Carbonite Server Backup Agent 6.72 for HP-UX

User Guide

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Two Avenue de Lafayette
Boston, MA 02111
www.carbonite.com

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Acknowledgements: Two encryption methods, DES and TripleDES, include cryptographic software written by Eric Young. The Windows versions of these algorithms also include software written by Tim Hudson. Bruce Schneier designed Blowfish encryption.

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The Carbonite Server Backup Agent, Carbonite Server Backup CentralControl, and Carbonite Server Backup Director applications have the encryption option of AES (Advanced Encryption Standard). Advanced Encryption Standard algorithm (named Rijndael, pronounced “Rain Doll”) was developed by cryptographers Dr. Joan Daemen and Dr. Vincent Rijmen. This algorithm was chosen by the National Institute of Standards and Technology (NIST) of the U.S. Department of Commerce to be the new Federal Information Processing Standard (FIPS).

The Carbonite Server Backup Agents and Carbonite Server Backup Director applications also have the added security feature of an over the wire encryption method.

Document History

Version	Date	Description
1	October 2017	Carbonite Server Backup-branded Agent 6.72 guide.

Contents

1. Introduction

Carbonite Server Backup CentralControl, Director (Vault), and Agent comprise a data protection software suite that securely backs up and restores data from servers across a network to a remote data vault. The applications provide an automated lights-out method for protecting your valuable computer data without the need for tape devices or other backup media.

This Agent for HP-UX User Guide explains how to install, configure and manage the Agent on individual computers. This guide is intended for the administrator responsible for ensuring that users' servers (computers) are configured properly for backups. Those who use the servers do not necessarily need to be aware that their systems are being backed up.

Different servers may require different files and directories backed up depending on what data needs to be secured. Some may require more frequent backups or different schedules. This can depend on your backup requirements, how frequently the data changes (its volatility), as well as your bandwidth capabilities.

This guide shows the administrator how to configure the Agents, select the data to be backed up, and schedule when the backups will be run.

1.1 Features in this Release

- Added support for HP-UX 11i (11.31) on PA-RISC and on IA-64 in Binary Translation.
- For Agent versions 6.72 and above, the "Preserve folder structure" checkbox has been removed from the Restore Wizard. If your data to restore has been selected with the recursive option, the directory structure will also be restored to the alternate location (starting from the selection point of the included item). You can individually specify whether your restore/directory selections are recursive or not.

1.2 Agent vs. CentralControl

Each computer that needs to be backed up must have the Agent software installed, running, and connected to the network. The Agent runs on the computer as a background service, and starts automatically when the system starts.

The setup of Agents, Jobs, scheduling, and monitoring is done from the CentralControl application. The actual backup is done from the server with the Agent, to the system with the vault. No user data goes through CentralControl. The vault has to be previously set up with a valid account to receive your Agent's commands and data.

1.3 Agent/Central Control Configuration Overview

The Agent program runs as a service on the server (computer) that will be backed up. The way to configure and control it is with the CentralControl program. One CentralControl program controls many different Agents on many different servers on a network.

You need to provide names, passwords, and permissions to allow the Agent to connect with CentralControl:

1. Each server (computer to be backed up) needs an Agent.
2. Need to connect (from CentralControl) to an Agent (when you create a new Agent).
3. Supply Name, IP address, and user/password.
4. Then, register the computer on the vault.

You must register a computer on a vault in order to log on to the vault and establish a connection. The vault must be informed that this Agent is valid and is authorized to perform its functions.

You need to “re-register” a computer if you restore from another computer, or perform a disaster recovery (described in chapter 4 of this guide.).

When you create a backup Job, you register information about it. For example:

1. Which profile (i.e., which vault) applies?
2. What data does it need to back up?
3. What types of logs will it produce?
4. What type of encryption (if any) will it use?
5. When will it run?

Note: The first backup is a “seed” (complete backup). The next and subsequent ones are deltas (i.e., changes only), but they are still considered to be full backups.

Depending on the configuration of your system:

- There might be more than one vault that you can use.

- One CentralControl usually controls all of the Agents on your network.

- You can also back up to your own local disk or tape.

2. Agent Configuration

2.1 Introduction

For a newly installed application, you can use the following steps to quickly perform your first backup. Regarding the CentralControl program, the "CentralControl Operations Guide" describes all of the features, options, and further details.

> **An Agent** configures, manages, runs, and monitors backup Jobs. You can manage and control many Agents through one CentralControl application (GUI). An Agent can have multiple Jobs.
>
> **A Job** defines the parameters associated with backups, restores, and other processes. Parameters can include: file selections and filters; compression; and encryption settings. A Job can belong to only one Agent. Job names are unique on that Agent.
>
> **A Profile** defines the vault configuration that your Agent will use. It matches a Job to an account on a vault. The Job uses the profile to validate the backup to the vault, and to know where to put the data. A profile can apply to more than one Job.

Steps for a QUICK START:

1. Create an Agent profile.
This is the local name (used by CentralControl) of the Agent program that will initiate the backups. You need an Agent profile name for each computer that you back up.

2. Save the default workspace as a named workspace.
To save your configurations (for Agents, Jobs, and options), you need to assign a workspace name. CentralControl will prompt you to save any changes. You can create more than one workspace, but you can open only one workspace at a time.

3. Configure the vault.
To connect with your account on the vault, create a profile with the properties of this Agent. Some users may have only one profile to service one account (i.e., all Jobs back up to a single account). Others may have multiple profiles (and accounts) on one or more vaults.

4. Create a Job.
Each Agent on CentralControl has Jobs with names that are unique to that Agent. Other Agents may have similar or different Job names, even if they perform similar functions. A named Job can be one of many for different types of backups, in different ways, at different times. When you create a Job, specify a profile that you have created. This allows you to access the vault (i.e., your account).

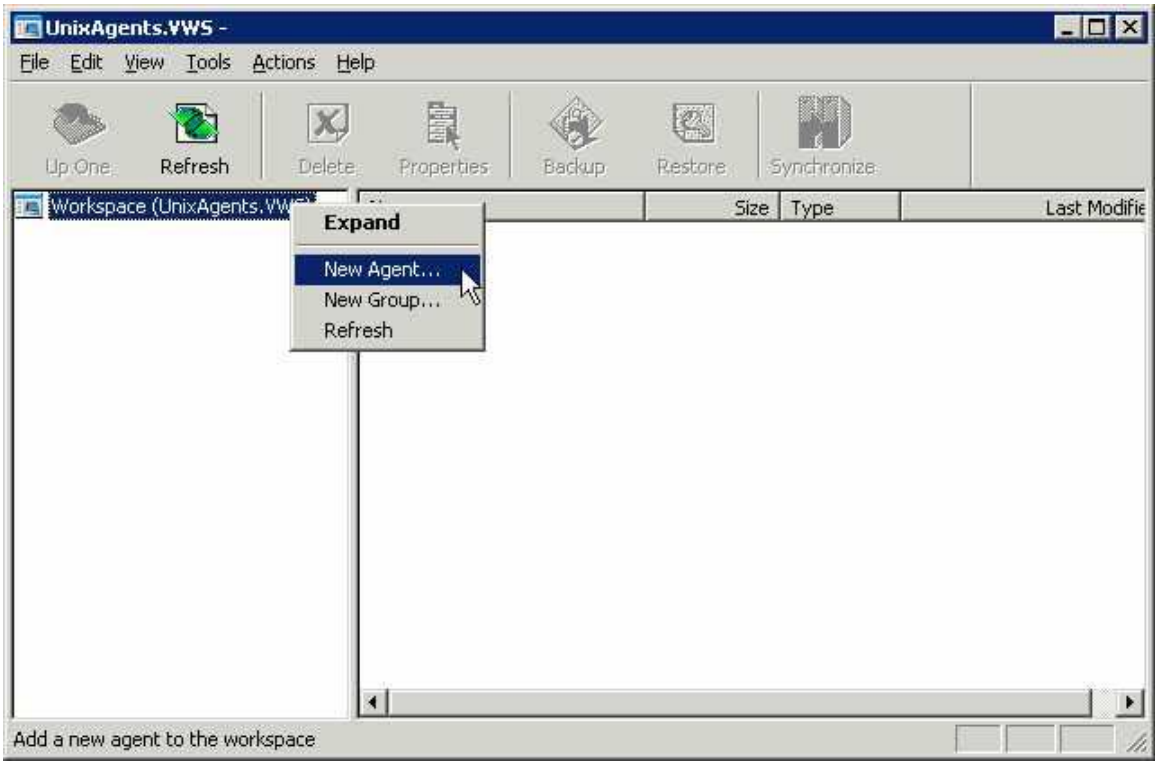
5. Schedule the Job.
You can run your Job at predetermined times. You can also run it manually (“ad-hoc”) whenever you want.

When you have completed these steps, you are ready to run a backup.

The remainder of this chapter describes the steps in more detail. Backups are described in the next chapter.

2.2 Create an Agent Profile

This is the named function that will initiate the backups. You may (at this stage), when you create the Agent, continue right through to creating a Job, configuring the vault, and running the backup. This chapter, though, will describe the steps for configuration only, as outlined here, with the backup being run as described in the next chapter.



Add a new agent to the workspace

To create an Agent profile, you must have the Workspace selected (highlighted). From here you may either:

- From the pull down menus, use File → New Agent, or

- Right-click on the workspace, and then click on New Agent (see Figure 2).

This brings up an Agent Properties screen.

- Description: a description meaningful to you.

- Network Address: either the IP or name of the server the Agent software is on.

- Port: the communications port number reserved for this service (the default is 808).

- User name: authentication to communicate with the Agent service.

- Password: password assigned to the user above.

- (Check to save the password): saves the password on this machine with CentralControl.

- Domain: Windows domain (if applicable).

Click the Check Status button to ensure the communication is valid and you can talk to the remote Agent. If not, check with your support or vault service provider. Click OK to exit the Status window, and OK again to finish and exit the New Agent window.

