

Lifecycle Manager Administration Guide

vCenter Lifecycle Manager 1.0.2

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Updated Information

This *Lifecycle Manager Administration Guide* is updated with each release of the product or when necessary. This table provides the update history of the *Lifecycle Manager Administration Guide*.

Revision	Description
EN-000234-01	<ul style="list-style-type: none">■ Added a new topic about configuring the Lifecycle Manager components in the Orchestrator configuration interface in “Configure Plug-ins” on page 17.■ Added information about custom style sheets in “Create a Custom Style Sheet” on page 26.■ Added information about unlinked elements in “Relink Unlinked Elements” on page 33.
EN-000234-00	Initial release.

About This Book

This book, the *Lifecycle Manager Administration Guide*, provides information about installing and configuring VMware® vCenter™ Lifecycle Manager (LCM).

Intended Audience

This book is intended for administrators who are installing and configuring LCM. The information in this guide is written for experienced system administrators who are familiar with virtual machine technology.

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Understanding LCM

VMware vCenter Lifecycle Manager (LCM) helps you manage the creation of virtual machines. Using LCM, you can perform the following tasks:

- Handle and process virtual machine requests in a Web user interface.
- Automatically place servers based on their location, organization, environment, service level, or performance levels. When a solution is found for a set of criteria, the machine is automatically deployed.
- Enforce automatic deployment and configuration to reduce errors and speed up provisioning processes.
- Track lifecycle information for requested machines. Tracking helps maintain on-time archiving and deletion of end-of-life servers and avoids server sprawl.

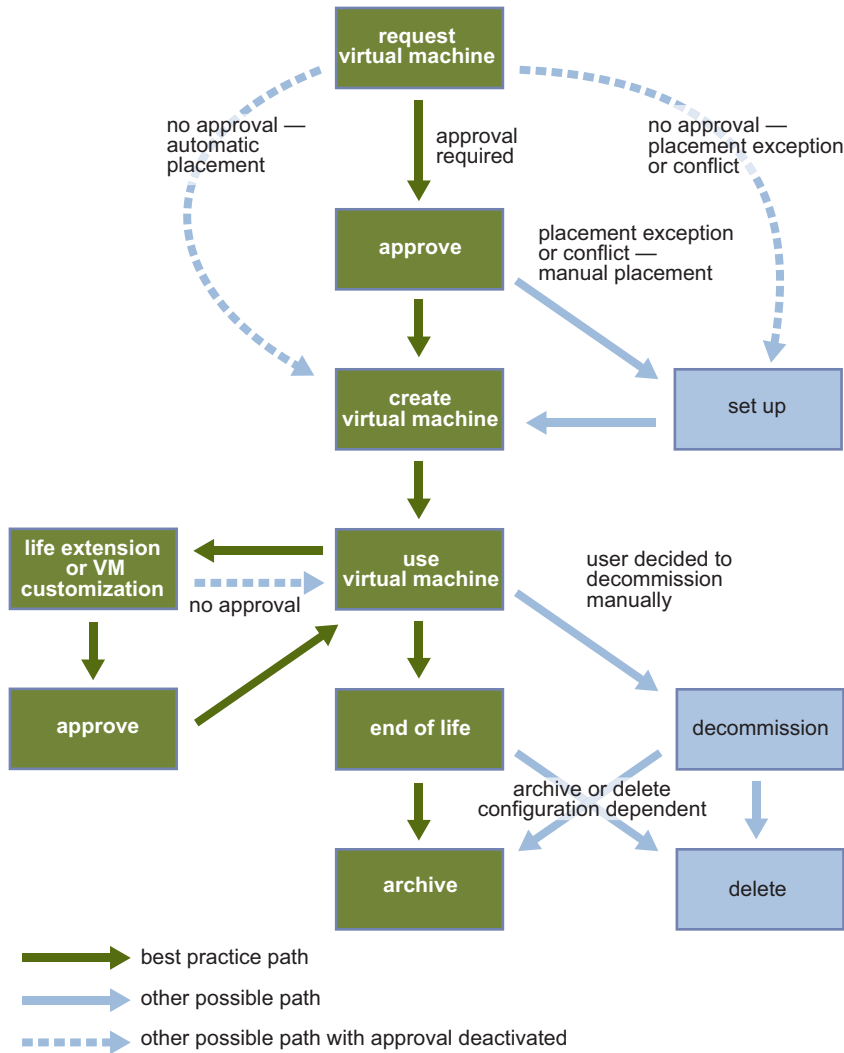
This chapter includes the following topics:

- [“The Lifecycle Manager Process”](#) on page 9
- [“Lifecycle Manager Terminology”](#) on page 11
- [“Role-Based User Interface”](#) on page 11
- [“LCM Administrator”](#) on page 11
- [“Lifecycle Manager Architecture”](#) on page 12

The Lifecycle Manager Process

LCM automates the process of creating virtual machines and removing them from service at the appropriate time. [Figure 1-1](#) provides an overview of the process and the tasks completed by each role.

Figure 1-1. Stages in the Lifecycle of a Virtual Machine under LCM



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. 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 has been 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 requester can do one of the following:

- 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.

The LCM Administrator can choose to delete the virtual machine request. The LCM Administrator is the only role that can remove information about a virtual machine. When a request is deleted, no information about the virtual machine appears in reports, but the virtual machine is not destroyed. If a virtual machine request is accidentally deleted, the LCM Administrator can recover the associated virtual machine.

Lifecycle Manager Terminology

LCM uses specific terminology to describe lifecycle events and attributes.

Table 1-1. Terminology

Term	Definition
Commission	Date and time to create a requested virtual machine. The commission time is submitted during the request process.
Decommission	The requested machine reaches its end of life. A decommission date is submitted during the request process. The decommissioned machine can be archived or deleted.
Extension	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.
Infrastructure	Attributes such as the network, domain, and datastore affect where the requested virtual machine is placed in VMware Infrastructure.
Criteria	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.
Template Profile	The profile that is used when a requested virtual machine is cloned.
Customization Template	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.
Placing	The requested virtual machine is created or moved into the infrastructure, based on the selected criteria and infrastructure.

Role-Based User Interface

LCM has a role-based interface. Users are presented only the options that are relevant to a specific role. All roles can request a virtual machine.

LCM has the following roles:

- **LCM Administrator** – Establishes the criteria used for machine placement and determines how the criteria convert to sizing or placement values. The LCM Administrator configures LCM and establishes the placement of virtual machines.
- **LCM Requester** – Can request to extend the life of a created virtual machine. Requesters can power virtual machines on and off, as well as delegate this control to other users.
- **LCM Tech Requester** – In addition to doing everything that the requester role can do, the tech requester can modify customization templates.
- **LCM Approver** – Approves virtual machine deployment and extension requests. If a machine cannot be placed based on the provided criteria, a user with the LCM IT Staff role must manually choose the sizing and placement of the new machine.
- **LCM IT Staff** – Completes manual placement of approved virtual machines.

For more information on the tasks that users can perform, see the *Lifecycle Manager User's Guide*.

