyond its scheduled decommissioning date, you can request an extension. An LCM Approver must approve the extension request if the LCM Administrator has configured LCM to require an approval.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Extension**.
- 5 In the **Extend Until** field, select the new date for the virtual machine to be decommissioned.
- 6 In the **Comment** text box, type the reason for your request.
- 7 In the **Requester E-mail Address** text box, type your email address.
- 8 Click **Submit**.

## Decommission a Virtual Machine Immediately

You can decommission a virtual machine that you have requested before its scheduled date or if the virtual machine has no scheduled decommissioning date.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Decommission**.
- 5 In the **Comment** text box, type the reason why you want to decommission the virtual machine.
- 6 Click **Submit**.

## Request to Change the Virtual Machine Customization Attributes

If you are an LCM Tech Requester, you can request to change the customization template attributes for a virtual machine that has been placed.

### Prerequisites

Review the customization template attributes to verify that you understand the default values. For more information, see [“Customization Template Attributes,”](#) on page 14.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 From the **Filter** drop-down menu, select **Available VM**.
- 4 In the catalog list, click a virtual machine name.
- 5 In the right pane, click **Change Request**.
- 6 In the **Comment** text box, type the reason for your request.

- 7 In the **Contact E-mail Address** text box, type your email address.
- 8 Click **Next**.
- 9 Change the attribute values as necessary.
- 10 Click **Submit**.



# LCM Approver Tasks

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If you are an LCM Approver, you can approve or reject requests, and also perform all basic LCM user tasks.

This chapter includes the following topics:

- [“Request a Virtual Machine as an LCM Approver,”](#) on page 21
- [“Display Requested Virtual Machines,”](#) on page 22
- [“Check the Power State of a Virtual Machine,”](#) on page 24
- [“Power a Virtual Machine On or Off,”](#) on page 24
- [“Suspend a Virtual Machine,”](#) on page 24
- [“Connecting to a Virtual Machine,”](#) on page 24
- [“Create a Snapshot,”](#) on page 25
- [“Revert to a Snapshot,”](#) on page 26
- [“Request to Extend the Life of a Virtual Machine,”](#) on page 26
- [“Decommission a Virtual Machine Immediately,”](#) on page 26
- [“Review Requests for Approval,”](#) on page 27
- [“Approve or Reject Requested Virtual Machines,”](#) on page 27
- [“Approve or Reject Requests to Extend the Life of a Virtual Machine,”](#) on page 27
- [“Approve or Reject Requests for Customization Changes,”](#) on page 28
- [“Generate Reports,”](#) on page 28

## Request a Virtual Machine as an LCM Approver

To obtain a virtual machine, you must submit a request. You can request a specific start date or accept the first available date.

### Procedure

- 1 Log in to LCM and click the **Requests** view.
- 2 Click **Request**.
- 3 (Optional) To specify a commissioning date, select **Yes** for **Set commissioning date?** and select a date.

If you do not specify a commissioning date, the virtual machine is created at the first available opportunity after approval.

- 4 (Optional) To specify a decommissioning date, select **Yes** for **Set decommissioning date?** and select a date.  
If you do not specify a decommissioning date, the virtual machine remains in service until it is decommissioned manually.
- 5 (Optional) Specify who can control the virtual machine request.  
If you do not specify a user or group, only you and the LCM Administrator have control.
  - a From the **Virtual machine control by** drop-down menu, select **Group** or **User**.
  - b Type the name of the user or group, or search from a list of available group or user names and descriptions.
  - c Type the email address for the user or group if email notifications are enabled.
- 6 (Optional) Specify who can connect to and view the virtual machine when it is running.  
If you do not specify a user or group, only you and the LCM Administrator can view the virtual machine.
  - a From the **Virtual machine view by** drop-down menu, select **Group** or **User**.
  - b Type the name of the user or group, or search from a list of available group or user names and descriptions.
  - c Type the email address for the user or group if email notifications are enabled.
- 7 Click **Next**.
- 8 Select settings for the **Location, Organization, Server Environment, Service Level, and Performance** options.  
The available settings for these options are specified by the LCM Administrator.
- 9 Type the requester email and click **Next**.
- 10 Select the server type.
- 11 (Optional) To start the virtual machine as soon as it is provisioned, select **Yes** for **Start virtual machine**.
- 12 Click **Next**.
- 13 Type comments about the virtual machine, which are viewed in the approval process.
- 14 Click **Submit**.

