

PowerQuest®
Drive Image® 7.0

User Guide

PowerQuest® Drive Image® 7.0

User Guide

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Glossary

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What is Drive Image?

PowerQuest® Drive Image® 7.0 is a disaster recovery and backup solution. Wizards guide you through creating an exact copy, or *backup image*, of your hard drive.

Drive Image also makes it easy to copy everything from your hard drive to a new hard drive when you upgrade the hardware in your computer.

What Are the Benefits of Using Drive Image?

If you have a backup and you encounter problems with your computer, you can restore the backup image to return your computer to the state it was in when you created the backup. Instead of just getting some files back, you get the operating system, applications, and your data files from the drive. Having a good backup also lets you restore individual files and folders if necessary.

Using Drive Image protects you from the following problems:

- Virus attack
- Poorly performing software
- Faulty Internet downloads
- Hard drive failure
- Files accidentally deleted or overwritten
- Corrupted files

How Does Drive Image Work?

You do not have to choose individual files or folders to include in a backup image. Instead, you choose a drive to back up; Drive Image copies the contents of that drive into a file called a backup image.

You can save the backup image to a hard drive, a USB or FireWire drive, a network drive, or to removable media.

When you experience a problem with your computer or if you need to recover a file or folder for any reason, you can restore a file, folder, or an entire drive from your existing backups.

What's New in Version 7.0?

- **Improved network support** – Previous versions of Drive Image required the use of Boot Disk Builder to save some backups to a network. In Drive Image 7.0, network support is built in, with no additional setup needed. Drive Image 7.0 also supports saving backup images to a shared network drive on a peer-to-peer network.

- **Hot backups** – Previous versions of Drive Image sometimes used DOS to create the actual backup images. Drive Image 7.0 creates backups “hot,” without leaving Windows.
- **Ability to save backups to USB and FireWire drives and to DVD** – With Drive Image 7.0, you can save backups to USB and FireWire drives and to DVD—as well as to a local drive, network drive, or other removable media (such as CD-R, CD-R/W, Zip, or Jaz drives).
- **ImageExplorer renamed** – With version 7.0, ImageExplorer has been redesigned and renamed Backup Image Browser.
- **Operating system support** – Drive Image 7.0 is not supported on Windows 9x, Windows Me, or Windows NT 4.0 Workstation. However, PowerQuest is including Drive Image 2002 in the box and will continue supporting Drive Image 2002 for customers who still use these older operating systems. For information about Drive Image 2002, see the online help, or refer to the Drive Image manuals, which are included on the Drive Image CD in the \English\Docs folder on the Drive Image 2002 CD.

Installing Drive Image

[Drive Image System Requirements](#)

[Installing Drive Image](#)

[Testing the PQRE](#)

[Activating Drive Image](#)

Drive Image System Requirements

Operating system	Windows 2000 Professional, Windows XP Home, Windows XP Professional
Processor	Pentium 150 or faster
RAM	128 MB for Drive Image running from Windows 2000 or Windows XP 256 MB for PQRE, the recovery environment from the bootable CD
Hard drive free space	45 MB for program files (and an additional 40 MB for the Microsoft .NET Framework if it is not already installed) Storage space for your backup images, unless you choose to store them to a network or on removable media
CD or DVD drive	Any speed See supported drives. See "I can't boot from the CD." on page 69.
Software	When you install Drive Image, you will be prompted to install the Microsoft .NET Framework, if it has not already been installed on the machine.

Drive Image 7.0 is compatible with dynamic disks. You can back up dynamic disks, and you can store backup images on dynamic disks.

Supported File Systems and Removable Media

File Systems	Drive Image is fully supported on FAT16, FAT16X, FAT32, FAT32X, NTFS, Linux Ext2, Linux Ext3, and Linux swap partitions.
Removable Media	Drive Image supports the saving of backup image files locally (that is, backup image files are created and saved on the same machine where the console is installed) to most CD-R, CD-RW, DVD-R(W), and DVD+RW recorders on the market today. For an updated list of supported drivers, See supported recorders. It also supports saving backup image files to most USB devices, 1394 FireWire devices, JAZ, Zip, SuperDisk, and magneto-optical devices. IMPORTANT! Drive Image does not support RAM drives.

Windows 9x, Windows Me, and Windows NT Workstation 4.0

Drive Image 7.0 does not run under Windows 9x, Windows Me, or Windows NT Workstation 4.0. If you have one of these operating systems, you can use Drive Image 2002, which is included in the box with Drive Image 7.0.

Drive Image 2002 requires a Pentium-compatible processor or higher, 32 MB RAM, 35 MB of hard drive space, a CD drive (any speed), and a high-density floppy disk drive.

Drive Image 2002 can also run under Windows 2000 Professional with 64 MB RAM and Windows XP Professional or Home with 128 MB RAM.

Installing Drive Image

- 1** Insert the Drive Image CD. If the CD browser screen does not appear automatically, browse the CD and double-click AUTORUN.EXE.
- 2** The Drive Image CD will immediately scan the hard disk and prompt you to install the .NET Framework if it does not exist on the machine. Following the installation of the .NET Framework, you can continue with the installation of Drive Image.
- 3** From the CD browser screen, click **Install**.
- 4** At the welcome screen, click **Next**.
- 5** Read the license agreement. Select **I accept the terms in the license agreement**, then click **Next**.
- 6** (Optional) Click **Change** if you want to change the default location for the Drive Image program files.
- 7** Click **Next**.
- 8** Click **Yes** or **No** to specify whether you will use Drive Image with a network.
- 9** If you have a network, type a user name, domain or computer name, and password that will give Drive Image read-write access to the network for saving and restoring backups. Then click **Next**.

If you specified that you do not have a network, the **Agent Setup** screen will not display.

- 10** Review the summary information, then click **Install**.
A progress screen shows the status of the installation.
- 11** Click **Finish** when the install is complete.

You must reboot your computer before all the features in Drive Image are available.

Testing the PQRE

As part of the installation process, you should test the PQRE to ensure it runs properly on your system. If the PQRE does not run as expected, you can take action early to fix the problems. Then if your backed up machine experiences a catastrophic failure later, you'll be assured that you can run the PQRE to recover the system or your data.

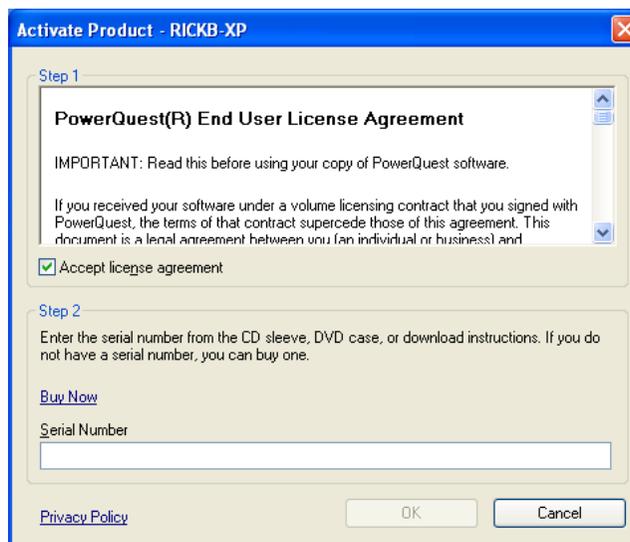
The troubleshooting section provides information to help you resolve issues that may exist with running the PQRE on your system.

- Your machine must be able to boot from the PowerQuest CD. [See "I can't boot from the CD." on page 69.](#)
- You must have the necessary storage drivers to access your backups for a restore. [See "I can't access the local drive where my backups are saved." on page 69.](#)
- You must have the necessary NIC drivers to access files on a network. [See "I can't access the network drive where my backups are saved." on page 70.](#)
- You may need to use information about your system that you would not generally know. [See "I don't know the system information that I'm required to enter." on page 68.](#)

Activating Drive Image

You must activate Drive Image, or the software will expire after 30 days.

- 1 From the Drive Image console, click **Help > Activate Product**.



- 2 Read the license agreement, then select **Accept license agreement** to indicate that you accept the terms of the license agreement.
- 3 If you do not have a serial number for Drive Image (because you have not purchased the software), click **Buy Now** to pay for the software and receive a serial number.

4 Type the Drive Image serial number from the DVD case or from the e-mail message you received from PowerQuest.

5 Click **OK**.

The licenser distinguishes your computer from others without storing information about you or your computer's hardware and software. Activating your software may trigger an optional registration. Registration data is generally used for demographic purposes and is not resold. You can opt out of marketing-oriented uses of your data as part of registration.

Getting Started

[Starting Drive Image](#)

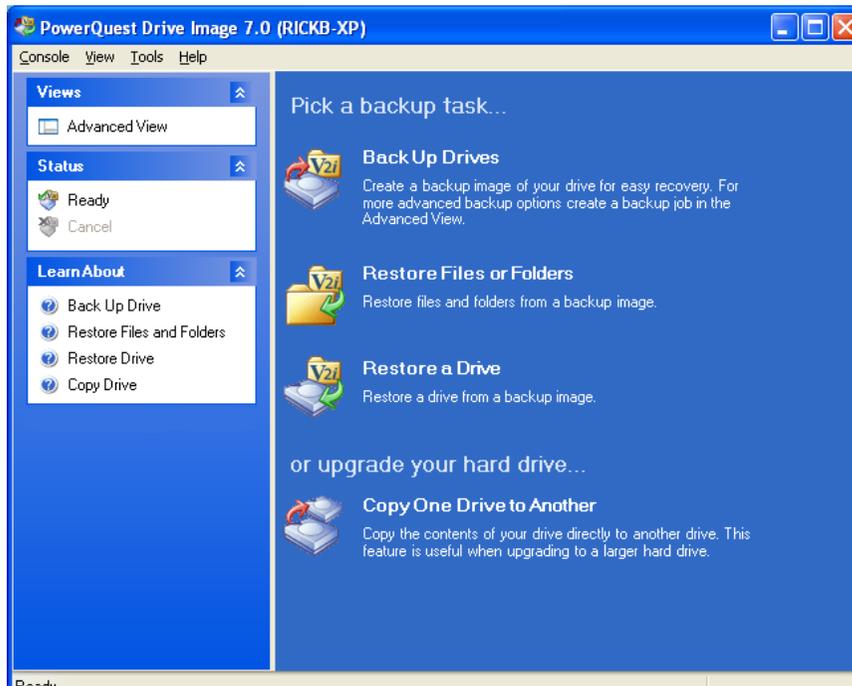
[Basic and Advanced Views](#)

[PowerQuest Backup Image Browser](#)

[Where Do I Go From Here?](#)

Starting Drive Image

- 1 Click **Start > Programs > PowerQuest Drive Image 7.0**.

