

Symantec NetBackup™ Plug-in for VMware vCenter Guide

Release 7.6 Beta

DRAFT

Symantec NetBackup™ Plug-in for vCenter Guide

The software described in this book is furnished under a license agreement and may be used only in accordance with the terms of the agreement.

Documentation version: 7.6 Beta

Legal Notice

Copyright © 2013 Symantec Corporation. All rights reserved.

Symantec, the Symantec Logo, the Checkmark Logo and are trademarks or registered trademarks of Symantec Corporation or its affiliates in the U.S. and other countries. Other names may be trademarks of their respective owners.

This Symantec product may contain third party software for which Symantec is required to provide attribution to the third party ("Third Party Programs"). Some of the Third Party Programs are available under open source or free software licenses. The License Agreement accompanying the Software does not alter any rights or obligations you may have under those open source or free software licenses. Please see the Third Party Legal Notice Appendix to this Documentation or TPIP ReadMe File accompanying this Symantec product for more information on the Third Party Programs.

The product described in this document is distributed under licenses restricting its use, copying, distribution, and decompilation/reverse engineering. No part of this document may be reproduced in any form by any means without prior written authorization of Symantec Corporation and its licensors, if any.

THE DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID. SYMANTEC CORPORATION SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING, PERFORMANCE, OR USE OF THIS DOCUMENTATION. THE INFORMATION CONTAINED IN THIS DOCUMENTATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

The Licensed Software and Documentation are deemed to be commercial computer software as defined in FAR 12.212 and subject to restricted rights as defined in FAR Section 52.227-19 "Commercial Computer Software - Restricted Rights" and DFARS 227.7202, "Rights in Commercial Computer Software or Commercial Computer Software Documentation", as applicable, and any successor regulations. Any use, modification, reproduction release, performance, display or disclosure of the Licensed Software and Documentation by the U.S. Government shall be solely in accordance with the terms of this Agreement.

Symantec Corporation
350 Ellis Street
Mountain View, CA 94043
<http://www.symantec.com>

DRAFT

Technical Support

Symantec Technical Support maintains support centers globally. Technical Support's primary role is to respond to specific queries about product features and functionality. The Technical Support group also creates content for our online Knowledge Base. The Technical Support group works collaboratively with the other functional areas within Symantec to answer your questions in a timely fashion. For example, the Technical Support group works with Product Engineering and Symantec Security Response to provide alerting services and virus definition updates.

Symantec's support offerings include the following:

- A range of support options that give you the flexibility to select the right amount of service for any size organization
- Telephone and/or Web-based support that provides rapid response and up-to-the-minute information
- Upgrade assurance that delivers software upgrades
- Global support purchased on a regional business hours or 24 hours a day, 7 days a week basis
- Premium service offerings that include Account Management Services

For information about Symantec's support offerings, you can visit our Web site at the following URL:

www.symantec.com/business/support/

All support services will be delivered in accordance with your support agreement and the then-current enterprise technical support policy.

Contacting Technical Support

Customers with a current support agreement may access Technical Support information at the following URL:

www.symantec.com/business/support/

Before contacting Technical Support, make sure you have satisfied the system requirements that are listed in your product documentation. Also, you should be at the computer on which the problem occurred, in case it is necessary to replicate the problem.

When you contact Technical Support, please have the following information available:

- Product release level

- Hardware information
- Available memory, disk space, and NIC information
- Operating system
- Version and patch level
- Network topology
- Router, gateway, and IP address information
- Problem description:
 - Error messages and log files
 - Troubleshooting that was performed before contacting Symantec
 - Recent software configuration changes and network changes

Licensing and registration

If your Symantec product requires registration or a license key, access our technical support Web page at the following URL:

www.symantec.com/business/support/

Customer service

Customer service information is available at the following URL:

www.symantec.com/business/support/

Customer Service is available to assist with non-technical questions, such as the following types of issues:

- Questions regarding product licensing or serialization
- Product registration updates, such as address or name changes
- General product information (features, language availability, local dealers)
- Latest information about product updates and upgrades
- Information about upgrade assurance and support contracts
- Information about the Symantec Buying Programs
- Advice about Symantec's technical support options
- Nontechnical presales questions
- Issues that are related to CD-ROMs, DVDs, or manuals

Support agreement resources

If you want to contact Symantec regarding an existing support agreement, please contact the support agreement administration team for your region as follows:

Asia-Pacific and Japan	customercare_apac@symantec.com
Europe, Middle-East, and Africa	semea@symantec.com
North America and Latin America	supportsolutions@symantec.com

DRAFT

Contents

Technical Support	4
Chapter 1	Introduction and notes 9
	About the Symantec NetBackup plug-in for VMware vCenter 9
	Notes and recommendations on the NetBackup plug-in 10
	How to access the features of the Symantec NetBackup plug-in 11
Chapter 2	Installing the NetBackup Plug-in for vCenter 13
	Requirements for the NetBackup plug-in for vCenter 13
	Configuration overview for the NetBackup plug-in 15
	Consistent naming for the vCenter server 16
	Installing the NetBackup plug-in for vCenter 17
	Disabling or uninstalling the NetBackup plug-in for vCenter 19
	Manually unregistering the plug-in 19
Chapter 3	Monitoring backup status 21
	Configure the plug-in for backup monitoring 21
	Installing the trusted SSL certificate 21
	Setting vCenter privileges for backup monitoring 23
	Symantec NetBackup tab in vSphere Client 23
	Summary display 24
	Virtual Machines display 26
	Events display 28
	Using the Symantec NetBackup tab for backup reporting 28
	How to respond to backup status 30
Chapter 4	Recovering virtual machines 31
	Configure the NetBackup Recovery Wizard 31
	Enabling NetBackup Web Services on the Windows master server 32
	Enabling NetBackup Web Services on the UNIX or Linux master server 34
	Configuring ports for the NetBackup Web Services 36
	Creating an authentication token 38

Authorizing the plug-in to restore virtual machines 41

Setting vCenter privileges for recovering virtual machines 42

Notes on restoring virtual machines with the NetBackup Recovery Wizard 43

How to access the NetBackup Recovery Wizard 44

NetBackup Recovery Wizard screens 45

 Select source virtual machine 45

 Select Backup 46

 Destination Options 46

 Transport Modes 47

 Disk Options 48

 Virtual Machine Options 48

 Network Connectivity Options 49

 Recovery Summary 49

Chapter 5 Troubleshooting 51

 Common problems 51

DRAFT

Introduction and notes

This chapter includes the following topics:

- [About the Symantec NetBackup plug-in for VMware vCenter](#)
- [Notes and recommendations on the NetBackup plug-in](#)
- [How to access the features of the Symantec NetBackup plug-in](#)

About the Symantec NetBackup plug-in for VMware vCenter

With the NetBackup plug-in for vCenter, you can use vSphere Client to monitor virtual machine backups and 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, such as datacenter, resource pool, ESXi host.
- View messages 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.)

