

Installation and Configuration Guide

VMware Lifecycle Manager 1.0 - Standard



Installation and Configure Guide

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About This Book

This installation and configuration guide provides information about installing and using VMware Lifecycle Manager - Standard.

Intended Audience

This book is intended for anyone who needs to install, upgrade, or use Lifecycle Manager. Typical users are VI Administrators who want to build better tracking and control into their virtual infrastructure. Other end users include those who the VI admin gives access to for requesting virtual machines on behalf of business units for test, development, and production environments.

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Technical Support and Education Resources

The following sections describe the technical support resources available to you. You can access the most current versions of this manual and other books by going to:

<http://www.vmware.com/support/pubs>

Online and Telephone Support

Use online support to submit technical support requests, view your product and contract information, and register your products. Go to <http://www.vmware.com/support>.

Customers with appropriate support contracts should use telephone support for the fastest response on priority 1 issues. Go to http://www.vmware.com/support/phone_support.html.

Support Offerings

Find out how VMware support offerings can help meet your business needs. Go to <http://www.vmware.com/support/services>.

VMware Education Services

VMware courses offer extensive hands-on labs, case study examples, and course materials designed to be used as on-the-job reference tools. For more information about VMware Education Services, go to <http://mylearn1.vmware.com/mgreg/index.cfm>.

Overview

1

VMware® Lifecycle Manager - Standard seamlessly provides virtual machines to end users. The application helps IT staff address the provisioning and tracking challenge of finding an efficient way to manage the lifecycle of user-requested virtual machines.

Lifecycle Manager - Standard automatically manages the provisioning and decommissioning of virtual machines. This solution leverages the increased operational efficiency and flexibility of the infrastructure of VMware, and adds the automation capabilities to dramatically reduce the cost and complexity of operating a virtualized environment.

The solution allows you to do the following:

- Handle and process virtual machine requests in a simple Web user interface.
- Disable the approval process to provide a self-service portal.
- Automatically determine the provisioning infrastructure, based on organizational and logical criteria, not technical ones. Servers are automatically placed based on their location, organization, environment, service level, or performance levels. When a solution is found for set of criteria, the machine is automatically deployed.

- Enforce best practice provisioning process.

Automatic deployment and configuration reduces error and speeds up the process.

- Delegate basic server operations, such as requesting a machine, to end users.
- Track the lifecycle information of requested machines. This helps maintain an audit trail, which allows on-time archiving and deletion of an end-of-life server and avoids server sprawl. These requests can be modified to extend the virtual machine's lifespan.

Role-Based Interface

Lifecycle Manager - Standard has a role-based interface and presents information that is relevant to a role. This maintains proper role separation that is required by most regulatory procedures.

The following roles exist in the Lifecycle Manager - Standard:

- **IT Administrator** – Establishes the criteria used for machine placement and determines how these criteria convert to sizing or placement values. This role is responsible for configuring Lifecycle Manager - Standard and establishing the placement of virtual machines. For more information on this role, see IT Administrator.
- **User/Technical User** – Requests or the extends the life of a new virtual machine. Users can also access elementary functions of machines assigned to them, such as opening consoles and shutting down or restarting machines. Users can delegate this control to other users. For more information on this role, see User/Technical User.
- **Approver** – Approves current requests for deployment or extensions. Approvers have the authority to approve or reject deploying a machine. If no unique solution is available to place a machine based on the provided criteria, an IT staff member must manually choose the sizing and placement of the new machine. For more information on this role, see Approver.
- **IT Staff** – Completes manual placement of approved machines. For more information on this role, see IT Staff.

Benefits

The benefits of Lifecycle Manager - Standard include the following:

- **Web user interface** – Allows easy cataloging, requesting, configuration, deployment, control, archiving, and deletion of virtual machines.
- **Streamline virtual machines provisioning** – Uses remote, automated installations of virtual machines.
- **Flexible approval options** – Offers a variety of approval options, including administrative approval, technical validation, and extending the provisioning period, which allows collaboration between IT and other departments.
- **Temporary provisioning of your virtual machines** – Allows a user to request a virtual machine for a period of time, and this time can be extended. This ensures optimal resource usage and the ability to control server sprawl.

- **Accountability** – Provides automation and an audit trail of a virtual machine's life cycle, which allows compliance with industry-specific standards.
- **Automated** – Allows instant setup and an automated operation because it is distributed as a virtual appliance.

System Requirements

2

This chapter provides the technical requirements that are necessary to install and configure VMware® Lifecycle Manager - Standard.

The following topics are covered:

- Infrastructure
- Operating System
- Database
- Browser

Infrastructure

You need at least the following for the target infrastructure:

- VMware® VirtualCenter 2.0x or 2.5x
- VMware® ESX Server 3.0x or 3.5x
- Virtual server template to clone operations
- Enough storage space to create new machines
- Distributed Resource Scheduler (DRS) cluster or a single host

You need at least the following for your physical infrastructure:

- Two CPUs
- 2GB of RAM

- 10GB of disk space
- A free, fixed IP address in your network

Operating System

You need at least one of the following:

- For Microsoft Windows, one of the following
 - Windows XP Pro 32-bit, SP2
 - Windows 2000 Server, SP4 with Update Rollup 1
 - Windows 2000 Advanced Server
 - Windows Server 2003, SP1
 - Windows Server 2003, SP2
 - Windows Server 2003, R2
 - Windows Server 2003 Standard, Web 32bit
 - Windows Server 2003 Standard, 32bit
- Ubuntu 7.04
- For Redhat Enterprise Linux 5 and SuSE Linux 10.3, you need the following:
 - At least 1GB of RAM (2GB suggested)
 - 5GB of available disk space on the target installation directory's partition (the default directory is `/opt/`)
 - A 32bits operating system

NOTE The installation program will install a compatible Java environment.

Database

You need one of the following:

- For SQL Server, one of the following:
 - SQL Server 2000 Standard Edition (SP4)
 - SQL Server 2000 Enterprise Edition (SP4)
 - SQL Server 2005 Standard Edition (SP1)
 - SQL Server 2005 Standard Edition (SP2)

- SQL Server 2005 Enterprise Edition (SP1)
- SQL Server 2005 Enterprise Edition (SP2)
- SQL Server 2005 Enterprise Edition 64bit (SP2)
- For Oracle, one of the following:
 - Oracle 9i Standard Edition, Release 2
 - Oracle 9i Enterprise Edition, Release 2
 - Oracle 10g Standard Edition, Release 1 [10.1.0.3.0]
 - Oracle 10g Enterprise Edition, Release 1 [10.1.0.3.0]
 - Oracle 10g Standard Edition, Release 2 [10.2.0.3.0]
 - Oracle 10g Enterprise Edition, Release 2 [10.2.0.3.0] 32bit
 - Oracle 10g Enterprise Edition, Release 2 [10.2.0.3.0] 64bit