The virtual machine is deleted on the decommissioning date. You cannot retrieve it, unless the LCM Administrator has configured LCM to archive the virtual machine. If virtual machines are archived, contact your LCM Administrator to retrieve it.

## Display Requested Virtual Machines

You can use filters to view the status of virtual machines that you have requested.

### Prerequisites

Review the descriptions of the filters to verify that you understand the different filter criteria. For more information, see [“Catalog View and Request View Filters,”](#) on page 23.

### Procedure

- 1 Log in to LCM.
- 2 Click **Catalog** or **Requests**.
- 3 Select a filter.
- 4 Click a virtual machine request in the left pane to see a summary of the configuration and status information.

## Catalog View and Request View Filters

You can use filters to view only virtual machines that meet a certain criteria.

In the **Catalog** view, you can use the following filters to view only virtual machines that meet the criteria.

**Table 3-1.** Catalog View Filters

Filter	Description
All	Displays the virtual machines that you requested.
Creating	Displays the virtual machines that you requested that are being created.
Available VM	Displays the available virtual machines that you created.
Rejected	Displays the virtual machines that you requested that were rejected.
Decommissioned	Displays the virtual machines that you created that have been decommissioned.
Canceled	Displays the virtual machines that you created and then canceled.
Errors	Displays the virtual machines that you created that have errors.
Waiting For Approval	Displays the virtual machines that you requested that are waiting for approval.
Waiting For Placement	Displays the virtual machines that you requested that are waiting to be correctly placed.
End Of Life	Displays the requested virtual machines that you requested that are decommissioned, archived, rejected, or canceled.
All Except End Of Life	Displays the requested virtual machines that you requested that are not decommissioned, archived, rejected, or canceled.

In the **Requests** view, you can use the following filters to view only virtual machines that meet the criteria.

**Table 3-2.** Request View Filters

Filter	Description
All Requests	Displays the virtual machines that you requested.
Waiting For Creation	Displays the virtual machines that you requested that are waiting to be created.
Waiting For Approval	Displays the virtual machines that you requested that are waiting for approval.
Waiting For Placement	Displays the virtual machines that you requested that are waiting to be correctly placed.
Creating	Displays the virtual machines that you requested that are being created.
End Of Life	Displays the requested virtual machines that you requested that are decommissioned, archived, rejected, or canceled.
All Except End Of Life	Displays the requested virtual machines that you requested that are not decommissioned, archived, rejected, or canceled.

## Check the Power State of a Virtual Machine

You can check whether a virtual machine is powered on or off or suspended.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.

The icon to the left of the virtual machine indicates its power state.

- A green triangle indicates that the virtual machine is powered on.
- A red square indicates that the virtual machine is powered off.
- Two parallel yellow bars indicate that the virtual machine is suspended.

## Power a Virtual Machine On or Off

Power commands are available to the users and groups that are given control when the virtual machine is requested. The LCM Administrator also has rights to control any virtual machine.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Power on** or **Shut down**.

## Suspend a Virtual Machine

Users and groups who were given control when the virtual machine was requested can suspend the virtual machine. The LCM Administrator also has rights to suspend any virtual machine.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Suspend**.

## Connecting to a Virtual Machine

You can connect to a virtual machine from your Web browser or using an RDP client application.

Only users and groups who were given control when the virtual machine was requested can connect to the virtual machine. The LCM Administrator also has rights to connect to the virtual machine.

- [Open a Virtual Machine in a Web Browser](#) on page 25  
From your Web browser, you can connect to a virtual machine running any guest operating system.
- [Use Remote Desktop to Connect to a Virtual Machine](#) on page 25  
You can open a Windows virtual machine using an RDP client application.

## Open a Virtual Machine in a Web Browser

From your Web browser, you can connect to a virtual machine running any guest operating system.

### Prerequisites

To connect via your browser, you must have the VMware WebCenter Remote MKS Plug-in installed in your browser.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Open console**.

The virtual machine's desktop appears in a new browser window.

## Use Remote Desktop to Connect to a Virtual Machine

You can open a Windows virtual machine using an RDP client application.

### Prerequisites

The client software must be installed on your computer.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Connect**.

Your RDP application opens and the virtual machine's desktop appears in the RDP client.

## Create a Snapshot

You can create a snapshot that captures the state of a virtual machine's hard drives. A snapshot does not capture the virtual machine's memory and power state.

Snapshot commands are available to the users and groups who were given control when the virtual machine was requested. The LCM Administrator can also use snapshots. You can access only one snapshot at a time. If you need to revert to a snapshot earlier than the most recent one, contact your LCM Administrator.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Snapshot**.

