

# Guide to Deploying Virtual Appliances

VMware Studio 1.0



Guide to Deploying Virtual Appliances

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# About This Book

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This book, the *Guide to Deploying Virtual Appliances*, provides information about deploying virtual appliances using VMware Studio 1.0. This guide is intended for users who are deploying and running virtual appliances created with VMware Studio.

## Revision History

This book, the *Guide to Deploying Virtual Appliances*, is revised with each release of the product or when necessary. A revised version can contain minor or major changes. [Table 1](#) summarizes the significant changes in each version of this book.

**Table 1.** Revision History

| Revision | Description  |
|----------|--|
| 20080905 | First version of the Guide to Deploying Virtual Appliances |

To view the current version of this guide, go to [http://www.vmware.com/support/pubs/sdk\\_pubs.html](http://www.vmware.com/support/pubs/sdk_pubs.html).

## Intended Audience

This book is intended for anyone who wants to deploy virtual appliances using VMware Studio.

## Document Feedback

VMware welcomes your suggestions for improving our documentation. Send your feedback to:

[docfeedback@vmware.com](mailto:docfeedback@vmware.com)

## Technical Support and Education Resources

The following sections describe the technical support resources available to you. To access the current versions of other VMware manuals, go to:

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### Online Support

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# Overview of Appliances Created With VMware Studio

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# 1

A virtual appliance is a pre-built software solution, comprised of one or more virtual machines that are packaged, updated, maintained, and managed as a unit. Customers can easily install and deploy these pre-integrated solution stacks. This speeds up time to value and simplifies software development, distribution, and management.

VMware® Studio 1.0 enables building and maintenance of production-ready virtual appliances for applications that are not tied to a particular hardware form factor. VMware Studio built virtual appliances carry an in-guest management component—Virtual Appliance Management Infrastructure (VAMI). VAMI provides end-users of virtual appliances with Web console and command line interfaces to:

- Configure network settings.
- Manually or automatically check for updates and install updates.
- Review basic system information for their virtual appliance.
- Shutdown and reboot the virtual appliance.

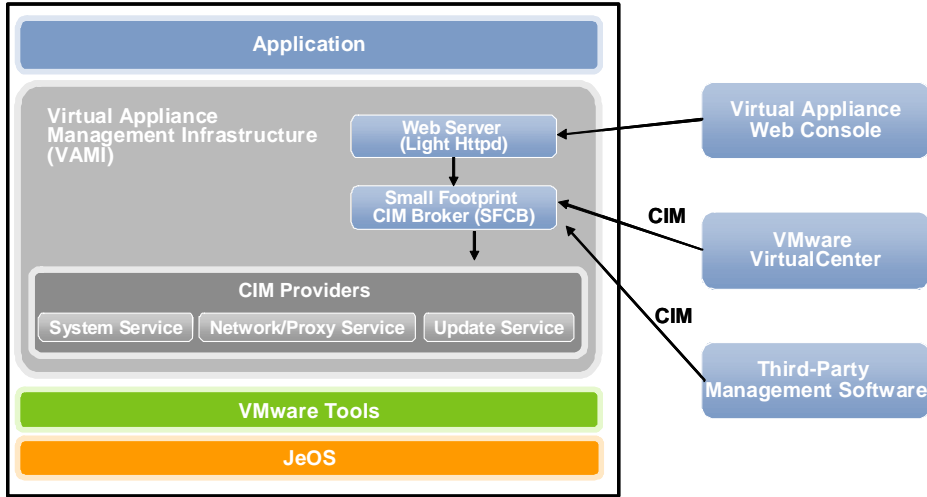
The Web console provided by VAMI is customized and rebranded by the ISV to provide a link to the application's Web interface. VAMI ensures that first boot and subsequent boot processes run as specified by the ISV for the appliance. VAMI provides better integration with VMware® VirtualCenter — VMware® Update Manager to enable central management of virtual appliances.

VMware Studio produces virtual appliances in Open Virtualization Format (OVF) or ZIP format. OVF files conform to the OVF 0.9 draft specification. For more information about OVF, see <http://www.vmware.com/appliances/learn/ovf.html>.