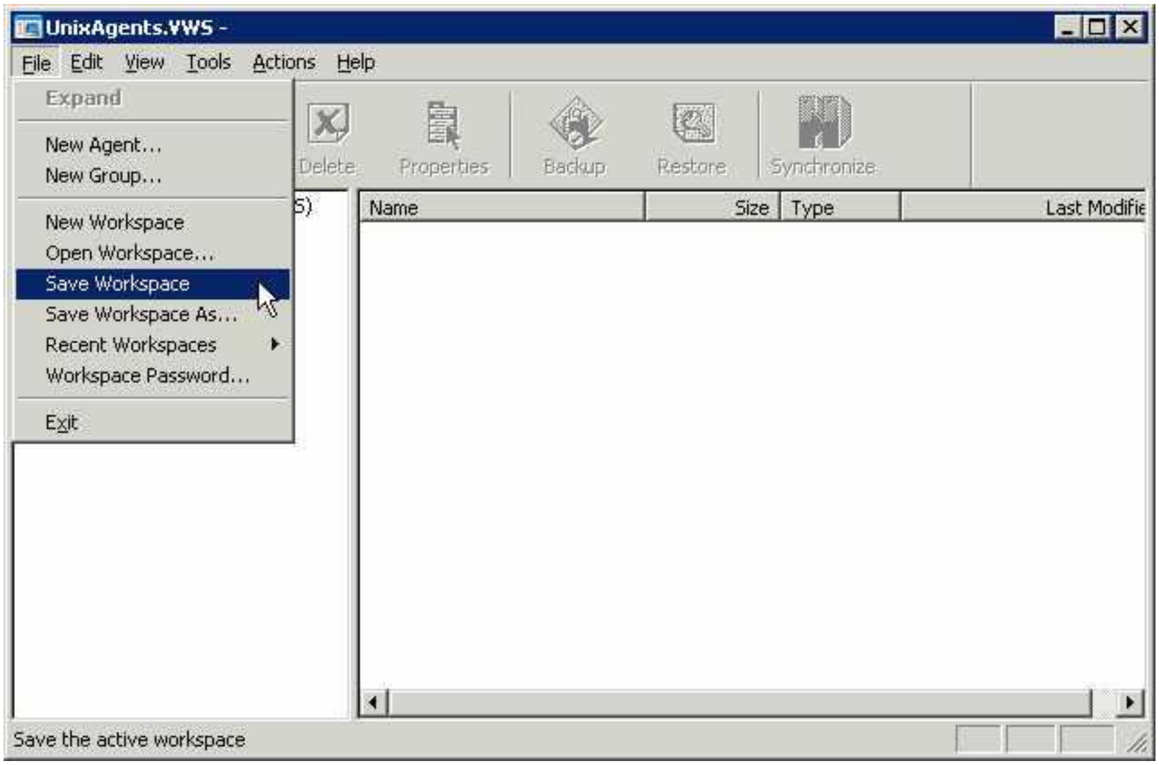
Your new Agent's name will show up in the left pane of the CentralControl GUI.

Note: In this screen and others, use the "What's This" help (the '?' in the upper right corner) for further information about the fields, as well as the main Help menu (F1) for general help.

If the F1 Help screen is open (even minimized), the "What's This" help will not be active. The F1 help must be closed for the "What's This" help to function properly.

2.3 Save the Workspace

Save the default workspace as a named workspace. To save all your configurations (Agents, Jobs and options) you must save your workspace with a name of your choice. CentralControl will prompt you to save any changes before you exit the application. You can save more than one workspace, but only open one at a time.



Choose a meaningful name for your workspace. As well as saving the current workspace as a new name, you may create new ones, open existing ones, save the current one, and see the recent ones.

Because a workspace contains important user names and passwords necessary for access to do backups, it is advisable to optionally encrypt these workspaces so that unauthorized users cannot gain access to them.

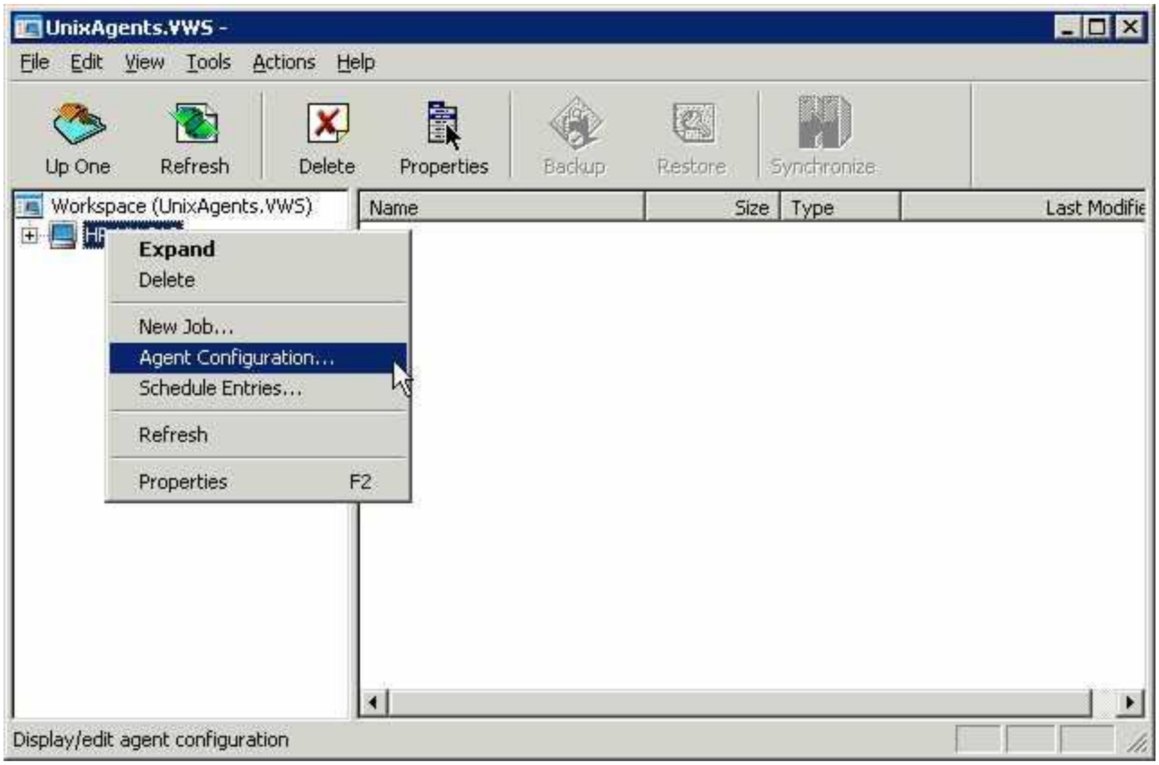
The “Workspace Password” option allows you to add or change a password, as well as choose from encryption types with different cipher strengths.

If this is the first time that you are using a password here, there will not be an “Old Password”, so leave that field blank. Select an encryption type, and create a password (case sensitive). If you lose this password you will need to recreate the workspace.

If the F1 Help screen is open (even minimized), the “What’s This” help will not be active. Close the F1 Help to allow the “What’s This” help to function properly.

2.4 Configure the vault – Agent Configuration

Configure the vault with Agent Configuration (i.e., Agent Properties). These are the properties that the Agent will use to connect to this vault. The settings are specific to the Agent, and affect all Jobs run under that Agent.



Display/edit agent configuration

You can start the Agent Configuration from either the Tools → Agent Configuration pull-down menus, or by right-clicking on a selected Agent in the left pane (see Figure 5). The Agent Configuration screen has several tabs available. Some, such as Notification or Plug-In, you might not use here, depending on your system and company/organization policies.

Vaults - Adds new vaults, and edits and/or deletes existing ones

- New: You want to select a new (existing) vault, and enter the following information, supplied by the vault service provider.

- Registration: The first time is always New. (Re-Registration is used for changes to the profile.)

- Profile Name: A meaningful name that points to your account on the vault.

- Network Address: vault machine address (IP or server name).

- Ports: Use a communication port.

- Reconnection: How to reconnect if there are communication problems.

- Authentication: Account, user name, and password to access your vault account.

Retention: Decide on the number of days online, copies online and number of days archived for your backups. This may affect the cost of your backups.

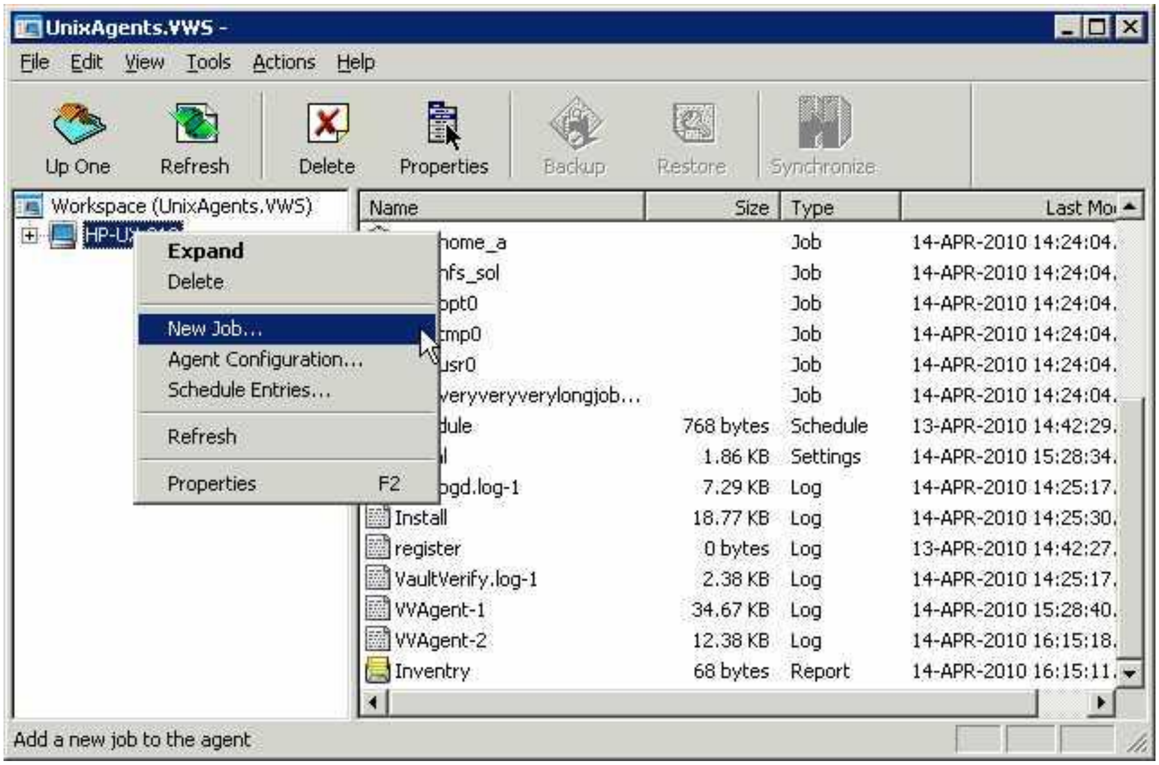
Notification: Do you want to be alerted by emails, to successful or failed backups?