LCM Administrator

The LCM Administrator is responsible for the following tasks:

- Configuring LCM
- Determining the infrastructure, such as the server environment
- Setting up email notifications, the look and feel of the user interface, and style sheets
- Specifying who can access elements, such as resource pools or datastores

Lifecycle Manager Architecture

LCM is powered by VMware vCenter Orchestrator 4.0. Orchestrator is a development and process-automation platform that provides a library of extensible workflows for creating and running automated, configurable processes to manage the VMware vCenter infrastructure. You can use Orchestrator to create custom workflows that you can run from LCM.

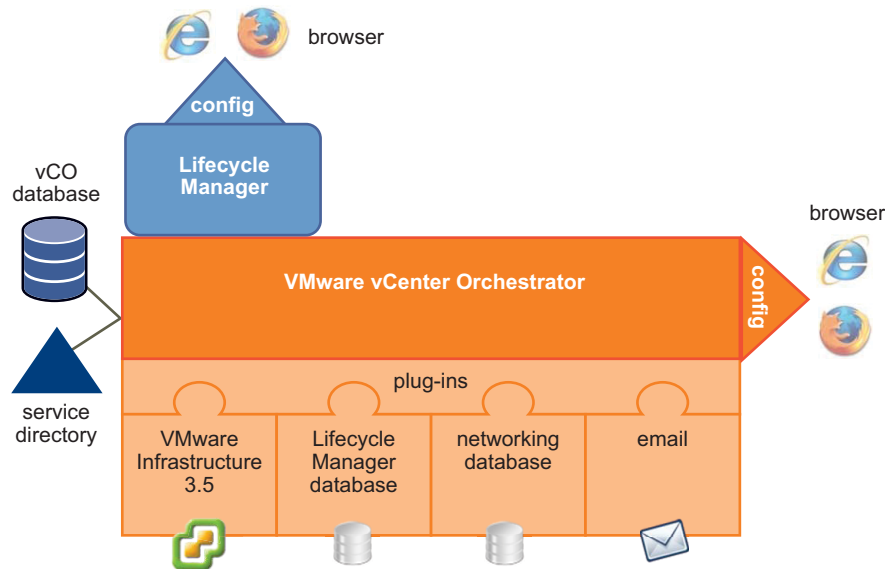
Orchestrator exposes every operation in the vCenter Server API, allowing users to integrate all these operations into their automated processes. Orchestrator also allows integration with other management and administration solutions through its open plug-in architecture.

For more information on Orchestrator, see http://www.vmware.com/support/pubs/orchestrator_pubs.html.

LCM Compatibility with vCenter

LCM works with vCenter 4.0 through an automatic compatibility mode. Only VirtualCenter 2.5 features are available in compatibility mode. LCM is also compatible with VirtualCenter 2.5, update 3 and VirtualCenter 2.5, update 4. Before you install LCM, make sure that you have vCenter 4.0 installed or the compatible version of VirtualCenter 2.5.

Figure 1-2. Architecture of LCM and Orchestrator



After you install LCM, you must configure the following Orchestrator plug-ins:

- **VMware Infrastructure 3.5**



CAUTION Because LCM supports vCenter 4.0 only in compatibility mode, you must configure the VMware Infrastructure 3.5 plug-in, and add your vCenter 4.0 server in it. LCM can operate only with the vCenter instances added and configured in the VMware Infrastructure 3.5 plug-in in the Orchestrator configuration interface.

- **LCM database**
- **Networking database**
- **Email**

Lifecycle Manager Components

LCM requires the following components, which you configure during installation:

- **Service directory** – Defines which users can connect to LCM and their permission levels. Only users who are members of a directory group can log in.
- **Database** – Stores all information that is related to LCM, such as virtual machine names, control groups, view groups, commission and decommission dates, infrastructure elements linked with the virtual machine request (template profile, datastore, resource pool, and so on). The information necessary to map criteria and the infrastructure is also stored in the database.
- **VMware Infrastructure** – Responsible for all communication with VMware vCenter. A Web service API is used to connect to VMware Infrastructure 3.5 or vCenter 4.

Installing LCM

This chapter describes the prerequisites, system requirements, and steps to install vCenter Lifecycle Manager on Windows. LCM 1.0.1 users can also migrate their existing configuration to LCM 1.0.2. (See [“Migrating from LCM 1.0.1 to LCM 1.0.2”](#) on page 19, before proceeding with the LCM 1.0.2 installation.)

This chapter includes the following topics:

- [“Installing and Configuring vCenter Orchestrator”](#) on page 15
- [“Control Orchestrator Access”](#) on page 15
- [“Installation Requirements”](#) on page 16
- [“Supported Browsers”](#) on page 17
- [“Install Lifecycle Manager”](#) on page 17
- [“Configure Plug-ins”](#) on page 17

Installing and Configuring vCenter Orchestrator

Before installing LCM, you must install and configure vCenter Orchestrator. You use the Orchestrator configuration interface to configure the components that are related to the engine, such as the database, network, server certificate, email, and so on. These components must be configured correctly for LCM to function properly.

For information about installing Orchestrator and setting up the configuration options, see the *vCenter Orchestrator Installation and Configuration Guide*.

Control Orchestrator Access

When using LCM, the best practice is to limit access to the Orchestrator client only to administrators. You can also configure the Orchestrator server to refuse access to Web service requests, to prevent malicious attempts from Web service clients to access workflows on sensitive servers.

To disable access to the Orchestrator client by non-administrators

- 1 Navigate to the following folder on the Orchestrator server system.

```
<installation_directory>\VMware\Orchestrator\app-server\server\vmo\conf
```

- 2 Open the `vmo.properties` configuration file in a text editor and add the following line.

```
#Disable Orchestrator client connection  
com.vmware.o11n.smart-client-disabled = true
```

If the `vmo.properties` configuration file does not contain this property, or if the property is set to false, Orchestrator permits all users access to the Orchestrator client.

To disable access to workflows from Web service clients

- 1 Navigate to the following folder on the Orchestrator server system.

```
<installation_directory>\VMware\Orchestrator\app-server\server\vmo\conf
```

- 2 Open the `vmo.properties` configuration file in a text editor and add the following line.

```
#Disable Orchestrator client connection
com.vmware.o11n.web-service-disabled = true
```

If the `vmo.properties` configuration file does not contain this property, or if the property is set to false, Orchestrator permits access to workflows from Web services.

Installation Requirements

Because LCM runs as an Orchestrator plug-in, the system requirements of the two products are the same. For detailed information about Orchestrator system requirements, see the *vCenter Orchestrator Installation and Configuration Guide*.

Before you install LCM on Microsoft Windows, make sure that your system meets the installation prerequisites.