## Components of Virtual Appliances Created With VMware Studio

Figure 1-1 shows the components of a virtual appliance created with VMware Studio.

**Figure 1-1.** Virtual appliance created with VMware Studio



Virtual appliances created with VMware Studio have the following components:

- **JeOS** – Just Enough Operating System. Virtual appliances built using VMware Studio use the minimal required operating system packages. This ensures that the virtual appliance has a small footprint and is more secure.
- **VMware Tools** – VMware Studio bundles a set of VMware tools during the build of virtual appliances. It enables better communication between VMware virtualization platforms and the virtual appliance.
- **VAMI** – The in-guest management component provides a Web console to manage the virtual appliance. VAMI provides the ability to change network settings, update the virtual appliance, and control the state of the system (shutdown/reboot). All management services provided by VAMI are implemented as Common Information Model (CIM) Providers while using Small Footprint CIM Broker (SFCB) as a CIM Manager. CIM is a standard from Distributed Management Task Force (DMTF). For more information on CIM standards, see <http://www.dmtf.org/standards/cim/>.
- **Application** – The ISV or HAV creates the application. The application performs the intended task for which the appliance is created.

The virtual appliance can be accessed with one or more of the following:

- **Virtual Appliance Web console** – This connection provides a Web console to perform administrative and maintenance tasks for the virtual appliance. A command line interface is also available for these tasks.
- **VMware VirtualCenter** – This connection allows the virtual appliance to be integrated with and managed by VirtualCenter.
- **Third-party management software** – This connection allows any 3rd party management software to manage the virtual appliance.

# Deploying Your Virtual Appliance

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This chapter provides information about how to deploy your virtual appliance. This chapter has the following topics:

- [“Distribution Formats”](#) on page 7
- [“Supported VMware Products”](#) on page 7
- [“Deploying Your Virtual Appliance in VMware Infrastructure 3.5 and Above”](#) on page 8
- [“Deploying Your Virtual Appliance in VMware Workstation, VMware Server, or VMware Player”](#) on page 8

## Distribution Formats

Your virtual appliance is distributed in one or both formats:

- As a ZIP file containing a VMX file and one or more VMDK files
- As an OVF file and one or more compressed VMDK files

The virtual appliance deployment method depends on the distribution format.

## Supported VMware Products

Virtual appliances created with VMware Studio are supported on the following VMware products:

- VMware Server 1.0 and above
- VMware ESX 3.0 and above
- VMware ESXi 3.5 and above
- VMware Workstation 6.0 and above
- VMware Player 2.0 and above
- VMware Fusion 1.1 and above

## Supported Web Browsers

Virtual appliances created with VMware Studio support the following browsers:

- Internet Explorer 6.0 or 7.0
- Firefox 1.0 or 2.0

## Deploying Your Virtual Appliance in VMware Infrastructure 3.5 and Above

If you receive the virtual appliance in OVF format, perform the following procedure to deploy your virtual appliance:

- 1 Open the VMware Infrastructure Client (VI Client) that is provided with the product you are using (for example ESX 3.5).
- 2 From the File menu, select **Virtual Appliance**.
- 3 Select **Import...**
- 4 Select **Import from file:**.
- 5 Click **Browse** and select the OVF file containing your virtual appliance.

If you receive your virtual appliance in a ZIP file that contains a VMX file and one or more VMDK files, then you must convert the virtual appliance to OVF format with VMware® Converter. The VMware Converter tool converts and imports the virtual appliance directly into your VMware Infrastructure Inventory so that the virtual appliance can be run immediately. This converter is free and available from the VMware website at:

<http://vmware.com/products/converter/>

## Deploying Your Virtual Appliance in VMware Infrastructure 3.0

If you receive the virtual appliance in OVF format, use the C++ based ovftool to import your virtual appliance.

If you receive your virtual appliance in a ZIP file that contains a VMX file and one or more VMDK files, then you must convert the virtual appliance to OVF format with VMware® Converter. The VMware Converter tool converts and imports the virtual appliance directly into your VMware Infrastructure Inventory so that the virtual appliance can be run immediately. This converter is free and available from the VMware website at:

<http://vmware.com/products/converter/>

## Deploying Your Virtual Appliance in VMware Workstation, VMware Server, or VMware Player

If you receive your virtual appliance in a ZIP file that contains a VMX file and one or more VMDK files, the deployment of your virtual appliance on VMware Workstation, VMware Server, or VMware Player requires that you unzip the file and open the VMX file with the appropriate virtualization engine.

