Installing and Configuring vCenter Multi-Hypervisor Manager

vCenter Server 5.1
vCenter Multi-Hypervisor Manager 1.1.2

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Installing and Configuring vCenter Multi-Hypervisor Manager

Installing and Configuring vCenter Multi-Hypervisor Manager provides information about how to install, upgrade, repair, configure, and uninstall vCenter Multi-Hypervisor Manager on your system.

Installing and Configuring vCenter Multi-Hypervisor Manager provides detailed step-by-step information about how to set up and configure vCenter Multi-Hypervisor Manager so that you can manage multi-hypervisor virtual environments by using the vSphere Client.

Intended Audience

This information is intended for vSphere system administrators who want to use vCenter Multi-Hypervisor Manager to manage third-party hypervisors with vCenter Server.

VMware Technical Publications Glossary

VMware Technical Publications provides a glossary of terms that might be unfamiliar to you. For definitions of terms as they are used in VMware technical documentation, go to http://www.vmware.com/support/pubs.
Introduction to vCenter Multi-Hypervisor Manager

vCenter Multi-Hypervisor Manager is an installable vCenter Server component that lets you manage heterogeneous virtual environments. After you install and configure vCenter Multi-Hypervisor Manager, you can use the vSphere Client to manage both VMware and third-party hypervisors such as Microsoft Hyper-V.

For more information about the key features of vCenter Multi-Hypervisor Manager, see Managing Multi-Hypervisor Environments with vCenter Server.

Figure 1-1. vCenter Multi-Hypervisor Manager Components and Definitions

vCenter Multi-Hypervisor Manager Server

A component that enables the management of third-party hypervisors in vCenter Server. The vCenter Multi-Hypervisor Manager server can reside on the same machine as vCenter Server if it runs on a Windows OS, or on a remote machine.

Third-Party Hypervisor

A hypervisor developed by a vendor different than VMware. With vCenter Multi-Hypervisor Manager 1.1, you can manage Microsoft Hyper-V hypervisors. See “vCenter Multi-Hypervisor Manager Software Requirements,” on page 9.
vCenter Multi-Hypervisor Manager Plug-In

The client component of vCenter Multi-Hypervisor Manager. It is installed as a plug-in to the vSphere Client and provides the graphical interface for managing third-party hypervisors in the vSphere Client.

Third-Party Hosts Inventory

An inventory tree in vCenter Server where you can manage third-party hypervisors. When installed and configured, vCenter Multi-Hypervisor Manager provides an inventory of third-party hosts. You can access the inventory by clicking the vCenter Multi-Hypervisor Manager icon under Inventory in the vSphere Client. You can add third-party hypervisors to this inventory and perform management tasks such as create new virtual machines, change the power state of virtual machines, change the hardware and software configuration of virtual machines, and so on.
Prerequisites for Installing and Running vCenter Multi-Hypervisor Manager

To install and run vCenter Multi-Hypervisor Manager, you need to verify that your system meets the requirements for the product. Make sure that you have access to user accounts with the necessary privileges and that the components of your multi-hypervisor manager environment can communicate with the vCenter Multi-Hypervisor Manager server and plug-in.

This chapter includes the following topics:
- “vCenter Multi-Hypervisor Manager Software Requirements,” on page 9
- “vCenter Multi-Hypervisor Manager Hardware Requirements,” on page 10
- “Authentication Credentials and Required Privileges,” on page 11
- “Required Ports for vCenter Multi-Hypervisor Manager,” on page 11
- “Choosing a Connection Protocol for Communication Between vCenter Multi-Hypervisor Manager and Hyper-V Hosts,” on page 13

vCenter Multi-Hypervisor Manager Software Requirements

To manage third-party hypervisors with vCenter Multi-Hypervisor Manager, verify that your environment meets the software requirements for installing and running the vCenter Multi-Hypervisor Manager server and plug-in.

To clone virtual machines from Hyper-V hosts to ESX/ESXi hosts, you need access to a system where a supported version of vCenter Converter Standalone server is installed and running.

To communicate with vCenter Converter Standalone, vCenter Multi-Hypervisor Manager requires TCP/IP network connection. The vCenter Converter Standalone must be installed in client-server mode so that the vCenter Multi-Hypervisor Manager can connect to it over TCP/IP network. For more information on how to perform a client-server installation of vCenter Converter Standalone, see the VMware vCenter Converter Standalone User’s Guide.