Browser

End users and administrators need one of the following supported browsers to connect to Lifecycle Manager - Standard:

- Microsoft Internet Explorer 6.0 and 7.0
- Mozilla Firefox 2
- Apple Safari 2 (experimental)

Installing the Lifecycle Manager

3

This chapter contains instructions to install VMware® Lifecycle Manager - Standard for the following:

- Microsoft Windows
- Linux
- The Appliance

Microsoft Windows

- 1 Install Lifecycle Manager - Standard from the download location or installation CD.
- 2 Accept the license and select your installation directory.
- 3 Choose one of the following options:
 - **Client** – This is the Orchestrator Client that allows you to create or edit workflows that exist in the Orchestrator Platform. It can also be installed with the server.
 - **Server** – Installs Lifecycle Manager - Standard and the Orchestrator Platform.
 - **Client-Server**

Linux

You can install Lifecycle Manager - Standard through UNIX in one of the following ways:

To install Lifecycle Manager - Standard with a graphical environment (X server)

- 1 Ensure that the .bin file has the following execution rights:

```
chmod +x <binary file>
```
- 2 Execute the binary file by double-clicking on it or running it from the command line.
- 3 Proceed with the Wizard.

To install Lifecycle Manager - Standard on a command line-only system

- 1 Make sure the .bin file has execution rights:

```
chmod +x <binary file>
```
- 2 Enter the following in the command line:

```
./<binary file> -i silent
```

Lifecycle Manager - Standard is installed in `/opt/vmo`. This is currently the only way to install using the command-line-only installer.

If the current working directory does not have enough disk space, you may need to specify a temp directory. To specify a temp directory, do an `export IATEMPDIR=<path>`. For example, if your path is `/opt/tmp`, your path would be `export IATEMPDIR=/opt/tmp`.

The Appliance

The Appliance is a preconfigured and prepackaged solution that is ideal for evaluation or proof of concept. This solution includes Lifecycle Manager - Standard and VMO 3.x is installed as a service.

System Requirements

NOTE The PostGres data base is not supported in a production environment. If you want to use the appliance in this environment, you need to configure it to work with an external database.

The appliance runs on the following packages:

- Operating system:
 - Distribution – Ubuntu GNU/Linux 7.04
 - Kernel version – 2.6.22-14-server
 - OpenSSH version– 4.6p1 (OpenSSL 0.9.8e)
- Database:
 - PostgresSQL version – 8.2.6
 - Directory Service
 - OpenLDAP (slapd) version– 2.3.35
- VMware Orchestrator (VMO) – VMO 3.x, installed as a service

The system is configured to run out of the box, using the locally installed database and the local OpenLDAP directory service for user authentication. The email server is optional. Users can also reconfigure the server to use an external database or an external directory service.

The Appliance package comprises the following files:

- An .ovf file
- Three .vmdk files

These files can be uploaded through VMware® VirtualCenter or VMware® ESX Server using the VMware® Virtual Infrastructure Client. They can also be imported through VMware® Converter or through the OVF tool. For instructions on downloading and using the OVF tool, see To install the Appliance below.

To install the Appliance

1 You can download the OVF tools in one of the following ways:

- Download OVF tools from
http://www.vmware.com/download/eula/ovf_eula.html
 For more information on OVF tools, go to
<http://www.vmware.com/appliances/learn/ovf.html>.
- Run the following command line:

```
java -jar ovftool.jar -i
```

Check `C:\Program Files\Java\jre 1.6.0_04\bin\jar -jar OVFtool.jar -i` to ensure that you have the latest version of Java.

VMware® Infrastructure Client supports OVF imports.

2 Select **Install OVF Package**.

Copy and paste name of the `.ovf` file that you downloaded. When it is saved locally, the extension might change to `.xml`, but you can still paste the filename in this field. The `.ovf` file looks for the `.vmdk` files in the same directory, so make sure that all the files are in this directory.

3 Read the information in the dialog box and click **Next**.

4 Choose destination folder for the new virtual machine, select the **Flat** check box click **Next**.

This option is faster, but the **Split** option uses less disk space. The appliance is now downloaded and expanded in the target directory.

5 Double click the `.vmx` file with your hypervisor and start the appliance.

If you are using the Appliance for evaluation, it will work with hypervisors, such as VMware Fusion, VMware Workstation, VMware Server, VMware ESX Server, and VMware Player, but this is not supported.

6 In the console of the VI Client, you are prompted to select the following:

- A static (**s**) or DHCP (**d**)
- Your country
- Your time zone

Once the virtual machine is running, the console displays the IP address you need to use to log on to the Orchestrator Platform.

Configuring the Orchestrator Platform

4

After installing VMware® Lifecycle Manager - Standard, you need to configure the Orchestrator Platform.

The following topics are covered:

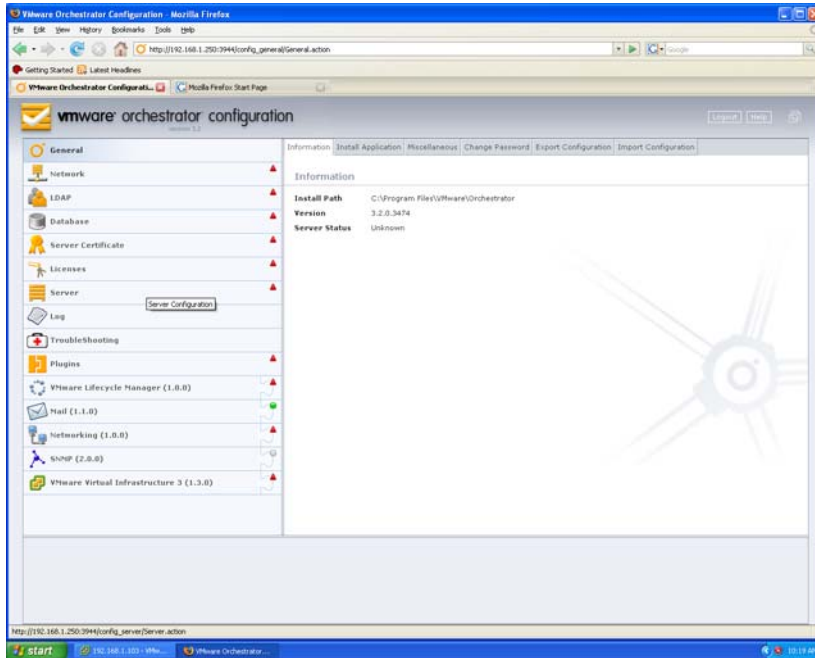
- Network Tab
- SSL Certificate Tab
- LDAP Tab
- License Tab
- Plug-Ins Tab

To configure the Lifecycle Manager - Standard Orchestrator Platform

Lifecycle Manager - Standard is powered by the VMware Orchestrator as part of the configuration of Lifecycle Manager - Standard.