If you receive your virtual appliance as an OVF file, convert the virtual appliance with the ovftool. This tool is free and available from the VMware website:

<http://vmware.com/appliances/learn/ovf.html>

The tool converts the OVF and VMDK files into a VMX and VMDK files that are compatible with your VMware product.

## First Launch of the Virtual Appliance

Perform the following procedure to run the virtual appliance:

- 1 Start the virtual appliance with the virtual machine “Power On” command.

The virtual appliance displays its startup messages. When you first start a virtual appliance, you are presented with the End User License Agreement (if one was provided by the ISV). Press the **space** bar as each page of the license is displayed. At the end of the license agreement, accept the agreement by entering **yes** and pressing **Enter**.

- 2 The virtual appliance Welcome screen displays.

By default, the virtual appliance tries to acquire an IP address from a DHCP server. If a static IP address is required, see [Chapter 4, “Managing Your Virtual Appliance,”](#) on page 13. Take note of the URL that is displayed in the sentence “To manage your appliance browse to https://<IPaddress>:5480/”. You must use this URL to access the virtual appliance Web console.

- 3 Your virtual appliance vendor may require you to login to the virtual appliance. If required, obtain the User ID and password from your virtual appliance vendor, then select **Login** and supply a user ID and password.

## Configuring Static IP Addresses

By default, the virtual appliance retrieves IP addresses from a DHCP server. To configure static network addresses for virtual appliance, perform the following procedure.

- 1 From the virtual appliance Welcome screen, select **Configure Network** and press **Enter**.
  - 2 Enter **no** to the “Use a DHCP server instead of a static IP address” prompt.
  - 3 Enter the addresses for the following and press **Enter** after each entry:
    - IP Address
    - Netmask
    - Gateway
    - DNS Server 1
    - DNS Server 2
  - 4 Enter **yes** or **no** at the “Is a proxy server necessary to reach the Internet?” prompt.
 

If you answered no, press **Enter**.

If you answered yes, press **Enter** and then enter the IP address and the port number for the proxy server and press **Enter**.

A review of your entries displays.
  - 5 Enter **yes** and press **Enter** if the values are correct.
- If the values are incorrect, enter **no** and perform the procedure again.

## Configuring DHCP

If you have configured the virtual appliance to use static IP addresses and you wish to change the configuration to retrieve IP addresses from a DHCP server, perform the following procedure:

- 1 From the virtual appliance Welcome screen, select **Configure Network** and press **Enter**.
- 2 Enter **yes** to the “Use a DHCP server instead of a static IP address” prompt.
- 3 Enter **yes** or **no** to the “Is a proxy server necessary to reach the Internet?” prompt.
 

If you answered no, press **Enter**.

If you answered yes, enter the IP address and the port number for the proxy server. Press **Enter**.

A review of the network settings displays.
- 4 Enter **yes** and press **Enter** if the values on the review screen are correct.
 

If the values are incorrect, enter **no**, press **Enter** and perform the procedure again.

## Setting the Time Zone

Perform the following procedure to set the time zone for the virtual appliance.

- 1 From the virtual appliance Welcome screen, select **Set Timezone** and press **Enter**.
- 2 At the “Do you want to change that?” prompt, enter **y** and press **Enter**.
- 3 Enter the number of the area containing the time zone you want and press **Enter**.
- 4 Enter the name of the time zone you want and press **Enter**.

The time zone is set and the Welcome screen displays.

# Knowing Your Virtual Appliance

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This chapter describes how to get information about your virtual appliance. This chapter has the following topics:

- [“Using the Web Console”](#) on page 11
- [“Using the Command Line”](#) on page 11

## Using the Web Console

The System tab provides the following information:

- **Vendor** – The name of the company that created your virtual appliance.
- **Appliance Name** – The name of your appliance.
- **Appliance Version** – The version number of your appliance.
- **Computer Name** – The computer name of your appliance.
- **OS Name** – The name of the operating system upon which your appliance runs.
- **OS Version** – The version number of the operating system.