## Revert to a Snapshot

You can use the snapshot to return to the saved state.

Snapshot commands are available to the users and groups who were given control when the virtual machine was requested. The LCM Administrator can also use snapshots. You can access only one snapshot at a time. If you need to revert to a snapshot earlier than the most recent one, contact your LCM Administrator.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Revert to snapshot**.

The virtual machine returns to the state it was in when the snapshot was taken.

## Request to Extend the Life of a Virtual Machine

If you want to continue using a virtual machine beyond its scheduled decommissioning date, you can request an extension. An LCM Approver must approve the extension request if the LCM Administrator has configured LCM to require an approval.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Extension**.
- 5 In the **Extend Until** field, select the new date for the virtual machine to be decommissioned.
- 6 In the **Comment** text box, type the reason for your request.
- 7 In the **Requester E-mail Address** text box, type your email address.
- 8 Click **Submit**.

## Decommission a Virtual Machine Immediately

You can decommission a virtual machine that you have requested before its scheduled date or if the virtual machine has no scheduled decommissioning date.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Decommission**.
- 5 In the **Comment** text box, type the reason why you want to decommission the virtual machine.
- 6 Click **Submit**.

## Review Requests for Approval

You can view the list of virtual machines waiting for approval.

### Procedure

- 1 Log in to LCM.
- 2 Click **Approvals**.

The virtual machines requesting approval are listed in the left pane.

- 3 Click a virtual machine name to view configuration and status information.

## Approve or Reject Requested Virtual Machines

You can approve or reject virtual machine requests if the LCM Administrator has configured LCM to require an approval. If the LCM Administrator has enabled email notifications, you receive a notification when a virtual machine is requested.

### Procedure

- 1 Log in to LCM.
- 2 Click **Approvals**.
- 3 Review the details for the requested virtual machine, and then click **Approve Request** or **Reject Request** in the right pane.
- 4 In the **Comment** text box, type a comment explaining your decision to reject or approve the request.
- 5 (Optional) If the **Virtual Machine Name** options are available, type values as needed.
- 6 Click **Submit**.

If the virtual machine is approved and no information is missing, it is created at the scheduled time and date. You can log in to the vSphere Client to monitor the progress.

## Approve or Reject Requests to Extend the Life of a Virtual Machine

You can approve or reject a request to extend the life of a virtual machine if the LCM Administrator has configured LCM to require an approval. If the LCM Administrator has enabled email notifications, you receive a notification when an extension is requested.

### Procedure

- 1 Log in to LCM.
- 2 Click **Approvals**.
- 3 Click the entry for the extension request that requires approval.
- 4 Click **Approve Extension** or **Reject Extension** in the right pane.
- 5 In the **Comment** text box, type a comment explaining your decision to reject or approve the request.
- 6 Click **Submit**.

## Approve or Reject Requests for Customization Changes

You can approve or reject a request to change the customization template attributes of a virtual machine if the LCM Administrator has configured LCM to require an approval. If the LCM Administrator has enabled email notifications, you receive a notification when a customization change is requested.

### Procedure

- 1 Log in to LCM.
- 2 Click **Approvals**.
- 3 Click the entry for the virtual machine that requires change approval.
- 4 Click **Approve Change Request** or **Reject Change Request** in the right pane.
- 5 In the **Comment** text box, type a comment explaining your decision to reject or approve the request.
- 6 Click **Submit**.

## Generate Reports

You can generate reports for various LCM events. For example, reports can display the cost of provisioning and running a virtual machine. This information helps determine whether a virtual machine should be approved or rejected.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Reports** view.
- 3 Select the type of report.
- 4 (Optional) Define the report period.
- 5 Click **Submit**.

The report appears in the right pane. You can save the report as an .xml file.

## LCM IT Staff Tasks

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If you are LCM IT Staff user, you can manually deploy requested virtual machines, modify customization attributes, and also perform all basic LCM user tasks.