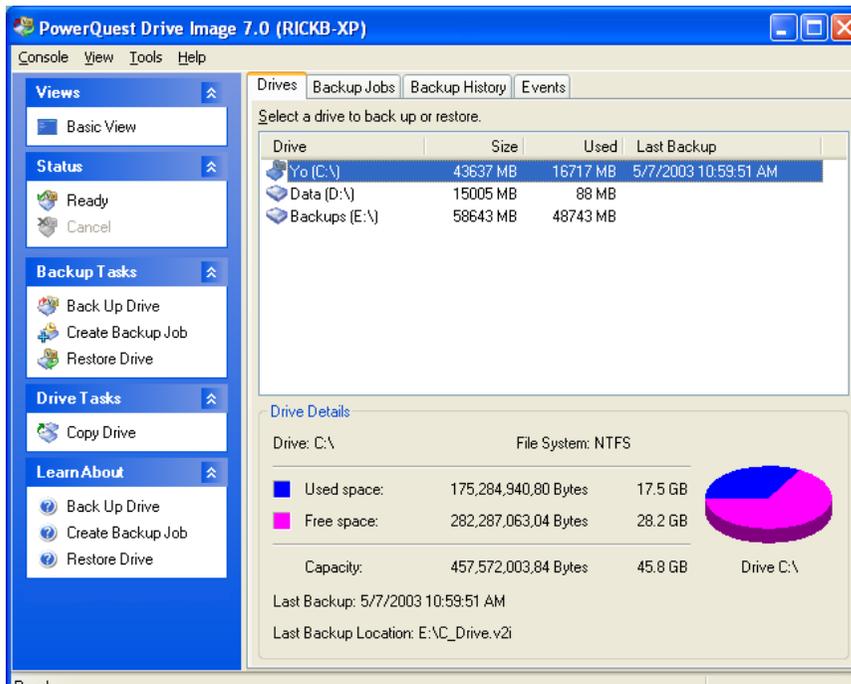


Basic and Advanced Views

Drive Image includes two views. The basic view is the default. It includes a menu bar, icons for common tasks in the right pane, and shortcuts for switching views and doing tasks in the left pane.

The basic view provides quick, easy access to the most commonly used features.

From the basic view, you can click **View > Advanced** to display the advanced view.



The advanced view provides a quick overview of the drives on the machine, backup jobs you have created, the backup history for each drive, and Drive Image-related event messages.

From the basic view, you can choose to back up a drive immediately. The advanced view lets you create backup *jobs* to schedule backups for the future and choose a regular schedule to repeat backups.

PowerQuest Backup Image Browser

The Backup Image Browser, included with Drive Image, simplifies the management and maintenance of your backup image files. Working within a single screen, Backup Image Browser gives you control of the backup image files you can access. For example, you can view backup image file contents, restore individual program and data files from the backup image, or you can mount a selected volume and share it across a network.

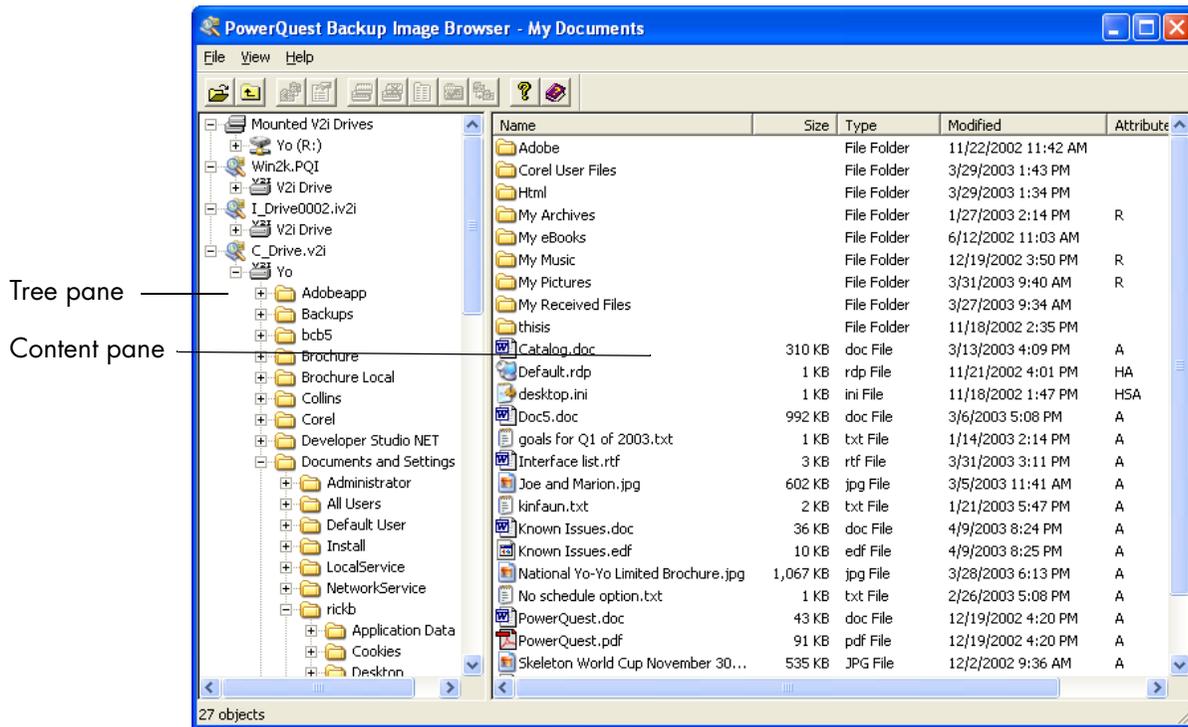
Backup Image Browser also displays backup image descriptions, so you can identify individual backup image files and volumes. You cannot modify folders and files from within an backup image and save them again as part of the image.

Opening the PowerQuest Backup Image Browser

- 1 From the Windows Start menu, click **Programs > PowerQuest Drive Image > Backup Image Browser**.

By default, the **Open** dialog is displayed each time you start the Backup Image Browser. You can select a backup image file to open, or you can click **Cancel**, then select a previously opened backup image file from the **File** menu.

All the features of Backup Image Browser are accessed from the main program screen or by right-clicking anywhere in the tree pane.



Tree pane

Shows a hierarchical tree view of all the backup image files that you have opened in the Backup Image Browser. From this left pane you can:

- Mount or dismount a volume inside a backup image.
- Verify that the selected backup image file is valid.
- Browse folders inside a backup image.
- View the properties of a selected backup image file.
- Open or close backup image files.

Content pane

Shows the contents of the selected drive, folder, backup image file, or volume. Depending on if you have selected a backup image, volume, folder, or file you can do the following directly from this right pane:

- Restore selected files and folders from within a backup image file.
- Mount or dismount a volume inside a backup image.
- View the contents of a selected file.
- View the properties of a selected volume.

Status bar

The status bar displays the description of toolbar buttons and pull-down menu items at the bottom of the Backup Image Browser window.

Opening or Closing a Backup Image in Backup Image Browser

- 1 From the Backup Image Browser, click **File > Open**.
- 2 Navigate to a backup image file (*.V2i) you want to open and view.
- 3 Double-click the backup image file to open it in Backup Image Browser.
Note that the **File** menu maintains a list of the most recently opened backup image files.
- 4 To close a backup image file, select the image name in the tree view pane, then click **File > Close**.

You can also double-click a backup image file from Windows Explorer to open it directly in Backup Image Browser.

Where Do I Go From Here?

The following is a list of the things you can do with Drive Image, along with pointers on how to get started.

What can I do?	How do I get there?
Back up a drive now.	From the right panel of the basic view, click Back Up Drives .
Back up a drive later.	From the left panel of the advanced view, click Create Backup Job .
Back up a whole drive on a regular schedule.	From the left panel of the advanced view, click Create Backup Job .
See the backups I have scheduled.	From the advanced view, click the Backup Jobs tab.
Restore a file or folder from a backup image.	From the right panel of the basic view, click Restore Files or Folders .
Restore a backup image from within Windows.	From the right panel of the basic view, click Restore a Drive .
Restore a backup to recover a crashed machine.	Boot from the Drive Image CD to run the PowerQuest Recovery Environment.
See the history of backups done on a drive.	From the advanced view, click the Backup History tab.

What can I do?

How do I get there?

Set a default location for backup images.

From the menu bar, click **Tools > Options**.

Copy the contents of my hard drive to a new hard drive.

From the right panel of the basic view, click **Copy One Drive to Another**.

Check to see if my backups are working the way they are supposed to.

From the advanced view, click the **Events** tab.

Send e-mail if backups do not work as planned.

From the menu bar, click **Tools > Options**, then click the **Notifications** tab.

Creating Backup Images

[Creating a Backup Image](#)

[Scheduling a Backup Image](#)

[Tips for Creating Backup Images](#)

[Editing a Backup Schedule](#)

[Deleting a Backup Schedule](#)

[Viewing the Backup Details of a Drive](#)

[Setting Options](#)

[Giving Additional Users the Ability to Back Up a Machine](#)

[Checking the Integrity of a Backup Image \(Backup Image Browser\)](#)

[Exporting a Backup Image \(Backup Image Browser\)](#)

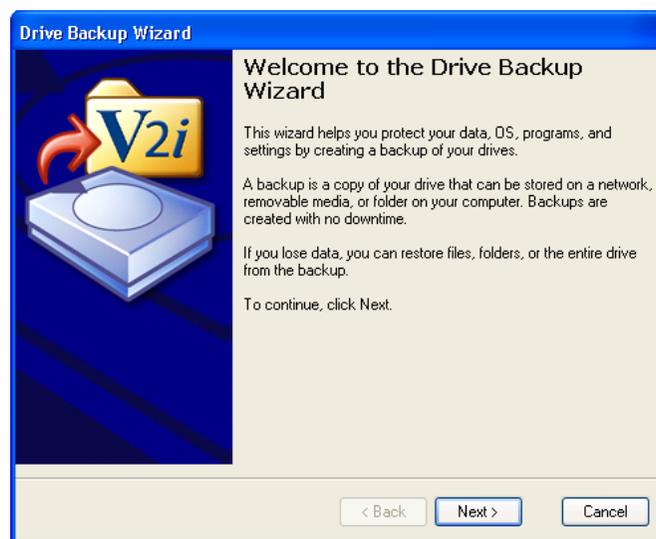
Creating a Backup Image

You can create a backup image manually. This is particularly useful if you are about to install a new product, some critical files have changed, or many file changes have occurred in a session, and you need to create a backup immediately. This is also useful if you want to make an initial backup image of a machine to ensure it is successful, then use the **Create Backup Job** feature to automate the creation of any subsequent backups.

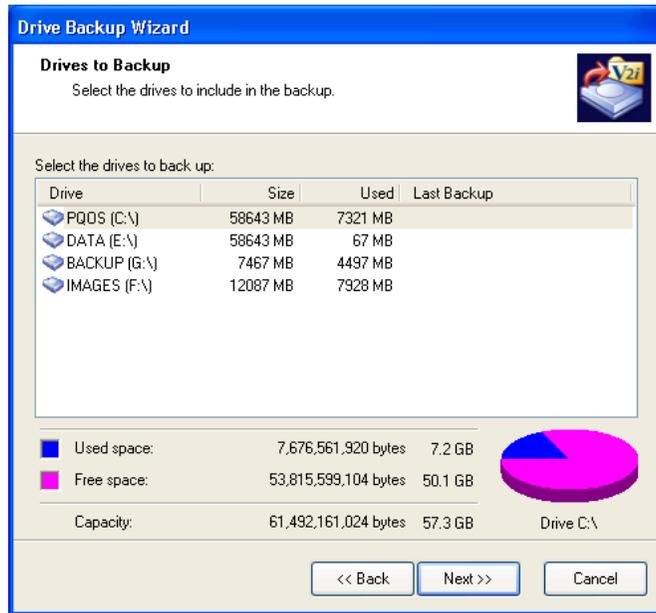
If you prefer to schedule the creation of backup images instead of creating them manually, see “Scheduling a Backup Image” on page 22.

1 From the basic view, click **Back Up Drives**.

From the advanced view, click the **Drives** tab, then click **Tools > Back Up Drive**.



2 Click **Next**.



3 Select one or more drives to back up.

A separate backup image will be created for each drive you select.

You can click a drive letter to view a graphical representation of the drive's used and total free space.

4 Click **Next**.

5 Select the location where you want the backup images stored.

IMPORTANT! If you receive a message stating that there is not enough available space at the specified location, you should specify a new location rather than continuing with the wizard and possibly not being able to save a complete backup image.

