

# Symantec NetBackup™ Plug-in for VMware vSphere Web Client Guide

Release 7.6.1



# NetBackup™ Plug-in for VMware vSphere Web Client Guide

Documentation version: 7.6.1

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North America and Latin America [supportsolutions@symantec.com](mailto:supportsolutions@symantec.com)

# Contents

Technical Support .....	4	
Chapter 1	Introduction and notes .....	9
	About the NetBackup plug-in for VMware vSphere Web Client .....	9
	Notes on the NetBackup plug-in for vSphere Web Client .....	10
	How to access the features of the NetBackup plug-in for vSphere Web Client .....	11
Chapter 2	Installing the NetBackup plug-in for vSphere Web Client .....	13
	Requirements for the NetBackup plug-in for vSphere Web Client .....	13
	Installation overview for the NetBackup plug-in for vSphere Web Client .....	14
	Using consistent vCenter naming with the NetBackup plug-in for vSphere Web Client .....	16
	Installing the NetBackup plug-in for vSphere Web Client .....	16
	Installing the NetBackup plug-in for vSphere Web Client on an additional vSphere Web Client server .....	24
	Registering the NetBackup plug-in for vSphere Web Client with additional vCenter servers .....	25
	Upgrading the NetBackup plug-in for vSphere Web Client from an earlier version .....	26
	Disabling the NetBackup plug-in for vSphere Web Client .....	26
	Uninstalling the NetBackup plug-in for vSphere Web Client .....	27
Chapter 3	Monitoring backup status .....	31
	Setting vCenter privileges for backup monitoring .....	31
	Symantec NetBackup tab in vSphere Web Client .....	32
	Summary display .....	34
	Virtual Machines display .....	36
	Events display .....	37
	Using the Symantec NetBackup tab for backup reporting .....	39
	How to respond to backup status .....	41

Chapter 4	Restoring virtual machines .....	42
	Configuration overview for the NetBackup Recovery Wizard .....	42
	Enabling NetBackup Web Services on the Windows master server .....	43
	Enabling NetBackup Web Services on the UNIX or Linux master server .....	46
	Configuring ports for the NetBackup Web Services .....	47
	Creating an authentication token for the NetBackup plug-in for vSphere Web Client .....	50
	Revoking an authorization token .....	51
	Listing all current authentication tokens .....	52
	Authorizing the NetBackup plug-in to restore virtual machines .....	53
	Setting vCenter privileges for recovering virtual machines .....	55
	Notes on restoring virtual machines with the NetBackup Recovery Wizard .....	57
	How to access the NetBackup Recovery Wizard .....	58
	NetBackup Recovery Wizard screens .....	61
	Virtual Machine Selection screen .....	61
	Image Selection screen .....	62
	Destination Selection screen .....	65
	Transport Selection screen .....	67
	Disk Provision screen .....	68
	Virtual Machine Options screen .....	70
	Network Selection screen .....	71
	Pre-Recovery Check screen .....	72
Chapter 5	Troubleshooting .....	74
	Setting the time zone of the NetBackup master server host to UTC .....	74
	Reducing the load time for the NetBackup plug-in for vSphere Web Client .....	75
	The NetBackup plug-in for vSphere Web Client does not find any backup images .....	76
	The NetBackup Recovery Wizard for vSphere Web Client does not find a particular backup image .....	76
	Mismatch in vCenter server name (uppercase vs. lowercase letters) causes the VMware connectivity test to fail .....	76

# Introduction and notes

This chapter includes the following topics:

- [About the NetBackup plug-in for VMware vSphere Web Client](#)
- [Notes on the NetBackup plug-in for vSphere Web Client](#)
- [How to access the features of the NetBackup plug-in for vSphere Web Client](#)

## About the NetBackup plug-in for VMware vSphere Web Client

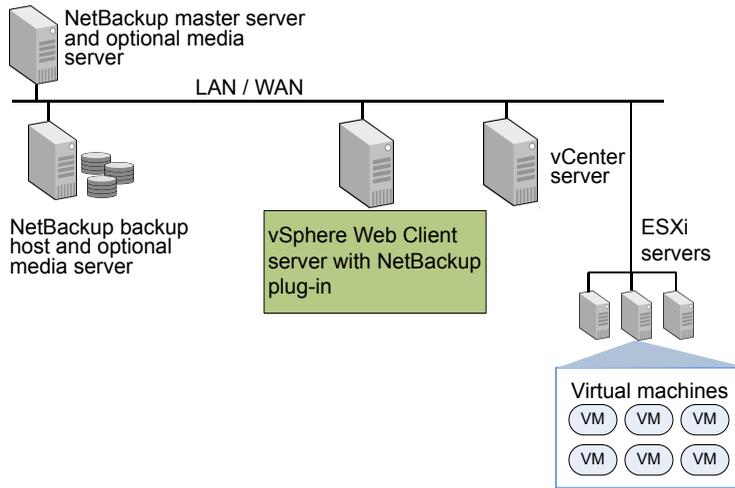
With the NetBackup plug-in, you can use vSphere Web Client to monitor the backups of virtual machines that vCenter servers manage. You can also recover a virtual machine from a backup.

You can use the plug-in to do the following:

- View the backup status of virtual machines at various vSphere levels. For example: Datacenter, resource pool, ESXi host.
- View messages that are related to backups, such as snapshot deletion failure.
- Sort and filter the backup information and export the information for analysis.
- Recover virtual machines. (The recovery feature is optional and is not required for monitoring virtual machine backups.)

[Figure 1-1](#) shows a NetBackup and VMware environment with the plug-in.

**Figure 1-1** vSphere Web Client with NetBackup plug-in



## Support for ESX and ESXi

NetBackup for VMware supports both ESX and ESXi servers. In this document, any reference to ESXi also refers to ESX.

Note that VMware no longer supports ESX in the latest versions of vSphere.

For the VMware versions that the NetBackup plug-in supports:

See [“Requirements for the NetBackup plug-in for vSphere Web Client”](#) on page 13.

# Notes on the NetBackup plug-in for vSphere Web Client

Note the following about the NetBackup vSphere Web Client plug-in:

- The time zone of the host OS on which the NetBackup master server is installed must be set to UTC.  
 See [“Setting the time zone of the NetBackup master server host to UTC”](#) on page 74.
- The best screen resolution for the plug-in is 1280 x 1024 or greater.
- The plug-in does not support auto-refresh. To refresh the display, click the vSphere Web Client refresh icon:



- In vCenter, the default retention period for vCenter events is 180 days. This value is the recommended setting.
- If an ESXi server is removed from vCenter and is later re-added, the events for the VMs managed by that ESXi are lost. For VM status, the plug-in shows "No Backup Information." The status changes as new backup events occur for each VM.
- See ["Notes on restoring virtual machines with the NetBackup Recovery Wizard"](#) on page 57.
- The NetBackup master server must be configured with backup policies of type **VMware**, with the **Post events to vCenter** option set to **All Events**. The plug-in monitors backups that a NetBackup **VMware** policy made. The plug-in does not monitor backups from other policy types.

Note the following exceptions:

- The plug-in does not monitor backups from a VMware policy that had **Use Replication Director** enabled and **Application Consistent Snapshot** disabled (under **Options**).
- The plug-in does not monitor all the copies that a storage lifecycle policy (SLP) makes; it monitors the first image only.

## How to access the features of the NetBackup plug-in for vSphere Web Client

[Table 1-1](#) describes the location of the NetBackup plug-in features in vSphere Web Client.

**Table 1-1** Accessing basic functions of the Symantec NetBackup plug-in for vSphere Web Client

Feature	How to access the NetBackup plug-in
Monitor the status of virtual machine backups	<p>In the vSphere Web Client object navigator, click <b>Home &gt; Hosts and Clusters &gt; Monitor &gt; Symantec NetBackup</b> tab.</p> <p>In the object navigator, select the vSphere object to monitor, such as vCenter, ESXi server, VM, or other object.</p> <p>See <a href="#">"Symantec NetBackup tab in vSphere Web Client"</a> on page 32.</p>

**Table 1-1**      Accessing basic functions of the Symantec NetBackup plug-in for vSphere Web Client (*continued*)

Feature	How to access the NetBackup plug-in
Restore a virtual machine	<p>In the vSphere Web Client object navigator, click <b>Symantec NetBackup</b>, then click <b>Recovery Wizard</b>.</p> <p>You can access the Recovery Wizard in several other ways:</p> <p>See <a href="#">“How to access the NetBackup Recovery Wizard”</a> on page 58.</p> <p><b>Note:</b> The Recovery Wizard is optional. It is not required for monitoring virtual machine backups.</p>

# Installing the NetBackup plug-in for vSphere Web Client

This chapter includes the following topics:

- [Requirements for the NetBackup plug-in for vSphere Web Client](#)
- [Installation overview for the NetBackup plug-in for vSphere Web Client](#)
- [Using consistent vCenter naming with the NetBackup plug-in for vSphere Web Client](#)
- [Installing the NetBackup plug-in for vSphere Web Client](#)
- [Installing the NetBackup plug-in for vSphere Web Client on an additional vSphere Web Client server](#)
- [Registering the NetBackup plug-in for vSphere Web Client with additional vCenter servers](#)
- [Upgrading the NetBackup plug-in for vSphere Web Client from an earlier version](#)
- [Disabling the NetBackup plug-in for vSphere Web Client](#)
- [Uninstalling the NetBackup plug-in for vSphere Web Client](#)

## Requirements for the NetBackup plug-in for vSphere Web Client

[Table 2-1](#) describes the requirements for the NetBackup plug-in.

**Table 2-1** Requirements for the NetBackup plug-in for vSphere Web Client

Requirement	Details
Common requirements for monitoring VM backups or recovering VMs	<p>NetBackup 7.6.1 and later.</p> <p>vCenter Server 5.5 and later.</p> <p><b>Note:</b> The plug-in supports any web browser that the vSphere Web Client supports.</p> <p><b>Note:</b> The NetBackup master server's operating system must be set to the UTC time zone.</p> <p>See " <a href="#">Setting the time zone of the NetBackup master server host to UTC</a> " on page 74.</p>
NetBackup master server platforms that are supported for recovering VMs	<p>For the NetBackup Recovery Wizard, these NetBackup master server platforms are supported:</p> <ul style="list-style-type: none"> <li>■ Windows</li> <li>■ Red Hat</li> <li>■ SUSE</li> <li>■ Solaris SPARC</li> <li>■ Solaris x86</li> </ul> <p>For the OS levels and versions that are supported for master server, refer to the <i>NetBackup 7.x Operating System Compatibility List</i>:  <a href="http://www.symantec.com/docs/TECH76648">http://www.symantec.com/docs/TECH76648</a></p>
NetBackup Web Services for recovering VMs	<p>For the NetBackup Recovery Wizard, the NetBackup Web Services must be enabled on the NetBackup master server.</p> <p>See " <a href="#">Installation overview for the NetBackup plug-in for vSphere Web Client</a> " on page 14.</p>

# Installation overview for the NetBackup plug-in for vSphere Web Client

[Table 2-2](#) lists NetBackup configuration requirements for the plug-in.

**Table 2-2** NetBackup configuration for the plug-in

Task	Description and notes
Configure NetBackup to back up the virtual machines.	<p>For example, the NetBackup administrator must configure the following:</p> <ul style="list-style-type: none"> <li>■ The VMware backup host (proxy, or access host).</li> <li>■ The NetBackup credentials for the vCenter server.</li> </ul> <p><b>Note:</b> The vCenter credentials can be entered as a fully qualified domain name or IP address. Specify the vCenter server in the same way when you install the plug-in.</p> <ul style="list-style-type: none"> <li>■ Policies of type <b>VMware</b>, with the <b>Post events to vCenter</b> option set to <b>All Events</b>.</li> </ul> <p>The <i>NetBackup for VMware Administrator's Guide</i> explains how to set up VMware policies.</p>
Set the time zone of the NetBackup master server host to UTC.	See " <a href="#">Setting the time zone of the NetBackup master server host to UTC</a> " on page 74.

Table 2-3 lists the steps for installing the NetBackup plug-in. See the reference topic in the table for details on each step.

**Table 2-3** Installing the plug-in

Step	Description	Reference topic
1	Install the plug-in for vSphere Web Client.	See " <a href="#">Installing the NetBackup plug-in for vSphere Web Client</a> " on page 16.
2	Set vCenter privileges for backup monitoring.	See " <a href="#">Setting vCenter privileges for backup monitoring</a> " on page 31.

The steps for setting up the NetBackup plug-in's Recovery Wizard are described in another topic:

See "[Configuration overview for the NetBackup Recovery Wizard](#)" on page 42.

---

**Note:** The Recovery Wizard is not required for monitoring virtual machine backups.

---

## Using consistent vCenter naming with the NetBackup plug-in for vSphere Web Client

The name of the vCenter server must be identical in the following locations:

- In the NetBackup credentials.
- In the NetBackup plug-in installation.
- In the vCenter server installation.

### To set consistent vCenter naming

- ◆ If the fully qualified name of the vCenter server was not used during installation of the vCenter, do the following in vSphere Client:
  - Click **View > Administration > Server Settings**.
  - Click **Advanced Settings**.
  - Set the `VirtualCenter.VimApiUrl` key to the fully qualified domain name.

---

**Note:** If the vCenter server name is not entered correctly, the plug-in may not be able to access one or more of the virtual machine images.

---

## Installing the NetBackup plug-in for vSphere Web Client

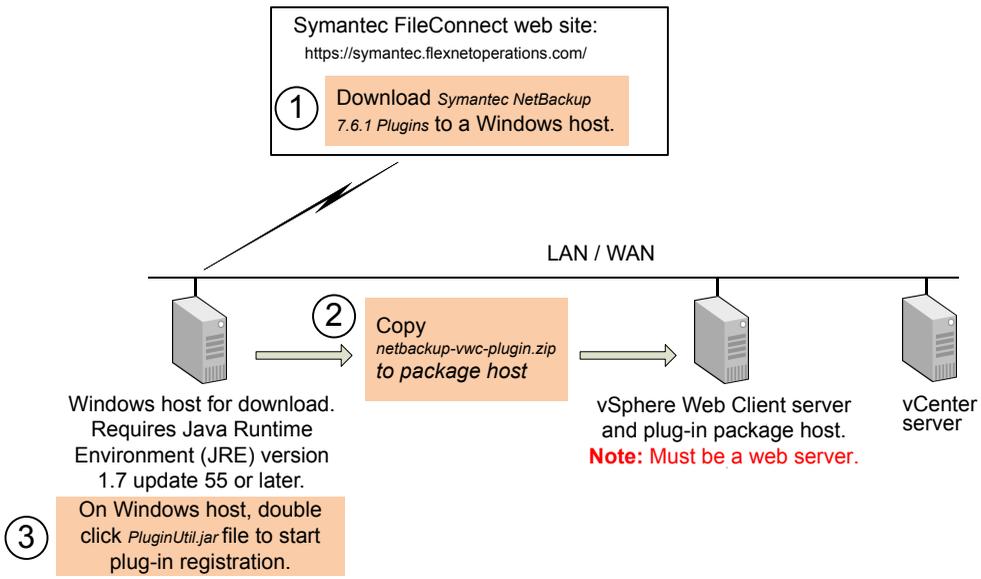
This topic describes how to obtain the installation media and install the NetBackup plug-in for vSphere Web Client.