This chapter includes the following topics:

- [“Request a Virtual Machine as an LCM IT Staff User,”](#) on page 29
- [“Display Requested Virtual Machines,”](#) on page 31
- [“Check the Power State of a Virtual Machine,”](#) on page 32
- [“Power a Virtual Machine On or Off,”](#) on page 32
- [“Suspend a Virtual Machine,”](#) on page 33
- [“Connecting to a Virtual Machine,”](#) on page 33
- [“Create a Snapshot,”](#) on page 34
- [“Revert to a Snapshot,”](#) on page 34
- [“Request to Extend the Life of a Virtual Machine,”](#) on page 35
- [“Decommission a Virtual Machine Immediately,”](#) on page 35
- [“Request to Change the Virtual Machine Customization Attributes,”](#) on page 35
- [“Deploy a Virtual Machine Manually,”](#) on page 36
- [“Retry a Request,”](#) on page 36
- [“Validate a Request After Manual Intervention,”](#) on page 36
- [“Approve or Reject Requests for Customization Changes,”](#) on page 37
- [“Generate Reports,”](#) on page 37

### Request a Virtual Machine as an LCM IT Staff User

To obtain a virtual machine, you must submit a request. You can request a specific start date or accept the first available date.

You can modify virtual machine parameters like CPU, memory, and shares, when you request the virtual machine. The options available are determined by the LCM Administrator. The modifications affect only the virtual machine that you are requesting at the time.

#### Prerequisites

Review the customization template attributes to verify that you understand the default values. For more information, see [“Customization Template Attributes,”](#) on page 31.

## Procedure

- 1 Log in to LCM and click the **Requests** view.
- 2 Click **Request**.
- 3 (Optional) To specify a commissioning date, select **Yes** for **Set commissioning date?** and select a date.  
If you do not specify a commissioning date, the virtual machine is created at the first available opportunity after approval.
- 4 (Optional) To specify a decommissioning date, select **Yes** for **Set decommissioning date?** and select a date.  
If you do not specify a decommissioning date, the virtual machine remains in service until it is decommissioned manually.
- 5 (Optional) Specify who can control the virtual machine request.  
If you do not specify a user or group, only you and the LCM Administrator have control.
  - a From the **Virtual machine control by** drop-down menu, select **Group** or **User**.
  - b Type the name of the user or group, or search from a list of available group or user names and descriptions.
  - c Type the email address for the user or group if email notifications are enabled.
- 6 (Optional) Specify who can connect to and view the virtual machine when it is running.  
If you do not specify a user or group, only you and the LCM Administrator can view the virtual machine.
  - a From the **Virtual machine view by** drop-down menu, select **Group** or **User**.
  - b Type the name of the user or group, or search from a list of available group or user names and descriptions.
  - c Type the email address for the user or group if email notifications are enabled.
- 7 Click **Next**.
- 8 Select settings for the **Location**, **Organization**, **Server Environment**, **Service Level**, and **Performance** options.  
The available settings for these options are specified by the LCM Administrator.
- 9 Type the requester email and click **Next**.
- 10 Select the server type.
- 11 (Optional) To start the virtual machine as soon as it is provisioned, select **Yes** for **Start virtual machine**.
- 12 Select the customization template.
- 13 (Optional) To modify the customization template, select **Yes** for **Would you like to customize the attributes of this template?** and change the attribute values as needed.
- 14 Click **Next**.
- 15 Type comments about the virtual machine, which are viewed in the approval process.
- 16 Click **Submit**.

The virtual machine is deleted on the decommissioning date. You cannot retrieve it, unless the LCM Administrator has configured LCM to archive the virtual machine. If virtual machines are archived, contact your LCM Administrator to retrieve it.

## Customization Template Attributes

You can assign custom values for template attributes.

**Table 4-1.** Customization Template Attributes

Attribute	Values
Memory reservation (MB)	Minimum is 0 (default is 256)
Memory limit/size (MB)	Minimum is -1; must be a multiple of 4 (default is 1024); must be greater than the Memory reservation value Selecting -1 maintains the same memory as the vCenter Server template.
Memory shares	<b>low</b> , <b>normal</b> , or <b>high</b> (default is normal)
CPU reservation (MHz)	Minimum is 0 (default is 200)
CPU limit (MHz)	Minimum is -1 (default is 2000); must be greater than the CPU reservation value Selecting -1 maintains the same CPU number as the vCenter Server template.
CPU count	1, 2, 3, or 4 (default is 1)
CPU shares	<b>low</b> , <b>normal</b> , or <b>high</b> (default is normal)
Disk shares	<b>low</b> , <b>normal</b> , or <b>high</b> (default is normal)

## Display Requested Virtual Machines

You can use filters to view the status of virtual machines that you have requested.

### Prerequisites

Review the descriptions of the filters to verify that you understand the different filter criteria. For more information, see [“Catalog View and Request View Filters,”](#) on page 31.