- 1 Log on to the VMO configuration <http://lcmserver:3944/> or choose **Start > All Programs > VMware > VMware Orchestrator Configuration**.

As you can see in the figure below, the Orchestrator comprises two panes. The configuration elements are listed in the left pane and their details are in the right pane. To configure the elements, you need to click on the relevant tabs and in the right pane, enter information or modify it as necessary. When you configure an element correctly, the red triangle changes to a green circle.



If you experience any problems, in Windows, go to your Services console for your Lifecycle Manager - Standard and check whether the service is running. In Linux and the Appliance, you need to ensure that the configuration server is running. The output of `ps -e 500 | grep jetty` should have a java line. Since ps lists running processes, and the grep command is a filter, it should output only processes that have jetty in their description.

2 Log in with the following:

- **User name – vmware**
- **Password– vmware**

These values are the defaults. After the first login, you can change the password.

3 In the left pane, click **Network**.

4 Under the **Network** tab are the following tabs:

Network Tab

- a Under **Network IP Configuration**, using the drop-down menu, select the IP address of your server.
- b Click **Apply Changes**.
- c Verify that the red triangle has changed to a green circle.
- d Click **Database**.
- e Under **Database Type**, using the drop-down menu, select your database.

If you do not have this information, contact your database administrator. You should have already created a database instance in your database.

We support only Oracle and SQLServer, but you can use PostGres or MySQL for evaluation purposes. If you select Oracle, specify the following connection parameters:

- **User name** of the database
- **Password** of the database
- **Hostname or IP** (localhost is ok)
- **Port**
- **Database name** – This field appears only if you select Microsoft SQLServer.
- **Instance name** (for example, SQLEXP_VIM if using VirtualCenter database)
- **Domain** – (for example, vmware.local) This field appears only if you select Microsoft SQLServer.

The database tables are created in your database. After you see a message that no database was found, click on **Install Database** to see VMO tables in SQL Server.

SSL Certificate Tab

- a Click **SSL Certificate**.
- b The URL from which to import certificate is `https://your_vc_server/`. Note that this URL starts with `https`, not `http`.
- c Click **Import** to see a message that the SSL certificate was successfully imported.
- d Repeat these steps for each VirtualCenter server.
- e To import a certificate file, do the following:
 - i In **Import from file**, click **Browser**.
 - ii Click **Import**.
- 5 Click **Server Certificate**.
- 6 Create SSL Certificate for VMO by doing the following:
 - a Click on **Server Certificate**
 - b Click on **Create a new Certificate Database and server certificate**
 - c In the fields below, enter information that is relevant for your company:
 - **Common Name**
 - **Organization Name**
 - **Organization**

The Orchestrator uses this information to generate a server certificate that is unique to your environment. Any value can be entered in these fields.
 - d Choose the appropriate country.
 - e Click **Apply Changes**.
 - f Verify that the red triangle has changed to a green circle.

LDAP Tab

- 1 Click **LDAP**.
- 2 In **LDAP Client**, using the drop-down menu, select one of the following clients:
 - **Active Directory**
 - **OpenLDAP**
 - **eDirectory**
 - **Sun One Directory**
- 3 In **Primary LDAP Host**, enter a relevant value (for example, **server.vmware.local**).
- 4 In **Username**, enter a relevant value (for example, **dc=vmware, dc=local**)
- 5 Enter a user name and password.
- 6 If an error message appears, click **LDAP Lookup Paths** tab.

For example, the user lookup base is **dc=vmware, dc=local**.

In the search link, enter your top level domain **vmware** and the LDAP connection string for the discovered branch appears. The group lookup base is **dc=vmware, dc=local**. The VMO Admin group is **cn=lcmadmins, cn=Users, dc=vmware, and dc=local**.

- 7 Click **Apply Changes**.
- 8 Verify that the red triangle has turned into a green circle.

License Tab

- 1 Click **Licenses**.

The license is an XML file that was emailed to you when you purchased Lifecycle Manager. Without the license, the server will not work.

You can also import the license by doing the following:

- a Click **Import License**.
- b Browse to the XML license file for VMO.
- c Click **Import** and review the VMO server, VS-O server, SSH, VIM3 and Microsoft licenses.

Plug-Ins Tab

- 1 Click **Plug-Ins**.

Users should be in the Administrators group.

- a Enter plug-ins username and password of the plug-ins.

The user should be in LCM Administrators group.

- b Click **Apply changes**.
- c Verify that the red triangle has changed to a green circle.

- 2 Click **VMware Virtual Infrastructure 3**.

- 3 Click **New VirtualCenter 2.x host**.

- 4 In **Available**, using the drop-down menu, select **Enabled**.

- 5 In **Port**, the default value is **443**.

If you have a different VirtualCenter host, your port number is different.

- 6 Select the **Secure channel** check box if you want a secure connection to your VirtualCenter host.

- 7 In **Path**, use the default value, **/sdk**.

This is the location to the SDK that you use to connect to your VirtualCenter instance.

- 8 In **URL**, the displayed path is generated based on the information you entered in the fields above.

- 9 In **User name** and **Password**, enter your VirtualCenter administrator user name and password.

- 10 If your VirtualCenter server is in AD domain, select **session per user**.

If you do not do this, you need to share a unique session. Ensure that this user is a VirtualCenter admin.

- 11 In **Domain name**, enter your domain name (for example, **VMWARE\%u**).

- 12 Click **Apply Changes**.

- 13 Verify that the red triangle has changed to a green circle.

14 Start the VMO service by doing the following:

- a Click **Server**.
- b Click **Start service**.

During this process, the server is installing all the components that Lifecycle Manager - Standard needs to run, such as populating the database tables you created earlier, and so on. The service takes about five minutes to start.

- c Verify that service is running.

The other tabs are used by the Orchestrator and are not needed by Lifecycle Manager - Standard. You do not need to configure anything in these tabs.

Configuring Lifecycle Manager

5

VMware® Lifecycle Manager - Standard is a Web-based solution and the only entry point is the URL. You can log on with the administrator user name and password that you configured in step 11 in To configure the Lifecycle Manager - Standard Orchestrator Platform.

This chapter covers the following topics:

- Configuration Tab
- Mail Tab
- Custom Elements Tab

To configure Lifecycle Manager - Standard

- 1 Open a browser and enter `http://IPaddress:8080/vmo/lifecycle/`, and for the Appliance enter `http://IPaddress/vmo/lifecycle`.

The URL for the Appliance does not have a port number.

- 2 Log in with Lifecycle Manager Administrator user name and password.

The first time you log on to Lifecycle Manager, the **Configuration** tab is selected.