The following is a brief list of the installation requirements:

- The plug-in installation media (Symantec NetBackup 7.6.1 Plugins folder). A plug-in package (`netbackup-vcw-plugin.zip`) is included in the installation media.
- A Windows host on which to download the installation media.
- A plug-in package host (web server) on which to copy the plug-in package (`netbackup-vcw-plugin.zip`).  
**Important!** The plug-in package host must be a web server.

Figure 2-1 shows the steps and components for installation.

**Figure 2-1** Simplified view of plug-in installation



For complete instructions, see **To install the NetBackup plug-in for vSphere Web Client** in this topic.

Table 2-4 describes the installation requirements in more detail.

**Table 2-4** NetBackup plug-in download location and installation requirements

Requirement	Notes
NetBackup plug-in media	You can download the plug-in installation media from the following location: <a href="https://symantec.flexnetoperations.com">https://symantec.flexnetoperations.com</a>
Windows host	Download the plug-in media to a Windows host. <b>Note:</b> The Windows host must have network connectivity to the vCenter server and to the vSphere Web Client server. <b>Note:</b> The Java Runtime Environment (JRE) version 1.7 update 55 or later must be installed on the Windows host.

**Table 2-4** NetBackup plug-in download location and installation requirements  
*(continued)*

Requirement	Notes
Plug-in package host web server and its URL	<p>The downloaded plug-in media contains a plug-in package folder. Use the procedure in this topic to copy the plug-in package to this package host, which must be a web server. The package host can be a separate web server or the vSphere Web Client server.</p> <p><b>Note:</b> The URL of the plug-in package host is required during plug-in installation.</p>
vSphere Web Client server(s)	<p>When the plug-in is installed, it runs on the vSphere Web Client server.</p> <p><b>Note:</b> If the plug-in package host is not the vSphere Web Client server, the vSphere Web Client server must have access to the package host.</p> <p><b>Note:</b> The vSphere Web Client server can manage multiple vCenter servers, and multiple vSphere Web Client servers can manage the same vCenter server.</p>
vCenter server(s) and their credentials	<p>The plug-in monitors backups of virtual machines that VMware vCenter servers manage.</p> <p>The vCenter server must be at vCenter version 5.5 or later.</p> <p>The following are required to complete the plug-in installation:</p> <ul style="list-style-type: none"> <li>■ Host name or IP address of each vCenter server.</li> <li>■ User name and password of each vCenter server.</li> <li>■ Port number for each vCenter server (default is 443).</li> </ul>

**Note:** Installing the NetBackup plug-in for vSphere Web Client does not uninstall the original NetBackup 7.6 or 7.6.0.1 plug-in for vCenter. The older plug-in continues to exist separately from the new one. You can uninstall the original plug-in as explained in the *NetBackup Plug-in for VMware vCenter Guide*:

<http://www.symantec.com/docs/DOC6288>

### To install the NetBackup plug-in for vSphere Web Client

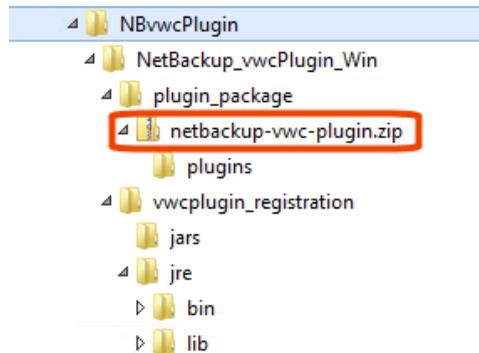
- 1 In your NetBackup product entitlement letter, locate your serial number for software downloads.
- 2 Go to the FileConnect webpage and enter your serial number:  
<https://symantec.flexnetoperations.com>
- 3 From FileConnect, download the Symantec NetBackup 7.6.1 Plugins folder to a Windows host.

---

**Note:** The Windows host must have network access to the vCenter server and to the vSphere Web Client server.

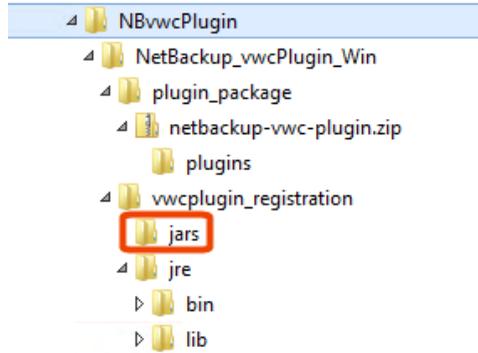
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- 4 In the downloaded plug-in folders, locate the `netbackup-vwc-plugin.zip` folder. Copy that folder to the plug-in package host web server.



The vSphere Web Client server can be the plug-in package host.

- 5 On the Windows host, in the downloaded plug-in folders, locate the `\vwcplugin_registration\jars` folder:



- 6 In the `\jars` folder, double click the `PluginUtil.jar` file.

---

**Note:** The Java Runtime Environment (JRE) must be installed on the Windows host.

---

Double-clicking this `.jar` file starts the registration process on the vCenter server.

- 7 Log in to the Windows host and follow the prompts to register the plug-in.

---

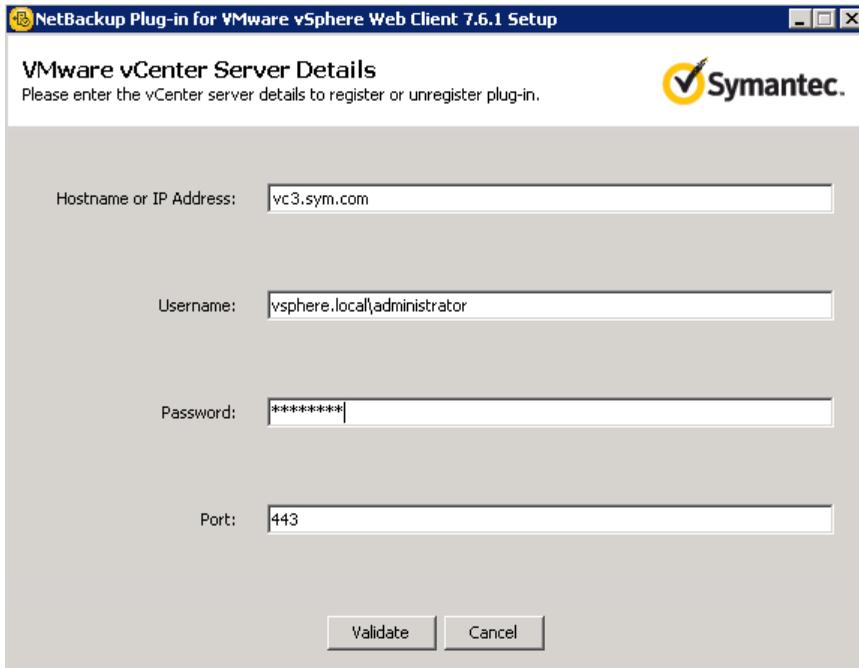
**Note:** The Windows host must have network access to the vCenter server and to the vSphere Web Client server.

---

Registration begins with the End User License Agreement (click **Accept**):



In the next screen, enter the vCenter server host name (or URL) and credentials, and click **Validate**:



**NetBackup Plug-in for VMware vSphere Web Client 7.6.1 Setup**

**VMware vCenter Server Details**  
Please enter the vCenter server details to register or unregister plug-in.

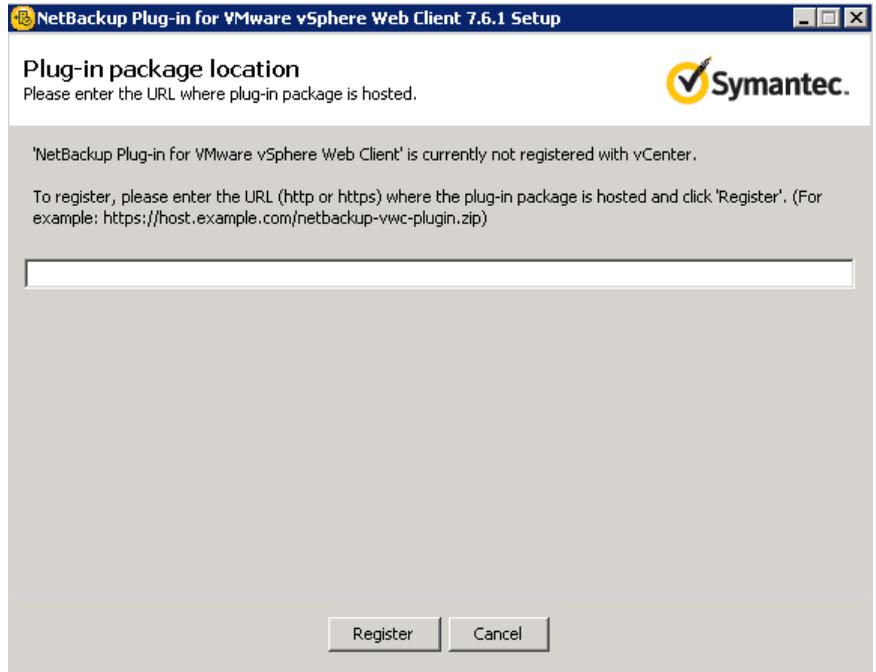
Hostname or IP Address:

Username:

Password:

Port:

The registration utility connects to the vCenter server and determines whether the plug-in is registered. If the plug-in is not registered, the following dialog appears:



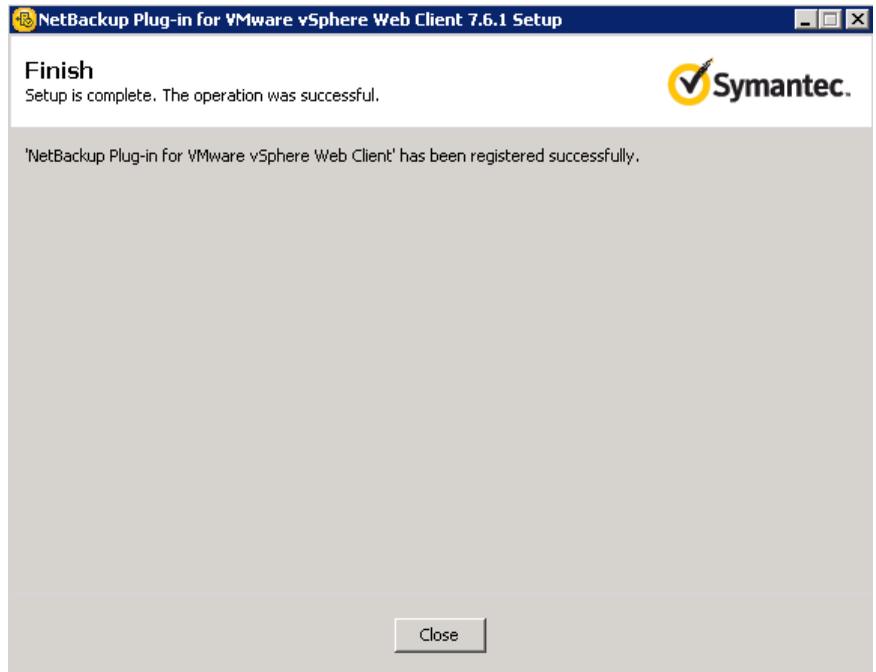
Enter the URL of the plug-in package host and click **Register**. The `netbackup-vwc-plugin.zip` folder was copied to this host at step 4.

- 8 Log in to a vSphere Web Client server that manages the vCenter server where you registered the plug-in.

When you log in, the vSphere Web Client server asks vCenter for a list of the registered plug-ins. The vSphere Web Client server also determines whether it has the plug-in binaries.

- If the vSphere Web Client server has the plug-in binaries, it automatically installs the plug-in and the login process continues.
- If the vSphere Web Client server does not have the plug-in binaries, it asks the vCenter for the location of the plug-in package. The vSphere Web Client server automatically downloads the plug-in package from the package host, unzips the package, and installs it.

Then the vSphere Web Client server displays the following:



- 9 To register the plug-in with another vCenter, repeat steps 7 and 8.

---

**Note:** The vSphere Web Client server where the plug-in is installed can manage multiple vCenter servers. The plug-in must be registered with each vCenter server that you want to monitor with the plug-in.

---

## Installing the NetBackup plug-in for vSphere Web Client on an additional vSphere Web Client server

Use the following procedure to install the NetBackup plug-in on an additional vSphere Web Client server that manages the vCenter where the plug-in was registered. Note that no new registration is required.

If the plug-in is not registered, see the following topic for instructions on registering and installing the plug-in:

See ["Installing the NetBackup plug-in for vSphere Web Client"](#) on page 16.

### To install the NetBackup plug-in on an additional vSphere Web Client server

- ◆ Log in to the vSphere Web Client server on which you want to install the plug-in. When you log in, the vSphere Web Client server asks vCenter for a list of the registered plug-ins. The vSphere Web Client server also determines whether it has the plug-in binaries.
  - If the vSphere Web Client server has the plug-in binaries, it automatically installs the plug-in and the login process continues.
  - If the vSphere Web Client server does not have the plug-in binaries, it asks the vCenter for the location of the plug-in package. The vSphere Web Client server automatically downloads the plug-in package from the package host, unzips the package, and installs it.

For a description of first-time plug-in installation and requirements (including the package host):

See [“Installing the NetBackup plug-in for vSphere Web Client”](#) on page 16.

## Registering the NetBackup plug-in for vSphere Web Client with additional vCenter servers

You can register the plug-in with multiple vCenter servers. The plug-in can then monitor and restore backups of the VMs that reside on all the vCenter servers.

---

**Note:** The plug-in must be registered with each vCenter server that you want to monitor with the plug-in.

---

---

**Note:** The Windows host (where the plug-in installation media was downloaded) must have network access to each vCenter server and to the vSphere Web Client server.

---

### To register the plug-in with another vCenter server

- ◆ In the following topic, refer to the installation requirements and steps 7 and 8:  
See [“Installing the NetBackup plug-in for vSphere Web Client”](#) on page 16.

# Upgrading the NetBackup plug-in for vSphere Web Client from an earlier version

---

**Note:** Installing the latest version of the plug-in does not uninstall the original NetBackup 7.6 or 7.6.0.1 plug-in for vCenter. The older plug-in continues to exist separately from the new one. You must uninstall the older plug-in. See [Table 2-5](#).

---

**Table 2-5** Upgrading the NetBackup VMware plug-in

Upgrade task	Reference topic and notes
To upgrade from the NetBackup 7.6 or 7.6.0.1 plug-in	<ul style="list-style-type: none"> <li>■ Uninstall the plug-in as explained in the <i>NetBackup Plug-in for VMware vCenter Guide</i>:  <a href="http://www.symantec.com/docs/DOC6288">http://www.symantec.com/docs/DOC6288</a></li> <li>■ Install the NetBackup plug-in for vSphere Web Client as explained in the following topic:                      See “<a href="#">Installing the NetBackup plug-in for vSphere Web Client</a>” on page 16.</li> </ul>

# Disabling the NetBackup plug-in for vSphere Web Client

You can disable the NetBackup plug-in without uninstalling it.