Table 2-1. Installation Prerequisites

Component	Description
VMware vCenter Orchestrator 4.0	
VMware vSphere™	<ul style="list-style-type: none"> ■ vCenter 4.0 in compatibility mode (default) ■ The Sysprep utility for the guest OS must be available in the proper directory on the vCenter Server.
VMware ESX™	Support for ESX depends on the version of vCenter that you are using. See the documentation for the relevant version of vCenter.
Sample ActiveDirectory groups that correspond to LCM roles	<p>The roles are:</p> <ul style="list-style-type: none"> ■ LCM Administrator ■ LCM IT Staff ■ LCM Approver ■ LCM Tech Requester ■ LCM Requester
Static account for each vCenter Server that LCM and Orchestrator can use	
Appropriate permissions for the LCM groups	<p>Include the following permissions:</p> <ul style="list-style-type: none"> ■ Allow the Orchestrator Administrator to deploy from vCenter templates ■ RDP access in the guest operating system <p>Use <code>xrdp</code> for Linux virtual machines</p>
LCM database	<p>Choose one of the following:</p> <ul style="list-style-type: none"> ■ Use the same database as Orchestrator ■ Use a separate database for LCM (recommended) <p>NOTE Because of CPU and memory usage, VMware recommends that you host the LCM database and the Orchestrator server on different machines on a local network with low latency.</p>
ActiveDirectory domain	
DHCP server and fixed range of IP addresses for new virtual machines	

Supported Browsers

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

- Microsoft Internet Explorer 7
- Mozilla Firefox 3.0.x (where x is 8 or later)

To connect to a virtual machine using a remote desktop application, you must have Remote Desktop Protocol (RDP) client software installed on your workstation.

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 7 on Windows XP or Windows Server 2003
- Mozilla Firefox 3 on Windows XP, Windows Server 2003, or Linux

Install Lifecycle Manager

Orchestrator must be running to install LCM.

To install LCM

- 1 Log in to the Orchestrator configuration interface at `http://<orchestrator_server>:8282`.
- 2 On the **General** tab, click **Install Application**.
- 3 Click **Choose** and browse to select the `vmo_lifecycle_1_0_2_<build_number>.vmoapp` file.
- 4 Click **Install**.
- 5 On the **Licences** tab, type the LCM serial number and click **Apply changes**.

Configure Plug-ins

You must configure the Orchestrator plug-ins that are installed with LCM.

Configure Database Options

You must configure the options for the LCM database table and the networking database table. The LCM database table contains virtual-machine-specific data that is managed by LCM, such as when the virtual machine was created, who created it, and other specifications. The networking database table contains data related to the management of the IP addresses.

To configure database options

- 1 Log in to the Orchestrator configuration interface at `http://<orchestrator_server>:8282`.
- 2 On the **VMware Lifecycle Manager** and **Networking** tabs, select the database connection type.

Option	Description
Custom	(Recommended) Select this option to store plug-in specific data in a database different from the Orchestrator database. Depending on the type of database you are connecting to, the required information might vary. For a list of the connection parameters that you might be required to specify, see the <i>vCenter Orchestrator Installation and Configuration Guide</i> .
Same as vCO	Select this option to store plug-in specific data in the Orchestrator database.
Built-in	Not supported.

- 3 Click **Apply changes**.

Configure VMware Infrastructure Options

The VMware Infrastructure 3.5 plug-in is responsible for all communication with VMware vCenter. A Web service API is used to connect to VMware Infrastructure 3.5 or vCenter 4. Because LCM supports vCenter 4.0 only in compatibility mode, you must configure the VMware Infrastructure 3.5 plug-in, and add your vCenter 4.0 server in it. LCM can operate only with the vCenter instances added and configured in the VMware Infrastructure 3.5 plug-in.

Prerequisites

You must import the SSL certificates for each VMware Infrastructure or vCenter instance you define. For information about importing SSL certificates, see the *vCenter Orchestrator Installation and Configuration Guide*.

To configure VMware Infrastructure 3.5

- 1 Log in to the Orchestrator configuration interface at `http://<orchestrator_server>:8282`.
- 2 On the **VMware Infrastructure 3.5** tab, click **New VirtualCenter host**.
- 3 From the **Available** drop-down menu, select **Enabled**.
- 4 In the **Host** text box, enter the IP address or the DNS name of the VMware Infrastructure or vCenter host.
- 5 In the **Port** text box, leave the default value 443.
- 6 (Optional) Select the **Secure channel** check box to establish a secure connection to your VMware Infrastructure or vCenter host.
- 7 In the **Path** text box, use the default value, `/sdk`.

This is the location of the SDK that you use to connect to your VMware Infrastructure or vCenter instance.

- 8 In **User name** and **Password** text boxes, type the credentials for Orchestrator to use to establish the connection to VMware Infrastructure or vCenter.
- 9 Specify the method you use to manage user access on the VMware Infrastructure or vCenter host.

Option	Description
Share a unique session	Type the credentials of a user who is a VMware Infrastructure or vCenter administrator.
Session per user	Select this option if your VMware Infrastructure or vCenter server is in an Active Directory domain. Make sure that the user has the necessary permissions to perform the required operations. CAUTION Each user who logs in creates their own session to VMware Infrastructure or vCenter. This results in higher traffic and more inquiries.

- 10 Click **Apply changes**.

The URL to the newly configured VMware Infrastructure or vCenter host is added to the list of defined hosts.

Repeat these steps for each VMware Infrastructure or vCenter instance.

Migrating from LCM 1.0.1 to LCM 1.0.2

If you are using VMware Lifecycle Manager - Standard 1.0.1 (LCM 1.0.1), you can migrate to VMware vCenter Lifecycle Manager 1.0.2 (LCM 1.0.2).

This chapter includes the following topics:

- “Back Up Database Tables” on page 19
- “Migrating LCM 1.0.1 Configuration to LCM 1.0.2” on page 19

Back Up Database Tables

Before migrating, VMware recommends that you back up your LCM database table and networking database table.

The LCM database table contains virtual-machine-specific data that is managed by LCM, such as when the virtual machine was created, who created it, and other specifications.

The networking database table contains data related to the management of the IP addresses.

NOTE This procedure is optional, but VMware recommends it for databases in a production environment. The backup procedure depends on your database vendor.

Migrating LCM 1.0.1 Configuration to LCM 1.0.2

The migration is performed by running workflows in LCM 1.0.1, which is powered by Orchestrator 3.2.1, and in LCM 1.0.2, which is powered by Orchestrator 4.0.

NOTE You must complete the export procedure in Orchestrator 3.2.1 and LCM 1.0.1 before installing Orchestrator 4.0 and LCM 1.0.2 on the same machine. Orchestrator 4.0 overwrites the installation of Orchestrator 3.2.1.

Export the LCM 1.0.1 Configuration

To migrate to LCM 1.0.2, you must first export your current configuration. You use Orchestrator 3.2.1 and LCM 1.0.1 to export the configuration. You must download a migration package file, which is installed in the Orchestrator configuration interface and executed in LCM.

To export your configuration from LCM 1.0.1

- 1 Log in to the Orchestrator 3.2.1 configuration interface at `http://<orchestrator_server>:3944`.
- 2 On the **General** tab, click **Install Application**.
- 3 Click **Browse** and select the `lcm_migration-export_1_0_2_<build_number>.vmoapp` file.
- 4 Click **Install**.