Configuration Tab

In the left pane, the following options are listed:

- **Edit Advanced Configuration**
- **Edit Approval Modes**
- **Edit Archiving**

- **Edit Authorization Groups**
- **Edit Base Name**
- **Edit E-Mail Notifications**
- **Edit Format (Currency, Date)**
- **Edit Policy Running Credential**

To use the editing options and configure Lifecycle Manager - Standard:

- 1 In the left pane, click **Edit Advanced Configuration**.
- 2 Under **Web View Advanced Configuration**, in **Webview URL**, enter a URL.
- 3 Under **Debug**, determine whether you would like to enable to debug mode and select **Yes** or **No** as appropriate.
- 4 Click **Submit**.
- 5 Click **Edit Approval Modes**.
- 6 Under **Creation**, **Extension**, and **Shaping** select **Yes** or **No** as appropriate.

If you select **No**, the approval for that option is turned off. If you select **Yes**, an approval is required for that option. You can always change these values later.
- 7 Click **Submit**.
- 8 Click **Edit Archiving**.
- 9 Under **Archive Configuration**, determine whether you want to archive by default and select **Yes** or **No**.
- 10 Under **Archive folder**, in **Destination Datastores**, enter or using the drop-down menu, select a datastore.

Virtual machines are automatically decommissioned on the date that the User selected when requesting the machine. If necessary, IT administrators can extend the life of a machine. Lifecycle Manager notifies the owner of the virtual machine two weeks before the virtual machine is going to be decommissioned with the option for the user to request an extension. The owner can log onto the **Catalog** user interface and request an extension, which may or may not go through an approval process (based on how approvals are configured).

The User role information is associated with virtual machine extension and virtual machine change requests. Once a virtual machine is created, users can extend a virtual machine and request that this machine be changed. For example, they might want to request a memory upgrade from 2GB to 4GB.

- 11 Click **Submit**.
- 12 Click **Edit Authorization Groups**.
- 13 Under **Management Groups**, select or enter appropriate values in the following:
 - **IT Administrators Group**
 - **IT Staff Group**
 - **Approvers Group**
- 14 Under **User Groups**, select or enter appropriate values in the following:
 - **Technical User Group**
 - **User Group**
- 15 Click **Submit**.
- 16 Click **Edit Base Name**.
- 17 Under **VM Naming Convention**, in **Name**, enter your naming convention.
- 18 Under **Allow to change name?**, select **Yes** or **No**.

If you select **Yes**, all name changes are sent to the IT staff who can determine whether to change the virtual machine name.
- 19 Click **Submit**.
- 20 Click **Edit E-Mail Notifications**.
- 21 Under **Activation**, select **Yes** or **No** to determine whether you want to enable (or disable) email notifications.
- 22 Click **Edit Format** and using the drop-down menu, select appropriate values for the following:
 - **Date format**
 - **Currency**
- 23 Click **Submit**.
- 24 Click **Policy Running Credential**.
- 25 Under **New Administrator Credential**, do the following:
 - Enter an administrator logon name.
 - Enter your password and reenter it.
- 26 Click **Submit**.

- 27 In the **Advanced Settings** tab, you can do the following:
 - In **Web view URL**, modify the default URL for your environment
 - In **Debug mode for Web view**, examine additional logs that Support can use for troubleshooting.
- 28 Click **Submit**.

A message is displayed that the updates were successful. You need to log back into Lifecycle Manager and click on the **Configuration** tab.

Mail Tab

- 1 Click **Mail** to display a list of actions for which you can set up notifications.

Each action is a specific notification that can be sent based on actions in Lifecycle Manager. You can also activate and deactivate all the actions individually.
- 2 Click an action in the left pane.

The details about this action are displayed in the right pane.
- 3 Click **-Edit**.

For each action, you can do the following:

 - a In **Enabled?** select **Yes**.
 - b Enter the relevant information and click **Submit**.
 - c Click on an action to see email fields, such as **To**, **Cc**, **Bcc**, **Subject**, and **Body**.
 - d Repeat these steps for the notifications you want to create.

Custom Elements Tab

Here, you can do the following:

- **Customize the style sheet** – Allows you to change the look and feel of the Lifecycle Manager - Standard user interface by modifying the existing style sheet or adding a new one. Style sheets help you can change things such as layout, location of tabs, colors, fonts, and so on.
- **Add your company logo** – Allows you to upload a new logo to replace the VMware Lifecycle Manager - Standard logo in the user interface. This option helps the interface look more like your corporate intranet.

- Modify your navigation items
- Run an RDP session – Allows you to change RDP settings for when the Lifecycle Manager UI launches a RDP session from the Catalog tab.

To modify the custom style sheet

- 1 Click **Custom style sheet**.
- 2 In the right pane, the current style sheet template appears with the following buttons at the top:
 - **Edit** – Allows you to edit the style sheet. After you make your changes, click **Submit**.
 - **Upload** – Allows you to upload a style sheet.
 - i Click **Browse**.
 - ii Select the file and click **OK**.
 - iii Click **Submit**.
 - **Download** – Allows you to download a `.css` file.
 - i In the dialog box, do one of the following:
 - Open the file with the `.css` file format.
 - Save it to disk.
 - ii Click **OK**.
 - **Remove** – Allows you to remove a style sheet. Click **Submit** to confirm the removal.

To add a company logo

- 1 Click **Company Logo**.
- 2 In the right pane, the current logo file appears with the following buttons at the top:
 - **Upload** – Allows you to upload a company logo, which has to be a `.jpeg` file.
 - i Click **Browse**.
 - ii Select the file and click **OK**.
 - iii Click **Submit**.

- **Download** – Allows you to download a .jpeg file.
 - i In the dialog box, do one of the following:
 - Open the file with the .jpeg file format.
 - Save it to disk.
 - ii Click **OK**.
- **Upload** – Click **Submit** to confirm the upload.

To modify a navigation item

- 1 Click **Navigation Items**.
- 2 In the right pane, the current navigation items template appears with the following buttons at the top:
 - **Edit** – Allows you to edit the style sheet. After you make your changes, click **Submit**.
 - **Upload** – Allows you to upload a navigation item file.
 - i Click **Browse**.
 - ii Select the file and click **OK**.
 - iii Click **Submit**.
 - **Download** – Allows you to download a navigation item file.
 - i In the dialog box, do one of the following:
 - Open the file with a browser.
 - Save it to disk.
 - ii Click **OK**.
 - **Upload** – Click **Submit** to confirm the upload.

To modify an RDP template

- 1 Click **RDP Template**.
- 2 In the right pane, the current RDP template appears with the following buttons at the top:
 - **Edit** – Allows you to edit the template. After you make your changes, click **Submit**.

- **Upload** – Allows you to upload a new template.
 - i Click **Browse**.
 - ii Select the file and click **OK**.
 - iii Click **Submit**.
- **Download** – Allows you to download a template.
 - i In the dialog box, do one of the following:
 - Open the file with the correct file format.
 - Save it to disk.
 - ii Click **OK**.
- **Upload** – Click **Submit** to confirm the upload.