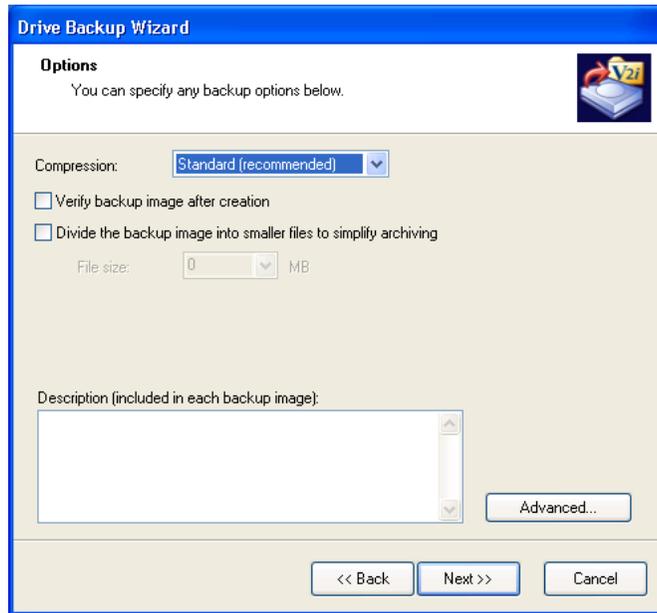
See [“How Do I Decide Where to Store Backup Images?” on page 21](#) for a list of the benefits and drawbacks of each option.

Backup Image Location	Description
Local file	<p>To store the backup images on the machine that is being backed up, click Local file, then specify a drive and folder (for example, E:\Data_Backups\) where you want the backup images stored.</p> <p>It is possible to save the backup image to the same drive that you are backing up; however, it is not recommended because as the number or size of backups grows, you will have less disk space available for regular use. (Also, the backup image itself will be included in subsequent backups of the drive, increasing the size of those backups.) Saving the backup to a separate drive, a network location, or removable media eliminates this problem.</p>
Network file	<p>To store the backup images on the network, click Network file, then specify a UNC path (\\server\share) to a folder on the network where you want the backup image stored, or click Browse to navigate to the network folder where you want the backup image stored.</p> <p>IMPORTANT! All network locations must be accessible using the credentials provided during the Agent installation.</p>
CD-RW/DVD-RW	<p>To store the backup images on disk media, click CD-RW/DVD-RW, then specify the CD or DVD drive where the backup images will be sent.</p> <p>If you do not have a writable CD or DVD drive, this option will not appear.</p>

- 6 (Optional) To rename a backup image instead of using the default filename, select a backup image filename from the list box, click **Rename**, then type a new name.

If a backup image spans multiple media, the filenames for subsequent files will be appended with _S01, _S02, etc. So if the first file of a backup were C_Drive.V2i, the second file would be C_Drive_S01.V2i, and so forth.

7 Click **Next**.



8 Select the compression level for the backup image from the **Compression** drop-down list. Results may vary depending on the types of files saved in the drive you are backing up.

Compression Level

Description

None	This is usually the fastest method for creating a backup image file and is most useful if storage space is not an issue. However, if you are saving the backup image file to a busy network drive, using high compression may be faster than no compression because there is less data to write across the network.
Standard	Uses low compression for a 40% average data compression ratio on backup image files. This is the default.
Medium	Uses medium compression for a 45% average data compression ratio on backup image files.
High	Uses high compression for a 50% average data compression ratio on backup image files. This is usually the slowest method.

9 (Optional) Make sure **Verify backup image file after creation** is selected.

This option is useful if you want to determine whether a backup image file is valid or corrupt immediately following its creation. The backup image is checked to see that all of the files are available for you to open, the internal data structures in the backup image file match the data that is available, and the backup image file can be uncompressed into the expected amount of data (if you selected a compression level at the time of creation).

IMPORTANT! Be aware that selecting this option will double the time (approximately) required to create the backup image.

- 10** (Optional) Select **Divide the backup image into smaller files to simplify archiving**, then type the maximum size (in MB) for each file. For example, if you plan to copy a backup image to CDs, specify a file size of 700 MB or less.

This option is useful if you are creating a backup image file that you know you will copy to removable media later for safekeeping. The backup image will be split into smaller, more manageable segments. If you are creating a backup of thousands of files on a computer that has low memory, splitting the backup image into smaller segments may help speed the process.

- 11** (Optional) Type a description that you want associated with the backup image.

The backup image file size and creation date are automatically appended to the description, so you do not need to enter this information.

- 12** (Optional) Click **Advanced** for additional options such as assigning a password to the backup image.

Advanced Option	Description
Use password	<p>If you select this option, you can specify a password for the backup image. Passwords can use standard characters, not extended characters or symbols. (Use characters with an ASCII value of 128 or lower.)</p> <p>A user must type this password before restoring a backup or opening it in the Backup Image Browser.</p> <p>To remove a password from a backup image file, see “Exporting a Backup Image (Backup Image Browser)” on page 33.</p>
Ignore bad sectors during copy	<p>If you want the ability to create a backup even if there are bad sectors on the hard drive, select this option. Although most drives do not have bad sectors, the potential for problems increases during the lifetime of the hard drive.</p>
Disable SmartSector Copying	<p>PowerQuest’s SmartSector® technology speeds up the copying process by only copying clusters and sectors that contain data. However, in some cases, it may be desirable to copy all clusters and sectors in their original layout, whether or not they contain data.</p> <p>To copy both used and unused clusters and sectors, select Disable SmartSector Copying. Deselecting this option increases processing time and usually results in a larger backup image file size.</p>

13 Click **Next**.

14 Click **Next** to create the backup image immediately.

When the backup has begun, you can watch its progress or close the wizard.

15 When the backup image is created, click **Finish**.

How Do I Decide Where to Store Backup Images?

You can save backup images to a local hard drive, local removable media, a network drive, or a local USB or FireWire drives. Each option has advantages and disadvantages. The following chart will help you decide the best location to store your backups.

	Advantages	Disadvantages
Hard drive	<ul style="list-style-type: none">• Fast create and restore• Can schedule unattended backups• Inexpensive because drive space can be overwritten repeatedly	<ul style="list-style-type: none">• Uses valuable drive space• Vulnerable to loss if the hard drive fails
Removable media (local)	<ul style="list-style-type: none">• Protection from hard drive failure• Ideal for off-site storage• Reserves hard drive space for other uses	<ul style="list-style-type: none">• Cannot create unattended backups; process is manual• Media can be expensive• Restore can be slower than from other locations, especially for individual files and folders
USB/FireWire drive (local)	<ul style="list-style-type: none">• Fast create and restore• Can schedule unattended backups• Inexpensive because drive space can be overwritten repeatedly• Off-site storage is possible• Reserves hard drive space for other uses	<ul style="list-style-type: none">• Additional expense for the drive itself• Must have supported storage device drivers to restore from PQRE; could require additional media along with the PowerQuest recovery CD

	Advantages	Disadvantages
Network drive	<ul style="list-style-type: none"> • Fast create and restore • Can schedule unattended backups • Inexpensive because drive space can be overwritten repeatedly • Protection from local hard drive failure • Off-site storage (through existing network backup strategies) 	<ul style="list-style-type: none"> • Must have supported NIC drivers to restore from PQRE • Must understand and assign the appropriate rights for the users who will perform backups and restores

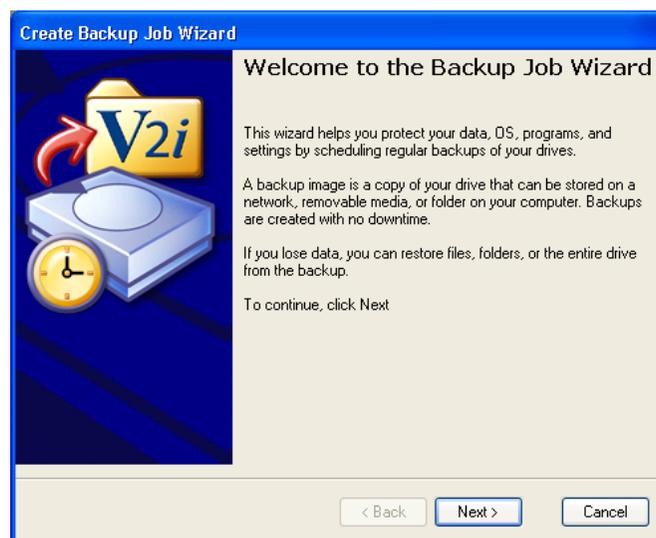
Use [PowerQuest® PartitionMagic®](#) to create a partition on your desktop (work) computer or home computer hard drive that is dedicated to backup images.

Scheduling a Backup Image

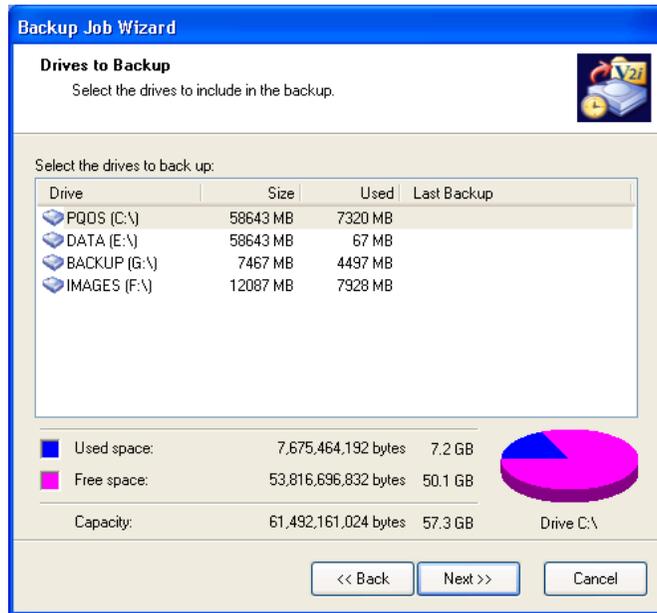
Use **Create Backup Job** to automate the creation of backup images using a daily, weekly, or monthly schedule. This method is useful if you want to create backup images during off-hours when you are not present. The machine must be turned on to perform a backup, but Drive Image does not need to be running.

If you prefer to manually create backup images instead of scheduling them, see “Creating a Backup Image” on page 16.

- 1 From the advanced view, click the **Drives** tab, then click **Tools > Create Backup Job**.



2 Click Next.

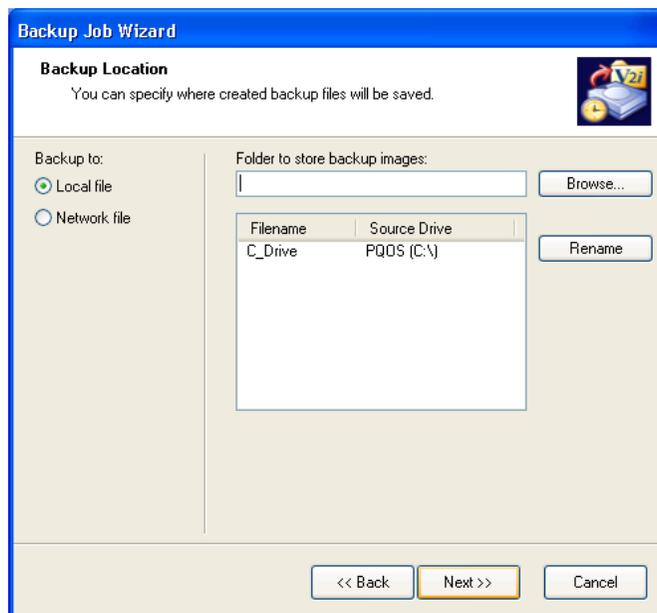


3 Select one or more drives to back up. (Shift-click to select a group of contiguous drives, or control-click to select non-contiguous drives.)