You can also stop and reboot your virtual appliance from the System tab:

- To reboot your virtual appliance, click **Reboot**.
- To stop your virtual appliance, click **Shutdown**.

## Using the Command Line

- **Version** – The following command shows the version information for the virtual appliance:

```
vamicli version --appliance
```

- The following command shows the version of VMware Studio used to build the virtual appliance:

```
vamicli version --vdk
```



# Managing Your Virtual Appliance

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This chapter provides procedures to perform maintenance operations on your virtual appliance. All operations are performed using the virtual appliance Web console. This chapter describes the following topics:

- [“Shutting Down or Rebooting the Virtual Appliance”](#) on page 13
- [“Choosing Between DHCP and Static Network Addresses”](#) on page 13
- [“Network Configuration”](#) on page 13

## Shutting Down or Rebooting the Virtual Appliance

On the System tab of the virtual appliance Web console, there is information about the virtual appliance installation as well as Shutdown and Reboot buttons.

If you wish to shut down the virtual appliance, click the **Shutdown** button under the Actions heading on the right-hand side of the window.

If you wish to reboot the virtual appliance, click the **Reboot** button under the actions heading on the right-hand side of the window.

## Choosing Between DHCP and Static Network Addresses

When started, your virtual appliance attempts to find a DHCP server and ask the server to assign it a temporary network address. This allows you to run the virtual appliance without any setup, but this temporary address might be different each time the virtual appliance starts. Most server appliances should be configured to a static network address that will not change if the virtual appliance is restarted. This allows other users of the virtual appliance to be aware of the network address (or associated network computer name) and connect to it.

Your virtual appliance might be configured to check an external site for updates to its software. If your IT department has configured your network to disallow access outside of your network, you might need to specify a proxy server. This is a server through which all network traffic flows in order to gain control over different types of network traffic. Your IT department can provide you with a proxy server name and a port number.

## Network Configuration

The Network tab contains sub-tabs for the following operations:

- **Status**—displays the network status information, such as interface name, whether DHCP was used, and the IP address. You can click the **Refresh** button under the Actions heading to obtain the most current information.

- **Address**—allows you to specify static IP address information or to retrieve the IP address from a DHCP server. Click **Save Settings** to accept changes you make to the IP address configuration. Click **Cancel Changes** to discard your changes. If you choose to use a static IP address you must enter values in the following fields:
  - **IP Address**—the IP address of virtual appliance.
  - **Netmask**—the netmask address for virtual appliance.
  - **Gateway**—the gateway address for virtual appliance.
  - **Preferred DNS Server**—the address of the primary DNS server.
  - **Alternate DNS Server**—the address of the secondary DNS server.
- **Proxy**—allows you to specify a proxy server and port for accessing external networks (for example, the internet). Click **Save Settings** to accept changes you make to the proxy server configuration. Click **Cancel Changes** to discard your changes. If you check the checkbox next to Use a Proxy Server, you must enter values in the following fields:
  - **Proxy Server**—host name or IP address for the proxy server.
  - **Proxy Port**—port for the proxy server.

# Updating Your Virtual Appliance

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This chapter provides information about updating a virtual appliance. This chapter has the following topics:

- [“Types of Updates”](#) on page 15
- [“Update Tab”](#) on page 15
- [“Checking Status and Applying Updates”](#) on page 15
- [“Setting Update Policies”](#) on page 16

## Types of Updates

Virtual appliances, once deployed, can be updated with new packages published by ISVs. Updates can be for:

- Operating system
- Application
- VMware Studio management agent
- VMware Tools

## Update Tab

The update information and update settings for the virtual appliance are accessed on the Update tab of the virtual appliance Web console. The Update tab has two sub-tabs:

- **Status** – provides information about the virtual appliance version and whether automatic or manual checking for and apply updates is specified.
- **Settings** – provides policies for automatically or manually checking for and applying updates.

The Update tab is not present if an update repository was not specified during the virtual appliance build process. In that case, contact your ISV for updates for your virtual appliance.