To add a new custom element

Adding new customization elements is useful when using the Lifecycle Manager - Customized Option where you are building new workflows that you want to execute in the Lifecycle Manager user interface. To add buttons to the UI, in the drop-down list and select the screen you would like to modify and add a description of the button you want to add. This button can be linked to new workflows created in VMware Orchestrator Client. For more information, see *Configuration and Usage – VMware Orchestrator Platform*.

- 1 Click **+New**.
- 2 Do one of the following:
 - Enter the name of the logo file.
 - Click **Browse** and **Open** to add your company's logo.
- 3 Click **Submit**.

Using the Lifecycle Manager - Standard

6

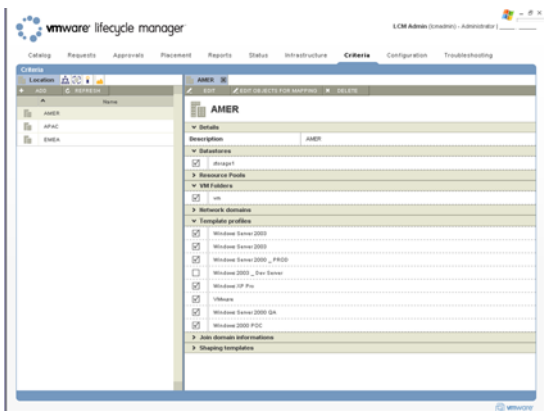
Depending on your role, VMware Lifecycle Manager - Standard allows you to do the following:

- Handle end users requests in a simple Web interface
- Automatically determine the provisioning infrastructure based on organizational criteria
- Enforce best practice provision process
- Administrative and technical approval process
- Provision request information
- Monitor the virtual machine lifecycle
- Archive end of life virtual machines
- Generate activity reports

This chapter covers the tasks completed by each of the following roles:

- IT Administrator
- User/Technical User
- Approver

■ IT Staff



This is the Lifecycle Manager user interface with all the tabs displayed. These tabs are role based, so tabs display depending on the role that logs onto Lifecycle Manager. This complete view of all the tabs is only available to the IT Administrator.

Here the following tabs are displayed:

- **Catalog**
- **Request**
- **Approvals**
- **Placement**
- **Reports**
- **Status**
- **Infrastructure**
- **Criteria**
- **Configuration**
- **Troubleshooting**

On each page, when a tab is clicked, the lists are displayed on the left pane. When you click on a machine or item in the list, the details are displayed on the right pane. In each page, the buttons that allow you to complete the tasks that are relevant for your role are displayed on the top of the pane. For example, if you are a **User**, and you want to request a new virtual machine, you need to click **Catalog** to see the **+Request** button.

IT Administrator

The IT administrator is responsible for the following:

- **Policy-based deployment** – Sets up provisioning criteria, such as geographic location, organization, server environment, services level, and performance. They can use these criteria to automatically place or configure virtual machines. During the provisioning process, users can select criteria defined by the IT Administrator.
- **Infrastructure Mapping** – Maps VMware® Infrastructure to the criteria defined by the IT Administrator. These mappings are used to automate the provisioning of virtual machines.
- **Edit objects for mapping** – Allows you to map criteria to the infrastructure.
- **Change all attributes of a virtual machine** – Allows you to change the provisioning date, the state, and delete virtual machines.

The IT Administrator completes the tasks in this section in the following tabs:

Criteria Tab

In this tab, you can set the location, organization, server environment, and so on.

To create a criterion

- 1 Log on as the IT Administrator.
- 2 Click the **Criteria** tab.
- 3 Click the icon of the criterion you want to change.
- 4 Click **+Add**.
- 5 Under **Criteria type**, in **Name**, enter a new criteria name.
- 6 Under **New criteria value**, in **Display name**, enter a name.
- 7 In **Description**, enter a description.
- 8 Click **Submit**.

Repeat this process for the criteria you want to create. You can select each criterion to display the **Details** page on the right pane.

If you do not want to use a criterion, you can modify the list so that only one criterion is displayed. You can associate that criterion to the infrastructure elements that you create.

To delete a criterion

- 1 Select the criterion.
- 2 Click **Delete**.

Infrastructure Tab

The **Infrastructure** tab allows you to automatically choose the best infrastructure.

To allocate the Infrastructure

Resource Pools

Click one of the following buttons:

■ + Register

This button allows you to select an existing resource pool from VMware® VirtualCenter.

■ + Create

This button allows you to create a new resource pool.

If you clicked + **Register**, do the following:

- 1 In the **Registration** tab, select a resource pool.
- 2 Determine which resource pool you want to register.
- 3 Select **Yes** or **No** to determine whether you want to automatically register all child resource pools.
- 4 Click **Submit**.

If you clicked + **Create**, do the following:

- 1 In the **General Information** tab, enter or select the name of the parent in the new resource pool.
- 2 In **Name**, enter the name of the new resource pool and click **Next**.
- 3 In the **CPU Allocation** tab, enter the appropriate information and click **Next**.
- 4 In the **Memory Allocation** tab, enter the appropriate information and click **Submit**.
- 5 In the main **Infrastructure** page, select the appropriate options and click **Submit**.

For example, you have created a resource pool called *Test*, and you map it to the server environment criteria called *Test*. The system automatically maps the request for a test environment to the *Test* resource pool. If you have mapped three resource pools to the server environment criteria of *Test*, the system allows IT staff to select from one of the three resource pools in the **Placement** tab. Once your criteria has been successfully updated, you can select **Datastores**.

Datastore

- 1 Click + **Register**.
- 2 Under the **Datastore** tab, select the datastore from VirtualCenter or ESX Server host you want to register and click **Submit**.

For example, you have three datastores and you want to associate different criteria to these datastores.

NOTE You cannot create a new datastore.

VM Folder

VM folders allow you to determine how you can categorize items in VirtualCenter folders, based on different organizations. If you select *IT organization*, all the virtual machines that are created would be associated with the VM folder that was created for the *IT organization* in VirtualCenter.

To create a virtual machine folder using the Register button

- 1 In the **Register VM Folder** tab, select the appropriate folder.
- 2 In **Register all Child VM Folders**, select **Yes** or **No** and click **Submit**.

To create a virtual machine folder using the Create button

- 1 Under **Create and Register VM folder** tab, in **Parent Folder**, select the parent folder.
- 2 Enter the name of the new folder and click **Submit**.

Network

This information helps you set up your network.

To create a new network

This button allows you to associate a new network instance with VirtualCenter or your ESX Server host.