Plug-Ins: Allows you to set and use optional Plug-In software. See the Plug-In manuals.

Note: Use the "What's This" help (the '?' in the upper-right corner) for further information about the fields, as well as the main Help menu (F1) for general help.

2.5 Create a Job

This named Job can be one of many used to do different types of backups, in different ways, at different times.



Name	Size	Type	Last Mo
home_a		Job	14-APR-2010 14:24:04.
fs_sol		Job	14-APR-2010 14:24:04.
pt0		Job	14-APR-2010 14:24:04.
tmp0		Job	14-APR-2010 14:24:04.
usr0		Job	14-APR-2010 14:24:04.
veryveryverylongjob...		Job	14-APR-2010 14:24:04.
dule	768 bytes	Schedule	13-APR-2010 14:42:29.
l	1.86 KB	Settings	14-APR-2010 15:28:34.
pgd.log-1	7.29 KB	Log	14-APR-2010 14:25:17.
Install	18.77 KB	Log	14-APR-2010 14:25:30.
register	0 bytes	Log	13-APR-2010 14:42:27.
VaultVerify.log-1	2.38 KB	Log	14-APR-2010 14:25:17.
VVAgent-1	34.67 KB	Log	14-APR-2010 15:28:40.
VVAgent-2	12.38 KB	Log	14-APR-2010 16:15:18.
Inventry	68 bytes	Report	14-APR-2010 16:15:11.

Add a new job to the agent

Select New Job to start the New Job Wizard (a program that asks you questions and prompts for details regarding the new Job).

- Backup source type – choose a local drive or mapped network drives.

- Vault profile – choose an existing one created earlier, or "branch out" from this Wizard and create a new one here.

- Job name – choose a unique, meaningful Job name.

- File list backup source - Select Data files. You can include/exclude files and subdirectories.

- Set the options – Quick File Scanning (on/off) and Backup time Options. (These are also accessible in the Schedule Job Wizard.)

- Select an encryption type – choose one from the list, or none. You must supply a password if you choose to encrypt your data on the vault. The data cannot be recovered if you lose the password.

- Configure the logs – set log options and log copies. Choices here depend on your backup activity, and your need for detailed logs and their length of retention. Changes here only affect the logs that will be created, not those already created.

- Finish – Run immediately, schedule a backup, or just exit.

To do an "ad-hoc" backup, we could choose to run this Job immediately. For this chapter, we are going to schedule the Job to run later. Choose either "Schedule a Backup" and go to the next section, or "Exit" and start the schedule in the next section.

Note: On this screen and others, use the "What's This" help (the '?' in the upper right corner) for further information about the fields, as well as the main Help menu (F1) for general help.

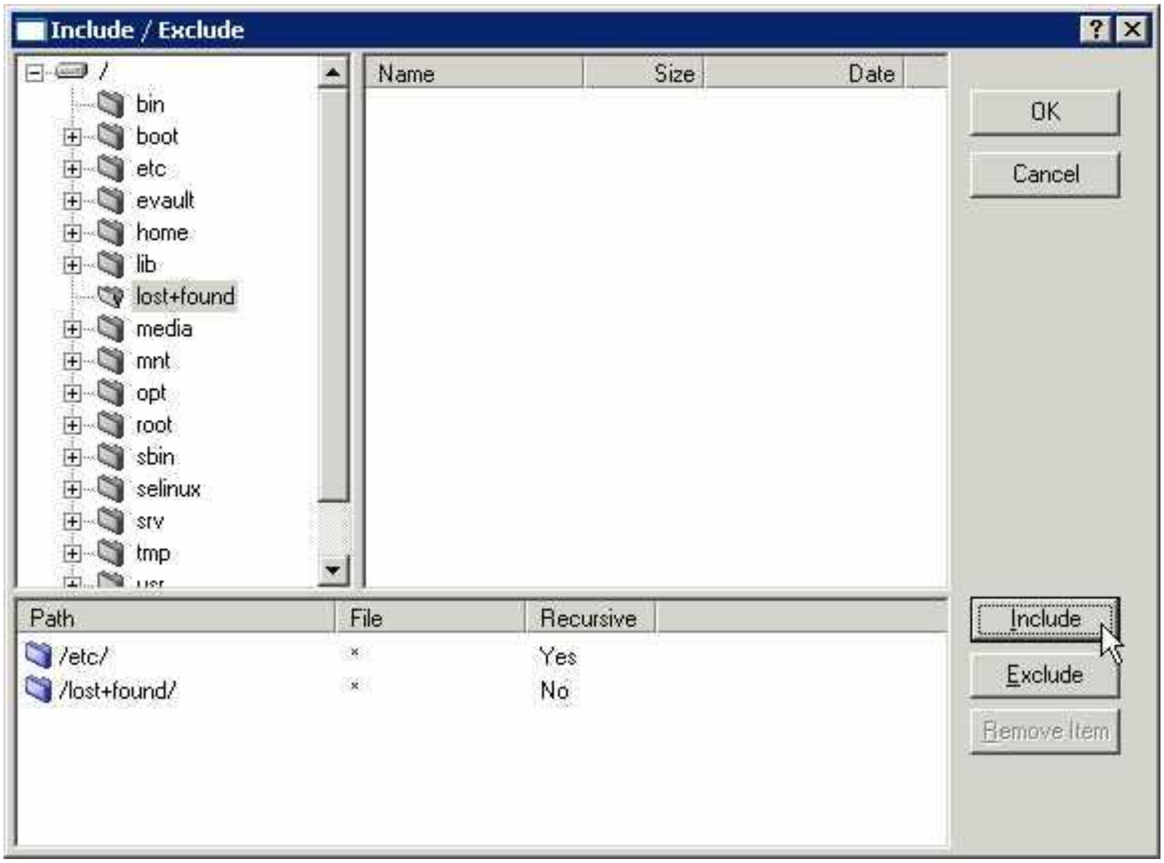
2.5.1 Adding a File or Directory to a new Backup Job

When you first create a Backup Job, you must include one or more files, or directories (folders). You may modify this list of files and directories afterwards.

In the New Job Wizard (described in the previous section), the Source screen asks you to select files and/or directories to include in the Backup.

If you are selecting Data Files, the **Options** button allows you to select Backup files opened for write (that is, shared read, not opened exclusive), or back up a single instance of all selected hard linked files. This requires a pre-scan pass through the file selection. (See Section 3.1.1 for more information on these options.)

Click **Add** to start adding files/directories to the list to be backed up. This brings up the Include/Exclude screen, which displays a hierarchy of the disks and directories that you may select from for the backup.



Path	File	Recursive
/etc/	*	Yes
/lost+found/	*	No

You can “open” the tree in the left pane by clicking on the + signs. The files in that directory are displayed in the right pane, where you can select one or more files. Use the CTRL key and the mouse to select multiple files in that directory. Click **Include**. The file/directory names are moved to the lower part of the screen. The **Remove Item** button allows you to un-select names from this lower list, if you change your mind, before you click the **OK** button.

If you have a directory with a large number of files, and you want to select most of them, it might be easier to **Include** them all, and then **Exclude** (from the list) the ones you don’t want.

You may also select one directory (folder) at a time to be backed up. When you click **Include**, you will get a message asking if you want to include all files, or just some of them which match your selection criteria (filter).

“Recursive” means to include all files and directories below this directory. Otherwise you may choose to select certain files, depending on their names and extensions. The asterisk (*) means all files with any name or extension.

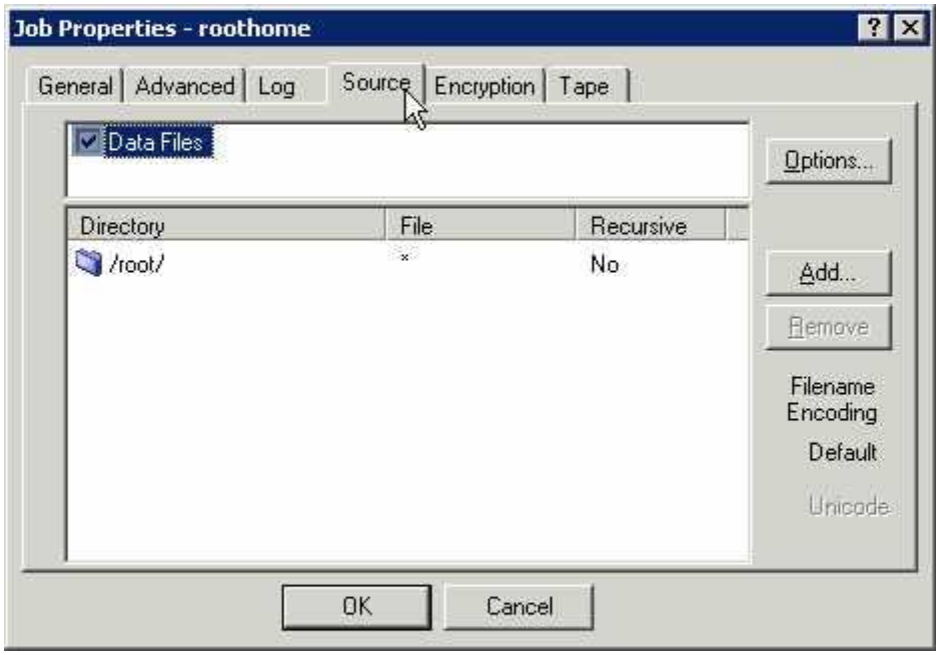
When you have finished selecting (and including) all the files and directories you want to be in this Backup Job, click **OK** and you will be back at the Source screen, where you can click **Next** to continue the next step of the New Job Wizard. See the information in the preceding section about creating a Job.

2.5.2 Adding/Removing a File or Directory with an existing Backup Job

When you first create a Backup Job, you must include one or more files, or directories (folders). See the section about "Adding a File or Directory to your new Backup Job". Later you may want to add or remove files or directories from the Backup Job.