A separate backup image will be created for each drive you select.

You can click a drive letter to view a graphical representation of the drive's used and total free space.

4 Click Next.



- 5 Select a backup image file location where you want the backup images stored.

Backup Image Location

Description

Local file

To store the backup images on the machine that is being backed up, click **Local file**, then specify a drive and folder (for example, E:\Data_Backups\) where you want the backup images stored.

It is possible to save the backup image to the same drive that you are backing up; however, it is not recommended because as the number or size of backups grows, you will have less disk space available for regular use. (Also, the backup image itself will be included in subsequent backups of the drive, increasing the size of those backups.) Saving the backup to a separate drive, a network location, or removable media eliminates this problem.

Network file

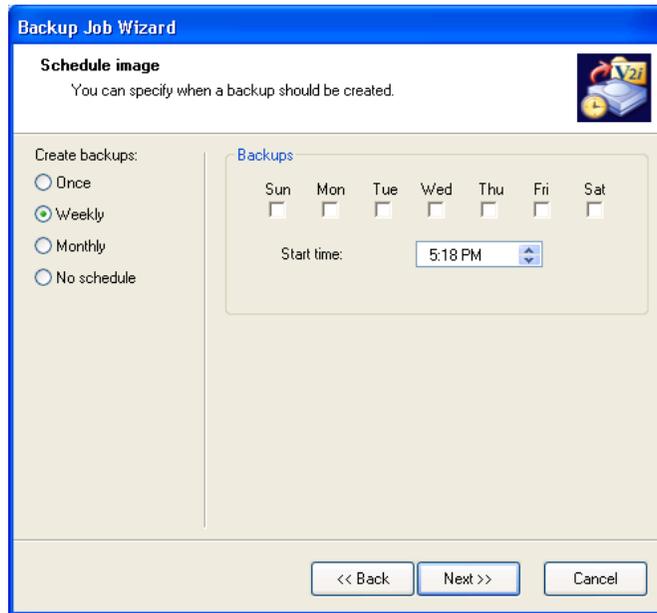
To store the backup images on the network, click **Network file**, then specify a UNC path (\server\share) to a folder on the network where you want the backup image stored, or click **Browse** to navigate to the network folder where you want the backup image stored.

IMPORTANT! All network locations must be accessible using the credentials provided during the Agent installation.

- 6 (Optional) To rename a backup image instead of using the default filename, select a backup image filename from the list box, click **Rename**, then type a new name.

By default, a scheduled full backup filename will be appended with 001.V2i. A subsequent backup created by the same backup job would be appended with 002.V2i.

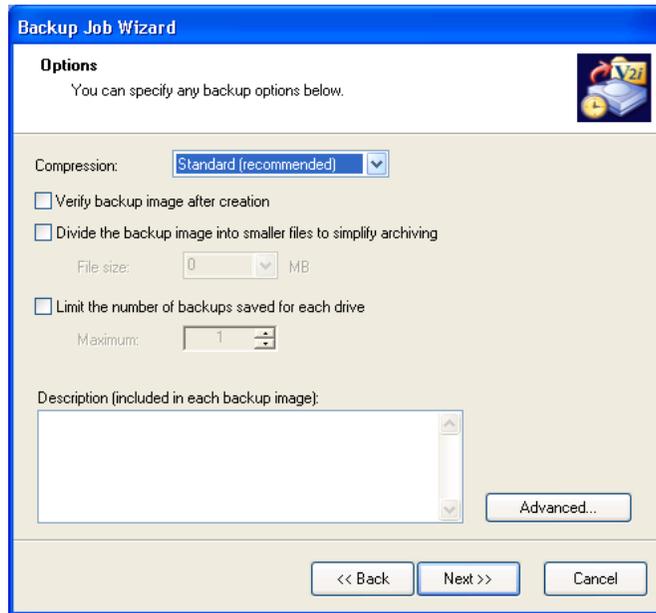
7 Click Next.



8 Specify the frequency and time of the backup images.

Option	Description
Once	A backup image is created at the date and time you specify.
Weekly	A backup image is created at the time and days of the week you specify.
Monthly	A backup image is created at the time and days of the month you specify.
No schedule (save for later)	Save all the backup settings except the backup folder location and the schedule. You can later run the backup job at your convenience by clicking the Backup Job tab in the advanced view, selecting the backup job, then clicking Tools > Run Job Now . You can also assign a schedule by selecting the backup job, then clicking Tools > Edit Job .

9 Click **Next**.



10 Select the compression level for the backup image.

Compression Level

Description

None	This is usually the fastest method for creating a backup image file and is most useful if storage space is not an issue. However, if you are saving the backup image file to a busy network drive, using high compression may be faster than no compression because there is less data to write to the file.
Standard	(Default) Use low compression for a 40% average data compression ratio on backup image files.
Medium	Uses medium compression for a 45% average data compression ratio on backup image files.
High	Use high compression for a 50% average data compression ratio on backup image files. This is usually the slowest method.

11 (Optional) Select **Verify backup image file after creation**.

This option is useful if you want to determine whether a backup image file is valid or corrupt immediately following its creation. If this option is selected, the image will be checked to see that all of the files in the backup image are available for you to open, the internal data structures in the backup image file match the data that is available, and the backup image file can be uncompressed to create the expected amount of data (if you selected a compression level at the time of creation).

- 12** (Optional) Select **Divide the backup image into smaller files to simplify archiving**, then type the maximum megabyte size for each file. For example, if you plan to copy a backup image to CDs, specify a file size of 700 or less.

This option is useful if you are creating a backup image file that you know you will copy to removable media later for safekeeping. The backup image will be split into smaller, more manageable segments. If you are creating a backup of thousands of files on a computer that has low memory, splitting the backup image into smaller segments may help speed the process.

IMPORTANT! Be aware that selecting this option will double the time (approximately) required to create the backup image.

- 13** (Optional) Select **Limit the number of backups saved for each drive**, then type a number in the text field.

When this limit is reached, each successive backup image is first created and stored, then the oldest, previously created backup image file is deleted from the same storage location.

IMPORTANT! Be sure you have enough hard disk space to accommodate the number of backup images you specify, *plus* one additional backup image. If you run out of hard disk space before the number of specified backup images is reached, the recurring backup image process will no longer function and a current backup image will not be created.

- 14** (Optional) Type a description that you want associated with the backup images created by this backup job.

The backup image file size and creation date are automatically appended to the description, so you do not need to enter this information.

- 15** (Optional) Click **Advanced** for additional options.

Advanced Option	Description
Ignore bad sectors during copy	If you want the ability to create a backup even if there are bad sectors on the hard drive, select this option. Although most drives do not have bad sectors, the potential for problems increases during the lifetime of the hard drive.

Advanced Option	Description
Disable SmartSector Copying	<p>SmartSector technology speeds up the copying process by only copying clusters and sectors that contain data. However, in some cases, such as high-security environments, it may be desirable to copy all clusters and sectors in their original layout, whether or not they contain data.</p> <p>If you want to copy both used and unused clusters and sectors, select Disable SmartSector Copying. Deselecting this option increases processing time and usually results in a larger backup image file size.</p>
Use password	<p>If you select this option, you can specify a password for the backup image. Passwords can use standard characters, not extended characters or symbols. (Use characters with an ASCII value of 128 or lower.)</p> <p>A user must type this password before restoring a backup or opening it in the Backup Image Browser.</p>

16 Click **Next**.

17 click **Finish**.

Tips for Creating Backup Images

- You may find it helpful to test a backups. If a backup is successful and the backup image is stored in the location you want, you can use the Create Backup Job feature to create subsequent backups at regular intervals.
- To test a backup job, click the **Backup Jobs** tab in the advanced view, then select the backup job you just created. Click **Tools > Run Job Now**.
- As each new backup is created, information is added to each tab (Drive, Backup Jobs, Backup History, Events) in the advanced view. Click the **Backup History** or **Backup Jobs** tab to get a detailed look at when the last backup images occurred, where the backup images are stored, their compression level, and any description you may have entered.
- All backup jobs are saved, so you can edit or run them later.
- If an NTFS volume uses EFS (Encrypted File System), the security remains intact on the volume when you mount the volume using the Backup Image Browser tool. If, however, you are simply viewing folders and files inside the backup image file using the Backup Image Browser tool (that is, the .V2i or .PQI file is not mounted), there is no security on the volume, folders, or files.
- Do not run a disk defragmentation program while a backup image is being created. Doing so will cause unexpected results.

Run a Scheduled Backup Job Immediately

You can use **Run Job Now** to immediately create a backup image.

To use **Run Job Now**, you must have already created a backup job. To create a backup job, see “Scheduling a Backup Image” on page 22.

- 1 From the advanced view, click the **Backup Jobs** tab.
- 2 Select a backup job name from the list box, then click **Tools > Run Job Now**.
- 3 Click **OK**.

Editing a Backup Schedule

- 1 From the advanced view, click the **Backup Jobs** tab.
- 2 Select a backup job from the list box.
- 3 Click **Tools > Edit Job** to open the selected job in the Backup Job wizard and change its properties.

Deleting a Backup Schedule

- 1 From the advanced view, click the **Backup Jobs** tab.
- 2 Select a backup job from the list box.
- 3 Click **Tools > Remove Job**.

Viewing the Backup Details of a Drive

You can view the backup image history of a drive, any schedules associated with creating a backup of the drive, and general status information, such as the backup and compression type, and where the image is stored.

- 1 From the advanced view, click the **Backup History** tab.

This tab lets you view a chronological history of all the backup images taken of selected drives (even if the backup image has been deleted from the storage location), including the original location of each backup image file.

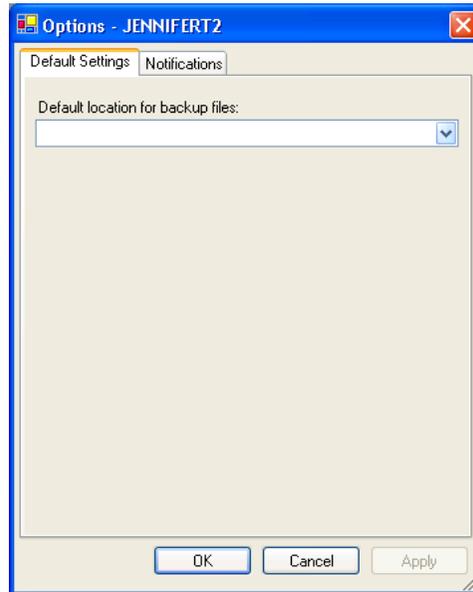
The history file of backup images is written to a subdirectory (named after the drive) in a folder that you specified when the drive was originally backed up.

- 2 Select a drive in the list box to view specific backup details about it.

Setting Options

You can specify the default path where backup image files are stored. This default path is used if you do not specify a different path when you create a backup. You can also set an option to send e-mail notification to a specified e-mail address if there are any errors or warnings that occurred during the creation of a backup.

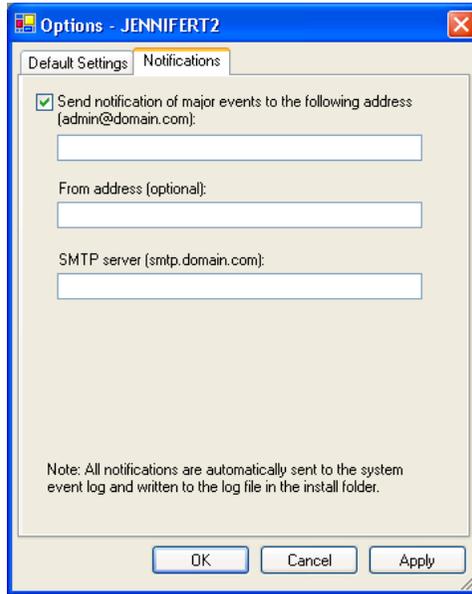
- 1 Click **Tools > Options**.