### To disable the NetBackup plug-in for vSphere Web Client

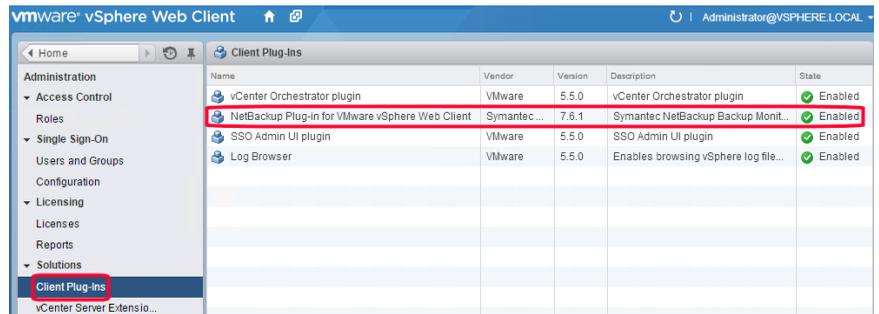
- 1 Log in to the vSphere Web Client console with the Single Sign On administrator user name.

The default user name is `vsphere.local\administrator`.

For the password, contact the vSphere administrator.

- 2 Click **Administration** and then click **Solutions > Client Plug-Ins**.

The installed plug-ins appear as shown in the following image.



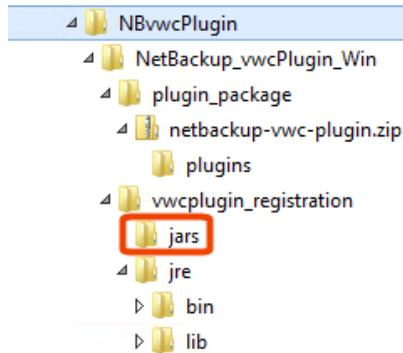
- 3 Right-click on the NetBackup plug-in and disable it.

## Uninstalling the NetBackup plug-in for vSphere Web Client

You can unregister and uninstall the NetBackup plug-in.

### To unregister and uninstall the NetBackup plug-in

- 1 On the Windows host where the Symantec NetBackup 7.6.1 Plugins folder was downloaded, locate the `\vwcpplugin_registration\jars` folder:



The Windows host must have network access to the vCenter server and to the vSphere Web Client server.

- 2 In the `\jars` folder, double click the `PluginUtil.jar` file.  
Double-clicking this `.jar` file starts the unregistration process.
- 3 On the **End User License Agreement** screen, click **Accept**.
- 4 On the **VMware vCenter Server Details** screen, enter the credentials for the vCenter Server where the plug-in is to be unregistered, and click **Validate**.

- 5 On the **Confirm Unregistration** screen, click **Unregister** and confirm it.

The following appears:



When the plug-in is un-registered, do the following to uninstall it.

- 6 On the vSphere Web Client server, stop the vSphere Web Client Server service.
- 7 On the vSphere Web Client server, delete the `com.symantec.netbackup.plugin-version` folder that contains the plug-in binaries.

In NetBackup 7.6.1, the folder name is `com.symantec.netbackup.plugin-7.6.1`.

The path to this folder is the following:

- On a Windows vSphere Web Client server:  
`\ProgramData\VMware\vSphere Web Client\vc-packages\vsphere-client-serenity\`
- On a Linux vSphere Web Client server:  
`/var/lib/vmware/vsphere-client/vc-packages/vsphere-client-serenity/`

- 8** If the existing settings of the NetBackup master servers do not need to be retained, delete the following folder on the vSphere Web Client server:

On a Windows vSphere Web Client server:

```
ProgramData\VMware\vSphere Web Client\netbackup
```

On a Linux vSphere Web Client server:

```
/storage/vsphere-client/netbackup
```

- 9** Start the vSphere Web Client Server service.

# Monitoring backup status

This chapter includes the following topics:

- [Setting vCenter privileges for backup monitoring](#)
- [Symantec NetBackup tab in vSphere Web Client](#)
- [Summary display](#)
- [Virtual Machines display](#)
- [Events display](#)
- [Using the Symantec NetBackup tab for backup reporting](#)
- [How to respond to backup status](#)

## Setting vCenter privileges for backup monitoring

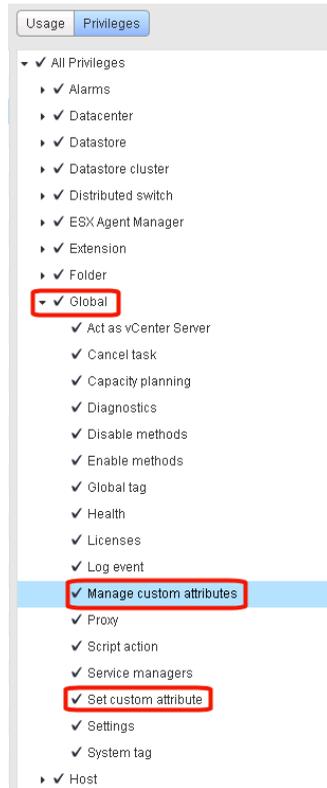
Before you can use the NetBackup plug-in for vSphere Web Client to monitor virtual machine backups, you must set vCenter privileges.

If the user account to access the plug-in cannot be assigned administrator privileges, you must set the following permissions at the vCenter level.

**To set vCenter privileges for backup monitoring**

- 1 In vSphere Web Client, click **Home > Roles**.
- 2 Under **Roles**, click **Administrator**.

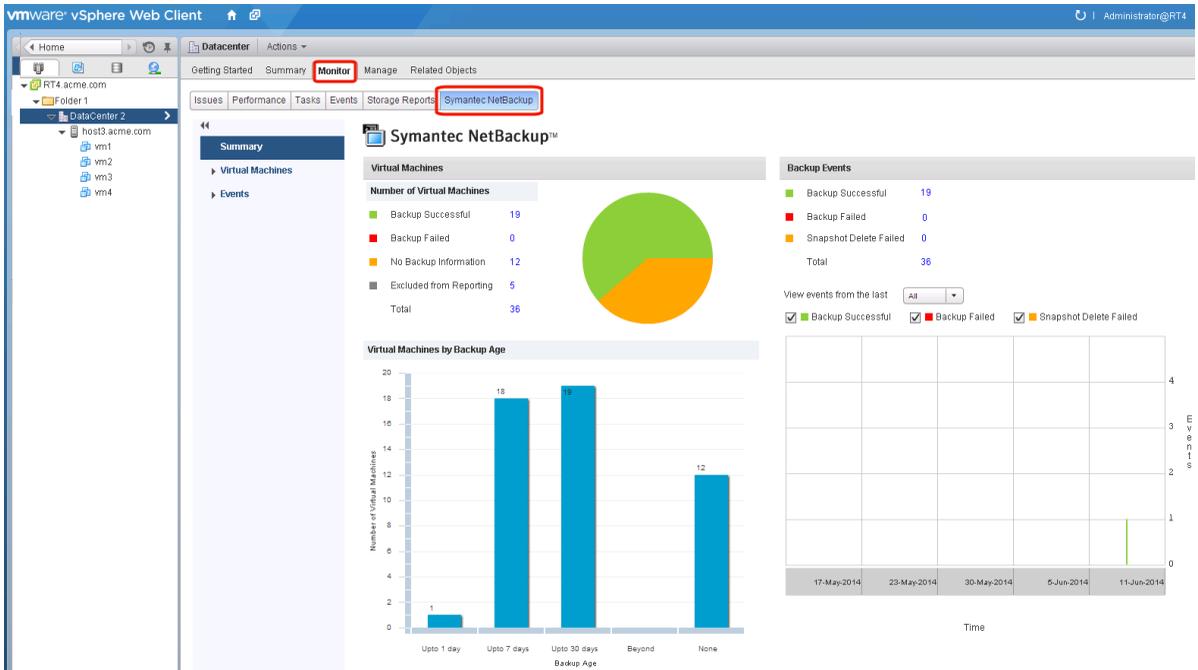
- 3 Click **Privileges**.
- 4 Drill into **Global** and make sure **Manage custom attributes** and **Set custom attribute** are selected.



## Symantec NetBackup tab in vSphere Web Client

The NetBackup plug-in for vSphere Web Client displays backup information on the **Symantec NetBackup** tab.

In the vSphere Web Client, click **Hosts and Clusters > Monitor**. Then select a vSphere object and click **Symantec NetBackup**.



**Note:** Select an object, such as a vCenter, folder, datacenter, or ESXi host. The information that appears in the **Symantec NetBackup** tab applies to the VMs within the object that you select.

Table 3-1 describes the displays that appear on the **Symantec NetBackup** tab.

**Table 3-1** Summary, Virtual Machines, and Events displays (NetBackup plug-in for vSphere Web Client)

Display	Information shown
<b>Summary</b>	<p>A summary and graphical view of backup success and backup events for a specified time period. Can show the current backup status for a selected VM.</p> <p>See <a href="#">“Summary display”</a> on page 34.</p>

**Table 3-1** Summary, Virtual Machines, and Events displays (NetBackup plug-in for vSphere Web Client) (*continued*)

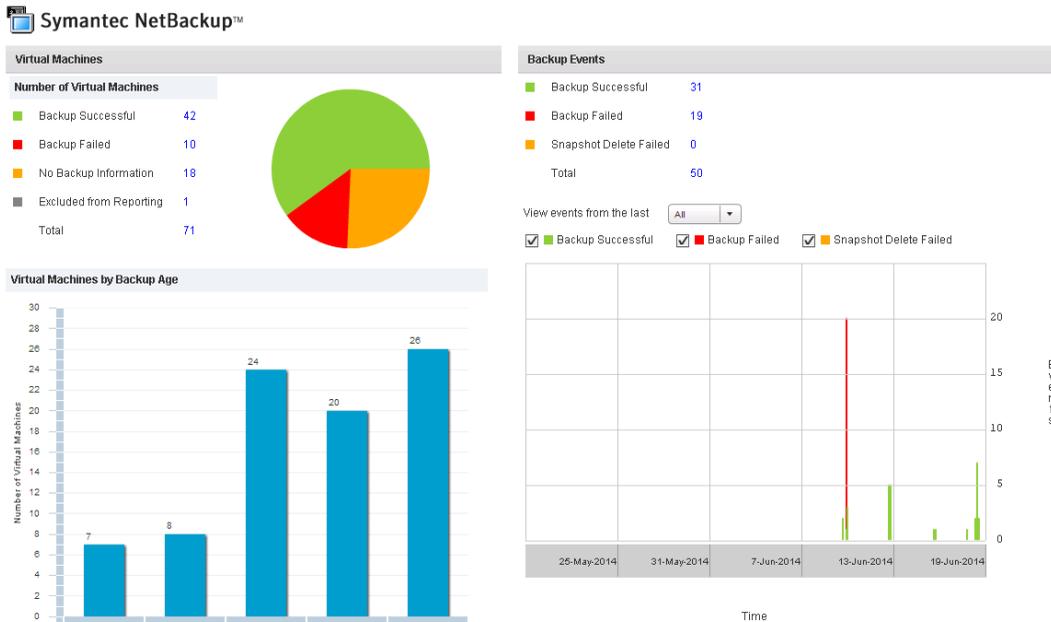
Display	Information shown
<b>Virtual Machines</b>	<p>Tabular view of backup information for a group of VMs.</p> <p><b>Note:</b> This display is available when you click on a vSphere object that is higher than the level of a VM.</p> <p>You can filter the information with a range of criteria. Includes an option for customized sorting in multiple columns.</p> <p>See <a href="#">“Virtual Machines display”</a> on page 36.</p>
<b>Events</b>	<p>More detailed tabular view of backup information based on events. Can show backup events for a VM or its parent object.</p> <p>You can filter the information with a range of criteria. Includes an option for customized sorting in multiple columns.</p> <p>See <a href="#">“Events display”</a> on page 37.</p>

## Summary display

The Summary display summarizes backup status, backup events, and backup age for the VMs in the vSphere object that you select. If you select an individual VM, the Summary display shows backup status and events for that VM.

[Figure 3-1](#) shows an example of the Summary display for multiple VMs.

**Figure 3-1** Summary display with backup data for multiple VMs



The Summary display presents the following backup information.

**Table 3-2** NetBackup Summary display for vSphere Web Client

Panel	Description
<b>Virtual Machine(s)</b>	Shows the current backup status for a particular VM or for all the VMs that belong to the selected vSphere object.  If the vSphere object is higher than the level of a VM, the backup status appears in a color-coded pie chart.  <b>Note:</b> If the panel applies to more than one VM: click on the linked values (such as for <b>Backup Successful</b> or <b>Total</b> ) to see the details in the <b>Virtual Machines</b> display.
<b>Virtual Machines By Backup Age</b>	Shows the backup age of the VMs in a bar chart. This panel is available only for a vSphere object that is higher than the level of a VM.

**Table 3-2** NetBackup Summary display for vSphere Web Client (*continued*)

Panel	Description
<b>Backup Events</b>	<p>Lists the total number of backup events and a breakdown of the events by <b>Backup Successful</b>, <b>Backup Failed</b>, and <b>Snapshot Delete Failed</b>.</p> <p><b>Note:</b> Click on the linked values for <b>Backup Successful</b>, <b>Backup Failed</b>, <b>Snapshot Delete Failed</b>, or <b>Total</b> to see the details in the <b>Events</b> display.</p> <p>Includes a color-coded bar chart that represents the type and number of backup events that occurred within a specified period. Each bar represents the events that occurred on a particular day.</p> <p>You can configure the chart as follows:</p> <ul style="list-style-type: none"> <li>■ Select the types of events that appear in the chart by clicking on the color-coded check boxes.</li> <li>■ Select a different time period from <b>View events from the last</b>.</li> </ul>

## Virtual Machines display

The Virtual Machines display is available when you click on a vSphere object that is higher than the level of a VM. For each VM it lists the following: the VM name, the host or cluster, backup status, last successful backup, backup age, backup policy, master server, and the number of consecutive failures.

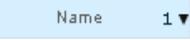
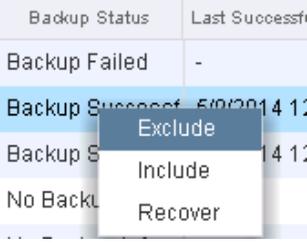
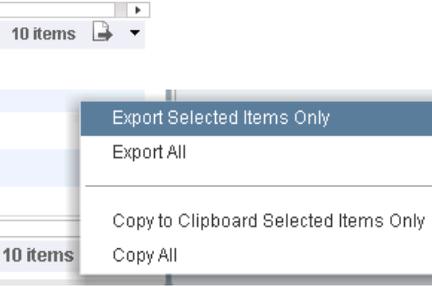
The following is an example of the Virtual Machines display.