## Checking Status and Applying Updates

The Status tab allows you to view information about your virtual appliance, such as vendor and version. You can also check for updates and install any updates that are found. If you decide to check for updates and install updates for your virtual appliance, you can do so either through the Web console or the command line.

To view information about your virtual appliance or check for and install updates, click the **Status** tab on the Update tab. The following information about your virtual appliance is shown:

- **Vendor** –The name of the company that created your virtual appliance.
- **Appliance Name** – The name of the virtual appliance.
- **Appliance Version** – The version information of the virtual appliance.

- **Last Check** – The date and time that the virtual appliance last checked for updates.
- **Last Install** – The date and time that the virtual appliance was last updated.

To check for updates, click **Check Updates**. The virtual appliance checks for any updates by connecting to the virtual appliance update repository. Any available updates are displayed in the “Available Updates” pane.

To install an available update, click **Install Updates**.

## Using the Command Line

Use the following command to check for updates for your virtual appliance:

```
vamicli update --check
```

Use the following command to download and install latest updates for your virtual appliance:

```
vamicli update --install latest
```

## Setting Update Policies

To set update policies for your virtual appliance, click the **Settings** tab on the Update tab. The Settings tab provides the following policies for updating your virtual appliance:

- **No automatic updates** – Select this policy if you do not want your virtual appliance to check for and install updates automatically.
- **Automatic check for updates** – Select this policy if you want your virtual appliance to automatically check for updates.
- **Automatic check and install updates** – Select this policy if you want your virtual appliance to automatically check for and install updates.

To save your changes, click **Save Settings**.

To discard your changes, click **Cancel Changes**.

If you select either “Automatic check for updates” or “Automatic check and install updates”, you might want to configure the time for the VAMI scheduler to do scheduled checks and updates. By default, your appliance runs either policy daily at 3:00 am local time. The Web console does not provide a way to change the default update time, you can manually change it with root access to the virtual appliance console.

### To edit the update time:

- 1 Stop the Small Footprint CIM Broker (SFCB) server by running the following command:

```
/etc/init.d/sfcb stop
```

- 2 Using a text editor or XML editor, open the file:

```
/opt/vmware/var/lib/vami/core/service-runtime.xml
```

If this file is not present, then edit:

```
/opt/vmware/var/lib/vami/core/service.xml
```

- 3 Locate the `jobList` property. The property value contains the following content:

```
"RunStartInterval": "0000000030000.000000:000"
```

- 4 The `RunStartInterval` value indicates the time for the update agent to check and install updates. The value is in the following format:

```
dddddddhhmmss.mmmmm:000
```

For example, to modify the start time to 9:45 pm local time the property should be:

```
"RunStartInterval": "00000000214500.000000:000"
```

- 5 Start SFCB by running the following command:

```
/etc/init.d/sfcb start
```

# Managing Your Virtual Appliance with VirtualCenter

# 6

This chapter provides information about managing your virtual appliance with VirtualCenter. It is not necessary to manage virtual appliances with VirtualCenter and Update Manager, however doing so provides centralized management of multiple virtual appliances. For more information on baselines and compliance checks, see the *Administration Guide for Update Manager*. This chapter has the following topics:

[“Requirements”](#) on page 17

[“View Virtual Appliance Information”](#) on page 17

[“Scanning Your Virtual Appliance”](#) on page 18

[“Remediating Virtual Appliances”](#) on page 19

## Requirements

If you deployed your virtual appliance on VMware ESX Server managed by VMware VirtualCenter 2 version 2.5 U2, you can use VMware Update Manager Plugin for VirtualCenter to update multiple appliances simultaneously. The following conditions apply to updating virtual appliances with Update Manager:

- The VirtualCenter that you import your virtual appliance into must have Update Manager installed.
- All virtual appliances are required to have an Internet connection for discovery, scan, and remediation operations.
- If the virtual appliance needs to access the Internet through a proxy, the proxy server settings can be configured using the appliance’s own Web console.
- Offline and suspended virtual appliances cannot be scanned and remediated.

After you import a Virtual Studio-based virtual appliance using the VI Client, and power it on for the first time, it is discovered as a virtual appliance. It is recommended that you import your virtual appliances into a separate folder in Virtual Machines and Templates in VirtualCenter.