- 2 On the **Default Settings** tab, select the default location for the backup files from the drop-down list.

Depending on the location you specify, you will also need to specify the local folder, the network path, or the removable media (if applicable).

3 Click the **Notifications** tab.



4 Select “**Send notification...**” to enable the option.

To turn off notification for the selected computer, deselect the option.

5 Type the e-mail address (for example: `admin@domain.com`) where notification will be sent regarding any important failures or events.

6 (Optional) Type the e-mail address of the sender in the **From address** text field.

If you do not specify a from address, “Drive Image” will be used.

7 Specify the path to the SMTP server that will send the e-mail notification (for example: `smtpserver.domain.com`).

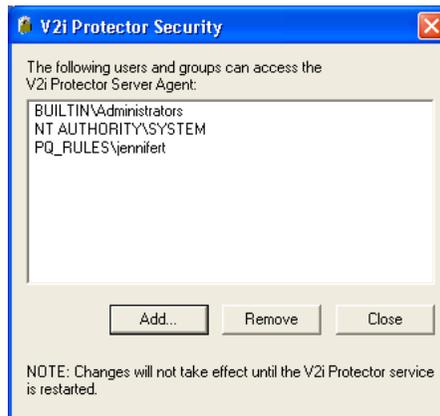
8 Click **OK**.

All notifications are automatically sent to the system event log and a custom log file located in the Agent folder of the product installation. (Click the **Events** tab in the Advanced View of the console to review any information, errors, or warnings within the software.)

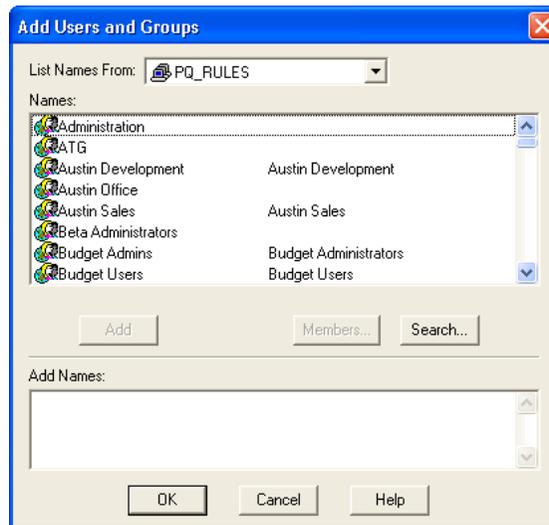
Giving Additional Users the Ability to Back Up a Machine

You can use the V2i Protector Security configuration tool to give additional users rights to run Drive Image. It is useful when you have more than one person who uses the machine. Backups will still run as scheduled no matter who is using the machine, but if you want *any* user to be able to set backup schedules, restore backups, and so forth, you must give the other users rights to the V2i Protector service by using this configuration tool.

- 1 From the Windows Start menu, click **Programs > Drive Image 7.0 > V2i Security Configuration Tool**.



- 2 Click **Add**.



- 3 Select a user or group, then click **Add**.

The user or group will appear in the text box at the bottom of the dialog.

- 4 Click **OK**.

You are returned to the **V2i Protector Security** dialog. From here you can delete users or groups by selecting a user/group from the list box, then click **Remove**.

- 5 Click **Close** to exit the dialog.

Open the Microsoft Services console (SERVICES.MSC), stop the V2i Protector service, then restart the service so your changes will take effect. See “Opening Services” on page 72 and “Starting, Stopping, or Restarting the Agent Service” on page 75 for more information on using the Services tool.

Checking the Integrity of a Backup Image (Backup Image Browser)

You can use Verify Backup Image to determine whether a backup image file is valid or corrupt. Backup Image Browser checks to see that all of the files in the backup image are available for you to open, the internal data structures in the backup image file match the data that is available, and the backup image file can be uncompressed and create the expected amount of data.

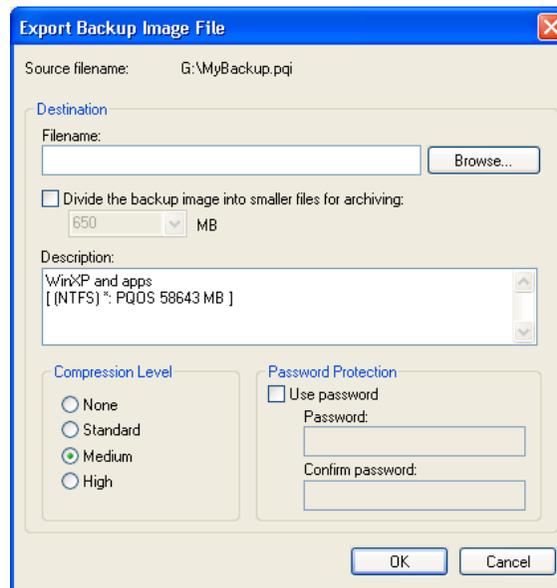
- 1 From the tree pane of Backup Image Browser, select the backup image file (.V2i, or .PQI) you want to check.
- 2 Click **File > Verify Backup Image**.
- 3 When the check is complete, click **OK**.

Exporting a Backup Image (Backup Image Browser)

You can export an open backup image file in Backup Image Browser to accommodate various methods of archiving. For example, when you export a backup image you can split the file into smaller sizes so it can be copied to other types of storage media. You can consolidate a spanned set into one backup image file.

You can also specify a description, compression level, or assign a password to protect the backup image.

- 1 From the tree pane of Backup Image Browser, select a backup image file.
- 2 Click **File > Export Backup Image**.



- 3** Select a location where you want the backup image stored and specify the filename for the backup image file. The new filename must have a .V2i extension.

Backup Location	Description
I want to store the backup images on the connected computer	Specify a drive, folder, and filename (for example, E:\Data_Backups\vol_1.v2i) located on the local computer where you want the backup image stored. While you can save backup images locally, it is generally not recommended. If the machine suffers a catastrophic failure such as a motherboard going bad, you may not be able to recover the backup image you need. Consequently, it is highly recommended that you save backup images to the network.
I want to store the backup images on the network	Specify a UNC (Universal Naming Convention) path on the network where you want the backup image stored, or click Browse to navigate to the network folder where you want the backup image stored.

- 4** (*Optional*) Select **Divide the backup image into smaller files for archiving**, then type the maximum megabyte size for each file. For example, if you plan to copy a backup image to CDs, specify a file size of 700 or less.

This option is useful for creating a backup image file that you will copy to removable media for safekeeping. The backup image is split into smaller, more manageable segments. If you are creating a backup of thousands of files on a computer that has low memory, splitting the backup image into smaller segments may help speed the process.

- 5** (*Optional*) Type a description that you want associated with the backup image.

The backup image file size and creation date are automatically appended to the properties of the file, so you do not need to enter this information.

- 6** Select the compression level for the backup image.

Compression Level	Description
None	This is usually the fastest method for creating a backup image file and is most useful if storage space is not an issue. However, if you are saving the backup image file to a busy network drive, using high compression may be faster than no compression because there is less data to write to the file.
Standard	(Default) Uses low compression for a 40% average data compression ratio on backup image files.

Compression Level	Description
Medium	Uses medium compression for a 45% average data compression ratio on backup image files.
High	Uses high compression for a 50% average data compression ratio on backup image files. This is usually the slowest method.

7 (*Optional*) Select **Use password** to assign a password to the backup image file.

A user must type this password before restoring a backup or opening it in the Backup Image Browser.

To remove a password for a backup image file, repeat steps 1 and 2 above, then deselect **Use password**.

8 Click **OK**.

Restoring Files and Folders

[Methods for Restoring Files and Folders](#)

[Restoring Files from a Backup Image](#)

[Mounting a V2i Drive](#)

[Dismounting a V2i Drive](#)

[Restoring Files from a Backup Image Using the PQRE](#)

[Viewing the Properties of a Backup Image \(Backup Image Browser\)](#)

[Viewing Drive Properties of a Backup Image \(Backup Image Browser\)](#)

[Viewing a File within a Backup Image \(Backup Image Browser\)](#)

Methods for Restoring Files and Folders

There are two different methods you can use to restore files and folders on a machine. Each restore method, as described in the table below, takes into account the functionality that is or is not available on the machine. In many instances, you do not need to take the machine down to complete a restoration.

IMPORTANT! Before you can restore a machine, you must have a backup image already created. You cannot restore data on a machine if a backup image of that machine does not exist.

Problem	Restore method
You can boot into the operating system on the machine but you have lost data, programs, or hardware files on a drive (excluding operating system files).	Restore selected files and folders from a backup image using Backup Image Browser within Windows. See “Restoring Files from a Backup Image” on page 38. Requires reboot? No.
You cannot boot into the operating system, and you have lost hardware, data, or program files on a drive.	Restore selected files and folders from inside a backup image using Backup Image Browser from the PowerQuest Recovery Environment (PQRE) on the bootable Drive Image CD. See “Restoring Files from a Backup Image Using the PQRE” on page 41. For tips and troubleshooting information when you are restoring from the PQRE, see “Tips and Troubleshooting When Restoring from the PQRE” on page 58. For information about the using the advanced support utilities under the PQRE, see “Using the Support Utilities under PQRE” on page 56.

Restoring Files from a Backup Image

If you are able to run the OS (operating system) on a troubled machine, you can use the Backup Image Browser to restore individual files or folders from a backup image—all with zero downtime to the machine. This method of recovery, sometimes known as a hot restore, is useful if you have traced the cause of a machine failure to a certain file or folder of files, or you have simply lost important data files and do not want to restore an entire backup image using the Restore Drive wizard.

- 1 From the tree pane of Backup Image Browser, double-click the backup image file (.V2i or .pqi) that contains the drive with the folders or files you want to restore.

To open the Backup Image Browser, see [“Opening the PowerQuest Backup Image Browser” on page 11](#).

2 Double-click the desired drive.

3 Select the files or folders you want to restore.

Press <Ctrl+A> to select all items.

To select a group of files that are next to each other, click the top file, then hold down <Shift> and click the last file in the list.

To select a group of files that are not next to each other, hold down <Ctrl> while selecting the files you want.

4 Click **File > Restore**.

5 Where possible, the **Restore Items** dialog will automatically fill in the **Restore to this folder** text field with the original path when the backup image was created. If the original location does not include a drive letter (because the drive was hidden when you created the backup image), you must enter a drive letter for the drive before you can restore any files or folders.

If the original path is unknown, or you want to restore the selected files to a different location, click **Browse** to locate the destination.

6 Click **Restore** to begin restoring the files.

When file restoration is complete, you are returned to the Backup Image Browser main window.

Modifying Files within a Backup

You can open files from within a backup image. However, you must restore a file from within a backup before making modifications to it, or your changes will be lost.

Mounting a V2i Drive

You can mount a drive within a backup image file (.V2i or .pqi) by assigning it a drive letter that is visible from Backup Image Browser and Windows Explorer. You can perform a variety of tasks on the drive such as run ScanDisk (or CHKDSK), perform a virus check, defragment files, copy folders or files to an alternate location, or simply view disk information about the drive such as used space and free space. You may also be able to run executable programs that exist within the mounted backup image.

When a drive is mounted, you can set it up as a shared drive. Users on a network can connect to the shared drive and restore files and folders from within the backup image.

You can mount one or more backup images at a time. The drives will remain mounted until you dismount them or restart the machine. Mounted drives do not take up extra hard disk space.