### Procedure

- 1 Log in to LCM.
- 2 Click **Catalog** or **Requests**.
- 3 Select a filter.
- 4 Click a virtual machine request in the left pane to see a summary of the configuration and status information.

## Catalog View and Request View Filters

You can use filters to view only virtual machines that meet a certain criteria.

In the **Catalog** view, you can use the following filters to view only virtual machines that meet the criteria.

**Table 4-2.** Catalog View Filters

Filter	Description
All	Displays the virtual machines that you requested.
Creating	Displays the virtual machines that you requested that are being created.
Available VM	Displays the available virtual machines that you created.
Rejected	Displays the virtual machines that you requested that were rejected.
Decommissioned	Displays the virtual machines that you created that have been decommissioned.
Canceled	Displays the virtual machines that you created and then canceled.

**Table 4-2.** Catalog View Filters (Continued)

Filter	Description
Errors	Displays the virtual machines that you created that have errors.
Waiting For Approval	Displays the virtual machines that you requested that are waiting for approval.
Waiting For Placement	Displays the virtual machines that you requested that are waiting to be correctly placed.
End Of Life	Displays the requested virtual machines that you requested that are decommissioned, archived, rejected, or canceled.
All Except End Of Life	Displays the requested virtual machines that you requested that are not decommissioned, archived, rejected, or canceled.

In the **Requests** view, you can use the following filters to view only virtual machines that meet the criteria.

**Table 4-3.** Request View Filters

Filter	Description
All Requests	Displays the virtual machines that you requested.
Waiting For Creation	Displays the virtual machines that you requested that are waiting to be created.
Waiting For Approval	Displays the virtual machines that you requested that are waiting for approval.
Waiting For Placement	Displays the virtual machines that you requested that are waiting to be correctly placed.
Creating	Displays the virtual machines that you requested that are being created.
End Of Life	Displays the requested virtual machines that you requested that are decommissioned, archived, rejected, or canceled.
All Except End Of Life	Displays the requested virtual machines that you requested that are not decommissioned, archived, rejected, or canceled.

## Check the Power State of a Virtual Machine

You can check whether a virtual machine is powered on or off or suspended.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.

The icon to the left of the virtual machine indicates its power state.

- A green triangle indicates that the virtual machine is powered on.
- A red square indicates that the virtual machine is powered off.
- Two parallel yellow bars indicate that the virtual machine is suspended.

## Power a Virtual Machine On or Off

Power commands are available to the users and groups that are given control when the virtual machine is requested. The LCM Administrator also has rights to control any virtual machine.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.

- 4 In the right pane, click **Commands**.
- 5 Click **Power on** or **Shut down**.

## Suspend a Virtual Machine

Users and groups who were given control when the virtual machine was requested can suspend the virtual machine. The LCM Administrator also has rights to suspend any virtual machine.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Suspend**.

## Connecting to a Virtual Machine

You can connect to a virtual machine from your Web browser or using an RDP client application.

Only users and groups who were given control when the virtual machine was requested can connect to the virtual machine. The LCM Administrator also has rights to connect to the virtual machine.

- [Open a Virtual Machine in a Web Browser](#) on page 33  
From your Web browser, you can connect to a virtual machine running any guest operating system.
- [Use Remote Desktop to Connect to a Virtual Machine](#) on page 33  
You can open a Windows virtual machine using an RDP client application.

## Open a Virtual Machine in a Web Browser

From your Web browser, you can connect to a virtual machine running any guest operating system.

### Prerequisites

To connect via your browser, you must have the VMware WebCenter Remote MKS Plug-in installed in your browser.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Open console**.

The virtual machine's desktop appears in a new browser window.

## Use Remote Desktop to Connect to a Virtual Machine

You can open a Windows virtual machine using an RDP client application.

### Prerequisites

The client software must be installed on your computer.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Connect**.

Your RDP application opens and the virtual machine's desktop appears in the RDP client.

## Create a Snapshot

You can create a snapshot that captures the state of a virtual machine's hard drives. A snapshot does not capture the virtual machine's memory and power state.

Snapshot commands are available to the users and groups who were given control when the virtual machine was requested. The LCM Administrator can also use snapshots. You can access only one snapshot at a time. If you need to revert to a snapshot earlier than the most recent one, contact your LCM Administrator.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Snapshot**.

## Revert to a Snapshot

You can use the snapshot to return to the saved state.

Snapshot commands are available to the users and groups who were given control when the virtual machine was requested. The LCM Administrator can also use snapshots. You can access only one snapshot at a time. If you need to revert to a snapshot earlier than the most recent one, contact your LCM Administrator.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Commands**.
- 5 Click **Revert to snapshot**.