## View Virtual Appliance Information

Perform the following procedure to view information about your virtual appliance:

- 1 Connect the VI Client to the VirtualCenter where you imported your virtual appliance.
- 2 Click **Inventory** and then click **Virtual Machines and Templates**.
- 3 Select the folder where you imported your virtual appliance.
- 4 Select your virtual appliance and then click the **Update Manager** tab to view information about your virtual appliance.

## Scanning Your Virtual Appliance

You can enable Update Manager to automatically scan virtual appliances using pre-established tasks, or you can manually initiate scans.

### Initiate a Manual Scan

Perform the following procedure to manually scan a virtual appliance:

- 1 Connect the VI Client to the VirtualCenter Server where you imported your virtual appliance.
- 2 Click **Inventory** and then click **Virtual Machines and Templates**.
- 3 Click the folder where you imported your virtual appliance.
- 4 In the left pane, right-click your virtual appliance and then click **Scan for Updates**.

### Schedule a Scan

Perform the following procedure to schedule scans for your virtual appliance:

- 1 Connect the VI Client to the VirtualCenter Server where you imported your virtual appliance.
- 2 Click **Scheduled Tasks**.
- 3 Click **New** in the toolbar to open the Select a Task to Schedule dialog box.
- 4 From the drop-down menu, select **Scan for Updates** and click **OK**.
- 5 Select the type of scan to schedule, and click **Next**.
- 6 Select the virtual appliance to be scanned, and click **Next**.
- 7 Enter the task name as well as the task description, configure when the task will run, and click **Next**.
- 8 Review the summary information for the task to be completed, and click **Finish**.

### Viewing Scan Results

Update Manager provides a means to quickly check how virtual appliances comply with baselines. You can review compliance either by examining the results for a single virtual appliance or by reviewing the results for a grouping of virtual appliances. Compliance information is available on the Update Manager tab in the VI Client. For virtual appliances, you can view compliance in the Virtual Machines and Templates view.

Supported groupings include VMware Infrastructure container objects such as folders, clusters and data centers.

Baselines interact with virtual appliances in the following ways:

- If a user does not have permissions to view a virtual appliance, the results of those scans are not displayed.
- Compliance with baselines is assessed at the time of viewing. To ensure that all information is current, a brief pause might occur while information is gathered about a virtual appliance's compliance.
- Only information about compliance with relevant baselines is provided. For example, if a baseline is not attached to the container in question, compliance is not assessed.
- Compliance status is displayed based on permissions. Users with permission to view a container but not all of the container's contents are shown the aggregate compliance of all entities under that container, but the individual counts for compliant, not compliant and unknown entities only appear as the user's permissions permit. To view the compliance status, the user also must have permissions to view the baseline or software update compliance status for an object in the inventory.

## Reviewing Scan Results for Virtual Appliances Contained in a VMware Infrastructure Object

When scans are completed on all machines contained within a VMware Infrastructure object, the results are displayed in a summary. Information that is displayed explains the degree of conformance with baselines, rather than the details. The following information is included:

- When the last scan was completed at this level.
- The total number of compliant and non-compliant updates.
- For each baseline, the number of virtual appliances that are compliant or not compliant.
- For each baseline, the number of patches that are not applicable to a particular virtual appliance.

Perform the following procedure to view scan results for virtual appliances:

- 1 Connect the VI Client to the VirtualCenter Server where you imported your virtual appliance.
- 2 Click **Inventory** and then click **Virtual Machines and Templates**.
- 3 Click the object whose scan results you want to view.
- 4 Click the **Update Manager** tab.

The results for scans completed on virtual appliances in that container appear on the right.

To receive more information about the results of the scans of particular baselines, click the hyperlink indicating how many virtual machines are in a particular state of compliance. The Baseline Details window appears.

To receive more information about a specific virtual machine's compliance with the updates contained in a baseline, click the hyperlink indicating the number of updates that are or are not in compliance. The Virtual Machine Baseline Details window appears.

## Reviewing Scan Results for an Individual Virtual Appliance

When scans are completed on a specific virtual appliance, detailed results are provided. Information that is displayed explains the degree of conformance with baselines, rather than the details of conformance. Some of the information included is:

- When the last scan was completed at this level.
- The total number of baselines and updates that are compliant or not compliant.