**Figure 3-2** Virtual Machines display

Name	Host / Cluster	Backup Status	Last Successful Backup	Backup Age (days)	Policy	Master	Consecutive Failures
TestVM1	Cluster_5.1	Backup Successful	5/12/2014 6:48:11 PM	37	backup_rt	ch53.eng	
TestVM22	Cluster_5.1	Backup Successful	5/19/2014 7:37:08 PM	30	SWD	ch53.eng	
TestVM3	Cluster_5.1	Backup Successful	6/19/2014 4:34:24 PM	0	backup_rt	ch53.eng	
nvm1	Cluster_5.1	Backup Successful	5/13/2014 7:15:14 PM	36	Import	ch53.eng	
chil_testguest_1	Cluster_5.1	Backup Successful	5/13/2014 7:10:53 PM	36	Import	ch53.eng	
chil_testguest_2	Cluster_5.1	Backup Successful	5/13/2014 7:10:22 PM	36	Import	ch53.eng	
NetworkVM3	Cluster_5.1	Backup Successful	5/13/2014 7:10:25 PM	36	Import	ch53.eng	

**Table 3-3** describes the options for using the Virtual Machines display.

**Table 3-3** Display options in the NetBackup Virtual Machines display for vSphere Web Client

Option	Description
	<p>Click in a column header to list the column entries in ascending or descending order.</p> <p>You can also adjust the width of each column.</p>
	<p>Click and hold a column header to drag the column to the left or right in the display.</p>
	<p>Right-click on a row to exclude or include a VM in the display, or to recover a VM.</p> <p><b>Exclude:</b> Marks a selected VM so that its backup status and other information are not displayed.</p> <p><b>Include:</b> Reverses the <b>Exclude</b> option: Adds a VM's backup status and other information to the display.</p> <p><b>Recover:</b> Brings up the <b>Recovery Wizard</b>, to recover the VM.</p>
	<p>Click the drop-down icon in the lower right, to export or copy the rows to a file. To export or copy information on a particular VM, first click on the row of the VM.</p> <p>To save the information to an HTML or comma-separated text (CSV) file, click <b>Export</b>.</p> <p>To save to the Clipboard, click <b>Copy</b>.</p>

## Events display

The Events display shows backup information based on events, such as backup successful, backup failed, and snapshot delete failed. It can show backup events for a single VM or for all VMs in the selected object.

The following is an example of the Events display.

**Figure 3-3** Events display

Virtual Machine	Event Type	Event Time	Policy	Schedule Nam...	Schedule Type	Backup Host	Master	Job Duration	Expiration
TestVM1	Backup Successful	5/12/2014 6:0	P1	Full	Full	zo2.acme.com	zo3.acm	0 hrs 1 min 21	5/26/2014 6:00:15 PM
TestVM1	Backup Successful	5/9/2014 4:43	P1	Diff	Differential	zo2.acme.com	zo3.acm	0 hrs 1 min 18	5/23/2014 4:41:58 PM
TestVM5	Backup Successful	5/9/2014 12:2	backup_rt	Full	Full	ch21.acme.com	ch49.acr	0 hrs 0 min 44	5/23/2014 12:21:58 AM
TestVM25	Backup Failed	5/9/2014 12:2	backup_rt	Full	Full	ch21.acme.com	ch49.acr	0 hrs 5 min 40	5/23/2014 12:16:17 AM
vm9	Backup Successful	5/9/2014 12:1	backup_rt	Full	Full	ch21.acme.com	ch49.acr	0 hrs 5 min 31	5/23/2014 12:10:49 AM
vm20	Backup Successful	5/8/2014 11:0	P1	Full	Full	ch21.acme.com	ch49.acr	0 hrs 5 min 44	5/8/2015 11:00:20 PM

**Table 3-4** Events display

Option	Description
	<p>Click in a column header to list the column entries in ascending or descending order.</p> <p>You can also adjust the width of each column.</p>
	<p>Click and hold a column header to drag the column to the left or right in the display.</p>
<b>Backup Successful</b>	For the selected vSphere object, shows only the VMs that were successfully backed up.
<b>Backup Failed</b>	For the selected vSphere object, shows only the VMs that were not successfully backed up.
<b>Snapshot Delete Failed</b>	<p>For the selected vSphere object, shows only the VMs for which NetBackup failed to delete the snapshot after the backup completed.</p> <p><b>Note:</b> After it creates a snapshot, NetBackup deletes the snapshot when the backup completes. If NetBackup fails to delete snapshots, the performance of the VM may eventually decline. In that case, you may need to delete the snapshots manually.</p>
<b>Recover</b>	<p>To recover a VM, right-click on its row and click <b>Recover</b>.</p> <p>The <b>Recovery Wizard</b> appears.</p>

**Table 3-4** Events display (*continued*)

Option	Description
Export Selected Items Only	Click the drop-down icon in the lower right, to export or copy the rows to a file. To export or copy information on a particular VM, first click on the row of the VM.
Export All	
Copy to Clipboard Selected Items Only	To save the information to an HTML or comma-separated text (CSV) file, click <b>Export</b> . To save to the Clipboard, click <b>Copy</b> .
Copy All	

## Using the Symantec NetBackup tab for backup reporting

The following procedures explain how to find VM backup status in the **Hosts and Clusters > Monitor > Symantec NetBackup** tab.

The information that appears in the **Symantec NetBackup** tab applies only to the vSphere object that you select.

### To find backup status for a single VM

- 1 Select the VM in vSphere Web Client.
- 2 On the **Monitor** tab, click **Symantec NetBackup**.
- 3 Use the **Summary** or **Events** displays to see the backup status.

### To find backup status for multiple VMs

- 1 Select the appropriate object in vSphere Web Client (such as datacenter or ESXi host).

- 2 On the **Monitor** tab, click **Symantec NetBackup**.

The **Summary** display shows the backup success rate for the VMs overall.

See [“Summary display”](#) on page 34.

- 3 For the backup status of particular VMs, click **Virtual Machines** and find the VMs in the **Name** column. Or click **Events** to list all the backup attempts.

You can click on a column header to reorder the entries in that column, or to move or widen the column.

You can use **Filter** to limit the type of information that appears.

Under **Events**, click **Backup Successful**, **Backup Failed**, or **Snapshot Delete Failed** to filter the events by backup status.

See [“Virtual Machines display”](#) on page 36.

See [“Events display”](#) on page 37.

### To determine which VMs are not backed up

- 1 Select the appropriate object in vSphere Web Client (such as datacenter or ESXi host).
- 2 On the **Monitor** tab, click **Symantec NetBackup**.
- 3 Click **Events**, then click **Backup Failed**.
- 4 To save the report, click on the save-file icon in the lower right and select an output type.

### To determine the age of existing backups

- 1 Select the appropriate object in vSphere Web Client (such as datacenter or ESXi host).
- 2 On the **Monitor** tab, click **Symantec NetBackup**.
- 3 Click **Summary**.

**Virtual Machines By Backup Age** shows the age of the backups (up to one day, 7 days, 30 days, and so forth).

- 4 For information on backup age per VM, click **Virtual Machines** and look at the **Backup Age (days)** column.
- 5 To save the report, click on the save-file icon in the lower right and select an output type.

## How to respond to backup status

For the backup status that is reported in the NetBackup plug-in for vSphere Web Client, try the following suggested actions. You may need to confer with the NetBackup administrator.

**Table 3-5** Tips for responding to backup status in the NetBackup plug-in for vSphere Web Client

Status	Action
Backup failures	<ul style="list-style-type: none"><li>■ Look at the number of consecutive failures on the <b>Virtual Machines</b> display.</li><li>■ If too many failures have occurred, export the display results (use the save-file icon in the lower right). Send the file to the NetBackup administrator.</li></ul>
No backup information	<ul style="list-style-type: none"><li>■ The VM may not be included in a NetBackup policy, or the <b>Post events to vCenter</b> policy option may not be correctly configured. Contact the NetBackup administrator.</li><li>■ The VM may be intentionally excluded from scheduled backups (contact the NetBackup administrator). In that case, you can right-click on the VM's row in the <b>Virtual Machines</b> display and click <b>Exclude</b>. The <b>Exclude</b> option removes the VM's status from the display.</li><li>■ The ESXi server may have been removed from the vCenter server. See <a href="#">"Notes on the NetBackup plug-in for vSphere Web Client"</a> on page 10.</li></ul>
Snapshot delete failed	NetBackup attempts to delete old snapshots at the start of each backup. If snapshots are not deleted, you can manually delete them in vSphere Web Client.

# Restoring virtual machines

This chapter includes the following topics:

- [Configuration overview for the NetBackup Recovery Wizard](#)
- [Notes on restoring virtual machines with the NetBackup Recovery Wizard](#)
- [How to access the NetBackup Recovery Wizard](#)
- [NetBackup Recovery Wizard screens](#)

## Configuration overview for the NetBackup Recovery Wizard

---

**Note:** The NetBackup Recovery Wizard is an optional feature of the NetBackup plug-in for vSphere Web Client, for recovering virtual machines. It is not required for monitoring virtual machine backups.

---

To use the NetBackup Recovery Wizard to restore virtual machines, configure the following:

**Table 4-1** Configuring the NetBackup Recovery Wizard

Step	Description	Reference topic
1	Enable the NetBackup Web Services on the master server.	See <a href="#">“Enabling NetBackup Web Services on the Windows master server”</a> on page 43. See <a href="#">“Enabling NetBackup Web Services on the UNIX or Linux master server”</a> on page 46.

**Table 4-1**      Configuring the NetBackup Recovery Wizard (*continued*)

Step	Description	Reference topic
2	Configure ports for the NetBackup Web Services.	See <a href="#">“Configuring ports for the NetBackup Web Services”</a> on page 47.
3	Create an authentication token file.	See <a href="#">“Creating an authentication token for the NetBackup plug-in for vSphere Web Client”</a> on page 50.
4	Authorize the plug-in to restore virtual machines.	See <a href="#">“Authorizing the NetBackup plug-in to restore virtual machines”</a> on page 53.
5	Set the required vCenter privileges.	See <a href="#">“Setting vCenter privileges for recovering virtual machines”</a> on page 55.

## Enabling NetBackup Web Services on the Windows master server

By default, the NetBackup Web Services are disabled on the master server. To allow the NetBackup plug-in for vSphere Web Client to communicate with the master server, the NetBackup administrator must enable the NetBackup Web Services.

**Table 4-2**      To enable the NetBackup Web Services on the Windows master server

Step	Description	Reference topic
1	Create a group <code>nbwebgrp</code> and a user <code>nbwebsvc</code> .	See <a href="#">“To create group <code>nbwebgrp</code> and user <code>nbwebsvc</code>”</a> on page 44.
2	If the NetBackup master server is a server in an MSCS cluster, verify the domain user configuration.	See <a href="#">“To verify the domain user configuration if the NetBackup master server is in an MSCS cluster”</a> on page 44.
3	Grant the <b>Log On As Service</b> right.	See <a href="#">“To grant the <code>Log On As Service</code> right”</a> on page 44.
4	Set up the NetBackup Web Services on each master server that the plug-in must access to perform restores.	See <a href="#">“To set up NetBackup Web Services”</a> on page 45.

**To create group `nbwebgrp` and user `nbwebsvc`**

- ◆ On the master server, check whether the `nbwebgrp` group contains the `nbwebsvc` user.

If the user and group do not exist, create them.

`nbwebsvc` and `nbwebgrp` can be local user and local group or domain user and domain group. They can be an Active Directory user and group.

---

**Note:** A combination of local user and domain group or domain user and local group is not supported. Both `nbwebsvc` and `nbwebgrp` must be local, or both must be part of the same domain.

---



---

**Caution:** For security reasons, it is highly recommended to create this user with a strong password and disable remote login for this user.

---

**To verify the domain user configuration if the NetBackup master server is in an MSCS cluster**

- 1 In **Active Directory Users and Computers**, click the **Users** folder under your domain controller.
- 2 Double-click the `nbwebsvc` user.
- 3 On the **nbwebsvc Properties** dialog, click the **Member Of** tab. It should contain the following records:

Domain Users

`nbwebgrp`

By default, `nbwebgrp` is set as the primary group.

- 4 Select the `Domain Users` record and click **Set Primary Group**.  
 Make sure that `Domain Users` is set as the primary group: the **Set Primary Group** button should be grayed out.
- 5 Click **OK**.

The NetBackup web management console should now start correctly when you run `setupWmc.bat` in the next procedure.

**To grant the `Log On As Service` right**

- 1 Go to **Control Panel > Administrative Tools > Local Security Policy**.
- 2 Under **Security Settings**, click **Local Policies** and then **User Rights Assignment**.

**3 Right click **Log on as a service** and select **Properties**.**

Add the `nbwebsvc` user. For a domain user, include the appropriate domain.

**4 Save your changes and close the **Log on as a service Properties** dialog.**

Now you can start the WMC service from the Windows Services tool or by means of the `setupWmc` script. In a clustered environment, you must start the WMC service on all nodes.

**To set up NetBackup Web Services**

**1 Run the `setupWmc` script on the master server:**

- If the master server is not in a clustered environment:

```
install_path\NetBackup\wmc\bin\install\setupWmc.bat
```

When you are prompted, enter the password for the local user `nbwebsvc`.

- If the master server is in a clustered environment:

```
install_path\NetBackup\wmc\bin\install\setupWmc.bat -domain  
domain_name
```

The `domain_name` is for the domain that contains group `nbwebgrp` and user `nbwebsvc`.

When you are prompted, enter the password for the user `nbwebsvc`.

**Note:** If `setupWmc.bat` fails to start the NetBackup Web Services, a message is displayed. The following log file contains further details:

```
install_path\NetBackup\wmc\webserver\logs\nbwmc_setupWmc.log
```

Enter the following for help with this command:

```
setupWmc.bat -help
```

**2 To make sure the NetBackup Web Services are enabled, go to the following location in a web browser:**

```
https://<server>:<port>/nbwebservice/application.wadl
```

Where:

- `server` is the host name or IP address of the master server, or the virtual name or IP address for clustered environments.
- `port` is the port number.

To find the port that NetBackup Web Services uses, enter the following on the NetBackup master server:

```
install_path\NetBackup\wmc\bin\install>configurePorts.bat  
-status
```

The HTTP 401 error indicates that the NetBackup Web Services are enabled.

## Enabling NetBackup Web Services on the UNIX or Linux master server

By default, the NetBackup Web Services are disabled on the master server. To allow the NetBackup plug-in for vSphere Web Client to communicate with the master server, the NetBackup administrator must enable the NetBackup Web Services.

**Table 4-3** To enable the NetBackup Web Services on the UNIX or Linux master server

Step	Description	Reference topic
1	Create a group <code>nbwebgrp</code> and a user <code>nbwebsvc</code> .	See <a href="#">“To create group <code>nbwebgrp</code> and user <code>nbwebsvc</code>”</a> on page 46.
2	Set up the NetBackup Web Services on each master server that the plug-in must access to perform restores.	See <a href="#">“To set up NetBackup Web Services”</a> on page 47.

### To create group `nbwebgrp` and user `nbwebsvc`

- ◆ On the master server, check whether the `nbwebgrp` group contains the `nbwebsvc` user.