Table 2-1. Software Requirements for vCenter Multi-Hypervisor Manager

<table>
<thead>
<tr>
<th>Virtual Environment Component</th>
<th>Software Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>vCenter Server systems</td>
<td>vCenter Server 5.1.x and vCenter Server 5.5</td>
</tr>
<tr>
<td>Third-party hypervisors</td>
<td>- Microsoft Hyper-V Server 2012</td>
</tr>
<tr>
<td></td>
<td>- Microsoft Hyper-V for Windows Server 2012</td>
</tr>
<tr>
<td></td>
<td>- Microsoft Hyper-V Server 2008 R2</td>
</tr>
<tr>
<td></td>
<td>- Microsoft Hyper-V for Windows Server 2008 R2</td>
</tr>
<tr>
<td></td>
<td>- Microsoft Hyper-V for Windows Server 2008</td>
</tr>
</tbody>
</table>
Table 2-1. Software Requirements for vCenter Multi-Hypervisor Manager (Continued)

<table>
<thead>
<tr>
<th>Virtual Environment Component</th>
<th>Software Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>vCenter Multi-Hypervisor Manager server</td>
<td>The Windows operating systems that vCenter Server 5.1 supports. For a list of the supported Windows operating systems, see the VMware Compatibility Guide at <a href="http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software&amp;testConfig=17">http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software&amp;testConfig=17</a></td>
</tr>
<tr>
<td>vCenter Multi-Hypervisor Manager plug-in</td>
<td>The Windows operating systems that the vSphere Client 5.5 supports. For a list of the supported Windows operating systems, see the VMware Compatibility Guide at <a href="http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software&amp;testConfig=17">http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software&amp;testConfig=17</a></td>
</tr>
<tr>
<td>vCenter Converter Standalone server</td>
<td>vCenter Converter Standalone 5.5.0</td>
</tr>
</tbody>
</table>

vCenter Multi-Hypervisor Manager Operational Limits

vCenter Multi-Hypervisor Manager can manage up to 50 third-party hypervisors with up to 1,000 virtual machines running.

vCenter Multi-Hypervisor Manager Hardware Requirements

To manage multi-hypervisor environments with vCenter Multi-Hypervisor Manager and vCenter Server, verify that the system on which you want to install the vCenter Multi-Hypervisor Manager server meets the hardware requirements.

The minimum memory requirements for installing and running vCenter Multi-Hypervisor Manager vary depending on how vCenter Multi-Hypervisor Manager is deployed.

Table 2-2. Minimum Hardware Requirements

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>64-bit processor with two or more logical cores, each with a speed of 2GHz</td>
</tr>
<tr>
<td>Network</td>
<td>LAN</td>
</tr>
<tr>
<td>Storage</td>
<td>1GB</td>
</tr>
<tr>
<td>Memory</td>
<td>2GB RAM in addition to the memory requirements of vCenter Server, if vCenter Multi-Hypervisor Manager and vCenter Server are installed on the same machine</td>
</tr>
<tr>
<td></td>
<td>4GB RAM, if vCenter Multi-Hypervisor Manager is installed on a machine different from vCenter Server</td>
</tr>
</tbody>
</table>
Authentication Credentials and Required Privileges

The installer wizard prompts you to provide authentication credentials for the various components of your multi-hypervisor environment. To install vCenter Multi-Hypervisor Manager, you must use user accounts with sufficient rights and permissions for each component so that the installation and setup process is completed successfully.

Table 2-3. Authentication Credentials Required to Install vCenter Multi-Hypervisor Manager

<table>
<thead>
<tr>
<th>Required Account</th>
<th>Minimum Privileges and Rights for the Account</th>
<th>Authentication Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>User account for the vCenter Server system</td>
<td>Administrator privileges</td>
<td>■ You need to provide the account on the vCenter Server page of the installer wizard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ The account is used for registering the vCenter Multi-Hypervisor Manager server as an extension with vCenter Server.</td>
</tr>
<tr>
<td>User account for the machine on which the vCenter Multi-Hypervisor Manager server is installed</td>
<td>Log on as a service and all required permissions to run Windows Remote Management commands</td>
<td>■ You need to provide the account on the Credentials for the vCenter Multi-Hypervisor Manager service page of the installer wizard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ The account is used for running the vCenter Multi-Hypervisor Manager service on the local machine.</td>
</tr>
<tr>
<td>User account for the machine on which the vCenter Converter Standalone server is installed</td>
<td>Sufficient privileges to run services and applications in the operating system of the machine where the vCenter Converter Standalone server is installed and running</td>
<td>■ You need to provide the account on the Converter Standalone Server Settings page of the installer wizard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ The account is used for authenticating with the machine on which the vCenter Converter Standalone server is installed and running.</td>
</tr>
</tbody>
</table>

For more information about the privileges required to manage virtual machines in the third-party hosts inventory, see Managing Multi-Hypervisor Environments with vCenter Server. For privileges that you might need for converting virtual machines, see VMware vCenter Converter Standalone User’s Guide.

Required Ports for vCenter Multi-Hypervisor Manager

vCenter Multi-Hypervisor Manager uses different ports to communicate with vCenter Server, the vSphere Client, and the third-party hypervisors. You can set most of the port numbers while installing the vCenter Multi-Hypervisor Manager server.