- 5 On the **Server** tab, click **Restart service**.
- 6 Go to `http://<orchestrator_server>:8080/vmo`.
- 7 Log in to the **VMware Lifecycle Manager - Migration Tool - Export** Webview.
- 8 Click **Execute Export Data Workflow**.
- 9 Click **Submit** to start the export process.
- 10 If the process fails, click **Back to Step 1** to retry.
- 11 After the export process is completed successfully, click **Download Exported Data** to save the `data.zip` file.

Install LCM 1.0.2

For information about installing LCM 1.0.2, see [“Installing LCM”](#) on page 15.

Import the LCM 1.0.1 Configuration into LCM 1.0.2

After exporting the LCM 1.0.1 configuration, you can import it into LCM 1.0.2. The migration is performed when you run LCM 1.0.2 for the first time.

NOTE You must use a new database when installing LCM 1.0.2.

To import the LCM 1.0.1 configuration into LCM 1.0.2

- 1 Start the Orchestrator Server.
 - a Log in to `http://<orchestrator_server>:8282`.
 - b Click **Startup Options**.
 - c Click **Start service**.
- 2 Go to `http://<orchestrator_server>:8280/vmo/lifecycle` to log in to LCM for the first time.

You need to log in with the credentials of a user who is a member of the administrator group that is selected in Orchestrator.
- 3 Select **Yes** for **Migrate from old LCM data** and click **Next**.
- 4 Click **Browse** and select the `data.zip` file that you exported from LCM 1.0.1.
- 5 Click **Submit** to start the import process.

After the import process is completed successfully, LCM is restarted automatically.

Configuring LCM

You must configure LCM before you can use it. The configuration involves setting up the virtual machine naming convention, specifying groups, and selecting date and currency formats. You can also configure role-based attributes.

This chapter includes the following topics:

- [“Check Configuration Readiness”](#) on page 21
- [“Initial Configuration of Lifecycle Manager”](#) on page 22
- [“Configure the LCM Webview”](#) on page 22
- [“Set Approval Requirements”](#) on page 23
- [“Configure Archiving Settings”](#) on page 23
- [“Change Authorization Groups”](#) on page 23
- [“Change the Base Name for Virtual Machines”](#) on page 24
- [“Enable Email Notifications”](#) on page 25
- [“Configure Email Notification Content”](#) on page 25
- [“Configure Currency and Date Formats”](#) on page 26
- [“Customizing the User Interface”](#) on page 26

Check Configuration Readiness

You can check whether the configuration service is ready.

To check configuration readiness

- 1 In Windows, select **Start > Programs > Administrative Tools > Services**.
- 2 Select **VMware vCenter Orchestrator Configuration** and open the window.

If the status is not **Started**, contact your Orchestrator Administrator.

Initial Configuration of Lifecycle Manager

You must complete the initial configuration of LCM when you run LCM for the first time.

To complete the initial configuration of LCM

- 1 Start the Orchestrator Server.
 - a Log in to `http://<orchestrator_server>:8282`.
 - b Click **Startup Options**.
 - c Click **Start service**.
- 2 Go to `http://<orchestrator_server>:8280/vmo/lifecycle` to log in to LCM for the first time.

You need to log in with the credentials of a user who is a member of the administrator group that is selected in Orchestrator.
- 3 Select whether you want to migrate from LCM 1.0.1 and click **Next**.
 - If you select **Yes**, see [“Import the LCM 1.0.1 Configuration into LCM 1.0.2”](#) on page 20.
 - If you select **No**, continue with the next step.
- 4 Edit the default virtual machine naming convention.

The default is `lcm-0001`, `lcm-0002`, and so on.
- 5 Choose whether to allow approvers and IT staff to manually overwrite the default name.
- 6 Select a currency from the drop-down menu.
- 7 Select the date format that you want to use.
- 8 Accept the default setting for advanced options and click **Next**.

You can edit the advanced options later.
- 9 Specify which groups belong to the different roles and click **Next** when you are done.

You can type the first few letters of the group name and the LDAP search matches the choices, or you can click **Search** to browse the LDAP inventory.
- 10 Accept the approvals, archiving, and notification defaults and click **Submit**.

You can change these values later. The LCM Webview is started.



CAUTION Do not change the LDAP settings in Orchestrator after submitting the configuration. This can result in a serious error, that requires using a backup for recovery.

- 11 Log in to LCM again as the LCM Administrator.

The LCM Administrator must be a member of the LCM Administrators group that you just configured.

Configure the LCM Webview

The Web UI of an application is called a Webview. For example, the front end of LCM is a Webview. You can configure the LCM Webview.

To edit the Webview configuration

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 In the left pane, click **Edit Advanced Configuration**.

- 4 Under **Display**, choose whether to display the details of an execution token after submitting a workflow. You can also limit the number of elements displayed on a single page.
- 5 In the **URL** text box, type a Webview URL.
- 6 Click **Submit**.

Set Approval Requirements

Virtual machines are decommissioned on the date that the requester selected when requesting the machine. LCM notifies the owner of the virtual machine five days before the decommissioning date with the option to request an extension. You can specify whether approval is required when virtual machines are requested, extended, or modified.

To specify approval requirements

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click **Edit Approval Modes**.
- 4 Under **Creation, Extension, and Customization changes**, select whether approval is required. You can change these values later.
- 5 Click **Submit**.

NOTE If you enable both approvals for customization changes, an LCM Approver and an LCM IT Staff user must approve each request for customization changes.

Configure Archiving Settings

Virtual machines can be archived instead of deleted when they are decommissioned. You can specify the archiving settings and where to store the archive.

To configure archiving settings

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click **Edit Archiving**.
- 4 Under **Archive Configuration**, choose whether to archive by default.
- 5 Under **Archive folder**, in **Destination Datastores**, select a datastore or an array of datastores to store the archive.

The datastore must be accessible from the ESX host running the virtual machine to be archived. The archive is placed in the first available datastore from the array. If no datastore has sufficient space, the archive fails.

- 6 Click **Submit**.

Change Authorization Groups

You can modify the types of changes that each role can make. For information about role-to-task mapping, see [“Roles and Tasks”](#) on page 24.



CAUTION Changing authorization groups can be a risk for existing users.

To edit authorization groups

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click **Edit Authorization Groups**.
- 4 Under **Management Groups**, select or type appropriate values for the groups.
- 5 Under **Requester Groups**, select or type appropriate values for the groups.
- 6 Click **Submit**.

Roles and Tasks

Table 4-1 describes how roles are mapped to tasks. Tasks marked with an O can be performed only by the owner of the request.

Table 4-1. Roles and Permitted Tasks

	LCM Admin	LCM IT Staff	LCM Approver	LCM Tech Requester	LCM Requester
Create infrastructure elements	X				
Map infrastructure elements with criteria	X				
Configure email notifications	X				
Generate reports	X	X	X		
Request virtual machines	X	X	X	X	X
Approve virtual machine requests	X		X		
Set up virtual machines	X	X			
Request extensions	X	O	O	O	O
Approve extensions	X		X		
Choose customization templates	X	O		O	
Approve customization templates	X	X			
Approve customization change requests	X	X	X		
Decommission virtual machines	X	O	O	O	O
Delete a request or a token	X				
Import existing virtual machines	X				

Change the Base Name for Virtual Machines

You can change the naming convention for a virtual machine. The default is **lcm-####**.