Select a Job in the CentralControl window, and select "Properties" for that Job, either from the icons, or by right-clicking or by using F2.

Select the "Source" tab in the Properties window.



Job Properties - roothome

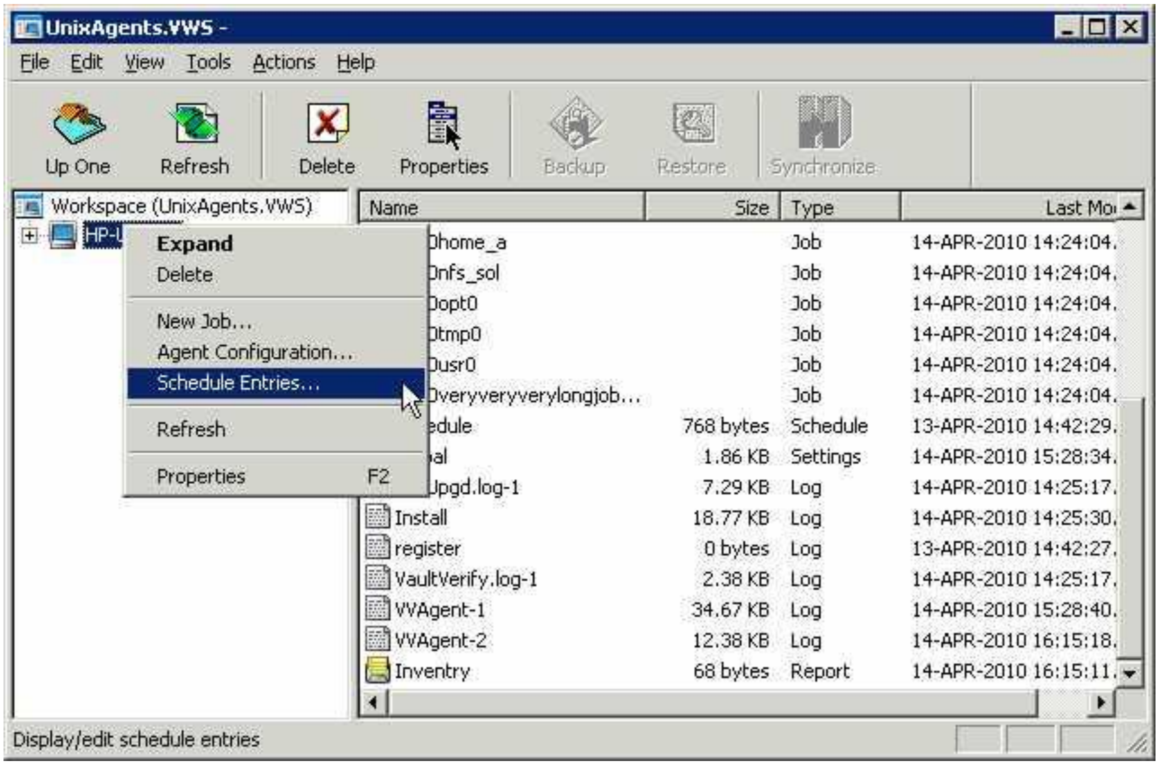
☑ Data Files

Directory	File	Recursive
/root/	*	No

This displays the existing list of files and directories for this Backup Job. You may select (highlight) one or more in the lower window, and click **Remove**. You will be prompted with a message "Are you sure you wish to delete the scheduled entry (or entries)?"
The **Add** and **Options** buttons work as described in preceding sections.
Click **OK** when you finish.

2.6 Schedule the Job

This Job can be run at predetermined times. All Jobs can also be run “manually” (ad-hoc) when desired.



Name	Size	Type	Last Mo
Dhome_a		Job	14-APR-2010 14:24:04.
Dnfs_sol		Job	14-APR-2010 14:24:04.
Dopt0		Job	14-APR-2010 14:24:04.
Dtmp0		Job	14-APR-2010 14:24:04.
Dusr0		Job	14-APR-2010 14:24:04.
Dveryveryverylongjob...		Job	14-APR-2010 14:24:04.
edule	768 bytes	Schedule	13-APR-2010 14:42:29.
al	1.86 KB	Settings	14-APR-2010 15:28:34.
Jpgd.log-1	7.29 KB	Log	14-APR-2010 14:25:17.
Install	18.77 KB	Log	14-APR-2010 14:25:30.
register	0 bytes	Log	13-APR-2010 14:42:27.
VaultVerify.log-1	2.38 KB	Log	14-APR-2010 14:25:17.
VVAgent-1	34.67 KB	Log	14-APR-2010 15:28:40.
VVAgent-2	12.38 KB	Log	14-APR-2010 16:15:18.
Inventry	68 bytes	Report	14-APR-2010 16:15:11.

Start the scheduling from Tools → Schedule Entries, or right-click on a selected Agent in the left pane (see Figure 9). This brings up the Schedule List screen. For a new installation, this will be empty. Click New to add a new schedule. This will start the Schedule Wizard, which will take you through the steps to configure a schedule.

- Select a Command to schedule. You may choose: Backup, Synchronize, or Custom command. For now choose “Backup”.

- Select a Job from the list. It shows the Target and Destination for each.

- Select a Backup type. (Note: This screen will not display for a vault backup.) Specify a Backup type and Processing Options for local disk or tape.

- Select a Retention. Choose Daily, Weekly, or Monthly from the list. This determines how long your backup will be kept online.

- Set the Options. Choose Quick File Scanning (on/off), and Backup Time Options. (These are also accessible in the Create a Job Wizard.)

- Select a Command Cycle. Choose Weekly, Monthly or a Custom Cycle for backups. When you have selected one, and defined the days and times, the Wizard will finish. The command you have just created will now show in the Schedule List. You may Edit, Remove or Disable it. If you have more than one schedule in the list, you may move them up or down in position (priority), so that any conflicts are resolved by taking the parameters in the first (highest) one, and overriding any others. Click **OK** when done.

Note: On this screen and others, use the “What’s This” help (the ‘?’ in the upper right corner) for further information about the fields, as well as the main Help menu (F1) for general help.

If the F1 Help screen is open (even minimized) the “What’s This” help will not be active. The F1 help must be closed for the “What’s This” help to function properly.

3. Performing Backups

Once all the Agent Configuration information has been entered, and a schedule set up, as in the previous chapter, the backups will take place automatically.

On occasion you may need to run a “one-time” backup for a special reason. You can either use an existing Agent and Job (and modify it), or create one specifically for this backup.

Seeding and Re-Seeding:

When you run your first Backup, a full backup is created on the vault. This first backup contains all the data selected for backup and is called a "seed". Subsequent backups are deltas (changes in file), which are applied to the first full backup to create subsequent backups. This way a current full backup is always available.
If the Agent detects changes, such as the encryption type or password changing, the next backup will be a re-seed.
In this case of a re-seed, your backup will take longer to complete and a message about re-seeding is created in the log file.

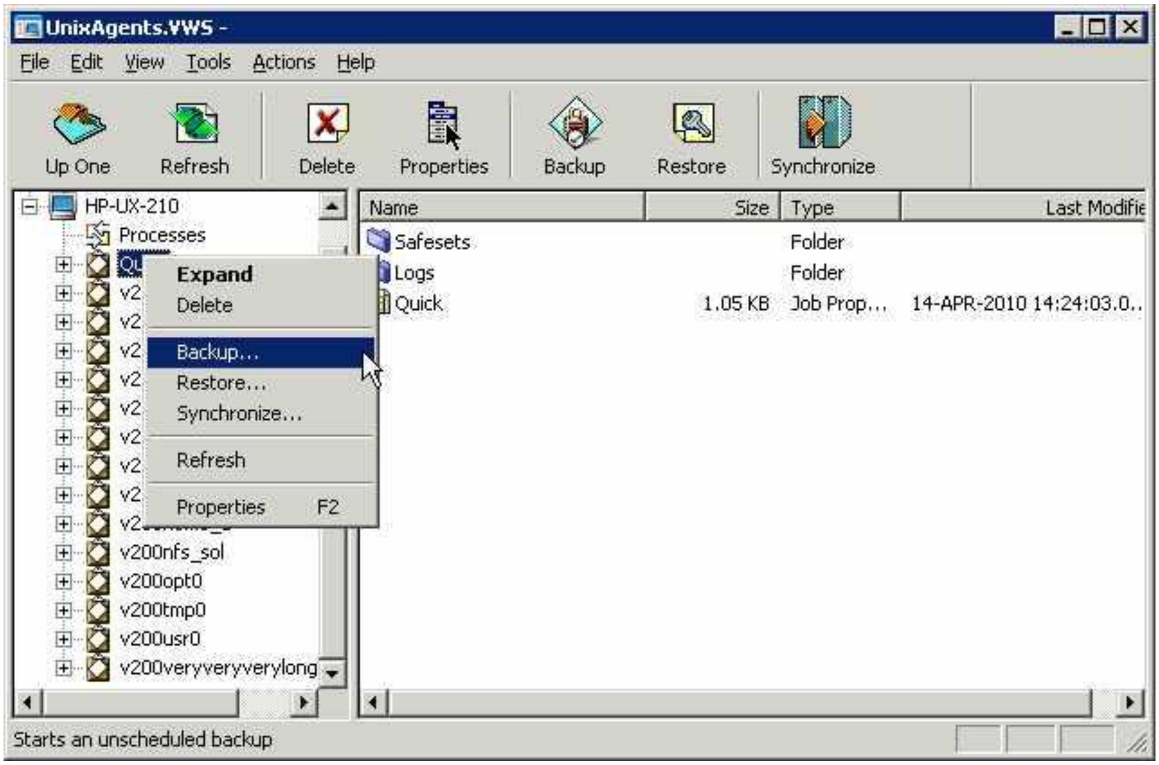
3.1 Running an Ad-Hoc Backup

To start an unscheduled (ad-hoc) backup Job, select (highlight) a Job, and then perform one of these actions:

- Choose Actions → Backup

- Click the backup icon (or use CTRL+B)

- Right-click a Job in the left pane



This starts the Backup Wizard, which asks you for:

- A destination (vault, tape or directory on disk). You may choose “Skip further configuration and **Backup Now**”, or click **Next.**

- Backup type and options. Depending on your choice of vault, tape or disk, make selections here for type and options. Note that a vault backup will skip over this screen.