- 1 Click **+Create**.
- 2 In **Network to Register**, under **Choose a Network**, do one of the following:
 - Enter a network.
 - Search for a network and select it.
- 3 Click **Next**.
- 4 Under **VMware 3** tab, in **Parent Folder**, select or enter the VirtualCenter or VMware® ESX Server network and click **Next**.
- 5 Under the **IP Configuration** tab, under **Network**, enter the appropriate information in the following fields and click **Submit**.

- **Base address**
- **Netmask**
- **Default gateway**
- **Use DHCP**

Determine whether you want to use DHCP or a static IP address. If you do not use DHCP, you need to create IP address ranges.

To create an IP address range

- a Click on the network you want to register.
- b Click **Create Range**.
- c In **Description**, enter a description.
- d In **Start IP Address**, enter the first IP address in your range.
- e In **End IP Address**, enter the final IP address in your range.
- f Each time the virtual machine is provisioned, Lifecycle Manager pulls an IP address from the defined range. You can set up multiple ranges for each network.
- g Click **Submit**.

To create subnets that are associated with a virtual machine

- a Click on the network.
- b Click **Create Subnet**.

NOTE Ensure that the IP addresses in your range are free. The provisioning process will fail if Lifecycle Manager tries to use an IP address that is currently being used.

For example, you have three networks and you need to associate that with the network on which your virtual machines is located.

- 6 Under **DNS**, enter the appropriate information in the following fields and click **Submit**:
 - **DNS Suffix (if any)**
 - **Primary DNS IP**
 - **Secondary DNS IP**

After you create the network, you need to map it to the criteria. The criteria you select and the network you created is used as part of a virtual machine request. If multiple networks are mapped to the same criteria, Lifecycle Manager - Standard does not know which network to use and will ask the IT Staff to select a network on the **Placement** tab.

For example, you have created a network called VM Network and you map it to the server environment criteria called *QA*. The system automatically maps the request for a *QA* environment to the virtual machine network. If you have mapped four networks to the server environment criteria called *QA*, the system allows IT staff to select from one of the four networks in the **Placement** tab. Once your criteria has been successfully updated, you can select **Template Profiles**.

Template Profile

Combining templates that exist in VirtualCenter is part of the provisioning process in addition to customization parameters that are used to configure Lifecycle Manager - Standard, such as sysprep.

- 1 Click **+ Create**.
- 2 Under the **Create a Template Profile** tab, under **Basic Parameters**, enter the appropriate information in the following fields and click **Next**:
 - **Display name**
This is the name of the template profile that is available for requesting.
 - **Description**

This is the information about the amount of memory, unit CPU, and disk size in the template. It is used to set up every virtual machine that uses this template.

- **State**

The following states are available:

- **Published** – As part of the provisioning process, used by end users to see the virtual machines that they created.
- **Unpublished** – Displays virtual machines that only the IT Administrator can see.
- **End of Life** – Displays virtual machines that are no longer needed, but the IT Administrator wants to continue tracking.

- **Template to clone**

This is the template you select from VirtualCenter or ESX Server.

- **Ongoing Monthly Cost (Dollars)**

This is the cost associated with setting up every virtual machine that uses this template.

- **Initial Setup Cost (Dollars)**

This is the monthly cost of creating future virtual machines.

- 3 Under the **Parameters** tab, under **Basic**, enter the appropriate information in the following fields:

- **Full name**
- **Organization name**
- **Local administrator password**
- **Timezone**

Windows and Linux parameters are the same.

- 4 Under **License Information**, enter the appropriate information in the following fields and click **Submit**:

- **Windows key (ignored if template key is VLK)**
- **Server licensing mode**
- **Number of licenses**

These fields are used to do chargeback through various template profiles.

5 Click **Submit**.

For example, you have mapped three template profiles to a server environment. If you selected a *Test* server environment as your criteria, only the criteria associated with this server environment are displayed. If you close the test environment, the template profiles associated with that test environment are displayed. Once your criteria has been successfully updated, you can select your **Domain**.

Domain

- 1 Click + **Create**.
- 2 Under the **Join Domain Information** tab, do the following and click **Submit**:
 - a Determine whether you want to join a domain or workgroup.
 - b If you select **Yes**, under **Domain**, do the following:
 - i In **Domain Name**, enter a name.
 - ii Enter your Domain administrator name
 - iii Enter your Domain password.
 - iv Reenter the password.
- 3 In **Networks Valid for this Domain**, select a network.

This network was defined in the **Network** configuration tab.

4 Click **Submit**.

For example, you want to associate your virtual machines in a Production environment in a location to be registered on this domain.

Customization Template

This template is used to associate an amount of computer resources to a virtual machine as part of the provisioning process. Lifecycle Manager uses the template to apply to correct levels of the resources.

- 1 Click + **Create**.
- 2 Under the **Template Name** tab, enter a template name and click **Next**.
The end user sees this name, so you should create a logical name.
- 3 Under the **Memory Information** tab, enter the appropriate information in the following fields and click **Next**:
 - **Memory Reservation (MB) (Guaranty)**

- **Memory Limit/Size (MB) (Desired, -1 to disable)**

- **Memory Shares**

The options are the following:

- **Low**
- **Medium**
- **High**

- 4 Under the **CPU Information** tab, enter the appropriate information in the following fields and click **Next**:

- **CPU Reservation (MHz) (Guaranty)**
- **CPU Limit (MHz) (Desired, -1 to disable)**
- **CPU Count**
- **CPU Shares**

Under the **Disk Information** tab, in **Disk Shares**, enter (or select) your disk share (**low**, **medium**, or **high**) and click **Submit**.

For example, you create a custom template called Standard. You would use this template to associate a performance level under the **Criteria** tab. Once your customization template has been successfully updated, click the **Criteria** tab.

Catalog Options for Administrators

The IT Administrator can change the attributes of a virtual machine in the **Catalog** tab.

- 1 Click the **Catalog** tab.
- 2 In the left pane, select a requested virtual machine.
- 3 On the right pane, the following buttons appear:

- **Edit** – Allows you to modify provisioning and decommissioning dates.
 - i Select a machine and click **Edit**.
 - ii Under **Request to Edit**, enter the new start and end dates and times.
 - i Click **Submit**.
- **Change State** – Allows you to move requests across different processes in the lifecycle. This is a feature that can be used by VMware support to help with troubleshooting.



CAUTION Administrators should use caution when making state changes. If they change state of a request it could inadvertently move the request to an undesirable state

- i In **New State**, using the drop-down menu, select a state.
 - ii Enter a required comment and click **Submit**.
- **Change Rights** – this allows the administrator to change what groups or users have the access to control or view virtual machines.
 - i Under **New Request**, enter or select a virtual machine and click **Next**.
 - ii Under **Requestor**, enter or select a group (for example, admins).
 - iii Under **Groups**, select the appropriate group in **VM Control by** and **VM View by**.
 - iv Enter a comment and click **Submit**.
 - **Delete Request** – Allows you to remove requested machines or existing machines from the system.