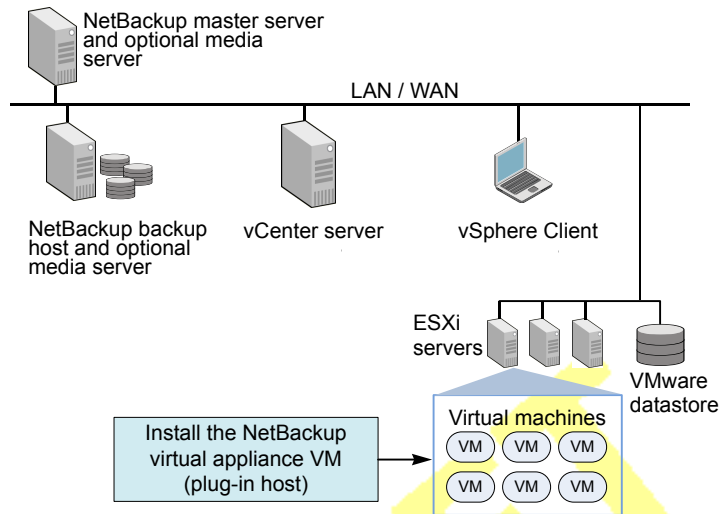
The backup information appears on the **Symantec NetBackup** tab in the vSphere Client interface.

You can start a virtual machine recovery from any of several points in the vSphere Client interface.

See [“How to access the NetBackup Recovery Wizard”](#) on page 44.

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

Figure 1-1 VMware environment 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 vCenter”](#) on page 13.

Notes and recommendations on the NetBackup plug-in

Note the following about the NetBackup plug-in for vCenter:

- 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 refresh button at the top.
- In vCenter, the default retention period for vCenter events is 180 days. This value is the recommended setting.
- The plug-in does not support multiple vCenter servers. The plug-in is intended for monitoring and restoring virtual machines within one vCenter server. The

plug-in Recovery Wizard can browse and restore images of virtual machines from only one vCenter.

To use the plug-in with another vCenter, you must either unregister the current vCenter or install another plug-in.

See [“Manually unregistering the plug-in”](#) on page 19.

- If Enhanced Security Configuration is enabled in Microsoft Internet Explorer on the vSphere Client host, you may need to add the plug-in as a Trusted site. This step is only required when you first open the **Symantec NetBackup** tab on the vSphere Client host.
- Depending on your firewall configuration, you may need to modify your firewall rules to allow the vSphere Client host to access the plug-in host. vSphere Client must have access to the port to which the plug-in host is configured.
Note: the default port for the plug-in host is 9445.
- If an ESXi server is removed from vCenter and is later re-added, the events for the VMs managed by that ESXi are lost. The plug-in shows the status of such VMs as "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 43.
- When the plug-in installation completes, restart the vCenter service `VMware VirtualCenter Server` if you are using vCenter 4.0.
- The plug-in monitors backups that were made by a NetBackup VMware policy. Backups from a different type of policy (not VMware) are not monitored.
Note the following exceptions:
 - The plug-in does not monitor backups that were made by a VMware policy that had **Perform snapshot backups** enabled and **Application Consistent Snapshot** disabled (under **Snapshot Client Options**).
 - The plug-in does not monitor all the copies made by a storage lifecycle policy (SLP): it monitors the first image only.

How to access the features of the Symantec NetBackup plug-in

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

Table 1-1 Basic functions in the Symantec NetBackup plug-in

Feature	How to access in vSphere Client
Monitor the status of virtual machine backups	Use the Symantec NetBackup tab. See “Symantec NetBackup tab in vSphere Client” on page 23.
Restore a virtual machine	You can access the Recovery Wizard in several ways. See “How to access the NetBackup Recovery Wizard” on page 44. Note: The Recovery Wizard is optional. It is not required for monitoring virtual machine backups.

DRAFT

Installing the NetBackup Plug-in for vCenter

This chapter includes the following topics:

- [Requirements for the NetBackup plug-in for vCenter](#)
- [Configuration overview for the NetBackup plug-in](#)
- [Consistent naming for the vCenter server](#)
- [Installing the NetBackup plug-in for vCenter](#)
- [Disabling or uninstalling the NetBackup plug-in for vCenter](#)
- [Manually unregistering the plug-in](#)

Requirements for the NetBackup plug-in for vCenter

Symantec provides the NetBackup plug-in as a virtual appliance. The requirements depend on which component of the plug-in you want to use.

The following tables describe the requirements:

- [Table 2-1](#) describes the requirements that are common to both monitoring virtual machine backups and to recovering virtual machines.
- [Table 2-2](#) describes the requirements that apply only to monitoring virtual machine backups.
- [Table 2-3](#) describes the requirements that apply only to recovering virtual machines with the NetBackup Recovery Wizard.

This wizard is not required for monitoring virtual machine backups.

Table 2-1 Common requirements for the vCenter plug-in virtual appliance

Requirement	Details
VM hardware	For the vCenter plug-in virtual appliance: 1 vCPU Minimum 2 GB vRAM Minimum 20 GB of disk space
Network access	The vSphere Client host must have access to the vCenter server where the virtual appliance is installed.
VMware versions	vCenter Server version 4.0 and later vSphere Client version 4.0 and later ESXi version 4.0 and later
Web browser in vSphere Client	Internet Explorer version 7 or later.

Table 2-2 Requirements for monitoring virtual machine backups

Requirement	Details
NetBackup versions	NetBackup 7.5 and later.

Table 2-3 Requirements for recovering virtual machines with the NetBackup Recovery Wizard

Requirement	Details
NetBackup versions	NetBackup 7.6 and later.
NetBackup master server platforms	<ul style="list-style-type: none"> ■ Windows ■ Red Hat ■ SUSE ■ Solaris SPARC ■ Solaris x86 <p>For all the OS levels and versions that are supported for master server, refer to the NetBackup compatibility lists in the <i>NetBackup 7.6 Release Notes</i>.</p>
NetBackup Web Services	<p>The NetBackup Web Services must be enabled on the NetBackup master server.</p> <p>See “Configuration overview for the NetBackup plug-in” on page 15.</p>

Configuration overview for the NetBackup plug-in

[Table 2-4](#) lists NetBackup configuration requirements that are related to the plug-in.

Table 2-4 NetBackup configuration related to the plug-in

Task	Description and notes
NetBackup must be configured to back up the virtual machines.	<p>For example, the NetBackup administrator must configure the following:</p> <ul style="list-style-type: none">■ The VMware backup host (access host).■ The NetBackup credentials for the vCenter server. <p>Note: 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">■ Policies of type VMware, with the Post events to vCenter option set to All Events. <p>The <i>NetBackup for VMware Administrator's Guide</i> contains details on setting up VMware policies.</p>

[Table 2-5](#) lists the steps for installing the NetBackup vCenter plug-in. See the reference topic in the table for details about each step.