Communication between the vCenter Multi-Hypervisor Manager server and plug-in is established through the vCenter Server proxy.
### Table 2-4. vCenter Multi-Hypervisor Manager Default Ports

<table>
<thead>
<tr>
<th>Component</th>
<th>Default Port Number</th>
<th>Protocol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vCenter Server proxy</td>
<td>80</td>
<td>HTTPS</td>
<td>Used as an endpoint for all outgoing communication from the vCenter Multi-Hypervisor Manager plug-in to the vCenter Multi-Hypervisor Manager server.</td>
</tr>
<tr>
<td>vCenter Multi-Hypervisor Manager server</td>
<td>8090</td>
<td>HTTPS</td>
<td>Used for communication between the vCenter Multi-Hypervisor Manager server and plug-in. The component that connects to this endpoint is the vCenter Server proxy.</td>
</tr>
<tr>
<td>HTTP server</td>
<td>8088</td>
<td>HTTP</td>
<td>Used by the vCenter Multi-Hypervisor Manager server to download the vCenter Multi-Hypervisor Manager plug-in from the HTTP server. The component that connects to this endpoint is the vCenter Server proxy.</td>
</tr>
<tr>
<td>WinRM server 1.1 and earlier</td>
<td>80</td>
<td>HTTP</td>
<td>Used for communication between the vCenter Multi-Hypervisor Manager server and the Hyper-V hosts.</td>
</tr>
<tr>
<td></td>
<td>443</td>
<td>HTTPS</td>
<td></td>
</tr>
<tr>
<td>WinRM server 2.0</td>
<td>5985</td>
<td>HTTP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5986</td>
<td>HTTPS</td>
<td></td>
</tr>
<tr>
<td>vCenter Converter Standalone server</td>
<td>443</td>
<td>HTTPS</td>
<td>Used for communication between the vCenter Multi-Hypervisor Manager server and the vCenter Converter Standalone server. For more information about the ports used by the vCenter Converter Standalone server, see the VMware vCenter Converter Standalone User’s Guide.</td>
</tr>
</tbody>
</table>

To use a secure connection, you can modify the default port settings and assign HTTPS ports to the vCenter Multi-Hypervisor Manager components.
Choosing a Connection Protocol for Communication Between vCenter Multi-Hypervisor Manager and Hyper-V Hosts

When you configure the ports for communication between vCenter Multi-Hypervisor Manager and the Hyper-V hosts, you can provide ports used for HTTP or HTTPS connection. You can make your decision based on the level of security that you require in your virtual environment.

vCenter Multi-Hypervisor Manager server communicates with Hyper-V hosts by using Microsoft Windows Remote Management standards and protocols. For more information, see Microsoft Windows Remote Management documentation.

For information about how to configure Hyper-V hosts for remote management, see Hyper-V documentation.

Differences Between Using an HTTP or an HTTPS Connection

When deciding whether to use an HTTP or HTTPS connection between vCenter Multi-Hypervisor Manager and Hyper-V hosts, you need to consider the differences between the connection protocols.

If you use HTTP, all authentication and management traffic data exchanged between the vCenter Multi-Hypervisor Manager and the Hyper-V host is encrypted but passes through an unencrypted channel. Management traffic data consists of the operations you perform in the vCenter Multi-Hypervisor Manager, such as powering on a virtual machine, creating a virtual machine, adding a Hyper-V host to the third-party hosts inventory, and so on.

If you use HTTPS, all authentication and management data exchanged between the vCenter Multi-Hypervisor Manager server and the Hyper-V host is encrypted by and passing through an encrypted channel. In contrast to HTTP, when you use an HTTPS connection, the identity of the parties involved in the communication is always verified by using all properties of their SSL certificates.
Enable WinRM over HTTP on a Hyper-V Host

To have an HTTP connection between a Hyper-V host and the vCenter Multi-Hypervisor Manager server, you must enable WinRM over HTTP on the Hyper-V host.

By default, no WinRM listeners are defined on a Hyper-V host. To enable HTTP connection between the Hyper-V host and the vCenter Multi-Hypervisor Manager server, you must define a WinRM listener.

Prerequisites
Log in as an administrator to the Hyper-V host system.

Procedure
1. On the Hyper-V host system, open a command prompt.
2. Run the following command:
   ```bash
   winrm quickconfig
   ```
   You successfully enabled WinRM over HTTP on the Hyper-V host.

Enable WinRM over HTTPS on a Hyper-V Host

To have an HTTP connection between a Hyper-V host and the vCenter Multi-Hypervisor Manager server, you must enable WinRM over HTTPS on the Hyper-V host.

By default, no WinRM listeners are defined on a Hyper-V host. To enable the communication via HTTPS between the Hyper-V host and the vCenter Multi-Hypervisor Manager server, you must define a WinRM listener.

You can define a WinRM listener that uses an automatically generated self-signed certificate.

Prerequisites
- Verify that you have the Web Server (IIS) role enabled with the Internet Information Services Management Console components.
- Log in as an administrator to the Hyper-V host system.