To change the base name of your virtual machines

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click **Edit Base Name**.
- 4 Under **VM Naming Convention**, in the **Name** text box, type the naming convention.
- 5 Choose whether to allow a user to change a virtual machine name.



If you select **Yes**, either the LCM Approver or the LCM IT Staff can change the virtual machine name when approving a request.

- 6 Click **Submit**.

Enable Email Notifications

LCM users can receive emails when they are required to perform an action. For example, an LCM Approver can receive an email when required to approve or reject a virtual machine request. You can enable email notifications.

To enable email notifications



- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
If the **Mail** icon () does not appear next to the **Configuration** icon (), email notifications are disabled.
- 3 To enable email notifications, click **Edit Email Notifications** in the left pane.
- 4 Under **Activation**, click **Yes**.
- 5 Type the email addresses for the LCM Administrator, LCM IT Staff, and LCM Approver roles.
- 6 Click **Submit**.

You can configure email notification content the next time you log in to LCM as an administrator.

Configure Email Notification Content

If you have email configured in Orchestrator, you can configure the content of LCM email notifications. To set up email options in Orchestrator, see the *vCenter Orchestrator Installation and Configuration Guide*.

To configure the content of an email notification

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click the **Mail** icon ().
A list of actions for which you can set up notifications appears. You can also activate or deactivate all notifications.
- 4 Click a notification () in the left pane.
The details about the notification appear in the right pane.
- 5 Click **Edit**.
- 6 For each notification, specify whether to enable it, who the recipients are, what appears in the Subject field, and a default email body text.

You can use the following variables in the email body:

- `#vmName` - Virtual machine name
- `#decommissionDate` - Date that the request is set to be decommissioned
- `#error` - Error message
- `#requester` - Name of the requester
- `#ipAddress` - IP address of the virtual machine, if the request is available and the virtual machine is powered on
- `#webviewUrl` - URL of the LCM Webview

These variables are changed to their corresponding values when the email is generated.

- 7 Click **Submit**.

Repeat these steps for each email notification that you want to create.

Configure Currency and Date Formats

You can configure the currency and date formats. The price of a virtual machine is estimated in the currency that you select.

To configure currency and date formats

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click **Edit Format (Currency, Date)**.
- 4 Select a currency format.
- 5 Select a date format.
- 6 Click **Submit**.


Customizing the User Interface

You can customize certain elements of the user interface. For example, you can add buttons to link to a particular workflow, or you can add your company logo.



Create a Custom Style Sheet

You can create a new custom style sheet. After you create a custom style sheet, you can modify it. With custom style sheets, you can change the look and feel of the UI.

To create a custom style sheet

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click the **Custom Element** icon .
- 4 Click **New**.
- 5 From the **Location** drop-down menu, select **Custom style sheet** and click **Next**.
- 6 Upload a custom style sheet to modify or create a new custom style sheet.
- 7 Click **Submit**.
- 8 Click **Reset Cache** to apply the changes.



To modify a custom style sheet

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click the **Custom Element** icon .
- 4 Click the **Custom style sheet**  that you want to modify to display its contents.
 - To modify the content of the custom style sheet, click **Edit**.
 - To upload a different style sheet, click **Upload**.
 - To download the existing style sheet, click **Download**.
 - To remove the existing style sheet, click **Remove**.
- 5 Click **Submit**.
- 6 Click **Reset Cache** to apply the changes.

Modify an RDP Template

You can modify the RDP template that is used to connect to a virtual machine. This changes the RDP settings when the LCM UI starts an RDP session from the **Catalog** view. For example, you can modify the screen and audio settings for RDP sessions.



To modify an RDP template

- 1 Log in as the LCM administrator.
- 2 Click the **Configuration** view.
- 3 Click the **Custom Element** icon ()
- 4 Click **Rdp template** ().
 - To modify the content of the RDP template, click **Edit**.
 - To upload a different RDP template, click **Upload**.
 - To download the existing RDP template, click **Download**.
 - To revert to the default RDP template, click **Reinitialize**.
- 5 Click **Submit**.
- 6 Click **Reset Cache** to apply the changes.

Change the Application Logo

You can replace the VMware logo with your own to make the interface look more like your corporate intranet.



To change the application logo

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click the **Custom Element** icon ()
- 4 Click **Application logo** ().
 - To upload a new logo, click **Upload**.
 - To download the existing logo, click **Download**.
 - To revert to the default logo, click **Reinitialize**.
- 5 Click **Reset Cache** to apply the changes.

Change a Navigation Element

You can add a link to the navigation bar in the LCM UI. This link can point to a custom URL.


To modify a navigation element

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click the **Custom Element** icon ()
- 4 Click **Navigation Items** ().
 - Click **Edit** to modify the label of the link and the URL.
 - Click **Reinitialize** to remove the link from the navigation bar.
- 5 Click **Submit**.
- 6 Click **Reset Cache** to apply the changes.

Add a Custom Element

You can add custom elements such as additional buttons that are linked to workflows. You can use standard workflows or use custom workflows created in the Orchestrator Client. For information about developing workflows, see the *vCenter Orchestrator Developer's Guide*.

To add a new custom element

- 1 Log in to LCM as an administrator.
- 2 Click the **Configuration** view.
- 3 Click the **Custom Element** icon ()
- 4 Click **New**.
- 5 From the **Location** drop-down menu, select a custom element and click **Next**.
- 6 Type the information needed to point to the custom elements to add.
- 7 Click **Submit**.
- 8 Click **Reset Cache** to apply the changes.

NOTE Members of the LCM Requester and LCM Tech Requester groups have permissions to run workflows only from the Applications\Lifecycle manager\User workflow category. If you're adding a custom element pointing to a custom workflow, you can use the Applications\Lifecycle manager\User\Custom workflow category for storing the workflows. If you want members of the LCM Requester and LCM Tech Requester groups to have permissions to run workflows from other categories, you must perform the following steps to give them permissions.

To give all users permissions to run workflows stored in a custom category

- 1 Select **Start > Programs > vCenter Orchestrator > vCenter Orchestrator Client**.
- 2 Log in as an administrator.
- 3 Click the **Web views** view.
- 4 Right-click **VMware Lifecycle Manager** and select **Unpublish**.
- 5 Right-click **VMware Lifecycle Manager** and select **Edit**.
- 6 On the **Attributes** tab, select the **userAllowedWorkflowPaths** attribute.
- 7 Click the entry in the **Value** column and add the category where the workflows are stored.
- 8 Click **Save and close**.
- 9 Right-click **VMware Lifecycle Manager** and select **Publish**.

Setting Up the Virtual Machine Environment

5

Before users can request virtual machines, the LCM Administrator must configure the infrastructure and criteria.