Table 2-5 Installing the plug-in

Step	Description	Reference topic and notes
1	Install the virtual appliance and plug-in for vCenter.	<p>See “Installing the NetBackup plug-in for vCenter” on page 17.</p> <p>Note: From the vSphere Client host, install the virtual appliance while you are logged into the vCenter. Network issues may occur if you are logged directly into the ESXi server.</p>
2	Install the trusted SSL certificate.	See “Installing the trusted SSL certificate” on page 21.

[Table 2-6](#) lists the steps for setting up the NetBackup vCenter plug-in for monitoring backups.

Table 2-6 Setting up the plug-in for backup monitoring

Description	Reference topic and notes
Set vCenter privileges.	See “Setting vCenter privileges for backup monitoring” on page 23.

Table 2-7 lists the steps for setting up the NetBackup vCenter plug-in for recovering virtual machines (the NetBackup Recovery Wizard).

Note: This wizard is not required for monitoring virtual machine backups.

Table 2-7 Setting up the plug-in for the NetBackup Recovery Wizard

Step	Description	Reference topic
1	Enable the NetBackup Web Services on the master server.	See “Enabling NetBackup Web Services on the Windows master server” on page 32. See “Configuration overview for the NetBackup plug-in” on page 34.
2	Configure ports for the NetBackup Web Services.	See “Configuring ports for the NetBackup Web Services” on page 36.
3	Create an authentication token file.	See “Creating an authentication token” on page 38.
4	Authorize the plug-in to restore virtual machines.	See “Authorizing the plug-in to restore virtual machines” on page 41.
5	Set vCenter privileges for virtual machine recovery.	See “Setting vCenter privileges for recovering virtual machines” on page 42.

Consistent naming for the vCenter server

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.

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**, then click **Advanced Settings**. Set the `VirtualCenter.VimApiUrl` key to the fully qualified domain name.

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 vCenter

The NetBackup plug-in for vCenter is provided as a virtual appliance in a pre-configured virtual machine. The virtual appliance package is included in the NetBackup 7.6 installation media, on the DVD titled "Symantec NetBackup v7.6 Plugins."

Install the virtual appliance as described in this topic. Once installed, the virtual appliance should be dedicated to hosting the NetBackup plug-in: it should not be used for other purposes.

For the plug-in, you need the following information about the vCenter server:

- Host name or IP address
- User name and password
- Port number for the vCenter server (default is 443).

To install the virtual appliance and plug-in for vCenter

- 1 From the vSphere Client host, log in to the vCenter server.
- 2 On the vCenter server, mount the NetBackup DVD titled "Symantec NetBackup v7.6 Plugins."
On the DVD, the name of the virtual appliance package is `NBvcplugin.ova`.
- 3 On the vCenter server, select **File > Deploy OVF template**.
Install the virtual appliance in vCenter, not directly in the ESXi server.
- 4 Browse to the location of the `NBvcplugin.ova` package.
Click **Next** to work through the screens.
- 5 For the **Properties** screen, enter static network addresses only. Dynamic Host Configuration Protocol (DHCP) is not supported.
- 6 Follow the remaining screens to finish installing the virtual appliance.

- 7 Click the `NBvcplugin` virtual machine and click the **Console** tab.

The SUSE Linux Enterprise Server screen appears, with a **Boot Options** tab. You can press **Enter**, or let the virtual machine start booting itself.

The boot process continues and asks for a new root password. Set the root password for the virtual appliance. The boot process continues until the following appears:

```
Symantec NetBackup Plugin for vCenter 7.6 Installation Program
```

- 8 Follow the installation prompts.

Enter the host name or IP address for the vCenter server, and a user name and password. For the vCenter server port number and web server port number, accept the defaults.

Note: You are allowed to re-enter the vCenter logon credentials five times. Without a valid logon for the vCenter, the installation stops. Delete the `NBvcplugin` virtual machine, obtain the correct logon information, and begin the installation procedure again.

Note: You may need to modify your firewall rules to allow vSphere Client to access the plug-in host. The vSphere Client host must have access to port 9445 of the plug-in host.

The plug-in installation begins.

- 9 When installation completes, restart the following:

- vSphere Client
- The vCenter service (restart required only for vCenter 4.0)

The virtual appliance boot process continues.

- 10 Verify that the plug-in has the correct time.

If the time is not correct, go to the console of the virtual appliance and use the `date` command to change the time, as follows.

- To obtain the current date and time, enter:

```
date
```
- Set the date and time by means of the `-s` option with the returned date and time enclosed in quotes. You can change the time zone as well if you do not want UTC.

Note: Symantec recommends keeping the plug-in in UTC.

An example of the date command:

```
date -s "Wed Feb 6 09:41:54 UTC 2013"
```

- Then reboot the virtual appliance.

Disabling or uninstalling the NetBackup plug-in for vCenter

You can disable the NetBackup plug-in, or remove the virtual appliance that contains the plug-in.

To disable the NetBackup plug-in

- 1 In vSphere Client, click **Plugins > Manage Plug-ins**.
- 2 Right-click on **Symantec NetBackup plug-in for vCenter** and click **Disable**.
The Symantec NetBackup tab is removed.
- 3 To re-enable the plug-in, right-click on **Symantec NetBackup plug-in for vCenter** and click **Enable**.

To uninstall the NetBackup plug-in

- 1 Right-click on the virtual appliance that contains the plug-in and select **Remove from Inventory**.

If necessary, the virtual appliance can be re-imported from the datastore. For permanent removal of the virtual appliance, click **Delete from disk**.

- 2 To re-install the plug-in, you must manually unregister it.

Manually unregistering the plug-in

In some cases it may be necessary to unregister the plug-in manually. For example: If the virtual machine on which the plug-in was installed goes down, the normal uninstall procedure cannot be used.

Note: The NetBackup plug-in installer allows one plug-in instance per vCenter server. You must uninstall the current plug-in before you can re-register it with the same vCenter server.

To manually unregister the plug-in

- 1 Open a web browser and use the following to log on to the vCenter Server Managed Object Browser (MOB):

Keep all on one line:

```
https://vCenter Server IP or host name  
/mob/?moid=ExtensionManager&method=unregisterExtension
```

where *vCenter Server IP or host name* is the IP address or system name of the vCenter Server where the NetBackup plug-in is registered.

If the VMware web service does not use the default port 443, specify the following (all on one line):

```
https://vCenter Server IP or host name:  
PortNumber/mob/?moid=ExtensionManager&method=unregisterExtension
```

where *PortNumber* is the VMware web service port number.

- 2 When prompted, specify the credentials.
You must have the **Unregister extension** privilege on the vCenter Server.
- 3 In the **UnregisterExtension** window, enter the following in the **extensionKey** value field:
Symantec NetBackup plugin for vCenter
- 4 Click **Invoke Method**.

The NetBackup plug-in is unregistered from the vCenter Server.