In **Request**, enter or select a virtual machine request to delete and click **Submit**.

User/Technical User

When Users log on to Lifecycle Manager, only the following tabs are displayed:

- **Catalog**

Under this tab, Users can do the following:

 - Request new virtual machines
 - Request a decommission date

- Change existing virtual machines
- Request an extension for virtual machines that are close to being decommissioned
- **Requests**

Under this tab, Users can see a list of virtual machines that they created. A user can also control or delegate control over existing machines.

To request a new virtual machine

- 1 Click the **Catalog** tab.
- 2 Under **Virtual Machine Catalog**, click **+Request**, which displays following tabs:
 - **Provisioning & decommissioning**
 - **User Information**
 - **VM parameters**
 - **Administrator additional information**

Provisioning and Decommissioning Tab

- 1 In the **Planning** section, select **Yes** or **No** for the following:
 - **Set commissioning date?**

If you select **Yes**, you can set a provisioning date and time. This option is useful when you want to provision a virtual machine in the future.
 - **Set decommissioning date?**

If you select **Yes**, you can set a decommission date and time.
- 2 In the **Group authorizations** section, select the options for the following and click **Next**:
 - **VM control by**

If you leave the field blank, only you have control. If you select **Groups**, Lifecycle Manager does a lookup for groups in your directory. If you select **Users**, Lifecycle Manager looks up the user accounts in your directory.
 - **Control group**

This option allows you to access power operations through the user interface.

- **VM view By**

If you select **Groups**, all the groups in your directory can see the virtual machines. If you select **Users**, only the Users can see them.

- **View group**

If the virtual machine is on, this option allows you to do an RDP session, but it has no power operations.

User Information Tab

In the **User Information** section, select options for the following criteria:

- **Location**
- **Organization**
- **Server environment**
- **Service level**
- **Performance**

These are criteria that have been created by the IT Administrator.

VM Parameters Tab

In the **Virtual machine information** tab, do the following and click **Submit**:

- 1 In **Server Type**, select your server type
- 2 In **Start Virtual Machine**, select **Yes** or **No** to determine whether you want to start your virtual machine during the provisioning process.

Options that the User sees for the server types depends on how template profiles are mapped. For more information, see Template Profile.

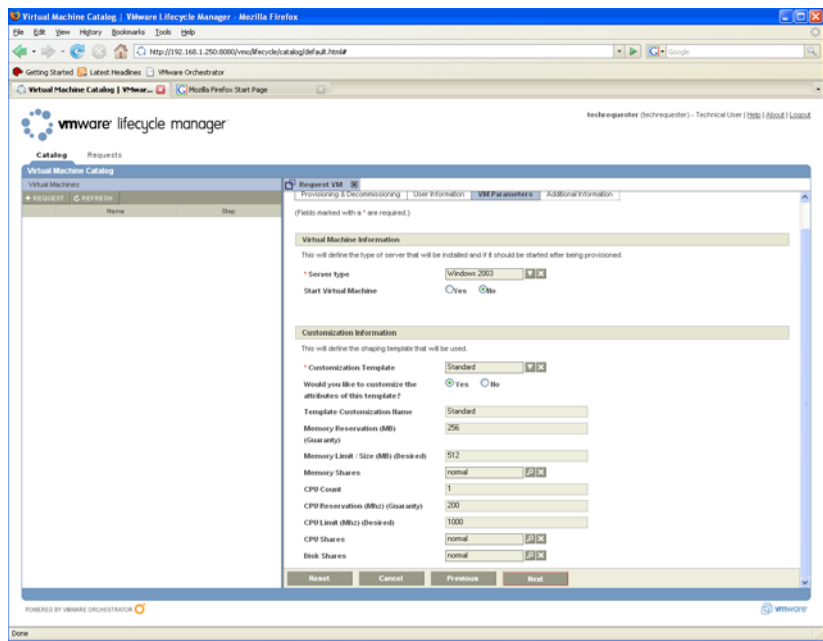
Technical User

The Technical User is an advanced User. The difference is that as part of the request process, the technical user has the ability to select a server environment (using the template profile) but also has an option to customize the amount of CPU, memory, and shares for the virtual machine.

- 1 Log on as the Technical User.

You will see the same pages as a User until the **Request VM** tab.

- 2 In this tab, in the **Customization Information** tab, select **Yes**.
A list of modifiable shaping attributes appears.
- 3 Changes the attribute values as necessary and click **Next**.
- 4 In the **Customization information** tab, select a shaping template.
- 5 Select **Yes** or **No** to determine whether you would change the attributes of this shaping template.
- 6 If you select **Yes**, the attributes for the customization template appear. You can modify the attributes and click **Next**.



Administrator Additional Information Tab

- 1 In the **Comment** field, enter some additional information about the virtual machine creating (for example, **Test machine for firewall software**).
- 2 Click **Submit**.

The machine you just submitted is displayed in the left pane. To see additional details for this machine in the right pane, you need to select it. To see a list of all the machines you have requested, click the **Request** tab.

Extending and Decommissioning Virtual Machines

You can also extend the life of a virtual machine. This option is useful when you have a virtual machine that is reaching its decommissioning date, but you still need this machine.

To extend the life of a virtual machine

- 1 In the **Catalog** tab, select the virtual machine.
- 2 In the right pane, click **+Extension**.

To decommission a virtual machine

- 1 In the **Catalog** tab, select the virtual machine.
- 2 In the right pane, click **-Decommission**.

Approver

When Approvers log on to Lifecycle Manager, in addition to seeing the **Catalog** and **Request** tabs, this role can also see the **Approvals** tab. Under this tab, under the left pane, is a list of requested virtual machines that are waiting to be approved. Their substate **Waiting for approval**.

The Approves can do the following:

- **Receive requests for new virtual machines** – The request is presented with the fixed cost of the virtual machine, so that the approver can determine the cost per day of using the machine.
- **Approve or reject requests** – Decisions are based on the following factors:
 - Requestor name
 - Requestor department
 - Project
 - Deployment criteria
 - Baseline costs
- Approve requests for extensions and changes
- Change the naming convention for virtual machines
- Change the guest OS name.

Approval Tab

The tasks under this tab are as follows:

To approve or reject a request

- 1 Log on as the Approver.
- 1 Select a requested machine from the left pane that is waiting for approval
The details about this machine appear on the right pane.
- 2 Click **✓ Approve Request** or **X Reject Request** as appropriate.
- 3 In the **Approve Server Provisioning** tab, under **Approval**, enter or select the provisioning to approve.
- 4 Enter a comment.
- 5 Click **Submit**.

If you log on to your Virtual Infrastructure Client, you will see this approved provision in the list.

Now, the request for the machine has been approved, and Lifecycle Manager determines whether provisioning of the virtual machine can start with the current information. If information is missing, the requested machine has a status of **Waiting for Placement**.