To create the `nbwebgrp` group, enter the following:

```
/usr/opensv/netbackup/bin # groupadd nbwebgrp
```

To create the `nbwebsvc` user, enter the following:

```
/usr/opensv/netbackup/bin # useradd -g nbwebgrp -c 'NetBackup Web Services application account' -d /usr/opensv/wmc nbwebsvc
```

Enter the command with the values as shown. The `-c` option specifies the password file comment, and `-d` specifies the user's home directory as

```
/usr/opensv/wmc.
```

---

**Note:** Symantec recommends default permissions (`UMASK`) for the `nbwebsvc` user. NetBackup assigns appropriate permissions to this user when it enables NetBackup Web Services.

---

### To set up NetBackup Web Services

- 1 Run the `setupWmc` script on the master server:

```
/usr/opensv/wmc/bin/install/setupWmc
```

Enter the following for help with this command:

```
setupWmc -help
```

- 2 To make sure the NetBackup Web Services are enabled, go to the following location in a web browser:

```
https://<server>:<port>/nbwebservice/application.wadl
```

Where:

- `server` is the host name or IP address of the master server, or the virtual name or IP address for clustered environments.
- `port` is the port number.  
 To find the port that NetBackup Web Services uses, enter the following on the NetBackup master server:

```
/usr/opensv/wmc/bin/install/configurePorts -status
```

The HTTP 401 error indicates that the NetBackup Web Services are enabled.

## Configuring ports for the NetBackup Web Services

The NetBackup Recovery Wizard requires the proper configuration of web ports for the NetBackup Web Services on the master server. Otherwise, you cannot authorize the NetBackup plug-in for vSphere Web Client to restore the virtual machines that were backed up by that master server.

The NetBackup installation process automatically runs the `configurePorts` script to configure NetBackup Web Services to run on any of the following sets of ports.

**Table 4-4** Port sets for NetBackup Web Services

Port set	HTTP port	HTTPS port	shutdown port
First set	8080	8443	8205
Second set	8181	8553	8305
Third set	8282	8663	8405

If the `configurePorts` script does not find one of the sets free (for example, 8080, 8443, and 8205), it logs an error to the following file:

Windows:

```
install_path\NetBackup\wmc\webserver\logs\nbwmc_configurePorts.log
```

**UNIX and Linux:**

```
/usr/opensv/wmc/webserver/logs/nbwmc_configurePorts.log
```

On UNIX and Linux, the following appears on the NetBackup system console:

```
configurePorts: WmcPortsUpdater failed with exit status <status_code>
```

When this error occurs, use the following procedure on the master server to manually configure the ports. The `configurePorts` command is in the following location:

**Windows:**

```
install_path\NetBackup\wmc\bin\install\configurePorts
```

**UNIX or Linux:**

```
/usr/opensv/wmc/bin/install/configurePorts
```

### To configure ports for the NetBackup Web Services

- 1 On the master server, enter the following to list the currently configured ports:

```
configurePorts -status
```

Example output:

```
Current Http Port: 8080
Current Https Port: 8443
Current Shutdown Port: 8205
```

- 2 Use the `configurePorts` command in the following format to re-configure a port:

```
configurePorts -httpPort http_port | -httpsPort https_port |
-shutdownPort shutdown_port
```

You can configure one, two, or three ports at a time. For example, to configure the HTTP port to 8181 and the HTTPS port to 8553:

```
configurePorts -httpPort 8181 -httpsPort 8553
```

Output:

```
Old Http Port: 8080
New Http Port: 8181
Old Https Port: 8443
New Https Port: 8553
```

Use this command as needed to configure a set of ports for HTTP, HTTPS, and shutdown.

See [Table 4-4](#) for a list of the port sets.

- 3 If the master server is in a clustered environment, do the following:
  - Make sure that the same set of ports are free on all the cluster nodes: Do step 1 on each node.
  - Reconfigure the ports on each node as required: Do step 2.
  - To override the ports that are used across all nodes, enter the following:

```
configurePorts -overrideCluster true
```

This command updates the following file on shared disk:

Windows:

```
install_path/NetBackup/var/global/wsl/portfile
```

UNIX or Linux:

```
/usr/opensv/netbackup/var/global/wsl/portfile
```

The NetBackup installer for `Web Services` uses this file during installation in a clustered mode.

## Creating an authentication token for the NetBackup plug-in for vSphere Web Client

To allow the plug-in to restore VMs, you must generate an authentication token on the NetBackup master server (or the NetBackup appliance as master server).

### To create an authentication token on the NetBackup master server

- 1 Enter the following on the master server:

#### Windows

```
install_path\NetBackup\wmc\bin\install\manageClientCerts.bat  
-create vCenter_plugin_host
```

#### UNIX, Linux

```
/usr/openv/wmc/bin/install ./manageClientCerts -create  
vCenter_plugin_host
```

where `vCenter_plugin_host` is the fully qualified domain name of the vCenter where the plug-in is installed.

The `manageClientCerts` command returns the location of a compressed file that contains the authentication token.

- 2 Provide the compressed file to the vCenter administrator.

---

**Caution:** Be sure to share or send the compressed file in a secure manner.

---

With the master server token, the plug-in can be authorized to restore virtual machines.

See “[Authorizing the NetBackup plug-in to restore virtual machines](#)” on page 53.

**To create an authentication token on the NetBackup appliance as master server**

- 1 Use the CLISH on the appliance to enter the **vCenter Client Administration view**:

```
nbapp213.Manage> vCenter
```

The following appears:

```
Entering vCenter Client Administration view...
```

```
Credential  Manage vCenter client credential
Exit       Logout and exit from the current shell.
Return     Return to the previous menu.
Shell      Shell operations.
```

- 2 Enter the following:

```
nbapp213.vCenter> Credential Create vCenter_plugin_host
```

where *vCenter\_plugin\_host* is the fully qualified domain name of the vCenter where the plug-in is installed. The following is example output:

```
Successfully created client certificate for 'vCent_1' to secure
access to the NetBackup Web Service Layer on Master Server
'nb-appliance', port '8443'.
```

In this example, the compressed file is created at:

```
/usr/opensv/var/global/wsl/credentials/clients/vCent_1.zip
```

- 3 Provide the compressed file to the vCenter administrator.

---

**Caution:** Be sure to share or send the compressed file in a secure manner.

---

With the master server token, the plug-in can be authorized to restore virtual machines.

See “[Authorizing the NetBackup plug-in to restore virtual machines](#)” on page 53.

## Revoking an authorization token

You can delete or revoke a master server authentication token for the NetBackup plug-in for vSphere Web Client, as follows.

### To revoke the authentication token

- 1 Enter the following on the master server:

#### Windows

```
install_path\NetBackup\wmc\bin\install\manageClientCerts.bat  
-delete vCenter_plugin_host
```

#### UNIX, Linux

```
/usr/openv/wmc/bin/install ./manageClientCerts -delete  
vCenter_plugin_host
```

where *vCenter\_plugin\_host* is the fully qualified domain name of the vCenter in which the plug-in is installed.

The `-delete` option removes the authentication token and its compressed file from the master server. The plug-in is no longer authorized to restore virtual machines from the backups that this master server made.

- 2 To re-authorize the plug-in for restores for this master server, create a new token and if necessary re-add the master server in vSphere Web Client.

See [“Creating an authentication token for the NetBackup plug-in for vSphere Web Client”](#) on page 50.

See [“Authorizing the NetBackup plug-in to restore virtual machines”](#) on page 53.

## Listing all current authentication tokens

You can list all the master server authentication tokens that are presently in use.

### To list all current authentication tokens

- ◆ Enter the following on the master server:

#### Windows

```
install_path\NetBackup\wmc\bin\install\manageClientCerts.bat -list
```

#### UNIX, Linux

```
/usr/openv/wmc/bin/install ./manageClientCerts -list
```

#### Sample output:

Client	Expiry Date
vCenter-server-1	Thu Feb 06 16:16:51 GMT+05:30 2014
vCenter-server-2	Fri Feb 07 11:22:53 GMT+05:30 2014

The command lists the vCenter servers for which the tokens were created as well as their expiration dates. It can help diagnose communication problems between the plug-in host and the master server when a certificate has expired.

- For well-formatted output, set the command prompt or shell screen size to more than 100 units.
- Server names that are longer than 40 characters are truncated. Characters beyond the first 40 are replaced with "...".

## Authorizing the NetBackup plug-in to restore virtual machines

The NetBackup master server initiates and controls the backup of virtual machines. To use the plug-in to restore virtual machines, you must obtain a master server authentication token from the NetBackup administrator. You can then authorize the plug-in to restore the virtual machines that were backed up by that master server.

### To authorize the plug-in to restore virtual machines

- 1 Ask the NetBackup administrator to provide an authentication token file.  
See ["Creating an authentication token for the NetBackup plug-in for vSphere Web Client"](#) on page 50.
- 2 Copy the authentication token file to the computer or laptop where the vSphere Web Client is launched.  
Make a note of the location.
- 3 In the top level of the vSphere Web Client object navigator, click **Symantec NetBackup**.

4 Click **Add/Remove servers**.

5 Enter the following to specify a NetBackup master server and its authentication token.

**Add NetBackup Master Server**

- **NetBackup Master Server**  
Enter the fully qualified domain name of the master server.
- **Port for NetBackup Web Services**  
If the NetBackup administrator has not changed the port, accept the default (8443). Otherwise, ask the administrator for the correct port number.
- **Upload Authentication Token**  
Click **Browse** to select the authentication token file that the NetBackup administrator provided.  
Click **Add Server**. The server is added to the list of master servers that the plug-in can communicate with.

- 6 Add other master servers and their authentication tokens as needed.
- 7 You can also remove a master server from the list of servers, or validate the connection from the plug-in to a master server.

**Validate/Remove NetBackup Master Server** After the master server is added to the list, you can validate the connection. Type or select the master server and click **Validate**.  
 Click **Remove** to remove the server from the list. The plug-in is no longer able to monitor or restore the backups that the master server performed.

## Setting vCenter privileges for recovering virtual machines

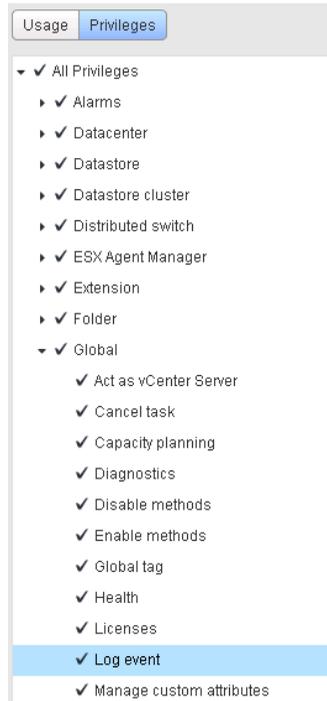
Use the following procedure to set the user privileges in vCenter for the NetBackup Recovery Wizard. Set the privileges on each vCenter where virtual machines may need to be restored.

If the user account to access the plug-in cannot be assigned administrator privileges, you must set the following permissions at the vCenter level.

### To set vCenter privileges for recovering virtual machines

- 1 In vSphere Web Client, click **Home > Roles**.
- 2 Under **Roles**, click **Administrator**.
- 3 Click **Privileges**.

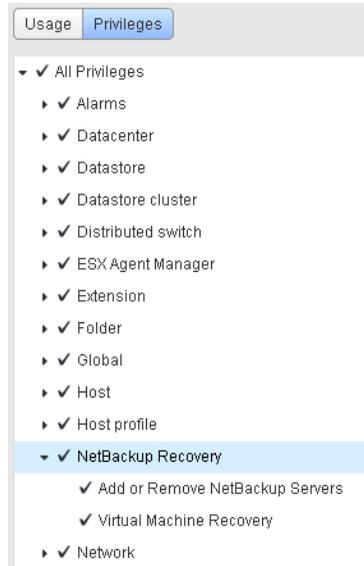
4 Drill into **Global** and make sure **Log Event** is selected.



- 5 Drill into **NetBackup Recovery** and make sure the following are selected:

**Add or Remove NetBackup Servers**

**Virtual Machine Recovery**



- 6 Set the privileges on each vCenter where virtual machines may need to be restored.

---

**Caution:** The NetBackup **Virtual Machine Recovery** privilege grants global recovery authorization. It allows users with that role to recover any virtual machine that resides on that vCenter. Use caution when granting this privilege to users.

---

## Notes on restoring virtual machines with the NetBackup Recovery Wizard

Use the **Symantec NetBackup Recovery Wizard** in vSphere Web Client to restore a virtual machine from its NetBackup image. You can restore the virtual machine to its original location or to a different location.

Note the following about the NetBackup Recovery Wizard:

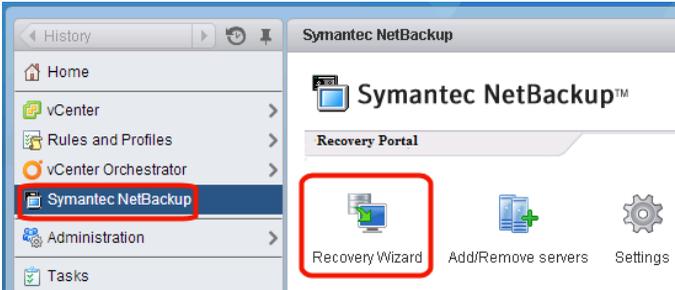
- For the pre-requisites for using the Recovery Wizard:  
See [“Configuration overview for the NetBackup Recovery Wizard”](#) on page 42.

- The NetBackup Recovery Wizard is an optional feature of the plug-in. It is not required for monitoring virtual machine backups.
- The NetBackup Recovery Wizard is for recovery of an entire virtual machine, not for recovery of individual files. To recover individual files from the virtual machine backup, use the NetBackup Backup, Archive, and Restore interface. See "About restore of individual files" and "Restoring individual files" in the *NetBackup for VMware Administrator's Guide*.
- The Recovery Wizard does not support recovery of vCloud Director backup images. To recover virtual machines into vCloud Director, use the NetBackup Backup, Archive, and Restore interface. See the "Use NetBackup for vCloud Director" chapter in the *NetBackup for VMware Administrator's Guide*.
- The Recovery Wizard does not use NetBackup's Instant Recovery feature.