Procedure
1. Log in to the Hyper-V host.
2. Click Start > Administrative Tools > Internet Information Services (IIS) Manager.
3. From the Connections tree, select the node that corresponds to the Hyper-V host and double-click Server Certificates.
4. In the Actions pane, click Create Self-Signed Certificate.
5. In the Create Self-Signed Certificate dialog box, type a name for the certificate and click OK.
6. In the Server Certificates pane, right-click the name of the newly created self-signed certificate, and select View.
7. On the Details tab, select Thumbprint and copy the certificate thumbprint.
8. In a command line window, run the following command:
   ```bash
   winrm create winrm/config/Listener?Address=*+Transport=HTTPS @{CertificateThumbprint="thumbprint"}
   ```
   Here thumbprint is the certificate thumbprint of the self-signed certificate.
You successfully enabled HTTPS on the Hyper-V host.
Installing vCenter Multi-Hypervisor Manager

To manage third-party hypervisors in vCenter Server, you must install the vCenter Multi-Hypervisor Manager server and plug-in for the vSphere Client. When installed, vCenter Multi-Hypervisor Manager provides a separate inventory for third-party hypervisors in vCenter Server, which you can manage with the vSphere Client.

- **vCenter Multi-Hypervisor Manager Deployment Schemes** on page 18
  You can install the vCenter Multi-Hypervisor Manager server on the same machine as vCenter Server if it runs on a Windows OS, or on a remote machine. In both cases, the vCenter Multi-Hypervisor Manager server communicates with the vSphere Client through the vCenter Server proxy.

- **Install the vCenter Multi-Hypervisor Manager Server** on page 18
  To be able to manage third-party hypervisors with vCenter Server, you must install the vCenter Multi-Hypervisor Manager server. You can install the vCenter Multi-Hypervisor Manager server on the same machine as vCenter Server if it runs on a Windows OS, or on a remote machine.

- **Install the vCenter Multi-Hypervisor Manager Plug-In for the vSphere Client** on page 20
  After you install the vCenter Multi-Hypervisor Manager server, you must install the vCenter Multi-Hypervisor Manager plug-in for the vSphere Client. The vCenter Multi-Hypervisor Manager plug-in enhances the user interface of the vSphere Client with the third-party hosts inventory view and exposes the third-party hypervisor management capabilities of the vCenter Multi-Hypervisor Manager server.
vCenter Multi-Hypervisor Manager Deployment Schemes

You can install the vCenter Multi-Hypervisor Manager server on the same machine as vCenter Server if it runs on a Windows OS, or on a remote machine. In both cases, the vCenter Multi-Hypervisor Manager server communicates with the vSphere Client through the vCenter Server proxy.

Figure 3-1. Communication Between the vCenter Multi-Hypervisor Manager Server and the vSphere Client Is Established Through the vCenter Server Proxy

If you decide to install the vCenter Multi-Hypervisor Manager server and vCenter Server on separate machines, verify that the vCenter Server system has network access to the machine where you want to install the vCenter Multi-Hypervisor Manager server and that firewalls do not block the communication between the vCenter Server system and the vCenter Multi-Hypervisor Manager server.

Install the vCenter Multi-Hypervisor Manager Server

To be able to manage third-party hypervisors with vCenter Server, you must install the vCenter Multi-Hypervisor Manager server. You can install the vCenter Multi-Hypervisor Manager server on the same machine as vCenter Server if it runs on a Windows OS, or on a remote machine.

Prerequisites

- Verify that you have an account with administrative privileges on the vCenter Server system.
- Verify that the Windows Remote Management service is running and configured on machine where you want to install the vCenter Multi-Hypervisor Manager server.
- Verify that your user account has sufficient rights to install Visual C++ 2008 Redistributable Package. The vCenter Multi-Hypervisor Manager installer starts the installation of the Visual C++ 2008 Redistributable Package, if not installed.
- Log in as a member of the Administrators group on the host machine where you are installing the vCenter Multi-Hypervisor Manager server.
- If you want to use a custom certificate for vCenter Multi-Hypervisor Manager, verify that all the necessary certification authorities are present in the Trusted Root Certification Authorities for the Local Computer certificate store on the system where you want to install the vCenter Multi-Hypervisor Manager server.

Procedure

1. Double-click the executable file of the vCenter Multi-Hypervisor Manager server installer.
   
   If the Windows system where you install vCenter Multi-Hypervisor Manager server has User Account Control enabled, use the Run as administrator option from the context menu to run the vCenter Multi-Hypervisor Manager installer executable.

2. Review the Welcome page of the installer and click Next.
3 Review the end-user patent agreement and click **Next** to accept it.

4 Review the license agreement, accept it, and click **Next**.

5 Select an installation directory for the vCenter Multi-Hypervisor Manager server and click **Next**.

6 Select a method for providing a vCenter Multi-Hypervisor Manager certificate and click **Next**.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automatically generate a certificate</strong></td>
<td>Select this option to use an automatically generated certificate for vCenter Multi-Hypervisor Manager. The installer wizard generates the certificate.</td>
</tr>
<tr>
<td><strong>Provide a certificate file</strong></td>
<td>Select this option to import a certificate for vCenter Multi-Hypervisor Manager from a file located on your system.</td>
</tr>
</tbody>
</table>

7 On the Certificate File Selection page, browse to the certificate file on your system, type the private key encryption password, if any, and click **Next**.