- Retention type. Select a retention scheme: daily, weekly or monthly. This is the same as in the scheduling of Jobs.

- Other options. Quick file scanning, and backup time options. This is the same as in the scheduling of Jobs.

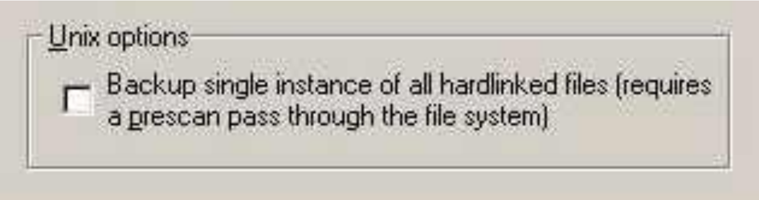
- Click **Finish** to complete the configuration and start the backup.

3.1.1 File Backup Options for Unix

The “File Backup Options” will have “Unix Options” enabled for Unix Agents.

Note: A **hard link** is a reference, or pointer, to physical data on a storage volume. The name associated with the file is simply a label that refers the operating system to the actual data. As such, more than one name can be associated with the same data.

Prescanning reads through the file system, gets each inode, and stores it in a map. The larger the file system, the more memory this map requires, and the more time it takes to process. Prescanning only makes a difference on hard-linked files. These share the same initial inode and are therefore the same file. Hard-linked files can only exist on the same disk. They cannot cross disk boundaries.



Unix options

□ Backup single instance of all hardlinked files (requires a prescan pass through the file system)

Backup single instance – option is selected:

If this option is set (this is the default), the backup is slower, as a second pass of the file selection (pre-scan) is required to follow all the links. Some files may have many hard links, and the process of searching them all may take considerable time. The backup size is smaller, as only one “copy” (inode) of the data is backed up, as well as all the links.

The pre-scan process can take a significant amount of time and memory depending on the number of files in the file selection (hard links may not cross physical file system boundaries).

On a restore (to original or alternate location), the data (with a new inode) and its hard links are restored.

Backup single instance – option is not selected:

If this option is not set (unchecked), it makes the backup faster, but the total backup size is larger, as each link (occurrence) gets backed up separately.

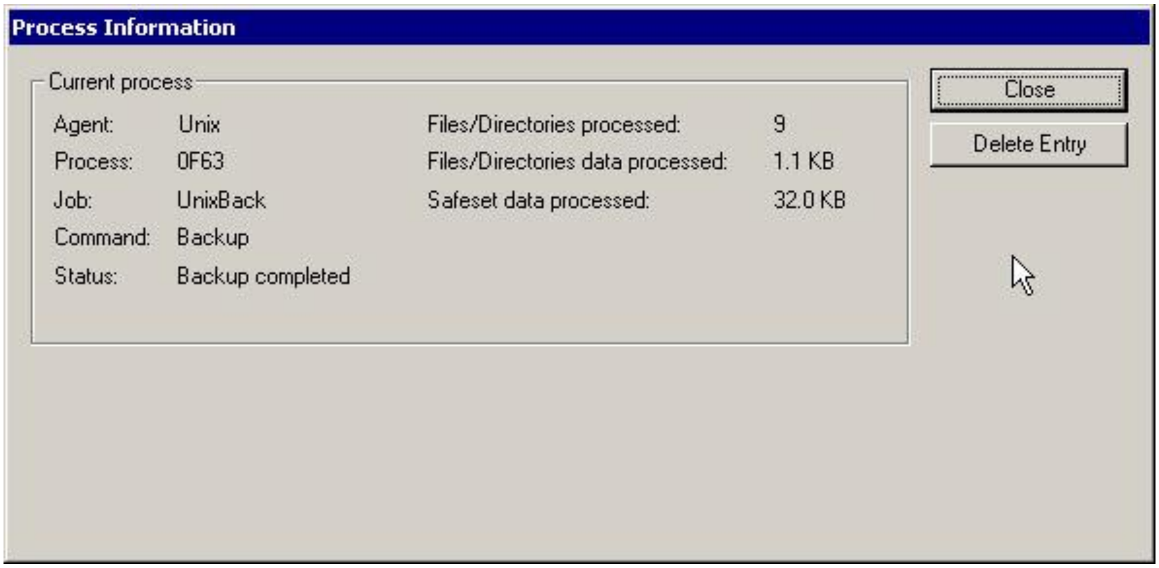
Disabling hard link pre-scanning means that if there are hard links in the file selection list, they will be backed up more than once.

On restore, the hard-link relationship will not be re-established. Each file will be restored individually and applications depending on hard links may not be automatically restored.

Additionally, the restore may require more space than the size of original backup.

3.2 Check the Backup results

After a backup (scheduled or ad-hoc) you can check the results for success, or any possible errors. Note that you may have chosen, in Agent Configuration, to be notified by email of successful or failed backups.



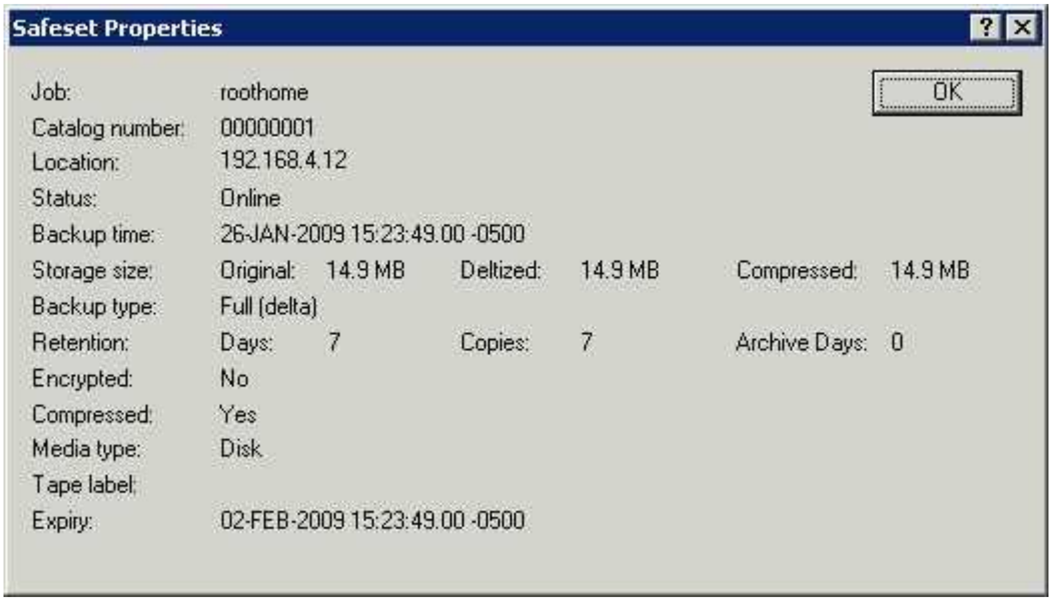
Process Information

Current process

Agent:	Unix	Files/Directories processed:	9
Process:	0F63	Files/Directories data processed:	1.1 KB
Job:	UnixBack	Safeset data processed:	32.0 KB
Command:	Backup		
Status:	Backup completed		

Processes are the “jobs” that the system has performed, such as backups, synchs, and restores. If you select “Processes” in the left pane, you can see a list of processes. Double clicking on one will show you the details. These processes will normally be deleted after approximately one hour in this list. To ensure an accurate (current) picture of the processes, you must perform a Synchronize operation.

Below each Job in the left pane are Safesets and Logs. Safesets are ”sets” of backup data (sequentially numbered) on the vault. They remain until their retention date (configured by you) expires. Double-click a backup (Safeset) to see its properties.



Safeset Properties

Job:	roothome					
Catalog number:	00000001					
Location:	192.168.4.12					
Status:	Online					
Backup time:	26-JAN-2009 15:23:49.00 -0500					
Storage size:	Original: 14.9 MB		Deltized:	14.9 MB	Compressed:	14.9 MB
Backup type:	Full (delta)					
Retention:	Days:	7	Copies:	7	Archive Days:	0
Encrypted:	No					
Compressed:	Yes					
Media type:	Disk					
Tape label:						
Expiry:	02-FEB-2009 15:23:49.00 -0500					

Log files are the system transcripts of what happened while the backup, synch or restore function proceeded. Double-clicking on a log will display the contents, which you can also print.

4. Performing Restores

There are several reasons for which you might want to do restores:

- To recover one or more data files or directories. You can restore them to their original location, overwriting any that are there, or restore them to a different location on that disk, so that you can then decide on which files you want to copy (restore).

- To recover data that was backed up from one computer, to be restored on another (similar) computer system.

- To recover a complete system (i.e., perform a disaster recovery) when the original system has been lost.

4.1 Restoring a Backup

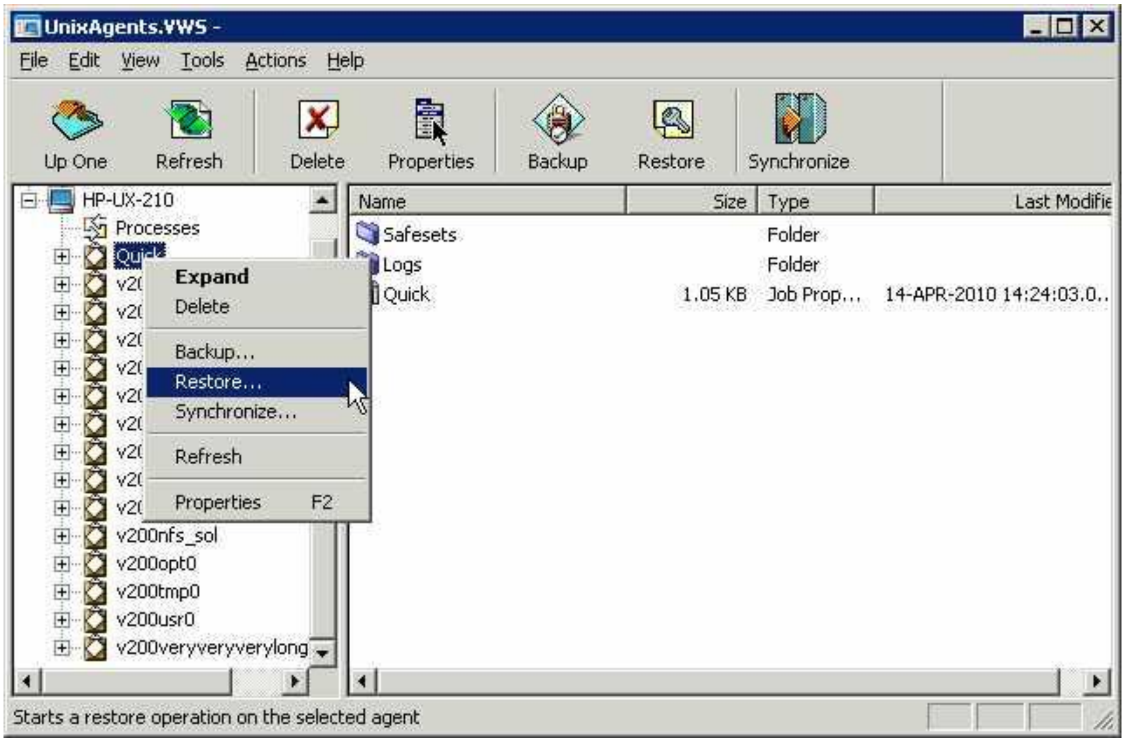
Restoring a backup is the most common usage, allowing you to recover anything from a single file to a complete directory structure.