This chapter includes the following topics:

- [“Configuring the Infrastructure for Requested Virtual Machines”](#) on page 29
- [“Configure Criteria for Requested Virtual Machines”](#) on page 34

Configuring the Infrastructure for Requested Virtual Machines

To set up the infrastructure for a requested virtual machine, you define the following elements:

- **Resource Pool** – You can use an existing resource pool in vCenter or create a new one.
- **Datastore** – You can choose which datastore to use. The datastore must exist.
- **Virtual Machine Folder** – You can categorize items in vCenter folders, based on different organizations.
- **Network** – You can associate a new network instance with vCenter or your ESX host.
- **Template Profile** – You can create a template profile for virtual machines. An example of a template profile is a virtual machine running Windows XP.
- **Domain** – You can specify the domain or workgroup that the requested virtual machine can join.
- **Customization Template** – You can create a customization template that defines the computer resources available to the virtual machine. LCM uses the template to apply the correct levels of the resources.

If multiple infrastructure elements are mapped to the same criterion, LCM does not know which element to use and notifies the IT Staff that an element must be selected on the **Placement** view.

Automatic Placement

When a virtual machine request is approved, the system tries to place the virtual machine automatically. If automatic placement is possible, the virtual machine is created and the state of the request changes to **Available**. If the automatic placement fails, the state of the request changes to **Waiting for Placement**, and a user with the LCM IT Staff role must place the virtual machine manually. During automatic placement, one of the following events can occur:

- If one path is found, the virtual machine is placed.
- If an exception occurs, the automatic placement fails. Information about the exception is displayed. The LCM IT Staff user can use the information to manually place the virtual machine and overwrite the initial criteria.
- If a conflict occurs, for example, if several solutions are found, or if the datastore is full, automatic placement fails. Information about the conflict and solution is displayed. The LCM IT Staff user can enter the new placement and overwrite the initial criteria.

Register or Create a Resource Pool

You can use an existing resource pool for requested virtual machines or create a new one. LCM automatically maps the request to the resource pool. If you map more than one resource pool to the server environment, the LCM IT Staff user can select which one to use.

To register a resource pool

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
The **Resource Pool** view opens as a default view.
- 3 Click **Register**.
- 4 Type the name of the resource pool that you want to register.
- 5 Choose whether you want to automatically register all child resource pools and click **Submit**.
- 6 Select the criteria options and click **Submit**.


To create a resource pool

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click **Create**.
- 4 Type or select the name of the parent in the new resource pool.
- 5 Type the name of the new resource pool and click **Next**.
- 6 Type or select the CPU allocation information and click **Next**.
- 7 Type or select the memory allocation information and click **Submit**.
- 8 Select the criteria options and click **Submit**.

Register a Datastore

You must use an existing datastore for the requested virtual machines. LCM cannot create a datastore. You must select a resource pool before you can select a datastore.


To register a datastore

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click the **Datastore** icon ()
- 4 Click **Register**.
- 5 Select a datastore from the vCenter or ESX host that you want to register and click **Submit**.
- 6 Select the criteria options and click **Submit**.

Register or Create a Virtual Machine Folder


You can register an existing folder or create a new one.

To register a virtual machine folder

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click the **Virtual Machine Folder** icon ()

- 4 Click **Register**.
- 5 Type or search for the name of the virtual machine folder that you want to register.
- 6 Choose whether you want to automatically register all child virtual machine folders and click **Submit**.
- 7 Select the criteria options and click **Submit**.


To create a virtual machine folder

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click the **Virtual Machine Folder** icon ().
- 4 Click **Create**.
- 5 Type or search for the name of the parent folder.
- 6 Type the name of the new folder and click **Submit**.
- 7 Select the criteria options and click **Submit**.

Configure Network Options

LCM automatically maps the request to the network. If you map more than one network to the server environment, the LCM IT Staff user can select which one to use.


To register a network

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click the **Network** icon ().
- 4 Click **Register**.
- 5 Type or search for a network and click **Next**.
- 6 Type the network domain name and click **Next**.
- 7 On the **IP Configuration** view, under **Network**, type the information and click **Submit**.

If you select **No** for **Use DHCP**, you must create an IP address for ranges or subnets.

- 8 Select the criteria options and click **Submit**.


To create an IP address range

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click the **Network** icon ().
- 4 Click a network.
- 5 Click **Create Range**.
- 6 Type a description.
- 7 Type the first and final IP addresses in your range

Each time the virtual machine is provisioned, LCM pulls an IP address from the defined range. You can set up multiple ranges for each network.

- 8 Click **Submit**.


To create subnets that are associated with a network

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click the **Network** icon (.
- 4 Click a network.
- 5 Click **Create Subnet**.
- 6 Type the information in the text boxes.
- 7 Click **Submit**.

Create a Template Profile

You can create a template profile. You can select an operating system, and specify the estimated cost for a virtual machine.

To create a template profile

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click the **Template Profile** icon (.
- 4 Click **Create**.
- 5 Type the information in the text boxes and click **Next**.
 - **Display name** – Name of the template profile
 - **Description** – Description of the template profile
 - **State** – State of the template profile
 - **Template to clone** – Source template from vCenter or ESX host
 - **Ongoing monthly cost** (currency) – Monthly cost of creating future virtual machines
 - **Initial setup cost** (currency) – Cost associated with setting up each virtual machine that uses this template


Use the currency entries to charge back through template profiles.
- 6 If you are using a Windows template, enter information about the operating system.
 - **Full Name** – Your name.
 - **Organization name** – Name of your organization (for example, **vmware**).
 - **Local administrator password** – If the template that you are registering has a local administrator password set, the password you enter here is ignored. If the template you registered does not have a local administrator password, the one you enter here is applied.
 - **Time zone** – Time zone in which the virtual machine is located.
 - **Windows license key** – Type the key, even if the template uses a volume license key.
 - **Server licensing mode** – Select either **perServer** or **perSeat**.
 - **Number of licenses** – Minimum number of licenses per server is 5.
- 7 Click **Submit**.
- 8 Select the criteria options and click **Submit**.

NOTE For a list of guest operating systems that support image customization, see the *VMware Infrastructure Compatibility Matrixes*.

Create a Domain

You can join a domain or a workgroup.


To create a domain

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click the **Domain** icon ().
- 4 Click **Create**.
- 5 Choose whether to join a domain or a workgroup.
 - If you selected **Yes**, type the necessary information.
 - If you selected **No**, type a workgroup name.
- 6 If you joined a domain, select a network or an array of networks.
The networks are defined on the **Network** view.
- 7 Click **Submit**.
- 8 Select the criteria options and click **Submit**.

Create a Customization Template

A customization template defines the computer resources available to the virtual machine.


To create a customization template

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click the **Customization Template** icon (.
- 4 Click **Create**.
- 5 Type a template name and click **Next**.
This is the name that the requester sees, so create an easily identifiable name.
- 6 Select the memory information and click **Next**.
- 7 Select the CPU information and click **Next**.
- 8 Select the disk shares and click **Submit**.
- 9 Select the criteria options and click **Submit**.

Relink Unlinked Elements

You can relink unlinked infrastructure elements automatically or manually. Elements become unlinked if they have been removed from vCenter, or if their ESX host has been removed from vCenter.