The Certificate File Selection page appears only if you have decided to provide the certificate file.

8 On the vCenter Server page, type the connection properties of your vCenter Server system and click **Next**.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IP address or host name</strong></td>
<td>The IP address or the host name of the vCenter Server system.</td>
</tr>
<tr>
<td><strong>Port</strong></td>
<td>The port number for connecting to the vCenter Server system.</td>
</tr>
<tr>
<td><strong>User name</strong></td>
<td>An administrator user name for the vCenter Server system. The user account will be granted administrator privileges on the root of the third-party hostWs inventory tree.</td>
</tr>
<tr>
<td><strong>Password</strong></td>
<td>The password for the administrator account for the vCenter Server system.</td>
</tr>
</tbody>
</table>

9 On the vCenter Server SSL certificate confirmation page, view the details of the certificate, accept the SSL certificate of vCenter Server, and click **Next**.

The vCenter Server SSL certificate confirmation page appears only if you have selected the option to use an automatically generated certificate.

10 On the Credentials for the vCenter Multi-Hypervisor Manager service page, type the credentials of a user account that has sufficient rights to run the VMware vCenter Multi-Hypervisor Manager service and has full permissions to run Windows Remote Management commands, and click **Next**.

11 Type the vCenter Multi-Hypervisor Manager server connection properties, and click **Next**.

   a In the **HTTP server port** text box, leave the default port 8088 for the HTTP server from where the vCenter Multi-Hypervisor Manager server downloads the vCenter Multi-Hypervisor Manager plug-in.

   The HTTP server is installed together with the vCenter Multi-Hypervisor Manager server. Change the default value of the port if another application uses it.

   b In the **vCenter Multi-Hypervisor Manager server port** text box, type the port number for the vCenter Multi-Hypervisor Manager server.

   Change the default value of the port if another application uses it.

   c Select how the vCenter Multi-Hypervisor Manager server will be identified on the network.

   The IP address or the host name that you select must be reachable by the vCenter Server system and by the machine that runs the vSphere Client instance where you plan to install the vCenter Multi-Hypervisor Manager plug-in.
12 (Optional) Select **Use a vCenter Converter Standalone server**, type the connection properties for the vCenter Converter Standalone server, and click **Next**.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address or host name</td>
<td>The IP address or the host name of the vCenter Converter Standalone server.</td>
</tr>
<tr>
<td>Port</td>
<td>The port number for connecting to the vCenter Converter Standalone server.</td>
</tr>
<tr>
<td>User name</td>
<td>A user name for the system on which the vCenter Converter Standalone server is running.</td>
</tr>
<tr>
<td>Password</td>
<td>The password for the user account for the system where the vCenter Converter Standalone server is running.</td>
</tr>
</tbody>
</table>

13 On the Converter Standalone Certificate Confirmation page, view the details of the certificate, and accept the SSL certificate of the vCenter Converter Standalone server and click **Next**.

The Converter Standalone Certificate Confirmation page appears only if you have decided to use automatically generated certificates and a vCenter Converter Standalone server for virtual machine conversions.

14 Click **Install**.

15 When the installation completes, click **Finish**.

The vCenter Multi-Hypervisor Manager server is successfully installed and running.

**What to do next**

Install the vCenter Multi-Hypervisor Manager plug-in for the vSphere Client.

**Install the vCenter Multi-Hypervisor Manager Plug-In for the vSphere Client**

After you install the vCenter Multi-Hypervisor Manager server, you must install the vCenter Multi-Hypervisor Manager plug-in for the vSphere Client. The vCenter Multi-Hypervisor Manager plug-in enhances the user interface of the vSphere Client with the third-party hosts inventory view and exposes the third-party hypervisor management capabilities of the vCenter Multi-Hypervisor Manager server.

**Prerequisites**

- Verify that the vCenter Multi-Hypervisor Manager server is installed and running.
- Log in as a member of the Administrators group on the host machine where you are installing the vCenter Multi-Hypervisor Manager plug-in.

**Procedure**

1. Using the vSphere Client, connect to the vCenter Server system.
2. Select **Plug-ins > Manage Plug-ins**.
3. Click **Download and Install** for the VMware vCenter Multi-Hypervisor Manager plug-in.
   The installation wizard for the vCenter Multi-Hypervisor Manager client plug-in opens.
4. Review the end-user patent agreement and click **Next** to accept it.
5. Review the license agreement, accept it, and click **Next**.
6. Click **Install**.
7 When the installation completes, click **Finish**.