To start a restore Job, select (highlight) a Job, and then perform one of these actions:

- Choose Actions → Restore

- Click the Restore icon (or use CTRL+R)

- Right-click a Job in the left pane



Name	Size	Type	Last Modifie
Safesets		Folder	
Logs		Folder	
Quick	1.05 KB	Job Prop...	14-APR-2010 14:24:03.0..

Starts a restore operation on the selected agent

The Restore Wizard starts allowing you to:

- Select a type of source device, vault, tape or directory. Depending on what you choose here, you may also select a vault and a backup. You can also choose to restore from a particular safeset, or from a range of Safesets.

- Enter the password if the backup is encrypted. You may not see this screen if the backup was not encrypted. If you have lost the password, you cannot access the backup data.

- Select the restore objects (files or directories). You can expand the directories (if available) and select or deselect files to include in the restore.

- Enter the restore destination options. You may choose to restore files to their original locations, or to alternate locations; create sub-directories; overwrite already existing files.

- Select the other restore options. You may overwrite files that are locked; choose all streams or just data streams. You may choose to create a log file with different levels of detail.

Press the **Finish** button to start the restore process. The restore proceeds, and the process information is displayed. You may wish to review the log file afterwards. Restore logs are prefixed with “RST” in the log listings.

4.1.1 Symbolic Links

A symbolic link (also called a symlink or soft link) consists of a special type of file that serves as a reference to another file or directory. A symbolic link contains a path that identifies the target of the symbolic link. The term “orphan” refers to a symbolic link whose target has moved or been deleted.

During a backup, a symbolic link gets backed up with the timestamp of the link. Restoring a symbolic link sets its modification date and time to the date and time of the restore (rather than the date and time of the symbolic link when it was backed up).

4.1.2 NFS – Network File System

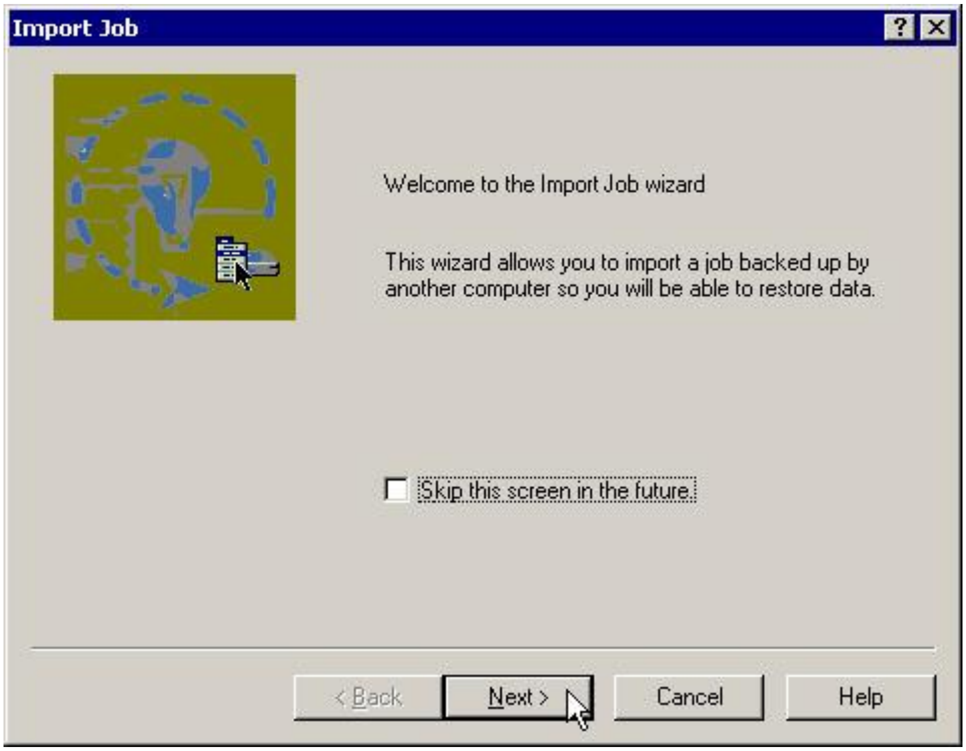
To back up Unix data (at a local or remote mount point) to a vault, you can use NFS on HP-UX. In the CentralControl application, create a new Job using “New Job Wizard - Backup Source Type”, and then select “Mapped Network Drive Only” from the drop-down list.
NFS servers must share their exports in order to make them available to client systems. If you want to perform a mount-point backup or restore, the NFS server must be available, and it must provide sufficient privileges to your client system. Also, the NFS must be mounted on your client system at the time of the backup or restore.
Note: If you restore an NFS backup, and the NFS mount does not exist, the restore will proceed as if it were a local restore. It will put the data on the local disk (with a similar path that is local) without using a mount-point (NFS) path. It will not indicate a “failure”.

If the local disk does not have sufficient space, this may cause a problem.

If you do not realize that a restore is local, and overwrite is enabled, you will overwrite the local data. You will think, however, that you are overwriting the mount-point data.

4.2 Cross-Computer Restores

From the menus, select Options → Restore from another computer. This starts the Job Import Wizard.



Welcome to the Import Job wizard

This wizard allows you to import a job backed up by another computer so you will be able to restore data.

□ Skip this screen in the future.

What the “Restore from another computer” option does is allow the user to redirect the (original) restore Job to a different client (location). It re-registers where the configuration file was originally pointing, so that the restore Job can be redirected to another location. It does this by getting, authenticating and copying configuration information - vault name, computer name, and Job name - from the original configuration, and adding it to your location so that the restore can be accomplished there.

The steps that the Wizard takes you through to do this are:

- Select an existing vault profile.
- Select the computer that has backed up the Job that you wish to import.
- Select the Job you want to restore.

The Wizard will now copy the Job to your local workspace. If a Job already exists with that name, you will receive a prompt regarding an overwrite.

From here, the restore proceeds normally (as outlined in the previous section).

4.3 Disaster Recovery

“Disaster Recovery” is not a menu choice in the CentralControl program. Rather, it is a way of restoring a complete backup to a new system. You would want to do this, for example, if a system has crashed, and the disk has been replaced. This is one of the times at which you would want to recover all system and user data back to that disk.

Reinstalling the O/S, applications, and data is possible, but you may not be able to recreate the exact state of the system that you would get with a restore of a full-drive backup that included data files, system state, and system files. A successful disaster recovery brings your new system to the state of the original system after its last full-drive backup.

4.4 Restoring ACLs

You can back up and restore Access Control Lists (ACLs). The following behaviors can occur when you restore ACLs on a Unix server.

ACLs control the access of users or groups to particular files. Similar to regular file permissions (e.g., owner, group, world), ACLs are tracked by the ID of the user/group. ACLs provide access-control granularity beyond regular file permissions, and unlike regular permissions, they are not always enabled.

ACL implementations differ by variety of Unix, and by the type of file system. Not all ACL implementations are "portable" (i.e., ACLs on one OS/file system may be incompatible with ACLs on another OS/file system). In addition, you might need to enable ACL support on a partition before you can configure it.

If you attempt to restore ACLs to an incompatible system (i.e., a file system that does not support ACLs, or where you are using another variety of Unix), the ACLs will not be restored. An error message will appear in the backup log.

If you restore to a compatible system (i.e., the original system, or a different system with the same variety of Unix), ACLs will also be restored.

Since ACLs are associated with user and group IDs, you will observe the following on a compatible system:

- If the group, user names, and IDs on the restored system match those of the original system, the ACLs will be associated with the same user name as on original system.
- If the group, user names, and IDs on the restored system do not match those on the original system, the ACLs will be associated with a different user or group name compared to the original system.

If the group or user name ID does not exist on the restored system, the ACLs will be associated with the user ID or group ID respectively. Therefore, browsing ACLs on these files will show user/group IDs as opposed to user/group names.

5. Installation

The software versions noted here are current for this manual. Refer to the Release Notes for any recent changes. Only version 6 of HP-UX is covered here. Other (previous) versions are covered in earlier manuals.

The installation kit typically comes as a zipped tar file. This must be unzipped only on the machine it is intended for (the target machine). That is, do not unzip it on a non-Unix machine, or even on another type of Unix. This may cause unpredictable results.

The amount of disk space needed for the installation varies from system to system. In all cases the installation program will determine if there is enough disk space for the installation to continue. (This determination also includes any temporary space required for an upgrade.)