To relink unlinked elements

- 1 Log in to LCM as an administrator.
- 2 Click the **Infrastructure** view.
- 3 Click the **Unlinked Elements** icon (.

- 4 Click **Relink All** to relink all unlinked elements automatically.
- 5 To relink an unlinked element manually:
 - a Click an element in the left pane.
 - b Click **Relink** in the right pane.
 - c Under **Action on unlinked element** select **Relink**.
 - d Select the element and click **Submit**.

Configure Criteria for Requested Virtual Machines

When users request virtual machines, they can specify criteria such as the location, organization, server environment, service level and performance. For example, a user can request a virtual machine and select a location called Palo Alto, Administrative as the Organization, Production as the server environment, select a comprehensive service level, and high performance. As an LCM Administrator, you can modify these criteria, for example, if the needs of the company change or resources change.

You can rename or delete existing elements or reconfigure mapping options. If you reconfigure these options, you are modifying the elements that comprise the criteria for a virtual machine. To create a criterion, at least one criterion of a type must currently exist. You can edit the mapping option for any element.

To rename criteria elements

- 1 Log in to LCM as an administrator.
- 2 Click the **Criteria** view.
- 3 Click an element and click **Edit**.
- 4 Modify the name and description.
- 5 Click **Submit**.

To reconfigure mapping objects

- 1 Log in to LCM as an administrator.
- 2 Click the **Criteria** view.
- 3 Click an element and click **Edit Objects for Mapping**.
- 4 Modify the mapping objects.
- 5 Click **Submit**.

To delete an element

- 1 Log in to LCM as an administrator.
- 2 Click the **Criteria** view.
- 3 Click an element and click **Delete**.
- 4 Click **Submit**.

Using LCM

After you have configured Lifecycle Manager, you can perform day-to-day administration tasks, such as approving virtual machine requests, importing virtual machines, decommissioning virtual machines, and so on. Some tasks, such as requesting a virtual machine, can be performed by all LCM user roles. Most tasks, however, can only be performed by the LCM Administrator.

This chapter includes the following topics:

- [“LCM Administrator’s Interface”](#) on page 35
- [“Request a Virtual Machine”](#) on page 36
- [“Display Requested Virtual Machines”](#) on page 38
- [“Modify Request Options”](#) on page 39
- [“Check the Power State of a Virtual Machine”](#) on page 39
- [“Power a Virtual Machine On and Off”](#) on page 39
- [“Connecting to a Virtual Machine”](#) on page 40
- [“Create or Revert to a Snapshot”](#) on page 40
- [“Generate Reports”](#) on page 41
- [“Register Virtual Machines with LCM”](#) on page 41
- [“Activate Webview Debug Mode”](#) on page 43
- [“Relink Tokens to Virtual Machines”](#) on page 43
- [“Check Licensing Status”](#) on page 43
- [“Export Logs and Application Settings”](#) on page 43
- [“Troubleshoot LCM”](#) on page 44

LCM Administrator’s Interface

When you log in as the administrator, the LCM interface contains the following views:

Catalog

This view displays a list of the virtual machines managed by LCM. Virtual machines can be filtered by a number of criteria. For more information see [“Display Requested Virtual Machines”](#) on page 38.

Requests

Virtual machine requests are made in this view. It also contains a list of pending requests, which can be filtered by their state. For more information see [“Request a Virtual Machine”](#) on page 36.

Approvals

This view displays virtual machine requests waiting for approval. Requests can be filtered by their state. Tasks in this view are typically performed by the LCM Approver role. For more information about using this view, see the *Lifecycle Manager User's Guide*.

Placement

This view displays virtual machine requests waiting for placement. Requests can be filtered by their state. Tasks in this view are typically performed by the LCM IT Staff role. For more information about using this view, see the *Lifecycle Manager User's Guide*.

Reports

Reports are generated in this view. For more information see [“Generate Reports”](#) on page 41.

Infrastructure

The infrastructure is determined in this view. For more information see [“Configuring the Infrastructure for Requested Virtual Machines”](#) on page 29.

Criteria

Virtual machine criteria options are modified in this view. For more information see [“Configure Criteria for Requested Virtual Machines”](#) on page 34.

Configuration

Configuration options are modified in this view. For more information see [“Configuring LCM”](#) on page 21.

Administration

Administration tasks are completed in this view. For more information see [“Register Virtual Machines with LCM”](#) on page 41, [“Activate Webview Debug Mode”](#) on page 43, [“Relink Tokens to Virtual Machines”](#) on page 43, [“Check Licensing Status”](#) on page 43 and [“Export Logs and Application Settings”](#) on page 43.

Request a Virtual Machine

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

To request a virtual machine

- 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.
Select a date for decommissioning the virtual machine. By default, virtual machines are decommissioned at midnight. For changing the decommissioning time see [“Modify the Decommissioning Time”](#) on page 38.
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 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 for 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 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 for 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.
- 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. For the attribute values, see [Table 6-1, "Customization Template Attributes"](#).
- 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 get it back, unless LCM is configured to archive the virtual machines.

Table 6-1. Customization Template Attributes

Attribute	Values
Memory reservation (MB)	minimum is 0 (default is 256)
Memory limit/size (MB)	range is -1 to 1024; must be a multiple of 4 (default is 1024) Selecting -1 maintains the same memory as the vCenter template.
Memory share	low, normal, or high (default is normal)
CPU reservation (MHz)	minimum is 0 (default is 200)
CPU limit (MHz)	minimum is -1 (default is 2000) Selecting -1 maintains the same CPU number as the vCenter template.
CPU count	1, 2, or 4 (default is 1)
CPU shares	low, normal, or high (default is normal)
Disk shares	low, normal, or high (default is normal)

For additional information on virtual machine resource allocation, see the VMware Infrastructure 3 *Resource Management Guide*.

Modify the Decommissioning Time

You can change the decommissioning time in the Orchestrator Client.

To change the decommissioning time

- 1 Select **Start > Programs > vCenter Orchestrator > vCenter Orchestrator Client**.
- 2 Log in as the Administrator.
- 3 Click the **Policies** view.
- 4 Right-click the **Lifecycle Scheduler** policy and select **Stop policy**.
- 5 Right-click the **Lifecycle Scheduler** policy and select **Edit**.
- 6 Click the **Scripting** tab in the right pane.
- 7 Select **Midnight - Delete VMs**.
- 8 On the **General** view underneath, type the new decommissioning time.
- 9 Click **Save and close**.
- 10 Right-click the **Lifecycle Scheduler** policy and select **Start policy**.

The new decommissioning time is now applied.

Display Requested Virtual Machines

You can display the requested virtual machines according to their status, such as available or rejected.

To display requested machines

- 1 Log in to LCM as an administrator.
- 2 Click the **Catalog** view.
- 3 Select a filter from the drop-down menu.

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

Modify Request Options

You can change the attributes of a virtual machine request.