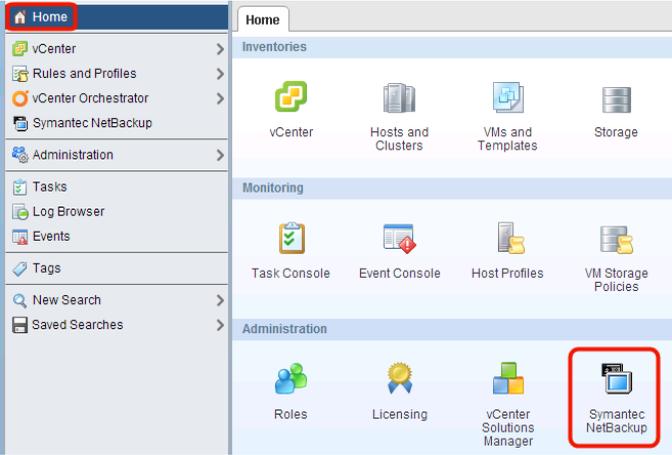
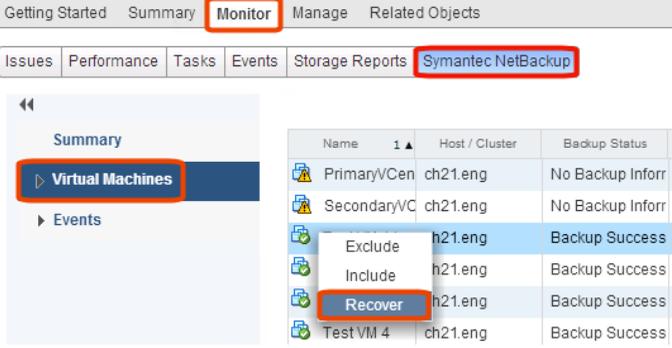
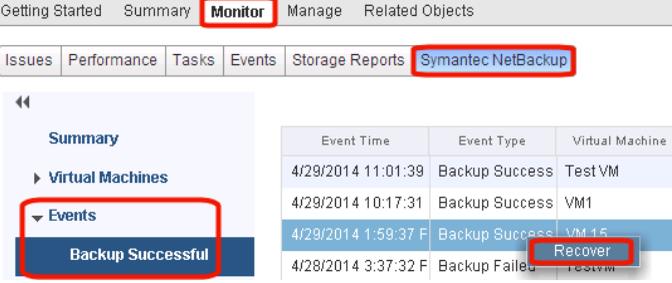
## How to access the NetBackup Recovery Wizard

In vSphere Web Client, you can launch the NetBackup Recovery Wizard as shown in [Table 4-5](#).

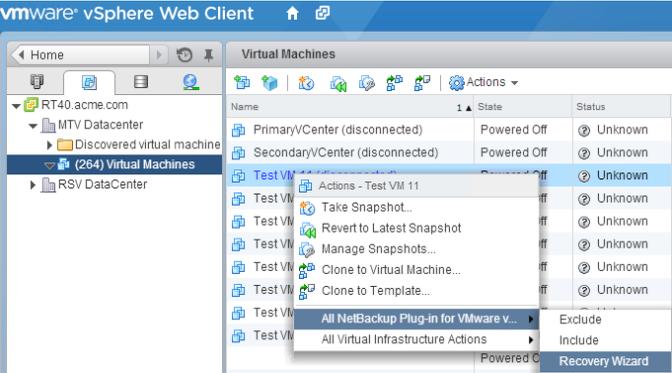
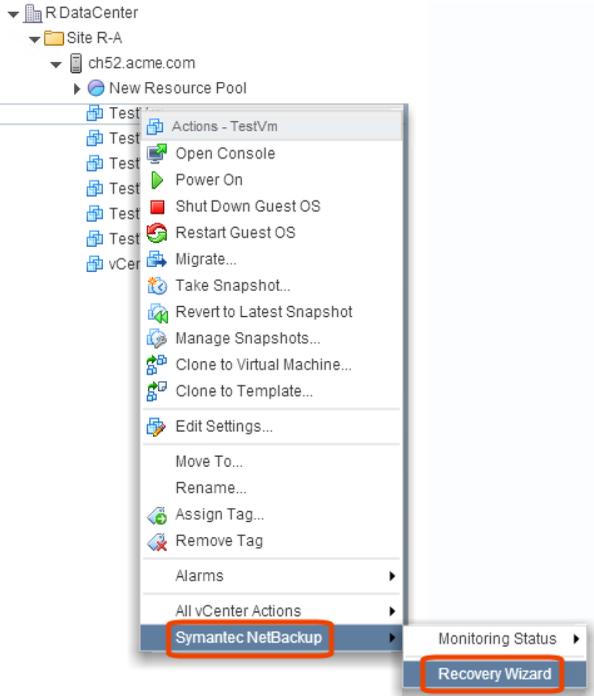
**Table 4-5** How to start the **NetBackup Recovery Wizard** in vSphere Web Client

Action	Description
 <p>The screenshot shows the vSphere Web Client interface. On the left is a navigation pane with a tree view containing: Home, vCenter, Rules and Profiles, vCenter Orchestrator, <b>Symantec NetBackup</b> (highlighted with a red box), Administration, and Tasks. The main content area displays the Symantec NetBackup interface, which includes a 'Recovery Portal' section with three icons: 'Recovery Wizard' (highlighted with a red box), 'Add/Remove servers', and 'Settings'.</p>	<p>In the vSphere Web Client object navigator, click <b>Symantec NetBackup</b>, then click <b>Recovery Wizard</b>.</p>

**Table 4-5** How to start the NetBackup Recovery Wizard in vSphere Web Client (continued)

Action	Description																					
	<p>In the vSphere Web Client object navigator, click <b>Home</b>, click the <b>Symantec NetBackup</b> icon, and then click <b>Recovery Wizard</b>.</p>																					
 <table border="1" data-bbox="417 1003 801 1222"> <thead> <tr> <th>Name</th> <th>Host / Cluster</th> <th>Backup Status</th> </tr> </thead> <tbody> <tr> <td>PrimaryVCen</td> <td>ch21.eng</td> <td>No Backup Infor</td> </tr> <tr> <td>SecondaryVC</td> <td>ch21.eng</td> <td>No Backup Infor</td> </tr> <tr> <td>h21.eng</td> <td>h21.eng</td> <td>Backup Success</td> </tr> <tr> <td>h21.eng</td> <td>h21.eng</td> <td>Backup Success</td> </tr> <tr> <td>h21.eng</td> <td>h21.eng</td> <td>Backup Success</td> </tr> <tr> <td>Test VM 4</td> <td>ch21.eng</td> <td>Backup Success</td> </tr> </tbody> </table>	Name	Host / Cluster	Backup Status	PrimaryVCen	ch21.eng	No Backup Infor	SecondaryVC	ch21.eng	No Backup Infor	h21.eng	h21.eng	Backup Success	h21.eng	h21.eng	Backup Success	h21.eng	h21.eng	Backup Success	Test VM 4	ch21.eng	Backup Success	<p>In <b>Hosts and Clusters</b>, click the <b>Monitor</b> tab.</p> <p>In the <b>Symantec NetBackup</b> tab, click <b>Virtual Machines</b> or <b>Events</b>, right-click on a successful backup for the virtual machine, and click <b>Recover</b>.</p>
Name	Host / Cluster	Backup Status																				
PrimaryVCen	ch21.eng	No Backup Infor																				
SecondaryVC	ch21.eng	No Backup Infor																				
h21.eng	h21.eng	Backup Success																				
h21.eng	h21.eng	Backup Success																				
h21.eng	h21.eng	Backup Success																				
Test VM 4	ch21.eng	Backup Success																				
 <table border="1" data-bbox="411 1390 801 1541"> <thead> <tr> <th>Event Time</th> <th>Event Type</th> <th>Virtual Machine</th> </tr> </thead> <tbody> <tr> <td>4/29/2014 11:01:39</td> <td>Backup Success</td> <td>Test VM</td> </tr> <tr> <td>4/29/2014 10:17:31</td> <td>Backup Success</td> <td>VM1</td> </tr> <tr> <td>4/29/2014 1:59:37 F</td> <td>Backup Success</td> <td>VM1.5</td> </tr> <tr> <td>4/28/2014 3:37:32 F</td> <td>Backup Failed</td> <td>TestVM</td> </tr> </tbody> </table>	Event Time	Event Type	Virtual Machine	4/29/2014 11:01:39	Backup Success	Test VM	4/29/2014 10:17:31	Backup Success	VM1	4/29/2014 1:59:37 F	Backup Success	VM1.5	4/28/2014 3:37:32 F	Backup Failed	TestVM							
Event Time	Event Type	Virtual Machine																				
4/29/2014 11:01:39	Backup Success	Test VM																				
4/29/2014 10:17:31	Backup Success	VM1																				
4/29/2014 1:59:37 F	Backup Success	VM1.5																				
4/28/2014 3:37:32 F	Backup Failed	TestVM																				

**Table 4-5** How to start the NetBackup Recovery Wizard in vSphere Web Client *(continued)*

Action	Description
	<p>In the <b>Virtual Machines</b> pane, right-click on the VM to restore.</p>
	<p>In the top level of the vSphere Web Client object navigator, right-click on the VM to restore and click <b>Symantec NetBackup &gt; Recovery Wizard</b>.</p>

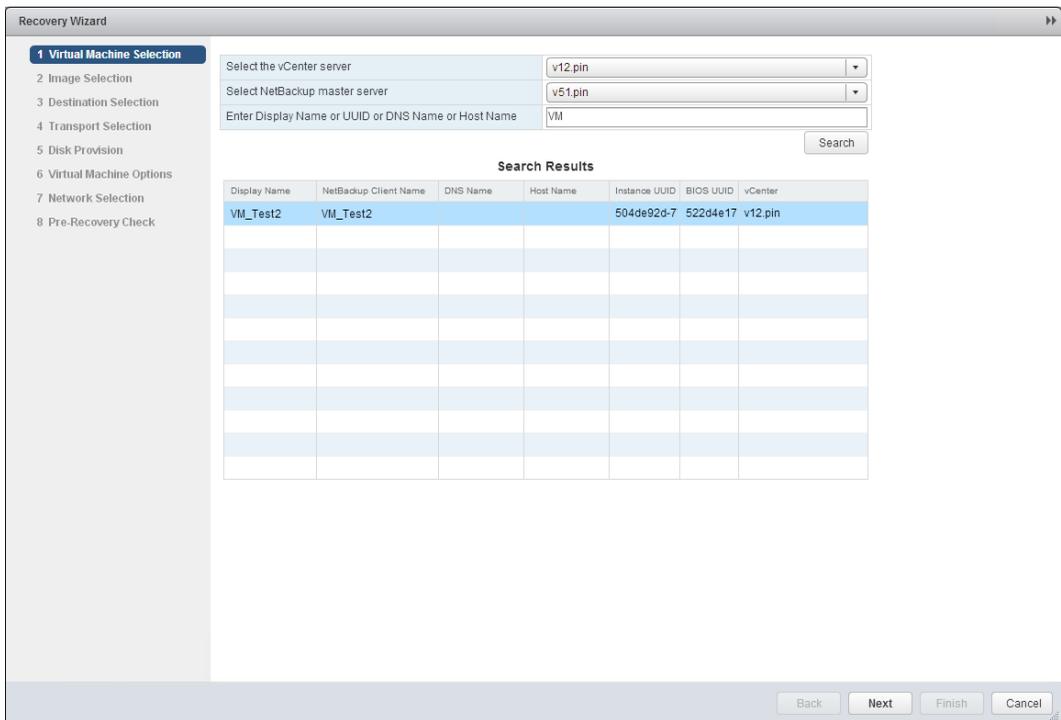
# NetBackup Recovery Wizard screens

Use the following screens to restore a virtual machine with the VMware vSphere Web Client interface.

## Virtual Machine Selection screen

Select the virtual machine to restore.

**Figure 4-1** Virtual Machine Selection screen in the NetBackup Recovery Wizard for vSphere Web Client



**Table 4-6** Fields in the Virtual machine selection screen

Field	Description
<b>Select the vCenter Server</b>	Use the drop-down list to select the vCenter server where the VM resided when it was backed up.

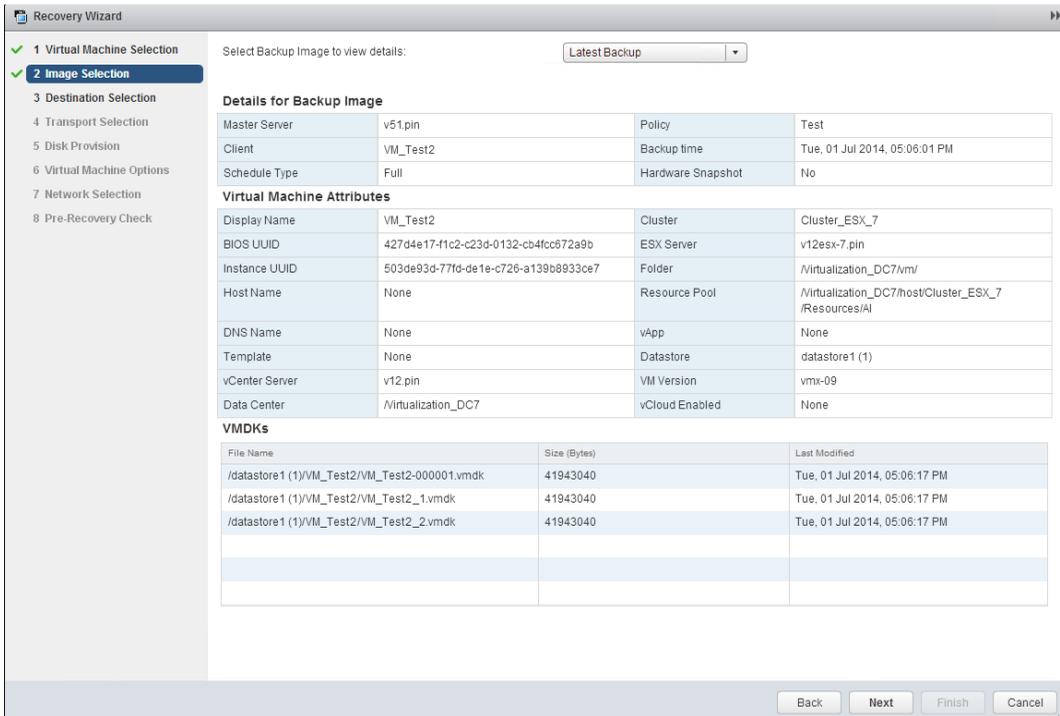
**Table 4-6** Fields in the Virtual machine selection screen (*continued*)

Field	Description
<b>Select NetBackup Master Server</b>	<p>Use the drop-down list to select the master server that made the backup.</p> <p>If the master server is not in the drop-down, you must add the server to the master server list.</p> <p>See “ <a href="#">Authorizing the NetBackup plug-in to restore virtual machines</a>” on page 53.</p>
<b>Enter Display Name or UUID or DNS Name or Host Name</b>	<p>Enter the name (or portion of the name) of the virtual machine that you want to restore, and click <b>Search</b>.</p> <p><b>Note:</b> This field is case-sensitive.</p>
<b>Search Results</b>	<p>The results of the search appear in this list.</p> <p>Click the virtual machine to restore and then click <b>Next</b>.</p> <p>The NetBackup master server identifies each VM in the backup policy as a "client." In the search results, the <b>NetBackup Client Name</b> column displays that name.</p>

## Image Selection screen

Select the backup image from which to restore the virtual machine.