If an NTFS volume uses EFS (Encrypted File System), the security remains intact on the volume when it is mounted.

It is not necessary to mount a drive to restore files or folders from within a backup image.

WARNING! Any data written to a mounted V2i drive—including creating, modifying, or deleting files—will be lost when the volume is dismounted.

From Backup Image Browser

- 1 From the tree pane of Backup Image Browser, select the backup image file that contains the drive you want to mount.
- 2 Click **File > Mount V2i Drive**.
- 3 Select the drive label you want mounted.
- 4 Choose a letter you want associated with the drive from the **Drive letter** drop-down list.
- 5 Click **OK**. To mount additional drives, repeat the steps above.

The mounted V2i drive appears in the tree pane of the Backup Image Browser and Windows Explorer is automatically opened to the drive letter of the mounted drive.

From Windows Explorer

- 1 Navigate to a backup image file.
- 2 Right-click the backup image file, then click **Mount**.
- 3 Select the drive you want mounted.
- 4 Choose a letter you want associated with the drive from the **Drive letter** drop-down list.
- 5 Click **OK**. To mount additional drives, repeat the steps above.

The mounted V2i drive appears in the tree pane of the Backup Image Browser and Windows Explorer is automatically opened to the drive letter of the mounted drive.

Dismounting a V2i Drive

Dismount from Backup Image Browser

- 1 From the tree pane of Backup Image Browser, select a mounted backup image file, then click **File > Dismount V2i Drive**.

To dismount all mounted drives at once, click **Mounted V2i Drives** in the tree pane, then click **File > Dismount All V2i Drives**. Rebooting the machine will also dismount all mounted V2i drives in Windows Explorer and Backup Image Browser.

Dismount from Windows Explorer

- 1 Navigate to the mounted V2i drive.
- 2 Right-click the drive, then click **Dismount V2i Drive**.

Restarting the machine will also dismount all mounted V2i drives in Windows Explorer and Backup Image Browser.

Restoring Files from a Backup Image Using the PQRE

You can use the PowerQuest Recovery Environment (PQRE) to restore files from within a backup image.

For tips and troubleshooting information when you are restoring from the PQRE, see “Tips and Troubleshooting When Restoring from the PQRE” on page 58.

When you are running the PQRE, there are several support utilities available from the main window that you can run to troubleshoot networking or hardware issues you may encounter. For example, you can ping a server, renew IP addresses, or get information about a hard disk partition table. For more information about these advanced utilities, see “Using the Support Utilities under PQRE” on page 56.

IMPORTANT! The PQRE requires a minimum of 256 MB of RAM to run.

- 1 Insert the PowerQuest Drive Image CD into the media drive of the machine.
- 2 Immediately reboot the machine.
You may need to modify your system to make it bootable from the CD. See “I can’t boot from the CD.” on page 69.
- 3 *(Optional)* If necessary, you can install special RAID or SCSI drivers for the machine’s hard disk subsystem by pressing <F6> when prompted during the boot into PQRE.
[See “I can’t access the local drive where my backups are saved.” on page 69.](#)
- 4 Watch the computer screen. When the prompt “Press any key to boot from CD” appears, you have approximately five seconds to press a key to begin booting into the PQRE from the CD.
- 5 *(Optional)* From the **Time Zone** drop-down list of the PQRE main window, select the time zone location you are in relative to the location of the backup image store.
- 6 *(Optional)* Select the language in which you want the SystemRestore wizards and Backup Image Browser to display.
- 7 Click **Backup Image Browser**.
- 8 From the **Open** dialog, open the backup image file (.V2i or .PQI) that contains the backup image folders or files you want to restore.

IMPORTANT! Drive letters under the PQRE may not match those in the Windows environment.

- 9 From the tree view pane of Backup Image Browser, double-click the desired drive.

You can also click **File > Open** to locate the backup image file you want. If you are unable to see or browse the network from the **Open** dialog, type the name of the server and share that holds your backup images, in the **File name** text box (syntax example:

\\server_name\share_name), then press <Enter>. Select a backup image file, then click **Open** to add it to the tree view pane of the Backup Image Browser. Double-click the backup image filename to display the available drives.

If you are still unable to see your network after typing the server name and share name, you may need to map a drive to see and browse the network. See “Network Connectivity During a Restore from the PQRE” on page 58 for more information.

- 10 From the content pane of the Backup Image Browser, select the files or folders you want to restore.

Press <Ctrl+A> to select all items.

To select a group of files that are next to each other, click the top file, then hold down <Shift> and click the last file in the list.

To select a group of files that are not next to each other, hold down <Ctrl> while selecting the files.

- 11 Click **File > Restore**.

If you selected an image file that was created with an older version of Drive Image or Backup Image Browser, a progress bar displays while the Backup Image Browser expands the image index.

- 12 Where possible, the **Restore Items** dialog will automatically fill in the restore location with the original path when the backup image was created. If the original location does not include a drive letter (because the drive was hidden when you created the backup image), you must enter a drive letter for the drive before you can restore any files or folders.

If the original path is unknown, or you want to restore the selected files to a different location, click **Browse** to locate the destination.

- 13 Click **Restore** to restore the files.

- 14 When file restoration is complete, click **OK**.

- 15 Click **Close** to return to the Backup Image Browser main window.

Viewing the Properties of a Backup Image (Backup Image Browser)

- 1 From the tree pane of Backup Image Browser, select the desired backup image file (.V2i or .PQI).

2 Click **File > Properties**, or right-click the backup image file and click **Properties**.

Image Property	Specifies
Description	A user-assigned comment associated with the backup image. The description is entered during the Backup Drive wizard, Create Backup Job wizard, or when you use the Export Backup Image feature in the Backup Image Browser.
Size	The total size (in megabytes) of the backup image.
Created	The date and time that the backup image file was created.
Compression	The compression level used in the backup image.
Spanned	Whether the entire backup image file is spanned over several files.
Password protected	Identifies whether or not the selected drive is password protected. The password is entered in the Advance Options area of the Backup Drive wizard and the Create Backup Job wizard, or when you use the Export Backup Image feature in the Backup Image Browser.
Version	The version number of the backup image file.

Viewing Drive Properties of a Backup Image (Backup Image Browser)

- 1 From the tree pane of Backup Image Browser, double-click the backup image file (.V2i or .PQI) that contains the desired drive.
- 2 Select a drive.
- 3 Click **File > Properties**, or right-click the drive and click **Properties**.

Drive Property	Specifies
Description	A user-assigned comment associated with the drive.
Original drive letter	The original drive letter that was assigned to the drive.
Cluster size	The cluster size (in bytes) used in a FAT, FAT32, or NTFS drive.
File system	The file system type (for example, FAT, FAT32, and NTFS) used within the drive.

Drive Property	Specifies
Primary/Logical	The selected drive's drive status as either Primary (primary partition) or Logical (logical partition).
Size	The total size (in megabytes) of the drive. This total includes both used and free space.
Used space	The amount of used space (in megabytes) within the drive.
Unused space	The amount of free or unused space (in megabytes) within the drive.

Viewing a File within a Backup Image (Backup Image Browser)

You can open a backup image file in Backup Image Browser to view its contents in the program associated with that file type. If a particular file type is not registered for viewing in a program, the Microsoft **Open With** dialog is displayed. You can then select the program that you want the file to open in.

You cannot view encrypted files system (EFS) NTFS volumes using Backup Image Browser.

- 1** From the tree pane of Backup Image Browser, double-click the backup image file (.V2i or .PQI) to reveal the list of drives.
- 2** From the tree pane, select a drive.
- 3** From the content pane, select a folder that contains the file you want to view.
- 4** From the content pane, select the file, then click **File > View**.

The **View** option is dimmed (unavailable) if you selected a program file that has a .EXE, .DLL, or .COM file extension.

Restoring Backup Images

[Methods for Restoring a Computer](#)

[Restoring a Backup Image](#)

[Restoring a Single Drive Using the PQRE](#)

[Restoring Multiple Drives Using the PQRE](#)

[Restoring Multiple Drives Using a System Index File Under the PQRE](#)

[Using the Support Utilities under PQRE](#)

[Tips and Troubleshooting When Restoring from the PQRE](#)

Methods for Restoring a Computer

There are two different methods you can use to restore a machine to full functionality. Each restore method, as described in the table below, takes into account the functionality that is or is not available on the machine. In many instances, you do not need to restart the machine to complete a restoration.

IMPORTANT! Before you can restore a machine, you must have a backup image already created. You cannot restore the operating system or data on a machine if a backup image of that drive does not exist.

Problem	Restore method
You can boot into the operating system on the machine but you need to restore a drive (other than the operating system partition) from a recent backup image.	Restore a backup image. See “Restoring a Backup Image” on page 46. Requires reboot? No.
The machine has suffered a catastrophic failure, or the software cannot lock a drive (definition of drive lock) to perform a restoration directly under Windows, or you cannot boot into the operating system, and you have lost hardware, data, or program files on a drive.	Restore the entire drive using the System Restore Wizard from the PowerQuest Recovery Environment (PQRE) on the bootable PowerQuest CD. See one of the following tasks based on your scenario: <ul style="list-style-type: none">• “Restoring a Single Drive Using the PQRE” on page 49.• “Restoring Multiple Drives Using the PQRE” on page 53.• “Restoring Multiple Drives Using a System Index File Under the PQRE” on page 55. Requires reboot? Yes.

Restoring a Backup Image

If you are able to access the operating system on a troubled machine, you can use the Restore Drive wizard to restore an entire backup image of a data drive—all with zero downtime. This method of recovery, known as a hot restore, is useful if you have experienced the complete loss of a data drive.

- 1 From the basic view, click **Restore a Drive**.



- 2 Click **Next**.
- 3 Select the backup location you are restoring from, then specify the path to the backup image file.

Restore from	Description
Local file	<p>To restore a backup image that is located on the connected machine, click Local file, then specify a drive and folder (example, E:\Data_Backups\) where the backup image is stored.</p> <p>To restore a backup image that is located on disc media, browse to the CD or DVD drive and folder where the backup image is located. Make sure the media is in the drive before clicking Browse.</p>
Network file	<p>To restore a backup image that is located on the network, click Network file, then specify a UNC (Universal Naming Convention) path (example, \\machine\share\file) on the network where the backup image is stored, or click Browse to navigate to the network folder where the backup image is stored.</p>

IMPORTANT! All network locations must be accessible using the credentials provided during the Agent installation.

- 4 If the backup image is password-protected, select the check box and enter the password.
- 5 Click **Next**.
- 6 Select the destination where you want to restore the backup image file.

If there is not enough free space to restore a backup image file, you can press <Shift> to select multiple, contiguous destinations that exist on the same hard drive.

The destination must be as large as the original drive.

7 Click **Next**.

8 Select or deselect the restore options you want.

The actual options available are dependent on the restore location you selected in the previous step.

Standard options	Description
Set drive active	Use Set drive active to make the restored drive the active partition (the drive the machine boots from). Only one drive can be active at a time. To boot the machine, it must be on the first drive, and it must contain an operating system. When the machine boots, it reads the partition table of the first drive to find out which drive is active and boots from that location. If the drive is not bootable or you are not certain that it is, have a boot disk ready. Set drive active is valid for basic disks only (not dynamic disks).
Resize drive to fill unallocated space	Automatically expand the drive to occupy the destination drive's remaining unallocated space.
Verify image file before restore	This option is recommended if you want to determine whether a backup image file is valid or corrupt before restoring it. The wizard checks to see that all of the files in the backup image are available for you to open, the internal data structures in the backup image file match the data that is available, and the backup image file can be uncompressed (if you selected a compression level at the time of creation). If the backup image is invalid, the restoration will not continue.
Check for file system errors	Check the restored drive for errors <i>after</i> restoring the backup image file.
Partition type: Primary partition Logical partition	Click Primary partition to restore as a primary partition. Click Logical partition to restore as a logical partition inside an extended partition.
Drive letter	Select a drive letter you want assigned to the partition from the Drive letter drop-down list.