5.1 Installation – Install.sh Options

For versions 6 and up, the installation directory has a shell file called “install.sh”. The “- help” option shows all of the commands available for installation.

```
Usage: install.sh [options]

-shutdown | -s          Force the agent shutdown, if running.

-force | -F             Force the installation; skip the initial free

                        space check.

-defaults | -D          Use the default values for installation.

-force-defaults         Force the installation using the defaults

                        (assumes -s and -F).

-web-registration=off   Turns off web console registration.

    -W-

-web-registration=FILE  Attempts to register to the web console with

    -W=FILE             the values in FILE.

-quiet | -Q             Quiet install; does not echo output to the

                        screen. If user interaction is required in

                        quiet mode, the install will fail unless

                        -force-defaults is specified.

-log=NAME | -L=NAME     Writes the installation log to the specified

                        FILE.
```

```
-lang=NAME | -l=NAME     Selects NAME as the language. Must begin with
                         an ISO language code. May optionally be
                         followed by a dash or underscore and an ISO
                         country code (e.g., fr, fr-FR, and fr_FR are
                         acceptable). Character set markers (e.g.,
                         UTF-8) are ignored. Languages that cannot be
                         matched will report an error and the language
                         will be defaulted to en-US [English (US)]. If
                         not specified, the language will be guessed
                         from your system value of "en_US.UTF-8".
-backup=DIR | -B=DIR     Backs up the current installation of the Agent
                         to the specified directory.
-verify | -V             Verifies the integrity of the installation kit.
-help                    Shows this text.
```

5.1.1 Starting and Stopping the Agent

Stop and Start commands for the Agent are determined by the specific OS version that you use. They are actually “rc” (run control) scripts. You can determine the location of these scripts by viewing the “Install.log”.

The “VVAgent” script is used to start, stop or check the status of both VVAgent and BUAgent.

For example:

```
   HP-UX:   /sbin/init.d/vvagent {start/stop/restart/status}
```

In this example, “stop”, “start”, “restart” and “status” are the parameters.

5.1.2 Registration

During the Agent installation you are prompted to register the Agent to Web CentralControl. You are also asked to choose a default language for email and command-line log viewing. After installation, you can change the registration (new or re-register) and/or the default language. The Agent must be stopped before re-registration. Then, the Agent must be restarted for these changes to take effect.

Web CentralControl Registration:

Run `<Agent installation directory>/register` to register the Agent with Web CentralControl.

If you are already registered to a Web CentralControl server, you will see:

```
    Do you wish to register as a new computer?

    This will invalidate your previous registration. (y/[N])
```

Whether New or Re-Register, you will be prompted for:

```
    What is the Web-based CentralControl address?  ("-" to cancel)

    What is the Web-based CentralControl connection port?  ("-" to cancel)

    What is your Web-based CentralControl username?  ("-" to cancel)

    What is your Web-based CentralControl password?  ("-" to cancel)
```

The address is the name or IP address of Web CentralControl.

The port number is defined by the Web CentralControl Administrator.

Your user name/password authentication is set by the Web CentralControl Administrator.

For the `-web-registration=FILE` option, you can create a separate file to supply the following values as responses:

```
wccAddress=ADDRESS_OF_AMP_SERVER
    wccPort=PORT_OF_AMP_SERVER # Defaults to 8086

    wccLogin=WEBCC_USER_LOGIN
    wccPassword=WEBCC_USER_PASSWORD
```

Use the values provided by your administrator in these lines for address, port, and login name/password.

Note: This option only applies during installation of the Agent. That is, it does not work with the "register" script, only the install.sh script.

5.1.3 Language Selection

During the Agent installation, you are asked to choose a default language for email and command-line log viewing.
After installation, you can change the default language. The Agent must be restarted for these changes to take effect.
Language Selection:
Run `<Agent installation directory>/set_language` to specify the language that the local Agent will use for e-mails and command-line log viewing.

```
Specify the language that should be used by default for e-mails
and command-line log viewing. The Agent knows the following
languages:

    de-DE, en-US, es-ES, fr-FR

Which language do you want? [en-US]
```

de-DE is German (Germany)

en-US is English (USA)

es-ES is Spanish (Spain)

fr-FR is French (France)

Refer to the information about the `-help` option for more information about the language selection.

5.2 Agent for HP-UX Installation

This section describes how to install the Agent for HP-UX. The installation requires that you have the Agent for HP-UX Installation kit and a system running HP-UX.
Windows CentralControl is needed to communicate with, configure, and manage the Agent for HP-UX.
Check the latest Release Notes for any updated versions.

5.2.1 System Requirements

Hardware

☑ CPU – PA-RISC 2.0

or

☑ Itanium

☑ RAM - 2 GB (minimum)

☑ Note: If your operating system suggests different minimum hardware requirements, use the most advanced requirements.

Software

☑ OS – HP-UX 11i (11.11, or 11.23 with PAM installed)
(with PAM and HP-UX Support Patch Bundle June 2008 or later)
or 11.31 on PA-RISC or IA-64 in Binary Translation.

☑ HP-UX Strong Random Number generator is required with 11.11 and 11.23.
HP-UX Strong Random Number Generator provides a
secure, non-reproducible source of true random numbers
for applications with strong security requirements, such as

for generating encryption keys. When configured to use these special files, applications such as SSH will have a more secure environment for performing cryptographic computations.

Privilege Requirements

☑ Installation
To extract the installation files for the Agent for HP-UX, no special privileges are required. However, to run the installation script, you must have root privileges.

☑ Functional
To communicate with the Agent remotely, the user specified must have full root privileges.

Note that you require enhanced privileges for the User ID that you use for Windows CentralControl Agent authentication.

To log in to the account:

- The User ID must be enabled.
- The User ID must not be suspended or locked out due to invalid password attempts.
- The password must not have expired.
- The User ID should not have time of day limits for when you can log in.
- The User ID must belong to the "root" group.

For additional security, rather than disabling the account, you can set the shell to be `/bin/false`. This can usually be done with the following command:

usermod -s /bin/false buagent
If you are running an ftp server, for additional security, it may be necessary to review the ftp server configuration to deny logins for this User ID. It is often sufficient to ensure /bin/false is not listed as a valid shell in /etc/shells. Your server may vary.

Note: You can install the HP-UX Agent from “fresh” or upgrade it from version 5.x.

5.2.2 Installation Procedures

The Agent for HP-UX Installation kit is available in a file whose name is similar to `Agent-HP-UX-6.xx.xxxx.tar.gz` (your service provider might have assigned a different name to this file). The kit contains all of the necessary components for installing the Agent for HP-UX.

5.2.2.1 Requirements

Before beginning the installation, make certain that the following requirements and materials are available:

- The Agent for HP-UX Installation kit.
- A target system running a supported version of HP-UX.
- Root privileges on the target system to install the product.
- Sufficient disk space for the new installation, and later Job activities. Note that if the available disk space is insufficient for a complete installation, the installation directory will roll back to its original state. You can override the space checking with `./install.sh –F` (but this only applies to the initial check for actual installation space, rather than extra temporary space for rolling back).

5.2.2.2 Running the Installation Kit

Depending on your service provider, you may have the option of downloading the file from the Web, from diskette and/or from a CD.
To install the Agent for HP-UX:

1. Download the `Agent-HP-UX-6.xx.xxxx.tar.gz` package.

   Note: You must do this locally (i.e., on the target machine).

2. Extract the files from the package. To do so, use this command (in which "PACKAGENAME" could be "Agent-HP-UX-6.72"):
   ```
   gunzip -c PACKAGENAME.tar.gz | tar xvf -
   ```

3. Run the installation script.

   ```
   >     # ./install.sh
   ```

Note: The installation script will interactively prompt you for configuration information such as web registration (address, port number and authentication), log file name, and language selection for logs and command lines. See section 5.1.1 of this guide.
When the installation is complete, a completion message will appear, and the Agent daemon will be running.
The `Install.log` is in the installation directory, if successful. For example:
<Agent installation directory>/Install.log
If the installation fails and rolls back, the installation log will be in the `<Installation Failure directory>`.
If it fails and does not roll back, the installation log will be in the `<Installation Kit directory>`.

5.2.3 Uninstall Procedures

To uninstall the Agent for HP-UX:

1. Log onto the target system.

2. Go to the installation directory (by default `/opt/BUAgent/`).

3. Use the VVAgent script to stop the Agent (see section 5.1.1).

4. Run "`uninstall.sh`". A message will appear, asking if you want to remove the Agent.

   Select Yes to completely remove the Agent, including all Job files and settings.

   Select No to remove the VVAgent service entry, executables and scripts. This choice leaves your directory, Job files and settings intact for future use.

If you choose to completely uninstall the VVAgent, a confirmation prompt will appear.

The log will be in `/tmp/Agent-Uninstall-<timestamp>.log`

5.2.4 Upgrading

This Agent version supports upgrades from Agent 5.x and above.
Upgrading an Agent includes the following tasks:

1. Meeting System and Software Requirements

2. Preparing the Computer

3. Upgrading Program Files and Configuration Files

4. Running the upgrade (installation) Job.

Note: **During the upgrade, you will be prompted to stop the Agent before performing the new installation.**

When you run the Installation Kit, the Agent is upgraded to Version 6.72 and the following tasks are automatically performed:

- The new BuildVersion and VVCVersion are created in Global.vvc and Job vvc files:

```
BuildVersion = 6.7X.XXXX
VVCVersion = XXX
```

- Server profiles in Global.vvc are updated with the computer registration information, such as computer GUID (Global Unique ID), computer name and vault GUID. These must match the information stored in the vault's database.

- Job vvc files are updated with Job registration information. This includes computer GUID (must be the same as in Global.vvc), Job GUID (must match the record of the vault's database) and vault GUID (must be the same as in Global.vvc).
- All Delta files are upgraded to Version 6.7x format.
- A backup of the old Global.vvc, Job vvc and Delta files is saved under a subdirectory of Agent installation directory.
- A log file will be created in Agent installation directory.
- All executables and documents are replaced by new versions.

5.2.4.1 Meeting System and Software Requirements

To upgrade the Agent, your system must meet the minimum requirements mentioned in the User Guide.

Note: Available free space of the volume that the Agent is installed on should be bigger than the size of all Delta files + the size of the largest Delta file + a reasonable cushion (at least 100 MB).

5.2.4.2 Preparing the Computer

To prepare your existing machine for upgrading the Agent, complete these tasks:

a. Back up the previous Agent Files

We strongly recommend that you make at least one backup of your previous Agent files, including all files and subdirectories under the Agent installation directory. Do not attempt an upgrade without a backup.

b. Clean up Server Profiles in Global.vvc

From CentralControl, open up the Agent Configuration of the Agent that you want to upgrade. Go to the Vaults section, look for a server configuration that is no longer in use, and delete it. Also, highlight every server configuration and click Edit to double-check that the information in this server profile is valid. Then click OK to save your changes.

c. Clean up Jobs

After the Global.vvc has been cleaned up, check all backup Jobs to see if there is any Job backing up to a vault that has been deleted from Agent Configuration. If so, delete that Job or assign it to a different vault.