The screenshot shows a web browser window titled "Managed Object Browser - Google Chrome". The address bar displays the URL: `https://ch37v2.acme.com/mob/?moid=ExtensionManager&method=unregisterExtension`. The main content area shows the following information:

- Managed Object Type: **ManagedObjectReference:ExtensionManager**
- Managed Object ID: **ExtensionManager**
- Method: **UnregisterExtension**

Below this information, the title **void UnregisterExtension** is displayed. A section titled **Parameters** contains a table with the following data:

NAME	TYPE	VALUE
extensionKey (required)	string	Symantec NetBackup plugin for vCenter

At the bottom right of the form, there is a button labeled **Invoke Method**. The browser's status bar at the bottom shows the JavaScript command `javascript:invokeMethod()`.

Monitoring backup status

This chapter includes the following topics:

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

Configure the plug-in for backup monitoring

Before you can use the plug-in to monitor virtual machine backups, configure the following:

- Install a trusted SSL certificate.
See [“Installing the trusted SSL certificate”](#) on page 21.
- Set vCenter privileges.
See [“Setting vCenter privileges for backup monitoring”](#) on page 23.

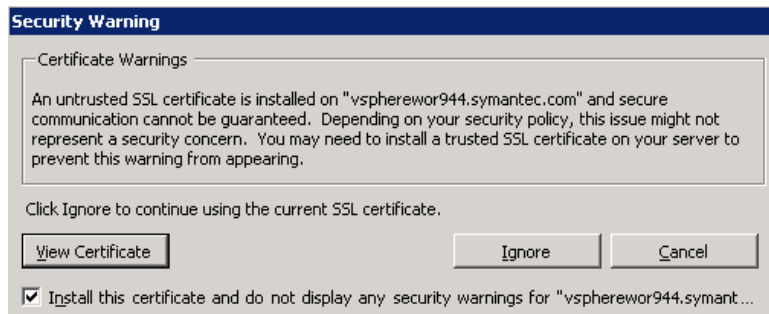
Installing the trusted SSL certificate

When you first use the NetBackup plug-in in vSphere Client, you are prompted to install a trusted SSL certificate. This certificate gets installed on the machine on which vSphere Client is running. This certificate authenticates and secures communication from the vSphere Client to the NetBackup plug-in host.

If you ignore the certificate warning, the same message appears whenever you log into vCenter. To stop the messages, install the SSL certificate in the Trusted Root Certification Authorities store, as follows.

To install the trusted SSL certificate

- 1 When the Security Warning appears, click **Install this certificate and do not display any security warnings for xxxx**. Then click **View Certificate** to examine the certificate and authenticate the identity of the connecting NetBackup plug-in host.



- 2 On the Certificate dialog, click **Install Certificate...**
- 3 On the Certificate Import Wizard, click **Next**.
- 4 On the Certificate Store dialog, click **Place all certificates in the following store**. Click **Browse**.
- 5 Select **Trusted Root Certification Authorities** and click **OK**.



- 6 Click **Next**.
- 7 On the final screen, click **Finish**.
A warning message describes the certificate to be installed.
- 8 Click **Yes**.

Setting vCenter privileges for backup monitoring

Use the following procedure to set the user privileges in vCenter that the NetBackup plug-in requires.

To set required vCenter privileges for backup monitoring

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

In vSphere Client, click **Home > Roles** and set the following:

To monitor virtual machine backups	Global > Manage custom attributes
	Global > Set custom attribute

Symantec NetBackup tab in vSphere Client

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

In the vSphere Client, go to **Home > Inventory > Hosts and Clusters** and select a vSphere object.

Note: You **must** select an object beneath the vCenter server, such as a 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

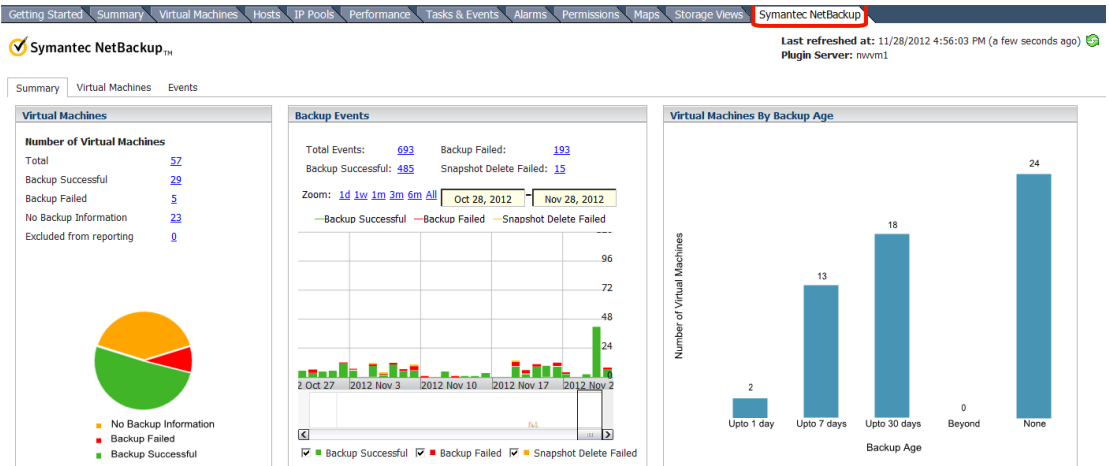
Display	Information shown
Summary	<p>A summary and graphical view of backup success and backup events, for a specified time period. Can show the current backup status for a selected VM.</p> <p>See “Summary display” on page 24.</p>
Virtual Machines	<p>Tabular view of backup information for a group of VMs.</p> <p>Note: This display is available when you click on a vSphere object above 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 “Virtual Machines display” on page 26.</p>
Events	<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 “Events display” on page 28.</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 backup information in the following panels.

Table 3-2 Summary panels

Panel	Description
Virtual Machine(s)	<p>Shows the current backup status and related information for a particular VM or for all the VMs that belong to the selected vSphere object.</p> <p>If the panel applies to more than one VM: click on the underlined values (such as for Total or Backup Successful) to see the details in the Virtual Machines display.</p>
Backup Events	<p>Shows the total number of backup events, and a breakdown of the events in three categories: Backup Successful, Backup Failed, and Snapshot Delete Failed.</p> <p>Also includes a 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. Hover over a bar to see the number of events for that day: the updated totals appear directly over the chart.</p> <p>You can configure the chart as follows:</p> <ul style="list-style-type: none"> ■ Select the types of events that appear in the chart by clicking on the colored check boxes. ■ Move the slider to adjust the time period, or click on a Zoom time period. <p>Note: Click on the values for Total Events, Backup Successful, Backup Failed, or Snapshot Deletion Failed to see those events listed in the Events display.</p>
Virtual Machines By Backup Age	Shows the backup age of the VMs in a bar chart. This panel is available only for a vSphere object above the level of a VM.

Virtual Machines display

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

Use the arrow on the right-most column header to hide or show a column. See [Figure 3-2](#).