9 Click **Next**.

10 Click **Finish** to restore the image.

If the wizard cannot lock the drive (definition of [drive lock](#)) to perform the restoration under Windows, it will prompt you to insert the PowerQuest CD, so you can manually boot into the PowerQuest Recovery Environment (PQRE) and complete the restoration. When the restore is finished, the machine is rebooted automatically.

You may wish to dismount the backup image after restoring it. [See "Dismounting a V2i Drive" on page 40.](#)

Restoring a Single Drive Using the PQRE

If you cannot restore a file or folder while the machine is online (because you cannot boot into the operating system or because of a lack of free hard drive space), you can use the System Restore wizard from the PowerQuest Recovery Environment (PQRE) to return a drive on the machine to full functionality.

You can also use the PQRE to perform a bare metal recovery of a machine if you have suffered a catastrophic hard drive failure.

Under the PQRE, you can restore a single drive, multiple drives, or multiple drives using a system index file (.sv2i).

IMPORTANT! The PQRE requires a minimum of 256 MB of RAM to run.

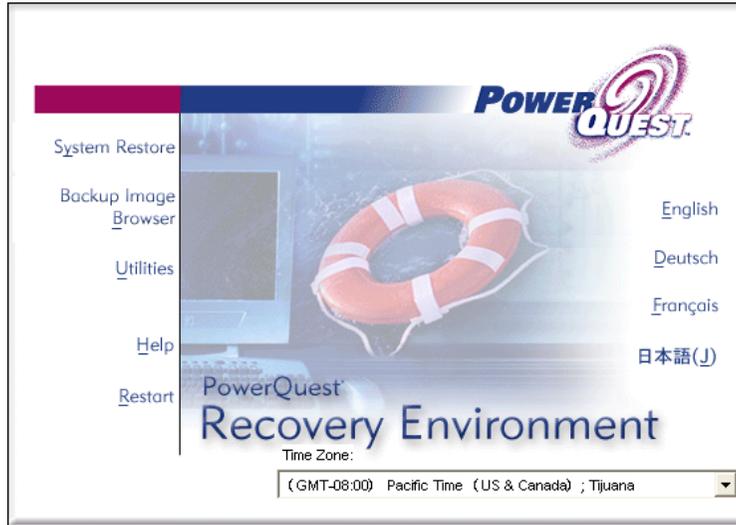
- 1** Insert the PowerQuest CD into the media drive of the machine.
- 2** Immediately reboot the machine.

You may need to modify your system to make it bootable from the CD. See "I can't boot from the CD." on page 69.

- 3** (*Optional*) If necessary, you can install special RAID or SCSI drivers for the machine's hard disk subsystem by pressing <F6> when prompted during the boot into PQRE.

[See "I can't access the local drive where my backups are saved." on page 69.](#)

- 4 Watch the computer screen. When the prompt “Press any key to boot from CD” appears, you have approximately five seconds to press a key to begin booting into the PQRE from the CD.



- 5 (Optional) From the **Time Zone** drop-down list of the PQRE main window, select the time zone location you are in relative to the location of the backup image store.
- 6 (Optional) Select the language in which you want the System Restore wizard and Backup Image Browser to display.
- 7 Click **System Restore**.
IMPORTANT! Drive letters under the PQRE may not match those in the Windows environment.
- 8 Click **Restore drives**, then click **Next**.
- 9 Click **Single drive**, then click **Next**.
- 10 Specify the location of the backup image file to restore, or click **Browse** and navigate to the backup image file you want.
If you click **Browse** and cannot see or browse the network from the Open dialog, type the name of the machine and share that holds your backup images, in the **File name** text box (example: \\machine_name\share_name\), then press <Enter>. Select a backup image file, then click **Open** to add it to the text field.
If you are still unable to see your network after typing the machine name and share name, you may need to map a drive to see and browse the network. See “Network Connectivity During a Restore from the PQRE” on page 58 for more information.
- 11 If the backup image was assigned a password, you must enter it now.
- 12 Click **Next**.
- 13 Select the drive where you want to restore the backup image file.

Note that some of the drives listed may be invalid selections because there is not enough free space for the restored backup image file or because you do not have rights to the drive.

- 14** (Optional) To free disk space, select a drive, then click **Delete Drive**. This will free space if a single drive space on the hard drive is not adequate.

IMPORTANT! When you click **Delete Drive**, the drive is only virtually deleted at that point; the actual deletion of the drive takes place *after* you click **Finish** in the wizard. If you change your mind before clicking **Finish**, go back to the **Restore Destination** dialog and click **Undo Delete** to “restore” the drive.

- 15** Click **Next**.

- 16** Select or deselect the restore options you want.

The options available will depend on the restore location you selected in the previous step.

Restore options	Description
Verify backup image before restore	<p>This option is useful if you want to determine whether a backup image file is valid or corrupt prior to the start of a restoration. The backup image is checked to see that the internal data structures in the backup image file match the data that is available, and the backup image file can be uncompressed (if you selected a compression level at the time of creation) and create the expected amount of data. If the backup image is invalid, the restoration will not continue.</p> <p>This option is selected by default.</p>
Check for file system errors after restore	<p>Enable error checking. The hard drive is checked for errors <i>after</i> the backup image file has been restored.</p>
Resize drive to fill unallocated space	<p>Expand the drive that is being restored to occupy the destination drive’s remaining free space.</p>

Advanced Restore Options

Description

Set drive active (for booting OS)	<p>Use Set drive active to make the restored drive the active partition (the drive the machine boots from). Only one drive can be active at a time. To boot the machine, it must be on the first drive, and it must contain an operating system. When the machine boots, it reads the partition table of the first drive to find out which drive is active and boots from that location. If the drive is not bootable or you are not certain that it is, have a boot disk ready.</p> <p>Set drive active is valid for basic disks only (not dynamic disks).</p>
Partition type	<p>Click Primary partition to restore as a primary partition.</p> <p>Click Logical partition to restore as a logical partition inside an extended partition. (This option is not applicable for dynamic disks.)</p>
Restore original disk signature	<p>Restores the original physical disk signature of the hard drive.</p> <p>Disk signatures are included in Windows Server 2003, Windows 2000 Advanced Server, and Windows NT Server 4.0 Enterprise Edition (SP3 and later) and are necessary before the hard drive can be used.</p> <p>This option is recommended for advanced users.</p>
Restore MBR	<p>Restore the master boot record. The master boot record is contained in the first sector of the first physical hard drive. The MBR consists of a master boot program and a partition table that describes the disk partitions. The master boot program looks at the partition table to see which primary partition is active. It then starts the boot program from the boot sector of the active partition.</p> <p>This option is recommended for advanced users.</p>

17 Click **Next**.

18 (*Optional*) Select **Reboot after finish** if you want the machine to reboot automatically after the backup images are restored.

19 Click **Finish > Yes** to restore the backup image.

Restoring Multiple Drives Using the PQRE

You can use the System Restore wizard from the PowerQuest Recovery Environment (PQRE) to restore an entire machine that may have more than one drive.

You can also use PQRE to perform a bare metal recovery of a machine if you have suffered a catastrophic hard drive failure.

IMPORTANT! The PQRE requires a minimum of 256 MB of RAM to run.

1 Insert the PowerQuest CD into the media drive of the machine.

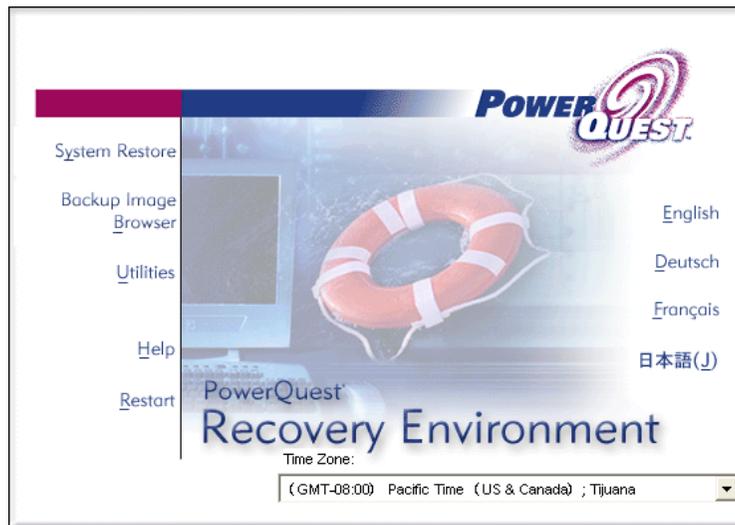
2 Immediately reboot the machine.

You may need to modify your system to make it bootable from the CD. See “I can’t boot from the CD.” on page 69.

3 (*Optional*) If necessary, you can install special RAID or SCSI drivers for the machine’s hard disk subsystem by pressing <F6> when prompted during the boot into PQRE.

[See “I can’t access the local drive where my backups are saved.” on page 69.](#)

4 Watch the computer screen. When the prompt “Press any key to boot from CD” appears, you have approximately five seconds to press a key to begin booting into the PQRE from the CD.



5 (*Optional*) From the **Time Zone** drop-down list of the PQRE main window, select the time zone location you are in relative to the location of the backup image store.

6 (*Optional*) Select the language in which you want the System Restore wizard and Backup Image Browser to display.

7 Click **System Restore**.

IMPORTANT! Drive letters under the PQRE may not match those in the Windows environment.

- 8 Click **Restore drives**, then click **Next**.
- 9 Click **Multiple drives**, then click **Next**.
- 10 Select the filenames of the backup images you want to restore from the list box.

Option	Description
Add	<p>a) To add a backup image file to the list box, click Add, then specify the location of the backup image file (.V2i or .pqi).</p> <p>b) Click Next.</p> <p>c) Select the drive where you want to restore the backup image file.</p> <p style="padding-left: 40px;">Note that some of the drives listed may be invalid selections because there is not enough free space for the restored backup image file or because you do not have rights to the drive.</p> <p>d) (<i>Optional</i>) To free disk space, select a drive, then click Delete Drive. This will free space if no single drive is adequate.</p> <p style="padding-left: 40px;">IMPORTANT! When you click Delete Drive, the drive is only virtually deleted at that point; the actual deletion of the drive takes place <i>after</i> you click Finish in the wizard. If you change your mind before clicking Finish, go back to the Restore Destination dialog and click Undo Delete to “restore” the drive.</p> <p style="padding-left: 40px;">Deleting drives lets you select the space previously used by more than one drive.</p> <p>e) Click Next.</p> <p>f) Select or deselect the restore options you want. For more information about each option, see the Restore options table on page 51.</p>
Change	To edit the list of backup images, select a filename from the list of backup images to restore, then click Change . Specify a new path to the backup image or select a new backup image filename.
Remove	To remove a filename from the list of backup images to restore, select a filename, then click Remove .

- 11 (*Optional*) Select **Reboot after finish** if you want the machine to reboot automatically after the backup images are restored.
- 12 Click **Finish > Yes** to restore the backup images.

Restoring Multiple Drives Using a System Index File Under the PQRE

You can use the System Restore wizard from the PowerQuest Recovery Environment (PQRE) to restore an entire machine that may have more than one drive. This type of restore uses a system index file (.sV2i) to reduce the amount of time needed to restore the drives. Each time a backup image is created, a system index file is saved along with it. The system index file contains a list of the most recent backup image files including the original drive location of each backup image file.