8 Close the Plug-in Manager window.

The vCenter Multi-Hypervisor Manager plug-in is installed. The vCenter Multi-Hypervisor Manager icon appears under Inventory in the vSphere Client.
During the installation process, you must configure vCenter Multi-Hypervisor Manager so that it works with the components of your virtual environment. You need to provide connection properties and authentication credentials, select certificates for authentication, and set communication ports. If changes in your virtual environment occur, you might need to reconfigure vCenter Multi-Hypervisor Manager.

Because the vCenter Multi-Hypervisor Manager server does not provide a user interface, you need to run the installer wizard again to modify the initial configuration.

Depending on the settings you want to change, you can repair or upgrade your current vCenter Multi-Hypervisor Manager server.

When you repair vCenter Multi-Hypervisor Manager server, you can modify most of the settings that are configured during installation process. You can repair your current vCenter Multi-Hypervisor Manager server by using the installer wizard of the same version.

When you upgrade vCenter Multi-Hypervisor Manager server, you can only configure settings for the new features in the later version. For example, when you upgrade vCenter Multi-Hypervisor Manager from version 1.0 to 1.1, the installer wizard lets you configure vCenter Converter Standalone settings.

Table 4-1. Configurable Settings In the Installer Wizard

<table>
<thead>
<tr>
<th>Setting</th>
<th>Install Operation</th>
<th>Upgrade Operation</th>
<th>Repair Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation folder</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Certificate method for authentication with the components of your virtual environment</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Connection properties for the vCenter Server system</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Credentials for authentication with the vCenter Server system</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Credentials for running the vCenter Multi-Hypervisor Manager service</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Port number for the download of the vCenter Multi-Hypervisor Manager plug-in</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Port number for the vCenter Multi-Hypervisor Manager server</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Table 4-1. Configurable Settings In the Installer Wizard (Continued)

<table>
<thead>
<tr>
<th>Setting</th>
<th>Install Operation</th>
<th>Upgrade Operation</th>
<th>Repair Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network identification for the vCenter Multi-Hypervisor Manager server</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Option to enable vCenter Converter Standalone server for virtual machine conversions</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Connection properties for the vCenter Converter Standalone server</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Credentials for authentication with the vCenter Converter Standalone server</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Upgrading vCenter Multi-Hypervisor Manager

When a new version of vCenter Multi-Hypervisor Manager is available, you can upgrade your existing product installation. By upgrading to the latest version of vCenter Multi-Hypervisor Manager, you can ensure that you have access to the latest product features and improvements.

This chapter includes the following topics:
- “Upgrade the vCenter Multi-Hypervisor Manager Server,” on page 25
- “Upgrade the vCenter Multi-Hypervisor Manager Plug-In in the vSphere Client,” on page 26

Upgrade the vCenter Multi-Hypervisor Manager Server

To use the latest features of vCenter Multi-Hypervisor Manager, you need to have the latest version of the product installed on your system. To preserve your vCenter Multi-Hypervisor Manager settings, you can perform an upgrade instead of a full install.

Procedure
1. Double-click the executable file of the vCenter Multi-Hypervisor Manager server installer.
2. Click Yes to confirm the upgrade.
3. Review the Welcome page of the installer and click Next.
4. Review the end-user patent agreement and click Next to accept it.
5. Review the license agreement, accept it, and click Next.
6. (Optional) Select Use a vCenter Converter Standalone server, type the connection properties for the vCenter Converter Standalone server, and click Next.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address or host name</td>
<td>The IP address or the host name of the vCenter Converter Standalone server.</td>
</tr>
<tr>
<td>Port</td>
<td>The port number for connecting to the vCenter Converter Standalone server.</td>
</tr>
<tr>
<td>User name</td>
<td>A user name for the system on which the vCenter Converter Standalone server is running.</td>
</tr>
<tr>
<td>Password</td>
<td>The password for the user account for the system where the vCenter Converter Standalone server is running.</td>
</tr>
</tbody>
</table>
7 On the Converter Standalone Certificate Confirmation page, view the details of the certificate, and accept the SSL certificate of the vCenter Converter Standalone server and click Next.

The Converter Standalone Certificate Confirmation page appears only if you have decided to use automatically generated certificates and a vCenter Converter Standalone server for virtual machine conversions.

8 Click Install.

9 When the upgrade completes, click Finish.

**What to do next**
- For the changes to take effect, restart the vSphere Client, if it is running.
- Upgrade the vCenter Multi-Hypervisor Manager plug-in in the vSphere Client.

**Upgrade the vCenter Multi-Hypervisor Manager Plug-In in the vSphere Client**

To use the latest features of vCenter Multi-Hypervisor Manager, you need to have the latest version of the product installed on your system. After you install or upgrade the vCenter Multi-Hypervisor Manager server, you might need to perform an upgrade of the vCenter Multi-Hypervisor Manager plug-in in the vSphere Client.

**Procedure**

1 Using the vSphere Client, connect to the vCenter Server system.

2 Select Plug-ins > Manage Plug-ins.

3 In the Plug-in Manager window, click Download and Install for the VMware vCenter Multi-Hypervisor Manager plug-in.

4 Click Yes to confirm the upgrade.

5 When the upgrade completes, click Finish.

6 If the Files in Use dialog box appears, select how to proceed and click OK.
   - If you click Cancel, the upgrade is cancelled and the installer wizard closes.