The virtual machine returns to the state it was in when the snapshot was taken.

## Request to Extend the Life of a Virtual Machine

If you want to continue using a virtual machine beyond its scheduled decommissioning date, you can request an extension. An LCM Approver must approve the extension request if the LCM Administrator has configured LCM to require an approval.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Extension**.
- 5 In the **Extend Until** field, select the new date for the virtual machine to be decommissioned.
- 6 In the **Comment** text box, type the reason for your request.
- 7 In the **Requester E-mail Address** text box, type your email address.
- 8 Click **Submit**.

## Decommission a Virtual Machine Immediately

You can decommission a virtual machine that you have requested before its scheduled date or if the virtual machine has no scheduled decommissioning date.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 In the catalog list, click a virtual machine name.
- 4 In the right pane, click **Decommission**.
- 5 In the **Comment** text box, type the reason why you want to decommission the virtual machine.
- 6 Click **Submit**.

## Request to Change the Virtual Machine Customization Attributes

You can request to change the customization template attributes for a virtual machine that has been placed.

### Prerequisites

Review the customization template attributes to verify that you understand the default values. For more information, see [“Customization Template Attributes,”](#) on page 31.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Catalog** view.
- 3 From the **Filter** drop-down menu, select **Available VM**.
- 4 In the catalog list, click a virtual machine name.
- 5 In the right pane, click **Change Request**.
- 6 In the **Comment** text box, type the reason for your request.

- 7 In the **Contact E-mail Address** text box, type your email address.
- 8 Click **Next**.
- 9 Change the attribute values as necessary.
- 10 Click **Submit**.

## Deploy a Virtual Machine Manually

If a virtual machine cannot be created because some information is missing, the LCM IT Staff user can provide the missing configuration information to complete the virtual machine request. After the information is provided, you can manually deploy virtual machines.

### Procedure

- 1 Log in to LCM.
- 2 Click **Placement**.
- 3 From the **Filter** drop-down menu, select **Waiting For Placement**.
- 4 Click a virtual machine entry to view the configuration and status information.
- 5 Click **Setup** near the top of the right pane.
- 6 Provide the required configuration information.
- 7 (Optional) If the LCM Administrator has configured LCM to allow you to change the virtual machine name, click **Next** to modify the name.
- 8 Click **Submit**.

## Retry a Request

If a request to commission a virtual machine encounters an error, the LCM IT Staff user can retry the request.

### Procedure

- 1 Log in to LCM.
- 2 Click **Placement**.
- 3 From the **Filter** drop-down menu, select **Error**.
- 4 Click the entry for the virtual machine that has encountered an error.
- 5 In the right pane, click **Retry**.
- 6 Select **Yes**.
- 7 Click **Submit**.

## Validate a Request After Manual Intervention

Occasionally, a request might require manual intervention. For example, if the Sysprep process inside the virtual machine does not run to completion as the virtual machine is cloned, you might need to open the virtual machine in the vSphere Client and complete the process manually. You can then validate the virtual machine so that LCM can resume managing the request.

### Procedure

- 1 Log in to LCM.
- 2 Click **Placement**.

- 3 From the **Filter** drop-down menu, select **Error**.
- 4 Click the entry for the virtual machine that has encountered an error.
- 5 In the right pane, click **Validation**.
- 6 In the **Comment** text box, type a comment.
- 7 Click **Submit**.

## Approve or Reject Requests for Customization Changes

You can approve or reject a request to change the customization template attributes of a virtual machine if the LCM Administrator has configured LCM to require an approval. If the LCM Administrator has enabled email notifications, you receive a notification when a customization change is requested.

### Procedure

- 1 Log in to LCM.
- 2 Click **Placement**.
- 3 From the **Filter** drop-down menu, select **Waiting For IT Approval**.
- 4 Click the entry for the virtual machine that requires approval.
- 5 Click **Approve Shaping Changes** or **Reject Shaping Changes** near the top of the right pane.
- 6 In the **Comment** text box, type a comment explaining your decision to reject or approve the request.
- 7 Click **Submit**.

## Generate Reports

You can generate reports for various LCM events. For example, reports can display the virtual machines waiting for placement.

### Procedure

- 1 Log in to LCM.
- 2 Click the **Reports** view.
- 3 Select the type of report.
- 4 (Optional) Define the report period.
- 5 Click **Submit**.

The report appears in the right pane. You can save the report as an .xml file.



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