**Figure 4-2** Image Selection screen in the NetBackup Recovery Wizard for vSphere Web Client



**Table 4-7** Fields in the Image Selection screen

Field	Description
<b>Select Backup Image to view details</b>	Use the drop-down to select the backup, as follows <ul style="list-style-type: none"> <li>■ <b>Latest Backup</b> Selects the latest available backup image.</li> <li>■ <b>Manually Specify</b> Click this option to select a different backup image. The <b>Browse Backups</b> button appears. Click that button and enter a date range within which to search for images. For more information, see <a href="#">Table 4-8</a>.</li> </ul>
<b>Details for Backup Image</b>	Lists the information about the VM backup image.
<b>Virtual Machine Attributes</b>	Lists the attributes of the virtual machine at the time it was backed up.
<b>VMDKs</b>	Lists the vmdk file(s) of the selected VM.
<b>Next</b>	Click <b>Next</b> for the next recovery screen.

**Figure 4-3** Manual Backup Selection screen in the NetBackup Recovery Wizard for vSphere Web Client

Manual Backup Selection ✕

**Search backup images between start and end time. Timezone for the input dates is Coordinated Universal time**

◀ May 2014 ▶

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

0

0

0

HourMinutesSeconds

◀ July 2014 ▶

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

0

0

0

HourMinutesSeconds

Search Images

**Images**

Backup time	Schedule Type	Size	Policy	Hardware Snapshot
Fri, 04 Jul 2014, 12:00:43 PM	Full	40991 kbytes	Test	No
Fri, 04 Jul 2014, 11:57:44 AM	Differential Incremental	32 kbytes	Test	No <span style="float: right;">7</span>
Fri, 04 Jul 2014, 11:56:06 AM	Full	40991 kbytes	Test	No
Fri, 04 Jul 2014, 11:45:58 AM	Full	40991 kbytes	Test	No
Fri, 04 Jul 2014, 11:42:48 AM	Differential Incremental	32 kbytes	Test	No
Wed, 02 Jul 2014, 02:15:53 PM	Full	40991 kbytes	Test	No

**Virtual Machine Attributes**

Display Name	VM_Test2	Cluster	Cluster_ESX_7
BIOS UUID	427d4e17-f1c2-c23d-0132-cb4fcc672a9b	ESX Server	v12esx-7.pin
Instance UUID	503de93d-77fd-d61e-c726-a139b8933ce7	Folder	/Virtualization_DC7/vm/
Host Name	None	Resource Pool	/Virtualization_DC7/host/Cluster_ESX_7/Resouces/Al
DNS Name	None	vApp	None

Selected Backup

**Table 4-8** Fields in the Manual Backup Selection screen

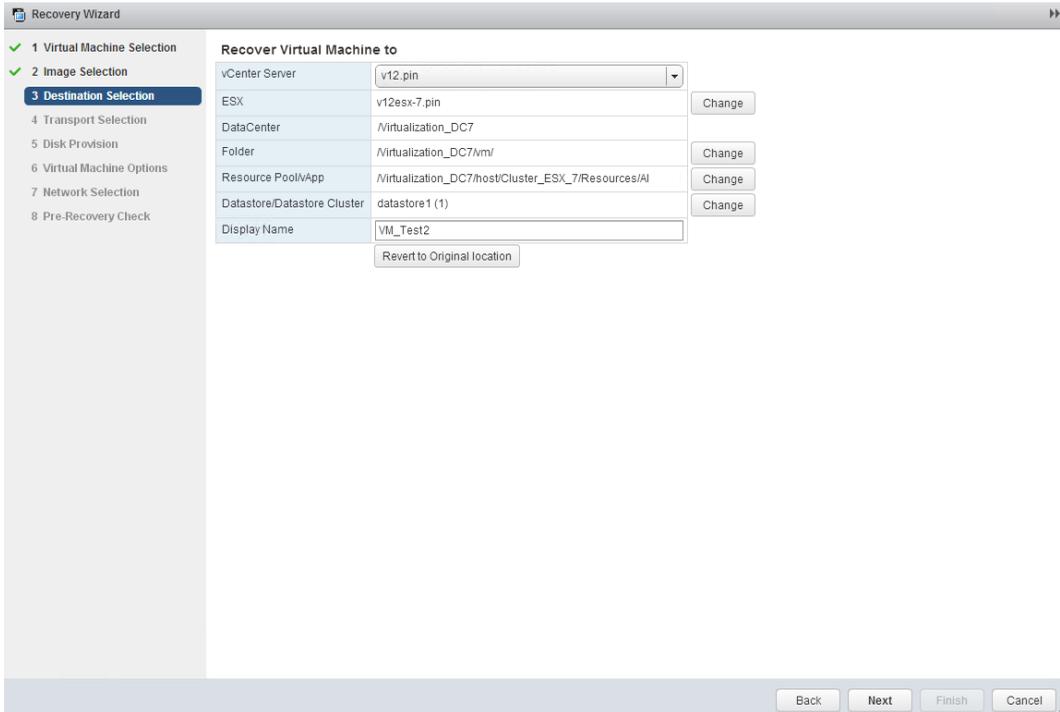
Field	Description
<b>Search backup images between start and end time</b>	To search for backup images, click in the left calendar to select the start time. Click in the right calendar to select the end time. You can use the <b>Hour, Minutes, Seconds</b> fields to set more precise times.  Then click <b>Search Images</b> . Click on an image. Further information about the image appears under <b>Virtual Machine Attributes</b> and <b>VMDKs</b> .
<b>Images</b>	Lists the images that fall within the search dates.
<b>Virtual Machine Attributes</b>	For the selected image, lists the attributes of the virtual machine at the time it was backed up.
<b>VMDKs</b>	For the selected image, lists the vmdk file(s) of the selected image.
<b>Selected Backup</b>	Click to select the image.

## Destination Selection screen

Specify the destination for the restored virtual machine.

The default values are from the original location of the virtual machine.

**Figure 4-4** Destination Selection screen in the NetBackup Recovery Wizard for vSphere Web Client



**Table 4-9** Fields in the Destination Selection screen

Field	Description
<b>vCenter Server</b>	The vCenter server for the restored virtual machine. Use the drop-down to select the vCenter server.
<b>ESX</b>	The ESXi server for the restored virtual machine. Click <b>Change</b> to browse for an ESX server.
<b>DataCenter</b>	The datacenter for the restored virtual machine.
<b>Folder</b>	The folder for the restored virtual machine. Click <b>Change</b> to browse for a folder.
<b>Resource Pool/vApp</b>	The resource pool for the restored virtual machine. Click <b>Change</b> to browse for a resource pool or vApp.

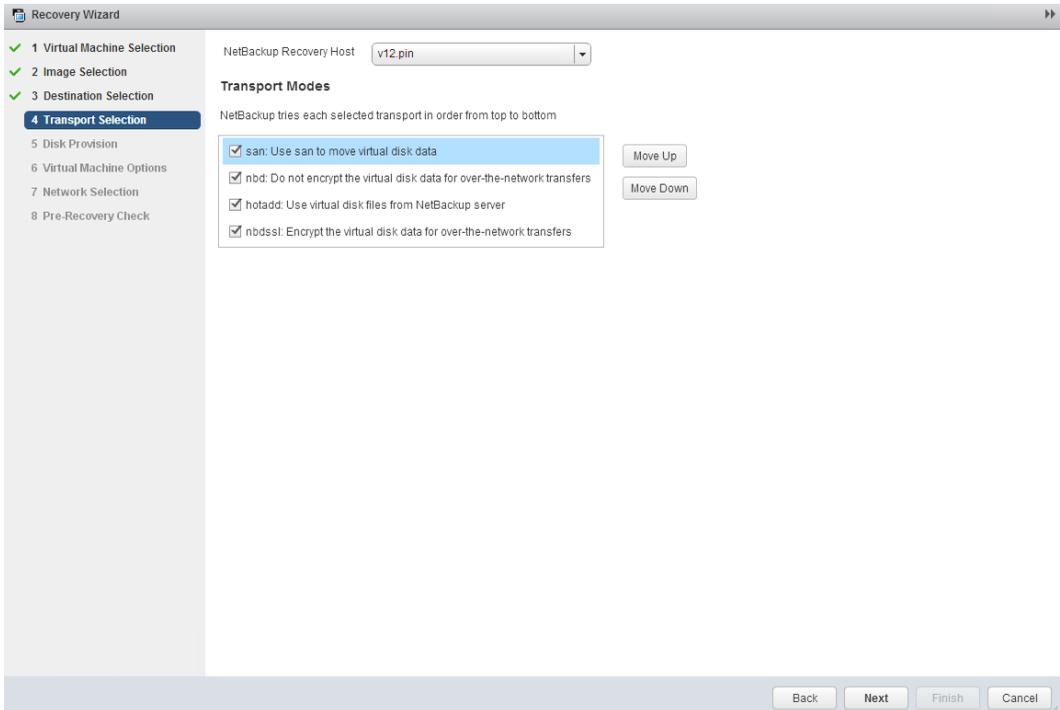
**Table 4-9** Fields in the Destination Selection screen (*continued*)

Field	Description
<b>Datastore/Datastore Cluster</b>	The datastore or datastore cluster for the restored virtual machine. Click <b>Change</b> to browse for a datastore or datastore cluster.
<b>Display Name</b>	The display name for the restored virtual machine. You can enter the name.
<b>Revert to Original location</b>	Selects the original location (vCenter and ESXi server, datacenter, folder, resource pool, vApp, datastore, or cluster) as the restore location. This setting is the default.
<b>Next</b>	Click <b>Next</b> for the next recovery screen.

## Transport Selection screen

Select the recovery host and data transport mode(s) for the virtual machine restore.

**Figure 4-5** Transport Selection screen in the NetBackup Recovery Wizard for vSphere Web Client



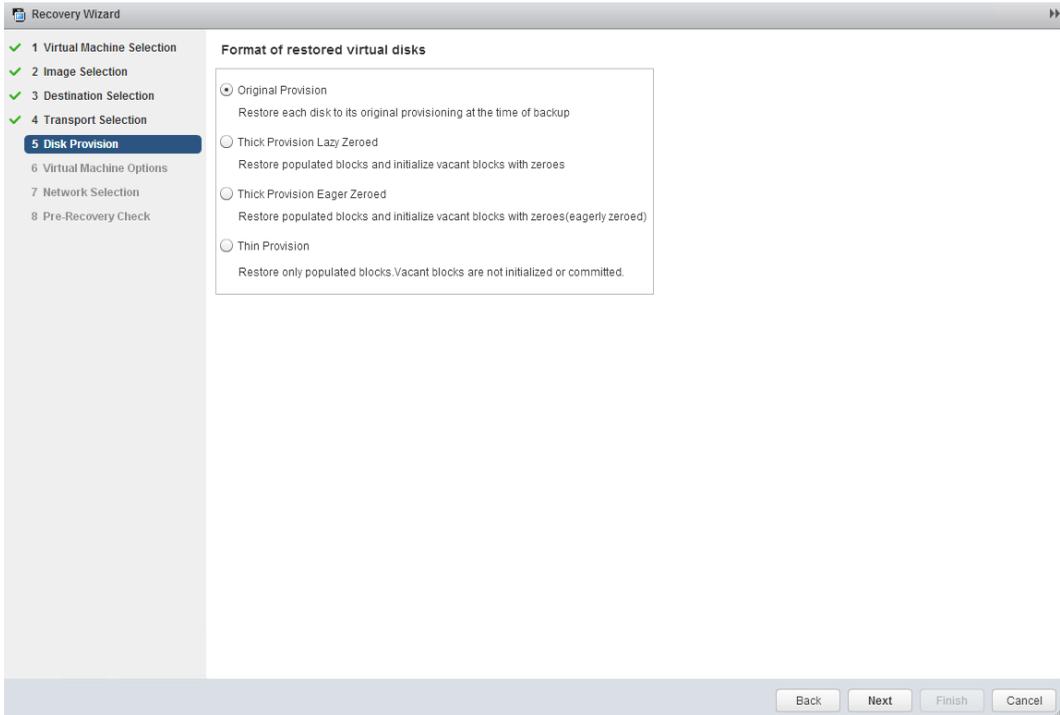
**Table 4-10** Fields in the Transport Selection screen

Field	Description
<b>NetBackup recovery host</b>	<p>The host that performs the recovery. The default is the host that performed the backup (the backup host).</p> <p>In most cases, use the host that performed the backup. Selecting a different host as the recovery host can result in a slow restore or a failed restore, depending on the transport mode.</p> <p>For example, the restore may fail if you select the SAN transport mode in the following case:</p> <ul style="list-style-type: none"> <li>■ The host that performed the backup used a SAN connection to access the datastore.</li> <li>■ The host you select as recovery host does not have SAN access to the datastore.</li> </ul>
<b>Transport Modes</b>	<p>Determines how NetBackup sends the restore data from the recovery host to the VMware datastore. The appropriate option depends in part on the type of network that connects the VMware datastore to the recovery host.</p> <p>Click the check boxes to select or unselect transport modes. For the restore, NetBackup tries the selected modes in the order listed. To change the order, click on a transport mode and click <b>Move Up</b> or <b>Move Down</b>.</p>
<b>san</b>	For unencrypted transfer over Fibre Channel (SAN) or iSCSI.
<b>nbd</b>	For unencrypted transfer over a local network with the Network Block Device (NBD) driver protocol. This mode of transfer is usually slower than Fibre Channel.
<b>nbdssl</b>	For encrypted transfer (SSL) over a local network with the Network Block Device (NBD) driver protocol. This mode of transfer is usually slower than Fibre Channel.
<b>hotadd</b>	<p>Requires that the recovery host is in a virtual machine.</p> <p>For instructions on this transport mode and on installing the recovery host in a virtual machine, refer to your VMware documentation.</p>

## Disk Provision screen

Select the provisioning (format) for the restored virtual disks.