Perform the following procedure to view the results for an individual virtual appliance:

- 1 Connect the VI Client to the VirtualCenter Server where you imported your virtual appliance.
- 2 Click **Inventory** and then click **Virtual Machines and Templates**.
- 3 Select an individual virtual machine or select a VMware Infrastructure object, such as a folder, to see the status for all virtual machines in that object.
- 4 Click the **Update Manager** tab.

## Remediating Virtual Appliances

Updates for a virtual appliance are downloaded by the virtual appliance during the remediation process. Update Manager only controls when and what to download. The download URL is set by the ISV providing the virtual appliance.

To download the updates for virtual appliances, Update Manager uses the following approach:

- 1 Update Manager scans the virtual appliances to return product and vendor information, information about the current version, and any missing updates.
- 2 Update Manager directs the virtual appliances to download the missing updates. Update Manager controls the remediation process of when and how to remediate, but the virtual appliance downloads and installs the updates itself.

After remediation, the virtual appliance can be rebooted if the update package requires a reboot.

Virtual appliances have their own Web UI for self-managed update mode. If the auto install updates option is turned on in a virtual appliance, Update Manager only runs reporting mode against it. This means that Update Manager scans the virtual appliance, but skips remediation and the remediation operation fails with an event indicating the reason.

You can either remediate virtual appliances manually, or can schedule a remediation process.

To manually remediate a virtual appliance, perform the following procedure:

- 1 Connect the VI Client to the VirtualCenter Server where you imported your virtual appliance.
- 2 Click **Inventory** and then click **Virtual Machines and Templates**.
- 3 Click the **Update Manager** tab.
- 4 Right-click the virtual appliance to be remediated, and click **Remediate**.
- 5 Select the baselines you want to apply, and click **Next**.
- 6 All updates are included by default. To exclude individual updates from the remediation process, deselect their check boxes and click **Next**.
- 7 (Optional) Review the excluded updates and click **Next**.
- 8 In the Schedule page, select the time to initiate the remediation actions, and click **Next**.
- 9 Specify whether you would like to enable rollback before performing the update. If you enable rollback, a snapshot of the virtual appliance is created.

Select the snapshot options including a name and description for the snapshot, and click **Next**.

- 10 Review the summary information for the task to be initiated, and click **Finish**.

To schedule virtual appliance remediation, perform the following procedure:

- 1 Connect the VI Client to the VirtualCenter Server where you imported your virtual appliance.
- 2 Click the **Scheduled Tasks** button.
- 3 Right-click the **Scheduled Tasks** pane and click **New Scheduled Task**.
- 4 Select **Remediate** and click **OK**.
- 5 Select **Virtual Machines / Guest Operating Systems** and click **Next**.
- 6 Select the virtual appliances to which this remediation will apply, and click **Next**.
- 7 In the Baselines page, select the baselines to apply and click **Next**.
- 8 To exclude individual updates from the remediation process, deselect their check boxes in the Updates page and click **Next**.
- 9 (Optional) Review the list of updates that will be excluded and click **Next**.
- 10 In the Schedule page, select the time to complete the remediation actions, and click **Next**.
- 11 Specify whether you would like to enable rollback before performing the update. If you enable rollback, a snapshot of the virtual appliance is created.

Select the snapshot options including a name and description for the snapshot and click **Next**.

- 12 Review the summary information for the task to be completed and click **Finish**.

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**NOTE** A virtual appliance, running the SLES operating system, might not get discovered as virtual appliance in Update Manager 1.0 U2 and Virtual Center 3.5 U2. The virtual appliance might still show as a virtual machine after the virtual appliance is fully powered on and finishes the first-time power on configuration.

**To resolve this issue:**

- 1 Power off the virtual appliance running the SLES operating system.
- 2 Remove it from the VirtualCenter Inventory.
- 3 Browse the host datastore and locate the virtual appliance.
- 4 Add it back into the VirtualCenter Inventory.
- 5 Power on the virtual appliance again, wait for the virtual appliance to finish booting.

Virtual appliance discovery will run again and this time it should recognize the virtual appliance correctly.

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