7 Close the Plug-in Manager window.
Repairing
vCenter Multi-Hypervisor Manager

When vCenter Multi-Hypervisor Manager does not work as expected, you might want to repair your existing installation before contacting support or attempting to uninstall. You can also use the repair operation to reconfigure your vCenter Multi-Hypervisor Manager settings.

You can attempt to repair only the vCenter Multi-Hypervisor Manager server. To repair or modify the vCenter Multi-Hypervisor Manager client plug-in, you need to uninstall and install the plug-in.

Repair the vCenter Multi-Hypervisor Manager Server

If vCenter Multi-Hypervisor Manager stops running properly, you can attempt to repair the current product installation. Unlike an uninstall and reinstall operation, a repair preserves your product's settings. Choosing to repair the product from the installer wizard also lets you modify your current vCenter Multi-Hypervisor Manager configuration.

**IMPORTANT** You can run a repair operation only by using the installer file for the version of the vCenter Multi-Hypervisor Manager server that you are attempting to repair.

**Procedure**

1. Double-click the executable file of the vCenter Multi-Hypervisor Manager server installer.
2. Review the Welcome page of the installer and click **Next**.
3. On the Program Maintenance Mode page, select **Repair** and click **Next**.
4. Select a method for providing a vCenter Multi-Hypervisor Manager certificate and click **Next**.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep current certificate settings</td>
<td>Select this option to preserve the current certificate for vCenter Multi-Hypervisor Manager.</td>
</tr>
<tr>
<td>Automatically generate a certificate</td>
<td>Select this option to use an automatically generated certificate for vCenter Multi-Hypervisor Manager. The installer wizard generates the certificate.</td>
</tr>
<tr>
<td>Provide a certificate file</td>
<td>Select this option to import a certificate for vCenter Multi-Hypervisor Manager from a file located on your system.</td>
</tr>
</tbody>
</table>

**CAUTION** If you select **Automatically generate a certificate** or **Provide a certificate file**, your current certificate is replaced. If the installer wizard is cancelled or interrupted before the repair is complete, you might not be able to use vCenter Multi-Hypervisor Manager.
5 On the Certificate File Selection page, browse to the certificate file on your system, type the private key encryption password, if any, and click Next.

The Certificate File Selection page appears only if you have decided to provide the certificate file.

6 On the vCenter Server page, type the connection properties of your vCenter Server system and click Next.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address or host name</td>
<td>The IP address or the host name of the vCenter Server system.</td>
</tr>
<tr>
<td>Port</td>
<td>The port number for connecting to the vCenter Server system.</td>
</tr>
<tr>
<td>User name</td>
<td>An administrator user name for the vCenter Server system. The user account will be granted administrator privileges on the root of the third-party hostW's inventory tree.</td>
</tr>
<tr>
<td>Password</td>
<td>The password for the administrator account for the vCenter Server system.</td>
</tr>
</tbody>
</table>

7 On the vCenter Server SSL certificate confirmation page, view the details of the certificate, accept the SSL certificate of vCenter Server, and click Next.

The vCenter Server SSL certificate confirmation page appears if you have selected to use an automatically generated certificate. The page also appears if you have selected to keep the current certificate, and it was automatically generated.

8 On the Credentials for the vCenter Multi-Hypervisor Manager service page, type the credentials of a user account that has sufficient rights to run the VMware vCenter Multi-Hypervisor Manager service and has full permissions to run Windows Remote Management commands, and click Next.

9 (Optional) Select Use a vCenter Converter Standalone server, type the connection properties for the vCenter Converter Standalone server, and click Next.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address or host name</td>
<td>The IP address or the host name of the vCenter Converter Standalone server.</td>
</tr>
<tr>
<td>Port</td>
<td>The port number for connecting to the vCenter Converter Standalone server.</td>
</tr>
<tr>
<td>User name</td>
<td>A user name for the system on which the vCenter Converter Standalone server is running.</td>
</tr>
<tr>
<td>Password</td>
<td>The password for the user account for the system where the vCenter Converter Standalone server is running.</td>
</tr>
</tbody>
</table>

10 On the Converter Standalone Certificate Confirmation page, view the details of the certificate, and accept the SSL certificate of the vCenter Converter Standalone server and click Next.

The Converter Standalone Certificate Confirmation page appears if you have selected to use an automatically generated certificate. The page also appears if you have selected to keep the current certificate, and it was automatically generated.

11 Click Install.

12 When the repair operation is completed, click Finish.

What to do next
For the changes to take effect, restart the vSphere Client, if it is running.
Uninstalling vCenter Multi-Hypervisor Manager

Instead of upgrading vCenter Multi-Hypervisor Manager to the latest version or repairing the current installation to resolve an issue, you might want to perform a clean installation of the product. To perform a clean installation, you need to uninstall vCenter Multi-Hypervisor Manager from your system first.