Figure 3-2 Enable or disable columns in Virtual Machines display (detail)

ExcludeIncludeExport▼Sort

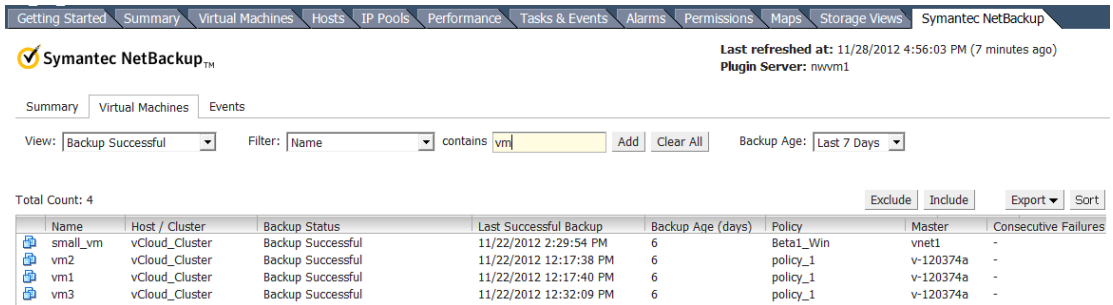
Policy	Master	Consecutive Failures	
test1	lqsol	1	✓ Name
test2	lqsol	1	✓ Host / Cluster
RD_V	hypervm	5	✓ Backup Status
Issue	vsphere	1	✓ Last Successful Backup
Issue	vsphere	1	✓ Backup Age (days)
Issue	vsphere	1	VM Age (days)
Issue	vsphere	1	✓ Policy
Issue	vsphere	1	✓ Master
Issue	vspherevmc11	1	✓ Consecutive Failures
Issue	vspherevmc11	1	

Note: You can move the table columns right or left (drag and drop).

You can also filter the information that appears in this display (**View, Filter, Backup Age**).

The display in [Figure 3-3](#) has been filtered to show data only for VMs that meet the following criteria: the VM has a successful backup, the backup image is up to seven days old, and the name of the VM contains the letters "vm."

Figure 3-3 Virtual Machines display



Getting Started Summary Virtual Machines Hosts IP Pools Performance Tasks & Events Alarms Permissions Maps Storage Views Symantec NetBackup

✓ Symantec NetBackup™ Last refreshed at: 11/28/2012 4:56:03 PM (7 minutes ago)
Plugin Server: nwvm1

Summary Virtual Machines Events

View: Backup Successful Filter: Name contains vm Add Clear All Backup Age: Last 7 Days

Total Count: 4

Name	Host / Cluster	Backup Status	Last Successful Backup	Backup Age (days)	Policy	Master	Consecutive Failures
small_vm	vCloud_Cluster	Backup Successful	11/22/2012 2:29:54 PM	6	Beta1_Win	vnet1	-
vm2	vCloud_Cluster	Backup Successful	11/22/2012 12:17:38 PM	6	policy_1	v-120374a	-
vm1	vCloud_Cluster	Backup Successful	11/22/2012 12:17:40 PM	6	policy_1	v-120374a	-
vm3	vCloud_Cluster	Backup Successful	11/22/2012 12:32:09 PM	6	policy_1	v-120374a	-

Table 3-3 describes the options for filtering or changing the display.

Table 3-3 Display options in the Virtual Machines display

Option	Description
View	Filters the display according to backup status (Backup Successful, Backup Failed, No Backup Information, Excluded from reporting). For example: If View is set to Backup Successful, it displays only the VMs that were backed up successfully.
Filter contains	Allows additional filtering. Select a type for Filter and enter a filter value in the contains field. For example: If set to Name nfs, it displays only the VMs that have a name that contains the characters nfs.
Add	Saves the current Filter type and value (in a blue-highlighted field), to allow the addition of more filters. Each Filter that you add further narrows the results. Click on a filter to remove it and refresh the display.
Clear All	Removes all filtering criteria from the Filter and contains fields and refreshes the display.
Backup Age	Filters the display according to the age of the backups.
Exclude	Marks a selected VM so that its backup status and other information are not displayed.
Include	Reverses the Exclude option: Adds a VM's backup status and other information to the display.
Export	Saves the information as an Excel file (.xls), as a comma-separated text (CSV) file, or to the clipboard.
Sort	Allows customized sorting in multiple columns. Each selection for Column and Order is a level. For example: If one level is Name A to Z , and you add the level Policy Z to A , the information appears as follows: the VMs are sorted by name in ascending order, then the VMs are sorted by policy name in descending order. To change the order in which the sorting occurs, select a level and click Move Up or Move Down .

Events display

The Events display shows backup information based on events. It can show backup events for a single VM or for all VMs in the selected object.

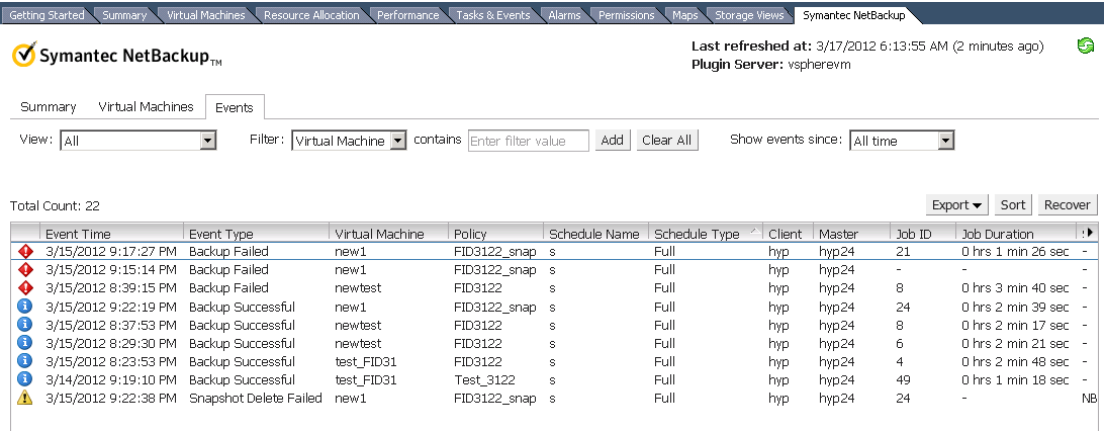
Most of the filtering options on this display are described in another topic:

See “Virtual Machines display” on page 26.

Show events since filters the events according to the time period you select.

Figure 3-4 shows an Events display with unfiltered data (the default).

Figure 3-4 Events display



Note the following:

Snapshot Delete Failed: 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.

Using the Symantec NetBackup tab for backup reporting

The following procedures explain how to find VM backup status in the Symantec NetBackup tab.

In the vSphere Client interface: Go to **Home > Inventory > Hosts and Clusters** and select a vSphere object (such as a datacenter, ESXi host, or VM). The

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

To find backup status for a single VM

- 1 Select the VM in vSphere Client.
- 2 Click the **Symantec NetBackup** tab.
- 3 Under **Summary, Virtual Machine**, see the **Current Backup Status** and the **Backup Events**.