**Figure 4-6** Disk Provision screen in the NetBackup Recovery Wizard for vSphere Web Client



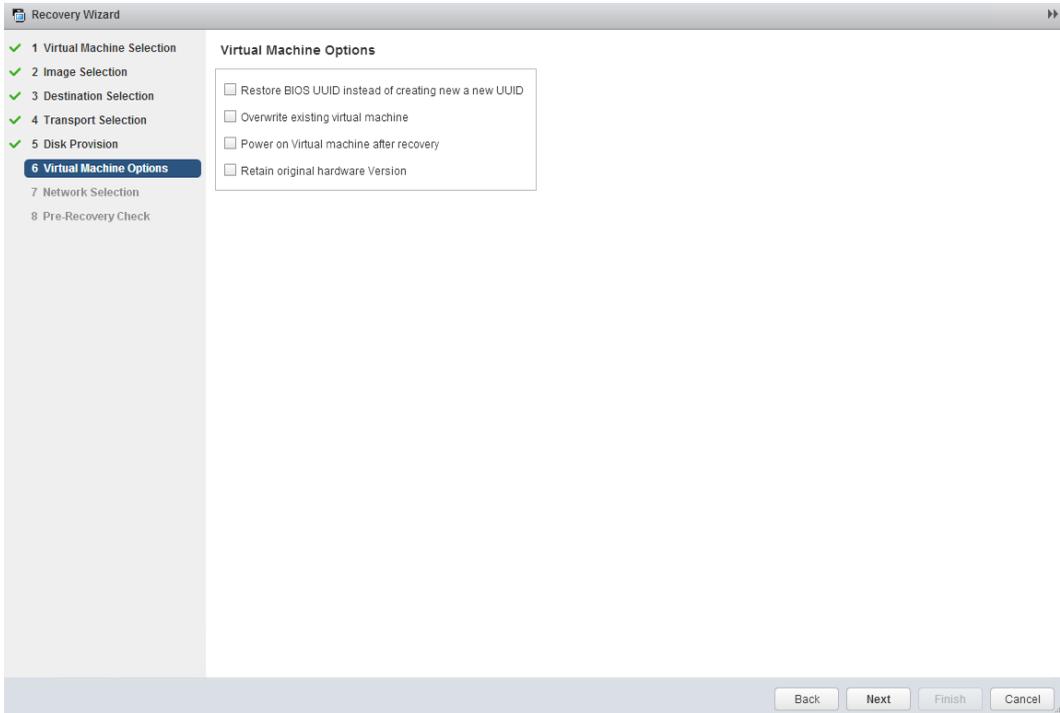
**Table 4-11** Fields in the Disk Provision screen

Field	Description
<b>Original Provision</b>	Restores the virtual machine's virtual disks with their original provisioning.
<b>Thick Provision Lazy Zeroed</b>	Configures the restored virtual disks in the thick format. The virtual disk space is allocated when the disk is created. This option restores the populated blocks, but initializes vacant blocks with zeros later, on demand.
<b>Thick Provision Eager Zeroed</b>	Configures the restored virtual disks in the thick format. Restores the populated blocks and immediately initializes vacant blocks with zeros (eagerly zeroed). Creation of the virtual disks may take more time with this option. However, if the restore occurs over a SAN, the eagerly zeroed feature may speed up the restore by reducing network communication with the vCenter server.
<b>Thin Provision</b>	Configures the restored virtual disks in the thin format. Restores the populated blocks but does not initialize vacant blocks or commit them.

## Virtual Machine Options screen

Click the check boxes to select the recovery options for the virtual machine.

**Figure 4-7** Virtual Machine Options screen in the NetBackup Recovery Wizard for vSphere Web Client



**Table 4-12** Fields in the Virtual Machine Options screen

Field	Description
<b>Restore BIOS UUID instead of creating a new UUID</b>	<p>Retains the UUID of the original virtual machine (note that the UUID is a globally unique identifier). The virtual machine is restored with the same UUID that it had before the restore.</p> <p>Note the following:</p> <ul style="list-style-type: none"> <li>■ If a virtual machine with the same display name but with a different UUID exists at the target restore location, the restore fails. You must either delete the existing virtual machine and run the restore, or keep the existing virtual machine and abandon the restore.</li> <li>■ If you do not want to keep the existing virtual machine, you can do one of the following: Remove the existing virtual machine, or log into the ESXi server and remove the directory where the virtual machine resides.</li> </ul>

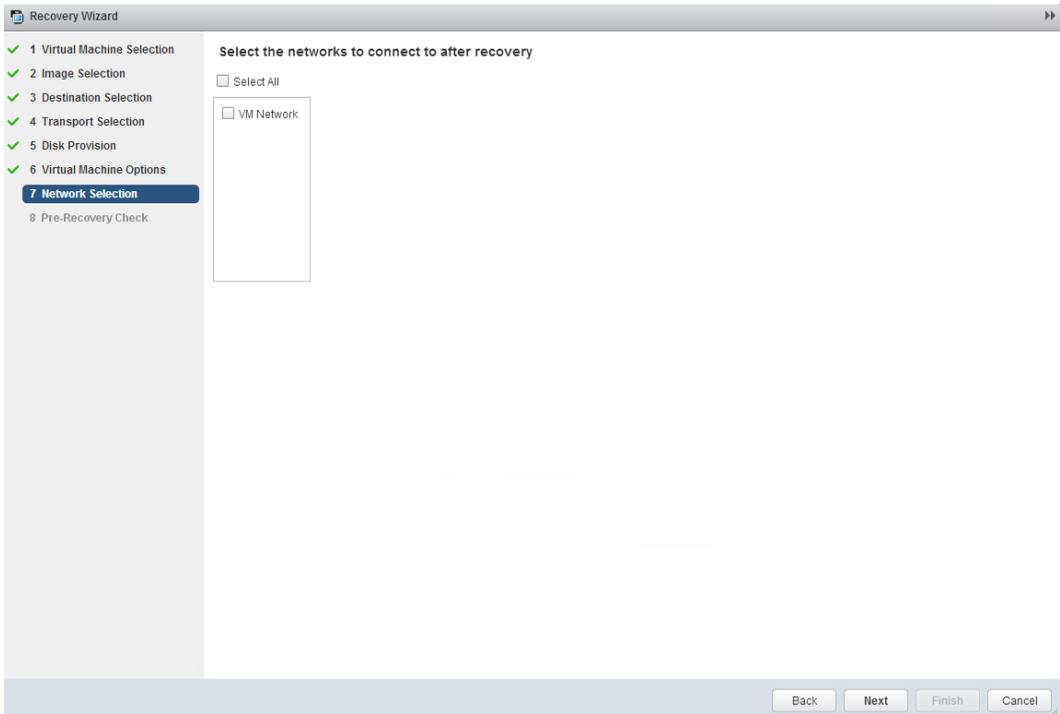
**Table 4-12** Fields in the Virtual Machine Options screen (*continued*)

Field	Description
<b>Overwrite existing virtual machine</b>	If a virtual machine with the same display name exists at the destination, that virtual machine must be deleted before the restore begins. Otherwise, the restore fails. Select this option to have the virtual machine deleted.
<b>Power on virtual machine after recovery</b>	The recovered virtual machine is automatically turned on when the recovery is complete.
<b>Retain original hardware version</b>	<p>This option restores the virtual machine with its original hardware version (such as 4). It retains the original version even if the target ESXi server by default uses a later hardware version (such as 7 or 8).</p> <p>If this option is disabled, the restored virtual machine is converted to the default hardware version that the ESXi server uses.</p>

## Network Selection screen

Click the check boxes to select the networks for the recovered virtual machine.

**Figure 4-8** Network Selection screen in the NetBackup Recovery Wizard for vSphere Web Client



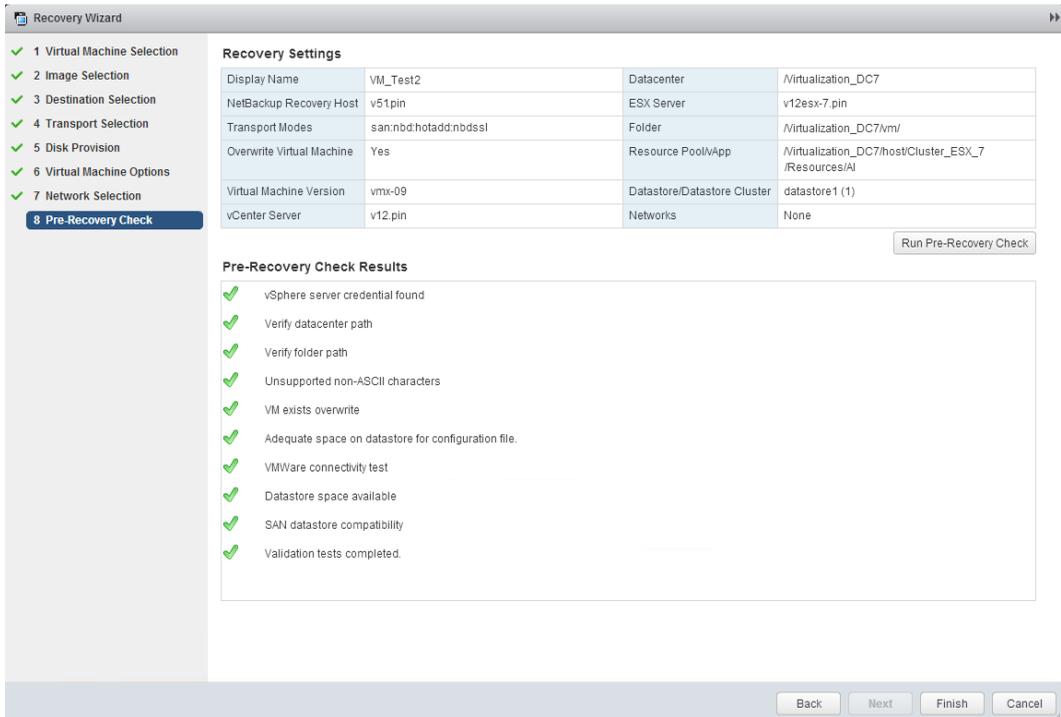
**Table 4-13** Fields in the Network Selection screen

Field	Description
<b>Select All</b>	Selects or unselects all the networks that are available. If a network is selected, the restored virtual machine is automatically connected to that network.
<b>VM Network</b>	You can select individual networks for the restored virtual machine.

## Pre-Recovery Check screen

Preview the recovery details, run a pre-recovery check, and start the recovery.

**Figure 4-9** Pre-Recovery Check screen in the NetBackup Recovery Wizard for vSphere Web Client



**Table 4-14** Fields in the Pre-Recovery Check screen

Field	Description
<b>Recovery Settings</b>	Lists the settings that are used for the recovery.
<b>Run Pre-Recovery Check</b>	Verifies the credentials and appropriate paths and connectivity, determines whether the datastore or datastore cluster has available space, and reviews other requirements.
<b>Pre-Recovery Check Results</b>	<p>Lists the results of the pre-recovery check.</p> <p>You can proceed with the restore even if the check fails.</p> <p>Note: A mismatch in the vCenter server name in NetBackup (uppercase vs. lowercase letters) may cause the "VMware connectivity test" to fail.</p> <p>See <a href="#">"Mismatch in vCenter server name (uppercase vs. lowercase letters) causes the VMware connectivity test to fail"</a> on page 76.</p>
<b>Finish</b>	Starts the recovery of the virtual machine.

# Troubleshooting

This chapter includes the following topics:

- [Setting the time zone of the NetBackup master server host to UTC](#)
- [Reducing the load time for the NetBackup plug-in for vSphere Web Client](#)
- [The NetBackup plug-in for vSphere Web Client does not find any backup images](#)
- [The NetBackup Recovery Wizard for vSphere Web Client does not find a particular backup image](#)
- [Mismatch in vCenter server name \(uppercase vs. lowercase letters\) causes the VMware connectivity test to fail](#)

## Setting the time zone of the NetBackup master server host to UTC

In vCenter 5.5, the time zone is set to UTC and cannot be changed. As a result, the time zone of the host on which the NetBackup master server is installed must also be set to UTC. Otherwise, the plug-in's **Virtual Machines** screen may show an incorrect backup age in the **Backup Age** column.

To set the master server time zone to UTC

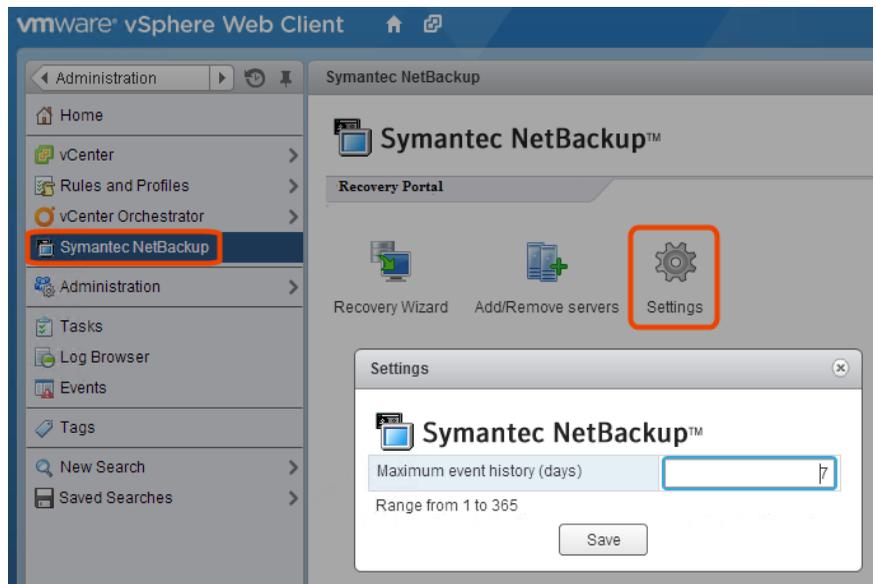
- 1 Consult the documentation for the master server host OS.  
On Windows, it may be **Control Panel > Date and Time > Change time zone** or similar.
- 2 Stop and restart the NetBackup processes.

# Reducing the load time for the NetBackup plug-in for vSphere Web Client

If the NetBackup plug-in for vSphere Web Client takes a long time to load, many backups may have occurred in your environment. By default, the plug-in retrieves backup events for the last 365 days.

To reduce the load time for the NetBackup vSphere Web Client plug-in

- 1 In the top level of the vSphere Web Client object navigator, click **Symantec NetBackup**.
- 2 Click **Settings**.



- 3 In the **Settings** dialog, enter a smaller value for **Maximum event history (days)**.

For example, enter 7.

This change limits the number of backup events that the plug-in retrieves. As a result, it reduces the plug-in's initial load time.

By default, the plug-in retrieves backup events for the last 365 days.

## The NetBackup plug-in for vSphere Web Client does not find any backup images

To allow the plug-in to monitor backups, the NetBackup master server's **VMware** policies must have **Post events to vCenter** set to **All Events**.

The **Post events to vCenter** option is available from the **Advanced** button of the NetBackup policy's **VMware** tab.

See ["Installation overview for the NetBackup plug-in for vSphere Web Client"](#) on page 14.

## The NetBackup Recovery Wizard for vSphere Web Client does not find a particular backup image

The NetBackup Recovery Wizard may not find the backup image for a particular VM if the VM display name contains special characters.

**To locate the backup image and start the recovery**

- 1 In the top level of the vSphere Web Client object navigator, click **Symantec NetBackup > Recovery Wizard**.
- 2 In the wizard's **Virtual Machine Selection** screen, enter the VM name (full or partial), and click **Search**.  
The VM should appear in the search results.
- 3 Click **Next** and continue with the Recovery Wizard.

## Mismatch in vCenter server name (uppercase vs. lowercase letters) causes the VMware connectivity test to fail

The NetBackup Recovery Wizard's **Pre-Recovery Check** screen runs a number of checks on the vSphere environment that you selected for the restore. The "VMware connectivity test" fails if the case of the vCenter name in NetBackup credentials differs from the case of the vCenter name in vSphere. For example: the name that was entered for NetBackup credentials is uppercase, but the name in vSphere is lowercase.

Mismatch in vCenter server name (uppercase vs. lowercase letters) causes the VMware connectivity test to fail

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**Note:** When the "VMware connectivity test" fails because of a vCenter name mismatch regarding its case, the failure can be ignored. Click **Finish** and the VM recovery should succeed.

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To prevent the "VMware connectivity test" from failing, delete the NetBackup credential for the vCenter and re-enter the credential with the correct case. For instructions on how to add credentials, see "Adding NetBackup credentials for VMware" in the *NetBackup for VMware Administrator's Guide*.

See "[Pre-Recovery Check screen](#)" on page 72.