To change the naming convention

- 1 Click the **Approvals** tab.
In the right pane, you can see that a requested machine is waiting for approval.
- 2 Under **Approve Request**, click **Change VM name**.
- 3 In **Enter name**, enter the new naming convention for your requested machines and click **Next**.

IT Staff can change the naming convention changes made by the Approver.

To change the guest operating system name

- 1 Click the **Approvals** tab.
In the right pane, you can see that a requested machine is waiting for approval.
- 2 Under **Approve Request**, click **Change guest OS Name**.
This is the operating system that is running inside the virtual machine.
- 3 In **Guest name**, enter the new guest OS name and click **Submit**.

IT Staff

IT staff is notified by email about new requests, and this email contains a link to the request. If the choice of criteria for a request is not resolved by one solution, the IT staff member can choose between the available options or provide the missing placement or configuration information to complete the request. Choosing **Next** automatically proposes the best choice.

This role does the following:

- Manually places approved virtual machines
- Approves or rejects requests to extend the lease period of a virtual machine.
- Creates a new naming convention on the **Placement** tab.

Placement Tab

To complete placement when information is missing

- 1 Log on as IT Staff.
- 1 Click on the **Placement** tab.

This page comprises the following buttons:

- **Verify** – Verifies that the virtual machine was correctly provisioned. Errors occur after the placement process is complete.
- **Retry** – Allows you to repeat the provisioning process if sysprep failed to create the virtual machine.
- **Setup** – Allows you to manually complete the placement process.

- 2 Click **Setup**.
- 3 Under the **Mapping** tab, under **Automatically mapping**, check if there is missing information.

If information is missing, Lifecycle Manager - Standard does not know where to map this virtual machine request.

- 4 Click the **Search** button next to the field with missing information.
- 5 In the dialog box, options appear for the missing item.
- 6 Select the best option and click **Select**.
- 7 Under **Mapping explanation**, enter a comment and click **Submit**.

The information is now complete and provisioning can begin.

To create a new naming convention in the Placement tab

- 1 In the **Configuration** tab, click **Edit Base Name**.
- 2 Under **VM Naming Configurations**, in the **Name** field, enter your new naming convention.
- 3 Under **Allow to change name?**, select **Yes**.

Selecting **Yes** allows the IT Staff to change the name of all virtual machines using the new naming convention.

Reports

Generating Reports

In the **Reports** tab, you can enter date-based queries. For example, you can ask for the number of new machine requests in the last month.

The following roles can access the **Reporting** tab:

- **Approver**
- **IT Staff**
- **IT Administrator**

To access reports

- 1 Select a report.
- 2 Define the time frame.
- 3 Click **Submit**.

You can download the report as an XML file by selecting the report and clicking **Download**.

Archiving

Virtual machines are archived if, when configuring the global settings, under the **Lifecycle Skipping Step** tab, the IT Administrator selected **Yes**.

Troubleshooting

7

This chapter covers some of the most common troubleshooting issues and the issues listed under the **Troubleshooting** tab.

How Do I Import Virtual Machines that Exist in ESX Server?

These virtual machines are not being physically imported into Lifecycle Manager, rather they are being registered. They will continue to exist in Virtual Center or ESX Server.

- 1 Log onto Lifecycle Manager and click the Troubleshooting tab.
- 2 Under VM information, in VM to import, enter the name of the virtual machine.
- 3 Under Additional information, add a comment.
- 4 Click Next.
- 5 Under Provisioning & Decommissioning, determine whether you want to set a decommissioning date.
- 6 If you select Yes, you need to enter a date.
- 7 Under Group Authorizations, enter information or make selections in the following fields:
 - VM control by
 - Control group
 - VM view by

- View group
- 8 Click Next.
 - 9 Under VM parameters, enter information in the following fields:
 - Unit cost
 - Setup cost
 - 10 Click Submit.

How Do I Relink a Token that Lost Link with its Virtual Machine?

If the provisioning request was available with a virtual machine, but this virtual machine was not registered in VirtualCenter. The workflow can only connect to the virtual machine after it is registered again. VirtualCenter Support can ask unregister and register all virtual machines, and this workflow manages this process.

- 1 Log on to Lifecycle Manager.
- 2 Click the **Troubleshooting** tab.
- 3 In **Would you relink request?**, select **Yes** or **No**.

How do I Import Virtual Machines?

To import virtual machines, you need to choose a virtual machine array.

- 1 Log onto Lifecycle Manager - Standard.
- 2 Click the **Troubleshooting** tab.
- 1 In **VM Information**, under **VM to Import**, enter the name of your virtual machine.
- 2 Under **Additional Information**, enter a comment and click **Next**.
- 3 Under **Provisioning & Decommissioning**, under **Planning**, determine whether you want to set a decommissioning date.
- 4 Under **Group Authorization**, using the drop-down menu, select or enter the appropriate information for the following fields:
 - **VM control by**
 - **Control group**

- **VM view by**
 - **View group**
- 5 Click **Next**.
 - 6 Under **VM Parameters**, under **Cost**, enter information in the following fields:
 - **Unit cost**
 - **Setup cost**

How Do I Import Virtual Machines from the Resource Pools?

You choose a resource pool and the workflow imports all virtual machines associated with resource pool.

- 1 Log on to Lifecycle Manager - Standard.
- 2 Click the **Troubleshooting** tab.
- 3 Under **VM Important Information**, enter information in the following fields:
 - a In **Resource Pool to Import**, enter the name of a resource pool.
 - b Under **Additional Information**, enter a comment.
- 4 Click **Next**.
- 5 Under **Provisioning & Decommissioning**, under **Group Authorizations**, enter information or make selections in the following fields:
 - **VM control by**
 - **Control group**
 - **VM view by**
 - **View group**
- 6 Click **Next**.
- 7 Under **VM parameters**, enter information in the following fields:
 - **Unit cost**
 - **Setup cost**
- 8 Under **User Information**, in **Contact**, enter your contact email address.
- 9 Click **Next**.

- 10 Under **VM parameters**, enter information in the following fields:
 - **Unit cost**
 - **Setup cost**
- 11 Click **Submit**.

How Do I Reset the Appliance to “Factory Settings”?

- 1 Log in to the appliance's shell (using ssh on port 22 or console)
- 2 Open a terminal and run the following command:

```
sudo /opt/scripts/mrproper clean
```



CAUTION This will delete system logs!

- 3 To be presented with the initial configuration script on your next boot, but not delete any log file, issue the following command instead:

```
sudo rm /home/vmware/.initialconfigrun
```

How Do I Restart the VMO Server from the Command Line?

Run the following command:

```
sudo /etc/init.d/vmod restart
```

How do I Restart the Web Configuration Server from the Command Line?

Run the following command to restart the Web Configuration server:

```
sudo /etc/init.d/jettyd restart
```


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