To find backup status for multiple VMs

- 1 Select the appropriate object in vSphere Client (such as datacenter or ESXi host).
- 2 Click the **Symantec NetBackup** tab.
The **Summary** display shows the backup **success rate** for the VMs overall.
See [“Summary display”](#) on page 24.
- 3 For the backup status of particular VMs, click the **Virtual Machines** display and find the VMs in the **Name** column.

Use the **View** field to select the type of backup message to show (such as **Backup Successful** or **Backup Failed**).

Use **Filter** to further limit the type of information that appears.

Use **Backup Age** to filter the display by backup age.

See [“Virtual Machines display”](#) on page 26.

To determine which VMs are not being backed up

- 1 Select the appropriate object in vSphere Client (such as datacenter or ESXi host).
- 2 Click the **Symantec NetBackup** tab.
- 3 Click the **Virtual Machines** display.
- 4 Set the **View** field to **Backup Failed**.
- 5 You can use **Filter** and **Backup Age** to filter the display.
- 6 To save the report, click **Export** and select an output type.

To determine the age of existing backups

- 1 Select the appropriate object in vSphere Client (such as datacenter or ESXi host).
- 2 Click the **Symantec NetBackup** tab.

In the **Summary** display, **Virtual Machines By Backup Age** shows the age of the backups (up to 1 day, up to 7 days, and so forth).
- 3 For information on backup age per VM, click the **Virtual Machines** display and look at the **Backup Age (days)** column.

Set **View** to **All** or to **Backup Successful**.

If needed, use **Filter** to filter the displayed information.
- 4 To save the report, click **Export** and select an output type.

How to respond to backup status

When viewing backup status in the plug-in, the following example actions may be appropriate. You may need to confer with the NetBackup administrator.

Table 3-4 Tips for responding to backup status

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

Recovering virtual machines

This chapter includes the following topics:

- [Configure 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](#)

Configure the NetBackup Recovery Wizard

Note: The NetBackup Recovery Wizard is an optional feature of the plug-in, 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 “Enabling NetBackup Web Services on the Windows master server” on page 32. See “Configuration overview for the NetBackup plug-in” on page 34 on page 34.
2	Configure ports for the NetBackup Web Services.	See “Configuring ports for the NetBackup Web Services” on page 36.
3	Create an authentication token file.	See “Creating an authentication token” on page 38.
4	Authorize the plug-in to restore virtual machines.	See “Authorizing the plug-in to restore virtual machines” on page 41.
5	Set the required vCenter privileges.	See “Setting vCenter privileges for recovering virtual machines” on page 42.

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 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 nbwebgrp and a user nbwebsvc.	See “To create group nbwebgrp and user nbwebsvc” on page 33.
2	Grant the "Log On As Service" right.	See “Grant the Log On As Service right” on page 33.
3	Set up the NetBackup Web Services on each master server that the plug-in must access to perform restores.	See “To set up NetBackup Web Services” on page 33.

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.

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 Make sure that the commands dsquery and dsget are available.
 If these commands are not available, you may not have added the Active Directory Domain Services role. To add that role, do the following:
 - Open **Server Manager**.
 - Click **Roles**.
 - Click **Add Roles**.

- Select **Active Directory Domain Services** and complete the wizard. The wizard installs the dsquery and dsget commands.

2 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 -password  
password
```

The password is 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 -password password
```

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

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

```
https://<server>:<port>/nbweb service/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 is used by the NetBackup Web Services, enter the following on the NetBackup master server:

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

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 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 nbwebgrp and a user nbwebsvc.	See “To create group nbwebgrp and user nbwebsvc” on page 35.
2	Set up the NetBackup Web Services on each master server that the plug-in must access to perform restores.	See “To set up NetBackup Web Services” on page 35.

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:

```
/opt/SYMCnbvcPlugin/tomcat/webapps # groupadd nbwebgrp
```

To create the nbwebsvc user, enter the following:

```
/opt/SYMCnbvcPlugin/tomcat/webapps # useradd nbwebsvc -g nbwebgrp
-c 'NetBackup Web Services application account' -d /usr/opensv/wmc
nbwebsvc
```

where -c specifies a password file comment, and -d specifies the user's home directory.

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
```

****Command details TBD....**

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>/nbwebsevice/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 is used by the NetBackup Web Services, enter the following on the NetBackup master server:

```
/usr/opensv/netbackup/wmc/bin/install/configurePort -status
```

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 plug-in to restore 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/netbackup/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/netbackup/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 8081 and the https port to 8553:

```
configurePorts -httpPort 8081 -httpsPort 8553
```

Output:

```
Old Http Port: 8080
New Http Port: 8081
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 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/openv/netbackup/var/global/wsl/portfile
```

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

Creating an authentication token

To allow the plug-in to restore virtual machines, you must generate an authentication token on the NetBackup master server (or on the 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 zip file that contains the authentication token.

- 2 Provide the zip file to the vCenter administrator.

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

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

See “[Authorizing the plug-in to restore virtual machines](#)” on page 41.

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 zip file is created at:

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

- 3 Provide the zip file to the vCenter administrator.

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

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

See “[Authorizing the plug-in to restore virtual machines](#)” on page 41.

Revoking an authorization token

You can delete or revoke a master server authentication token, as follows.

To revoke the authorization 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/opensv/wmc/bin/install ./manageClientCerts -delete  
vCenter_plugin_host
```

where *vCenter_plugin_host* is the fully qualified domain name of the vCenter in which the plugin is installed.

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

- 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 Client.

See [“Creating an authentication token”](#) on page 38.

See [“Authorizing the plug-in to restore virtual machines”](#) on page 41.

Listing all current authorization tokens

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

To list all current authorization tokens

- ◆ Enter the following on the master server:

Windows

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

UNIX, Linux

```
/usr/opensv/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 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. Then you can authorize the plug-in to restore 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"](#) on page 38.
- 2 Copy the authentication token file to the vSphere Client host (make a note of the location).
- 3 In vSphere Client, click **Home**.
- 4 Click the **Symantec NetBackup** icon.
- 5 Click **Add/Remove Servers**.
- 6 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, contact 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.

Note: If an "Out of sync" message appears after you add a master server, click on the message as requested. This message can be ignored: it does not indicate a problem in adding the NetBackup authentication token.

Note: If a "Connection Refused" message appears, the ports for the NetBackup Web Services may not be correctly configured on the master server. The following topic contains configuration instructions.

See [“Configuring ports for the NetBackup Web Services”](#) on page 36.

- 7 Add other master servers and their authentication tokens as needed.
- 8 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 backups that were performed by that master server.
--	---

Setting vCenter privileges for recovering virtual machines

Use the following procedure to set the user privileges in vCenter for the NetBackup Recovery Wizard.