To modify the request options

- 1 Log in to LCM as an administrator.
- 2 Click the **Catalog** view.
- 3 Select a requested virtual machine in the left pane.
- 4 Select an option from the right pane.
 - **Decommission** – Decommission the virtual machine.
 - **Extension** – Request an extension for the virtual machine.
 - **Change Request** – Modify request resources.
 - **Edit** – Modify provisioning and decommissioning dates.
 - **Change State** – Move virtual machine requests across different processes in the lifecycle. Used by VMware support to help with troubleshooting.



CAUTION Changing a state can move the request to an undesirable state.

- **Change Rights** – Change which groups or users can access, control, or view virtual machines.
- **Delete Request** – Delete the request and all associated reports and other elements. This does not destroy the virtual machine. To destroy the virtual machine, select a virtual machine that is in an available state, and click the **Decommission** button.

Check the Power State of a Virtual Machine

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

To check the power state of a virtual machine

- 1 Log in to LCM as an administrator.
- 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 and Off

You can power on and off, or suspend any virtual machine.

To power a virtual machine on or off

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

To suspend a virtual machine

- 1 Log in to LCM as an administrator.
- 2 Click **Catalog** to view a list of the virtual machines.
- 3 Click a virtual machine name in the catalog list.
- 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.

Open a Virtual Machine in a Web Browser

From your Web browser, you can connect to a virtual machine running any guest operating system. To connect via your browser, you must have the VMware WebCenter Remote MKS Plug-in installed in your browser.

To open a virtual machine in a Web browser

- 1 Log in to LCM as an administrator.
- 2 Click the **Catalog** view and click the virtual machine name in the catalog list.
- 3 In the right pane, click **Commands**.
- 4 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. The client software must be installed on your computer.

To open a virtual machine in a remote desktop

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

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

Create or Revert to a Snapshot

A snapshot captures the states of a virtual machine's hard drives. You can use the snapshot to return to the saved state. A snapshot does not capture the virtual machine's memory and power state.

To create a snapshot of a virtual machine

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

To revert to a snapshot

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

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

Generate Reports

You can generate reports for various LCM events. For example, reports can display approved and rejected requests, decommissioned virtual machines, error events, and so on.

To generate a report

- 1 Log in to LCM as an administrator.
- 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.

Register Virtual Machines with LCM

You can register existing virtual machines with LCM so that they can be more efficiently managed. You can register a virtual machine manually or import multiple machines from a resource pool or a virtual machine folder.

To register a virtual machine manually

- 1 Log in to LCM as an administrator.
- 2 Click the **Administration** view.
- 3 Click **Import Virtual Machine**.
- 4 Type or search for the name of the virtual machine that you want to import.
- 5 Type a comment and click **Next**.
- 6 Specify whether you want to set a decommissioning date.
- 7 (Optional) Specify who can control or view the virtual machine. If you do not specify a user or group, only you have control.
- 8 Click **Next**.
- 9 Specify whether you want to link with criteria.
If you select **Yes**, select entries for **Location**, **Organization**, **Server Environment**, **Service Level**, and **Performance**.
- 10 Type the contact email and click **Next**.
- 11 Specify whether you want to use the virtual machine name as the request name.
- 12 (Optional) Specify monthly and setup costs.
- 13 Click **Submit**.

To import virtual machines from a resource pool

- 1 Log in to LCM as an administrator.
- 2 Click the **Administration** view.
- 3 Click **Import Virtual Machine from Resource Pool**.
- 4 Select one or more resource pools of the virtual machines that you want to import.
- 5 Type a comment and click **Next**.
- 6 Specify whether you want to set a decommissioning date.
- 7 (Optional) Specify who can control or view the virtual machine. If you do not specify a user or group, only you have control.
- 8 Click **Next**.
- 9 Specify whether you want to link with criteria.
If you select **Yes**, select entries for **Location, Organization, Server Environment, Service Level, and Performance**. Also, specify whether you want to link the same criteria for all virtual machines or different criteria for each machine. If you select the same criteria for all machines, you must enter the criteria. Otherwise, the workflow prompts you to enter the criteria.
- 10 Type the contact email and click **Next**.
- 11 Specify whether you want to use the virtual machine name as the request name.
- 12 (Optional) Specify monthly and setup costs.
- 13 Click **Submit**.

To import virtual machines from a virtual machine folder

- 1 Log in to LCM as an administrator.
- 2 Click the **Administration** view.
- 3 Click **Import Virtual Machines from VM folder**.
- 4 Select one or more virtual machine folders that you want to import.
- 5 Type a comment and click **Next**.
- 6 Specify whether you want to set a decommissioning date.
- 7 (Optional) Specify who can control or view the virtual machine. If you do not specify a user or group, only you have control.
- 8 Click **Next**.
- 9 Specify if you want to link this virtual machine to criteria.
If you select **Yes**, specify whether you want to link the same criteria for all virtual machines or different criteria for each machine. If you select the same criteria for all machines, you must enter the criteria. Otherwise, the workflow prompts you to enter the criteria.
- 10 Type the contact email and click **Next**.
- 11 Specify whether you want to use the virtual machine name as the request name.
- 12 (Optional) Specify monthly and setup costs.
- 13 Click **Submit**.

Activate Webview Debug Mode

You can switch the Webview debug mode on and off.

To activate webview debug mode

- 1 Log in to LCM as an administrator.
- 2 Click the **Administration** view.
- 3 Click **Activate webview debug mode**.
- 4 Select **Yes**.
- 5 Click **Submit**.

Relink Tokens to Virtual Machines

If a provisioning request was available with a virtual machine but the virtual machine was unregistered in vCenter, the token loses its link to the virtual machine. The workflow can only connect to the virtual machine after it is registered again. You can try to relink the tokens.

To relink a request that lost the link with its virtual machine

- 1 Log in to LCM as an administrator.
- 2 Click the **Administration** view.
- 3 Click **Relink Requests That Lost the Link With its Virtual Machine**.
- 4 Select whether you want to proceed.
- 5 Click **Submit**.

Check Licensing Status

You can review the licensing status of LCM.


To check the licensing status

- 1 Log in to LCM as an administrator.
- 2 Click the **Administration** view.
- 3 Click **Licensing status**.
- 4 Select whether you want to proceed.
- 5 Click **Submit**.

Export Logs and Application Settings

You can export logs and application settings for analysis purposes.

To export logs and application settings

- 1 Log in to LCM as an administrator.
- 2 Click the **Administration** view.
- 3 Click the **Export** icon ().
- 4 Click **Export Logs and Application Settings**.

A log file that you can download is automatically generated.

Troubleshoot LCM

If you encounter problems, you can try these procedures to troubleshoot the situation.

To restart the Orchestrator server

- 1 Select **Start > Programs > Administrative Tools > Services**.
- 2 Select **VMware vCenter Orchestrator Server**.
- 3 Right-click and select **Restart**.

To restart the Web configuration server

- 1 Select **Start > Programs > Administrative Tools > Services**.
- 2 Select **VMware vCenter Orchestrator Configuration**.
- 3 Right-click and select **Restart**.

To view log files

Navigate to <Orchestrator install directory>\app-server\server\vmo\log.

To force plug-in reinstallation

For information about reinstalling plug-ins, see the *vCenter Orchestrator Administration Guide*.

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