If you have Jobs that are backing up to Tape drive or Directory on Disk, they are local Jobs and leave them unchanged. During the upgrade, they will be registered to the first vault indicated in Agent Configuration.

d. Synchronize all backup Jobs

After cleaning up the Jobs, check the backup logs of each Job to see if any errors show "Validation failed: ". If so, you need to verify the validation information with your vault operator to make sure it is valid. If the latest backup log shows no errors, do a Synchronize with the vault and check the Synch log.

e. Verify eligible vault version

For every vault that you are backing up to, make sure it is running Director Version 5.53 or higher. Otherwise, you need to upgrade the vault before you upgrade the Agent.

5.2.4.3 Upgrading Program Files and Configuration Files

We recommend starting the installation when the Directors in Agent Configuration are not busy with other Jobs.
When the Installation Kit is launched, it detects the previously installed versions of the Agent and starts to upgrade it.

IMPORTANT: *When the upgrade process starts, wait until it finishes. Do not run more than one upgrade at the same time.*

5.2.4.4 Upgrade Steps

Note: To upgrade the Agent properly, you must select the same installation directory that was used for the previous Agent. *Otherwise, the Upgrade will proceed as if it were a new installation.*

1. Log onto the target system.

2. Go to the installation kit directory.

3. Use the VVAgent script to stop the Agent (see section 5.1.1).

4. Download the `Agent-HP-UX-6.xx.xxxx.tar.gz` package.

   Note: You must do this locally (i.e., on the target machine).

5. Extract the files from the package. To do so, use this command (where "PACKAGENAME" could be "Agent-HP-UX-6.72"):

   ```
   gunzip -c PACKAGENAME.tar.gz | tar xvf –
   ```

6. Run the installation script.

   ```
   >   # ./install.sh
   ```

Always check the log file after an upgrade. The log file will be used when troubleshooting in the case of failure. If an upgrade fails, the Global.vvc, Job vvc and Delta files will roll back to their old versions. The Global, Job and Deltas will not work with new executables, but an upgrade failure will roll back the executables, too.

You may try to run the upgrade program again. If it still fails, contact your service provider for support. To completely roll back to the old version, you need to manually copy back the previous backups.

Recommendation: Do at least one backup for each Job after upgrading successfully. This allows the Agent to upload new configuration files to the vault.

5.2.5 Kernel Configuration Parameters

You may see core dumps that are related to the limit of semaphores on the system. Semaphore limits can be increased in the kernel configuration parameters.

Parameter	Recommended Minimum	Description
semaem	16384	Defines the maximum amount a semaphore value can be changed by a semaphore "undo" operation.
semmap	1026	Specifies the size of the free-space resource map used for allocating new System V IPC semaphores in shared memory. (Obsolete in 11.23 and 11.31)
semmni	2048	Specifies the maximum number of sets of IPC semaphores that can exist simultaneously on the system.
semmns	4096	Defines the system-wide maximum number of individual IPC semaphores that can be allocated for users.
semmnu	1020	Defines the maximum number of processes that can have undo operations pending on any given IPC semaphore on the system.
semmsl	2048	Maximum number of System V IPC semaphores per identifier.
semume	512	Defines the maximum number of IPC semaphores that a given process can have undo operations pending on.
semvmx	32767	Specifies the maximum possible semaphore value.

Note: The dynamic linker must be updated with HP-UX patch: PHSS_35385 from the HP website.

6. Unix System Recovery

The purpose of this chapter is to illustrate techniques for recovering a Unix file system. The procedures provided describe the minimum resources and information required to rebuild the Unix file system to its state at the last system backup. The recovery procedure can be performed from a backup tape or directly from a vault.

The basic recovery procedure for a Unix system is:

1. Install the minimal operating system, including networking (and optionally, tape services).
2. Install and configure the Agent.
3. Restore the backed up system state, programs, and data using the Agent.
4. Perform post-restore maintenance.
5. Verify the restore.

Prior to performing a recovery with a Unix system, ensure that your hardware configuration is at least sufficient to hold the programs, data, and system state previously installed on the system.

6.1 Hardware Requirements

It is crucial for local storage on the system to be sufficient for a full restore of programs, system state, and data. Otherwise, the restore will fail, and your system may be left in an indeterminate state.

If any configuration files for your operating system depend on specific identifiers of installed hardware (such as the MAC address of a network card), ensure that this information is noted, as the values may be different than when the system was backed up using the Agent.

6.2 Software Requirements

Ensure that the appropriate installation media is available. The minimum system software includes:

- Unix installation media identical to that installed on the original system.
- Any necessary OS patches to install the Agent, as described in the installation instructions for the Agent on the OS.
- Agent Installation media identical to that installed on the original system.

6.3 Unix Restoration Steps

This section describes the steps to perform a system restore.

6.3.1 Install the minimal operating system

Follow the instructions in your operating system manual and installation media to install a minimal operating system.

- When prompted to partition your drive(s), ensure that the partitions are large enough to restore to; they should be at least as large as the original partitions.
- If restoring over the network, TCP/IP network services must be installed and configured appropriately, and there must be a connection between the system and the backup vault.
- If restoring from a tape device, the driver and tape device files must exist.
- If restoring from a directory on disk, there must be sufficient disk space to handle all the restored data.

6.3.2 Install and configure the Agent

1. Install the Agent according to the instructions in this manual appropriate for your operating system.

2. Configure the Agent according to the instructions in section 2 of this manual. It is important to re-register to the vault where the data was backed up. (If restoring from tape, it is still required to re-register to the same vault, because previously defined Jobs will be restored.)

3. Synchronize the Job to ensure that local copies of Job catalogs are created.

6.3.3 Restore the backed up system

1. Start a restore according to the instructions in section 4 of this manual.

2. Select the files you wish to restore. The Unix Agent will restore most files to their original locations and protect against many known restore problems (for file systems mounted in their default locations), but some files may cause unpredictable results if restored. These files vary by OS to OS and may generally be restored to alternative locations without problems.

3. Ensure that the files are not being restored to a file system that is mounted read-only.

Note: **The Agent will prevent restoration of files to critical locations, but not all critical locations are necessarily detected. Also, the locations can vary between varieties of Unix.**

When the restoration procedure is complete, the process of verifying the integrity of the restore can commence.

6.3.4 Perform post-restore maintenance

If any modifications to the configuration of the restored system are required after restore, these should be performed now. Known post-restore maintenance steps are noted below.

6.3.5 Verify the restore

Once the restore procedure is complete, determine if the restoration is complete and correct. The listing and testing of the Jobs should be performed as part of the systems recovery planning. The specific Jobs to be performed for verification depend on the application environment and the system's importance.

Once the system is restored, the integrity of the restoration must be verified. The test can be as simple as placing a duplicate file in a different directory structure and testing for any differences within the file. Then, confirm that the file can be opened using a known application and that you are able to send e-mail to a known address. It can also be as complex as completing an SQL query on a known database set.

Whatever the test, both the list and the test itself must be planned and executed during normal system operation.

6.3.6 Unix Recovery Problems

Should any of the recovery Jobs fail, consider these questions:

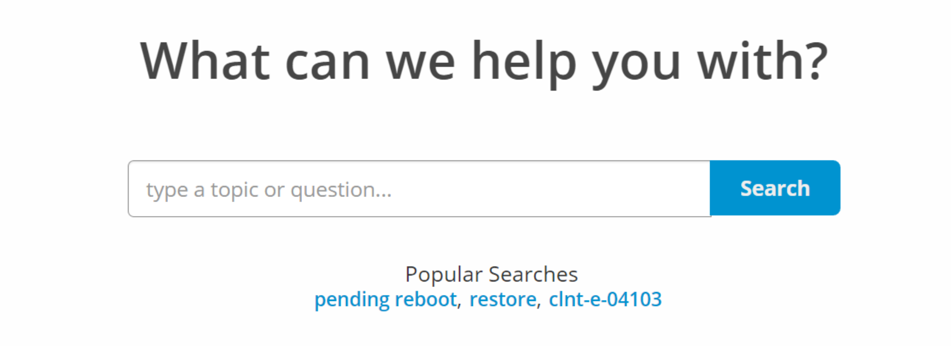
- Was the system restored using the same version of OS?
- What possible differences were there in the hardware or software settings that could have affected the restoration?
- Were any errors reported in the error log file?
- Were all the necessary drivers installed?
- Were the applicable OS patches added?

Was there sufficient disk space to handle all of the restored data?

7 Carbonite Server Backup Support

If you have a question about Carbonite Server Backup that isn't covered in this guide, our frequently-updated Knowledge Base contains comprehensive information. The Knowledge Base is your first stop when searching for any Carbonite Server Backup solutions you may need. We highly recommend searching here first for the quickest answers to your questions.

Knowledge Base: http://support.carbonite.com/evault

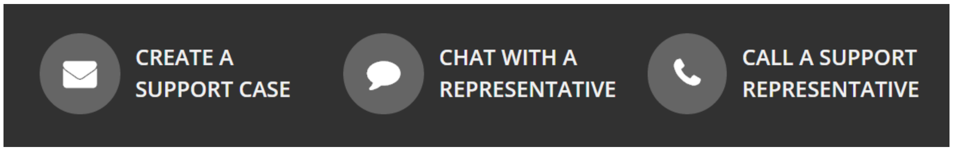


What can we help you with?

type a topic or question...
Search
Popular Searches
pending reboot, restore, clnt-e-04103

7.1 Contacting Carbonite

If you need live assistance from a qualified support agent, Carbonite Support is here for you 24 hours a day, 7 days a week (excluding US holidays). Please feel free to get in touch with us, and we'll help out any way we can! You can find the contact information for Carbonite Support in the Knowledge Base: http://support.carbonite.com/evault



Tip: When contacting Support with a technical issue, please have both the program's log files and the store you are having difficulty with ready.

To gather log files, click **File** menu and choose *Open log folder*. Compress the contents of the folder in a .zip file and attach it to your support request.

If the log archive and/or mail store exceeds 10MB, you may not be able to send them as an email attachment. In that case, upload instructions will be provided to you upon request.