To set required vCenter privileges for recovering virtual machines

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

In vSphere Client, click **Home > Roles** and set the following:

To recover virtual machines **NetBackup Recovery > Add or Remove NetBackup Servers**
NetBackup Recovery > Virtual Machine Recovery

Global > Log Event

Note: When you deploy the plug-in, NetBackup recovery privileges are automatically enabled for the Administrator role. These privileges allow the VMware administrator to use the NetBackup Recovery Wizard to recover virtual machines to any destination in vCenter. To give the recovery privileges to other users, you must enable the NetBackup Recovery privileges for other roles.

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 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:

- The following topic describes the pre-requisites for using the Recovery Wizard: See [“Configure the NetBackup Recovery Wizard”](#) on page 31.
- 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*.
- To restore 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

You can launch the Recovery Wizard in any of three ways, as shown in [Table 4-5](#)

Table 4-5 Three ways to start the NetBackup Recovery Wizard

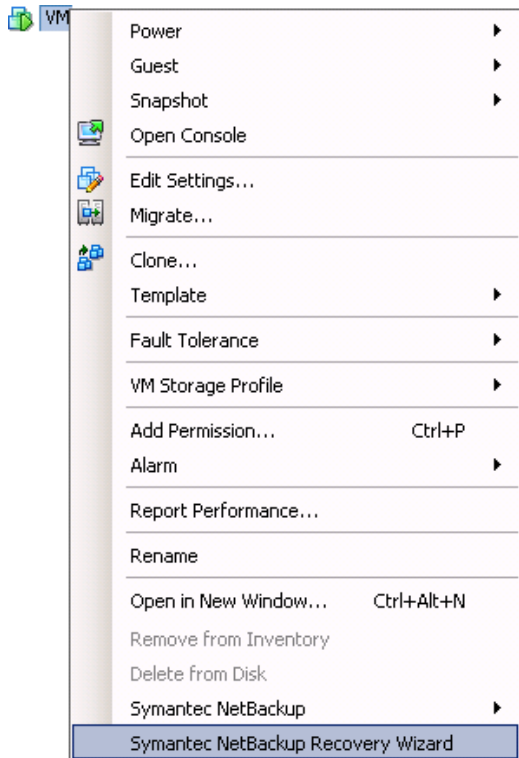

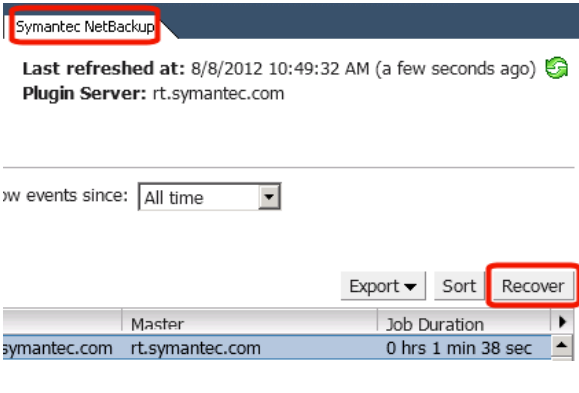
Action	Description
	<p>Right click on the virtual machine and select Symantec NetBackup Recovery Wizard.</p> <p>By default, the wizard selects the original location as the target for the restore. You can overwrite the virtual machine in the original location or direct the restore to another location.</p>
 Symantec NetBackup Recovery	<p>Click Home, click the Symantec NetBackup Recovery icon, and then click Start VM Recovery Wizard.</p>

Table 4-5 Three ways to start the NetBackup Recovery Wizard (continued)

Action	Description
 The screenshot shows the Symantec NetBackup web interface. At the top, there's a header with 'Symantec NetBackup'. Below it, a status bar shows 'Last refreshed at: 8/8/2012 10:49:32 AM (a few seconds ago)' and 'Plugin Server: rt.symantec.com'. A filter dropdown is set to 'All time'. Below the filter, there are buttons for 'Export', 'Sort', and 'Recover'. The 'Recover' button is highlighted with a red box. Below the buttons is a table with columns 'Master' and 'Job Duration'. The first row shows 'symantec.com' as the master and '0 hrs 1 min 38 sec' as the job duration.	In the Symantec NetBackup tab, click the Events tab, click on a successful backup event for the virtual machine, and click the Recover tab.

NetBackup Recovery Wizard screens

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

Select source virtual machine

Select the virtual machine to restore.

Table 4-6 Select source virtual machine

Field	Description
Select NetBackup Master Server	Use the drop-down list to select the master server that made the backup. If the master server is not in the drop-down, you must add the server to the master server list. See “To authorize the plug-in to restore virtual machines” on page 41.
Enter Display Name or UUID or DNS Name or Host Name	Enter the virtual machine name (or portion of the name) that you want to restore, and click Search . Note: This field is case sensitive. When you access this dialog by means of Home > Symantec NetBackup > Recovery Wizard , this field does not accept pasting values from the clipboard. You must enter a value manually. For security reasons, VMware does not allow pasting values into this field.

Table 4-6 Select source virtual machine (*continued*)

Field	Description
Select Client	The results of the search appear in this list. Click the virtual machine to restore and then click Next .

Select Backup

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

Table 4-7 Select Backup

Field	Description
Select Backup	Use the drop-down to select the backup, as follows <ul style="list-style-type: none"> ■ Latest Backup Selects the latest available backup image. ■ Manually Specify Click this option to select a different backup image. The Browse backups button appears. Click that button and enter a date range within which to search for images. The VMDK files for the image you select appear below the Virtual Machine Attributes area. A red triangle next to the date field indicates the entry of an unsupported date format. Use the calendar icon to select a date. The Select Backup screen of the Recovery Wizard in some cases allows the incorrect entry of a date. This will be fixed in a future release. Click Select this backup to select the backup image.
Backup Details	Displays information on the backup image and the attributes of the virtual machine at the time it was backed up.

Destination Options

Specify the destination for the restored virtual machine.

Table 4-8 Destination Options

Field	Description
Original Location	Lists the details of the original location.
Use Original Location	Selects the original location (ESXi server, folder, resource pool, datastore or cluster) as the restore location. (This setting is the default.) To accept the original location, click Next .

Table 4-8 Destination Options (*continued*)

Field	Description
ESXi	The ESXi server for the restored virtual machine. Click Change to browse for an ESXi server.
VM Folder	The folder for the restored virtual machine. Click Change to browse for a folder.
Resource Pool	The resource pool for the restored virtual machine. Click Change to browse for a resource pool.
Datastore or Cluster	The datastore or datastore cluster for the restored virtual machine. Click Change to browse for a datastore or datastore cluster.
Display Name	The display name for the restored virtual machine. You can enter the name.

Transport Modes

Select the recovery host and data transfer mode for the virtual machine restore.