This chapter includes the following topics:

- “Uninstall the vCenter Multi-Hypervisor Manager Server,” on page 29
- “Uninstall the vCenter Multi-Hypervisor Manager Plug-In,” on page 30

Uninstall the vCenter Multi-Hypervisor Manager Server

To remove the vCenter Multi-Hypervisor Manager server from your system, you need to run the installer wizard.

To uninstall the vCenter Multi-Hypervisor Manager server you can use the installer wizard.

**Procedure**

1. Double-click the executable file of the vCenter Multi-Hypervisor Manager server installer.
2. Review the Welcome page of the installer and click **Next**.
3. On the Program Maintenance Mode page, select **Remove** and click **Next**.
4. On the Remove the Program page, click **Remove**.
5. When the uninstall process is completed, click **Finish**.

The vCenter Multi-Hypervisor Manager server is removed from your system. The vCenter Multi-Hypervisor Manager plug-in remains installed. If you reinstall the vCenter Multi-Hypervisor Manager server, the vCenter Multi-Hypervisor Manager plug-in will automatically reconnect in a few minutes.

What to do next

Uninstall the vCenter Multi-Hypervisor Manager client plug-in.
Uninstall the vCenter Multi-Hypervisor Manager Plug-In

After you uninstall the vCenter Multi-Hypervisor Manager server, the vCenter Multi-Hypervisor Manager plug-in is no longer exposed in the vSphere Client, but the installed files remain in the installation location. To remove the vCenter Multi-Hypervisor Manager plug-in completely, you need to uninstall it manually.

Procedure

1. Run the uninstall tool of the Windows system on which the vCenter Multi-Hypervisor Manager plug-in is installed.

2. Select VMwarevCenter Multi-Hypervisor Manager Client from the list and click Uninstall.

3. If a confirmation prompt appears, click Yes to confirm the uninstall.

The uninstaller wizard closes and the vCenter Multi-Hypervisor Manager plug-in is removed from the installation location.
The troubleshooting vCenter Multi-Hypervisor Manager topics provide solutions to problems that you might encounter when installing, administering, and reconfiguring vCenter Multi-Hypervisor Manager.

This chapter includes the following topics:

- “Unable to Install the vCenter Multi-Hypervisor Manager Server,” on page 31
- “Unable to Reach vCenter Server During vCenter Multi-Hypervisor Manager Server Installation,” on page 32

Unable to Install the vCenter Multi-Hypervisor Manager Server

The vCenter Multi-Hypervisor Manager server installation might fail with an error message stating that a required program cannot be run.

Problem

Attempts to install the vCenter Multi-Hypervisor Manager server might fail. The following error message appears:

Error 1721. There is a problem with this Windows Installer Package. A program required for this install to complete could not be run. Contact your support personnel or package vendor. Action: InstallVCRedistributable, location: .../vcredist_x64.e...

Cause

The installer of the vCenter Multi-Hypervisor Manager server attempts to install the Microsoft Visual C++ 2008 Redistributable Package (vcredist_x64). The Microsoft Visual C++ 2008 Redistributable Package required by the vCenter Multi-Hypervisor Manager cannot be installed, because you do not have sufficient rights on the Windows machine where you are installing the vCenter Multi-Hypervisor Manager server.

Solution

Log in as an administrator to the Windows machine where you want to install the vCenter Multi-Hypervisor Manager server, or log in as a user with sufficient rights to install the Microsoft Visual C++ 2008 Redistributable Package.
Unable to Reach vCenter Server During vCenter Multi-Hypervisor Manager Server Installation

vCenter Server is not reachable during the installation of the vCenter Multi-Hypervisor Manager server and an error message appears.

Problem

After selecting the **Provide a certificate file later** option on the Certificate Type Selection page of the vCenter Multi-Hypervisor Manager installer and clicking **Next**, when you provide the connection settings on the vCenter Server page and click **Next**, the following error message appears, and the installation is blocked:

vCenter Server is not reachable.

Cause

- The vCenter Server certificate has expired.
- The vCenter Multi-Hypervisor Manager installer checks whether the certificate of the root certification authority that issued the vCenter Server certificate exists in the Trusted Root Certification Authorities for the Local Computer certificate store on the system where you are installing the vCenter Multi-Hypervisor Manager server. If the certificate of the root certification authority is not found in the Trusted Root Certification Authorities for the Local Computer certificate store, you cannot continue with the installation.

Solution

- Replace the vCenter Server certificate with a valid certificate.
- Add the root certificate of the certification authority that issued the vCenter Server certificate to the Trusted Root Certification Authorities on the system where you are installing the vCenter Multi-Hypervisor Manager server.

**CAUTION** Importing certification authorities manually in the Trusted Root Certification Authorities for the Local Computer certificate store might compromise the security of your system. Make sure that the root certificate of the certification authority that you want to import is authentic and is received through a secure channel.
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