Table 4-9 Recovery host and transport modes

Field	Description
NetBackup Recovery Host	The host that performs the recovery. The default is the host that performed the backup (the backup host). 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. For example, if the host that performed the backup used a SAN connection to access the datastore, but the host you select as recovery host does not have SAN access to the datastore, the restore fails if you select the SAN transport mode.
Transport Modes	Determines how the restore data is sent 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. Click a mode on the left and use the arrow to add it to the Selected modes in preference order panel on the right. The first mode added is the first transfer mode that NetBackup tries for the restore.
san	For unencrypted transfer over Fibre Channel (SAN) or iSCSI.
nbd	For unencrypted transfer over a local network that uses the Network Block Device (NBD) driver protocol. This mode of transfer is usually slower than Fibre Channel.

Table 4-9 Recovery host and transport modes (*continued*)

Field	Description
nbdssl	For encrypted transfer (SSL) over a local network that uses the Network Block Device (NBD) driver protocol. This mode of transfer is usually slower than Fibre Channel.
hotadd	Requires that the recovery host is in a virtual machine. For instructions on this transport mode and on installing the recovery host in a virtual machine, refer to your VMware documentation.

Disk Options

Select the provisioning for the restored disks.

Table 4-10 Disk options

Field	Description
Same as original	Restores the virtual machine's virtual disks with their original provisioning.
Thick Provision Lazy Zeroed	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.
Thick Provision Eagerly Zeroed	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.
Thin Provisioning	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

Select the recovery options for the virtual machine.

Table 4-11 Virtual machine options

Field	Description
Restore BIOS UUID instead of creating a new	<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"> ■ 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. ■ 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.
Power on virtual machine after recovery	The recovered virtual machine is automatically powered on when the recovery is complete.
Overwrite existing virtual machine	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.
Retain hardware version	<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 Connectivity Options

Select the networks for the recovered virtual machine.

Table 4-12 Network connectivity options

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

Recovery Summary

Preview the recovery details.

Table 4-13 Recovery summary

Field	Description
Destination	Lists the settings that are used for the recovery.
Pre-Recovery Check Results	Click Run Pre-Recovery Check . Verifies the credentials and appropriate paths and connectivity, determines whether the datastore or datastore cluster has available space, and reviews other requirements. You must run this check at least once. You can proceed with the restore even if the check fails.
Recover	Starts the recovery of the virtual machine. This button is not available until you run a pre-recovery check.

DRAFT

Troubleshooting

This chapter includes the following topics:

- [Common problems](#)

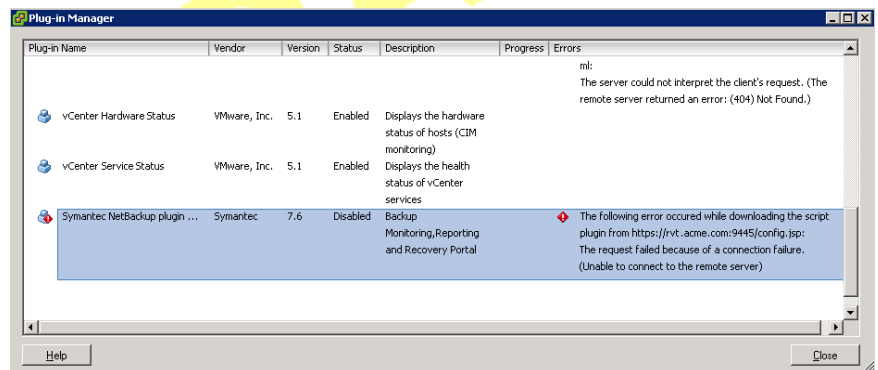
Common problems

For the NetBackup plug-in for VMware vCenter, this topic describes some common problems and their recommended actions.

The NetBackup plug-in does not appear in vSphere Client

The plug-in may not appear if vSphere Client fails to access the plug-in host.

In vSphere Client, click **Plug-ins > Manage Plug-ins**. A NetBackup plug-in message similar to the following indicates that vSphere Client cannot connect to the plug-in.



Recommended actions:

- Verify that the vSphere Client host can access the plug-in by name. You may have to modify `C:\Windows\System32\drivers\etc\hosts` on the vSphere Client host to correct the name resolution.
- Verify that the plug-in host (virtual appliance) is running.
- Verify that the host name being accessed is correct. If the plug-in host is configured with the wrong hostname, delete the virtual appliance and re-install it.

The Recovery Wizard does not find any backup images

This can happen for any of the following reasons:

- The vCenter name resolution on the plug-in host is different from that on the master server.
- The vCenter was added to the master server using name but the plug-in was configured using its IP.
- The time setting on the plug-in host is incorrect.

Recommended actions:

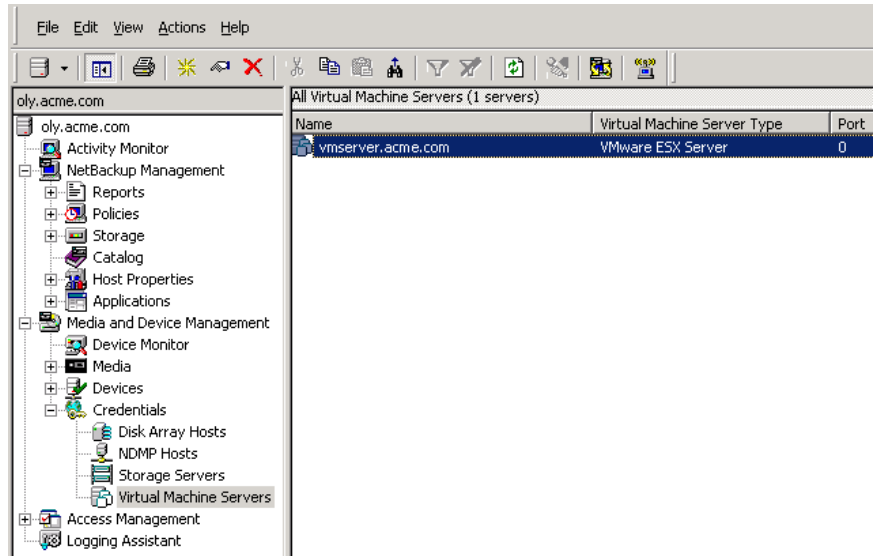
- Verify that the name of the plug-in on the plug-in host is identical to the name entered under **Credentials** on the NetBackup master server. The following two name entries should match:

- On the plug-in host enter the following:

```
/opt/SYMCnbvcPlugin/tomcat/webapps # cat /etc/nbvcplugin.env |  
grep SERVER_NAME
```

Example result: `SERVER_NAME=vmserver.acme.com`

- Find the virtual machine server name in the Administration Console on the NetBackup master server, under **Media and Device Management > Credentials > Virtual Machine Servers**:



The name that appears in the Administration Console should match the name that was returned on the plug-in host.

- Verify that the time setting on the plug-in host (virtual appliance) is correct. If necessary, set the current time using `date -s` command.

To obtain the current date and time, enter:

```
date
```

Set the date and time by means of the `-s` option with the returned date and time enclosed in quotes. For example:

```
date -s "Wed Feb 6 09:41:54 UTC 2012"
```

Then reboot the virtual appliance.

DRAFT