You can also use the PQRE to perform a bare metal recovery of a machine if you have suffered a catastrophic hard drive failure.

IMPORTANT! The PQRE requires a minimum of 256 MB of RAM to run.

1 Insert the PowerQuest CD into the media drive of the machine.

2 Immediately reboot the machine.

You may need to modify your system to make it bootable from the CD. See “I can’t boot from the CD.” on page 69.

3 (*Optional*) If necessary, you can install special RAID or SCSI drivers for the machine’s hard disk subsystem by pressing <F6> when prompted during the boot into PQRE.

[See “I can’t access the local drive where my backups are saved.” on page 69.](#)

4 Watch the computer screen. When the prompt “Press any key to boot from CD” appears, you have approximately five seconds to press a key to begin booting into the PQRE from the PowerQuest CD.

5 (*Optional*) From the **Time Zone** drop-down list of the PQRE main window, select the time zone location you are in relative to the location of the backup image store.

6 (*Optional*) Select the language in which you want the SystemRestore wizards and Backup Image Browser to display.

7 Click **System Restore**.

IMPORTANT! Drive letters under the PQRE may not match those in the Windows environment.

8 Click **Restore drives**, then click **Next**.

9 Click **Multiple drives using system index file (*.sV2i)**, then click **Next**.

10 Specify the full path to the system index file (.sV2i), or click **Browse** to navigate to the system index file.

The system index file is in the same location as the backup image file location.

11 Click **Next**, then select the filenames of the backup images you want to restore from the list box.

To add, change, or remove a backup image file in the list box, see the **Option** table on page 54.

- 12** (Optional) Select **Reboot after finish** if you want the machine to reboot automatically after the backup images are restored.
- 13** Click **Finish > Yes** to restore the backup images.

Using the Support Utilities under PQRE

When you are running under the PQRE, there are several support utilities available from the main window that you can run to troubleshoot networking or hardware issues you may encounter. For example, you can ping a machine, renew IP addresses, or get information about a hard drive partition table.

PowerQuest Technical Support may require information generated by these utilities if you call PowerQuest for help resolving problems.

IMPORTANT! The PQRE requires a minimum of 256 MB of RAM to run.

- 1** From the PQRE main window, click **Utilities**.
- 2** Click the support utility you want to run.

Support Utility Option	Description
Map Network Drive	See “Network Connectivity During a Restore from the PQRE” on page 58.
Configure IP Address	See “Getting a Static IP Address When Running the PQRE” on page 59.
PARTINNT.EXE	Use PartitionInfo to create a report of the contents of your hard drive partition table. This report can help you diagnose and fix various disk partition problems. You can save the information to a text file, which can then be sent to technical support, if necessary.

Support Utility Option	Description
PQBOOT32.EXE	<p data-bbox="552 304 1430 420">Use PQBoot to easily and quickly switch between bootable primary partitions. PQBoot is for users who only occasionally need to change the active partition.</p> <p data-bbox="552 441 1430 556">1 Type the ID number of the partition (shown in the first column) you want to make the bootable primary partition, then press <Enter>.</p> <p data-bbox="552 577 1430 651">PQBoot makes the partition active and reboots the computer.</p>
PTEDIT32.EXE	<p data-bbox="552 672 1430 829">Use the PTEdit (Partition Table Editor) to read and allow manipulation of the partition table information found in the Master Boot Record and EPBR Boot record. PTEdit is useful for fixing partition table errors or boot sector problems.</p> <p data-bbox="552 850 1430 1071">You can make changes to partition tables by using decimal values rather than hex values. You can also change the file system flag, set the active partition, hide and unhide partitions, and change CHS values, boot sector information, and the number of sectors in a partition. When you change the number of sectors, the final result must match the CHS values.</p> <p data-bbox="552 1092 1430 1249">PTEdit looks at partition table information in a relative fashion. Basically it finds the start sector of a primary partition by calculating the absolute value of the sector from the start of the drive to the boot sector of the partition.</p>
RESTOREMBR.EXE	<p data-bbox="552 1270 1430 1417">Use to save or restore critical MRB (Master Boot Record) information in the first sector of a hard drive. The contents of the first sector or entire first head of the hard drive are saved or restored to a file.</p>
SMEDUMP.EXE	<p data-bbox="552 1438 1430 1522">Use to view, among other things, information about the hard drive on the machine.</p> <p data-bbox="552 1543 1430 1619">You can save the information to a text file (SMEDUMP.TXT) which can then be sent to technical support, if necessary.</p>

Support Utility Option	Description
IPCONFIG.EXE	<p>Use IP Configuration to view, among other things, network adapter information. You can also release or renew IP addresses from this utility.</p> <p>You can save the information to a text file (IPCONFIG.TXT) which can then be sent to technical support, if necessary.</p>
PING.EXE	<p>Use Ping to see if a machine you want to back up is operating and to see if the network connections to that machine are intact and functioning.</p> <p>1 Type the IP address of the machine you want to check, then click OK.</p>

Tips and Troubleshooting When Restoring from the PQRE

Use the following information to help you perform restorations from the PQRE or to solve issues you may experience while restoring a backup image from the PQRE.

How Does the PowerQuest Recovery Environment Work?

Occasionally, a machine failure can leave the operating system intact but you cannot restore a backup image with just a reboot. Or, sometimes a machine failure has made the operating system entirely inoperative, making a restoration seemingly impossible. For these types of situations, you simply reboot the machine using the PowerQuest CD. The machine automatically boots into the PowerQuest Recovery Environment (PQRE) and lets you run either the System Restore wizard (to restore a backup image) or the Backup Image Browser (to perform a file-level restore).

The PQRE makes restoring backup images possible after almost any machine disaster. Following the restoration of a backup image, the machine is automatically rebooted and restored to its previous, usable state.

Running USB Devices from the PQRE

To enable a USB device while you are running from the PQRE, you must first attach the device, then reboot the machine into the PQRE environment.

Network Connectivity During a Restore from the PQRE

If you attempt to boot directly into the PowerQuest Recovery Environment (PQRE) when there is no DHCP server (or the DHCP server is down), you will immediately be prompted to enter a static IP address and a subnet mask address for the machine on which you are running the PQRE.

After the static IP address and subnet mask address are correctly entered, you will be able to enter the PQRE. However, because there is no way to resolve computer names, when you run the System Restore Wizard or the Backup Image Browser, you will not be able to browse the network to locate a backup image file. To correct this issue,

- 1 From the PQRE main window, click **Utilities > Map Network Drive**.
- 2 Map a network drive using a UNC path of the computer where the backup image file is located (examples: \\machine_name\share_name or \\IP_address\share_name).

You will now be able to browse to that drive mapping and select a backup image file that you want to restore.

Getting a Static IP Address When Running the PQRE

If you are trying to restore a backup image that is located on a network drive/share, but you are unable to map a drive or browse to the drive/share on the network (usually caused by the lack of an available DHCP service), you can assign a unique static IP address to the computer that is running the PQRE. You can then map to the network drive/share.

- 1 If there is no DHCP service available when you start the PQRE, the **Network Configuration** dialog is automatically displayed. (If the dialog does not display, click **Utilities > Configure IP Address**.)
- 2 Select **IP #1** from the list box, then click **Modify**.
- 3 Specify a unique IP address and subnet mask for the computer you are restoring. Be sure that the subnet mask matches the subnet mask of the network segment.
- 4 Click **OK** twice to return to the main menu.
- 5 Click **Utilities > PING.EXE**.
- 6 Specify the address of a computer you want to ping on the network segment. Usually it will be the computer that holds the backup image you want to restore.

Address Method	Description
Computer name	Specify a computer name (example: computersb) if you use the domain or workgroup to resolve computer names.
Computer name and domain	Specify a computer name and domain (example: computersb.domain.com) if you are using an Active Directory domain to resolve computer names.
IP address	Specify an IP address (example: 12.345.678.9) if there is no computer name resolution available on the segment.

- 7 Click **OK**.

If you specified a computer name or computer name and domain as the address method (as described in the table above), make note of the IP address that is returned from the computer you are pinging.

If an IP address is not returned, go to the storage computer that holds the backup image you are wanting to restore. At a DOS prompt, type `ipconfig/all` and press <Enter>. Write down the IP address that is displayed. Return to the computer that is running the PQRE and run `PING.EXE` using the IP address you wrote down.

If communication to the storage computer is operating as expected, you can use the **Map Network Drive** feature to map a drive to the backup image location.

- 8** From the PQRE, click **Utilities > Map Network Drive**.
- 9** Select a drive letter from the **Drive** drop-down list.
- 10** In the **Folder** text field, type the IP address of the storage computer and the share where the backup image is located (for example: `\\IP.address\share_name\`).
- 11** Click **Connect using a different user name**.
- 12** Type the IP address and username (for example: `IP.address\user_name`) in the **User name** text field.
- 13** Type the username password in the **Password** text field.
- 14** Click **OK**.

You should now have a drive mapped to the backup image location on the storage computer.

Using a Delayed Apply When there is No DHCP

Using the PQRE without DHCP or DNS is not recommended. This is because of the limited support for DHCP and DNS within the PQRE. Therefore, if there is no DHCP service available and you have stored your backup images to a network drive, a delayed apply will not work because the computer name cannot be resolved.

To work around this issue, you can boot directly into the PQRE and restore the backup image from there instead of using delayed apply.

Copying Drives

[Overview](#)

[Preparing to Use the Copy Drives Feature](#)

[Copying One Hard Drive to Another Hard Drive](#)

[Preparing to Reboot the Machine After Copying Drives](#)

Overview

You can copy the contents of one hard drive to another. You can copy your operating system, applications, and data to a new hard drive.

You can use the Copy Drives feature when you upgrade to a larger hard drive or when you add a second hard drive and keep the original. You should not use the Copy Drives feature to set up a hard drive that will be used in another computer.

If the power or other hardware fails when you are copying data, no data is lost from the source drive. Should the power or other hardware fail, just start the process again after the failure is resolved.

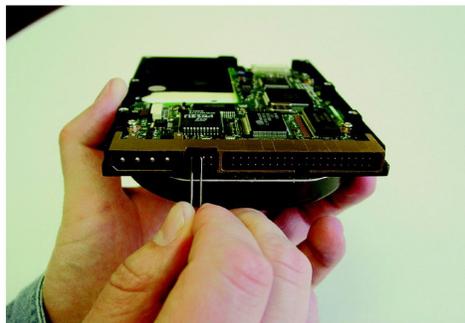
Preparing to Use the Copy Drives Feature

Before you can copy drives, you must have the hardware configured correctly.

- 1 Prepare the computer. Get the manufacturer's directions for installing the drive. Shut down the machine, and disconnect the power cord. Discharge electricity by touching a grounded metal object. Remove the computer cover.



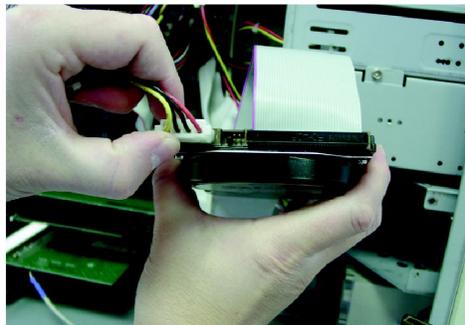
- 2 Change the hard drive jumper settings to make the new hard drive the slave drive, or connect it as the slave drive if you are using cable select instead of jumper settings to determine the master and slave drives.



- 3 Attach the new hard drive. Connect the cable so the colored stripe on the edge lines up with the I/O pins on the motherboard. The motherboard is marked Pin1 or 1 where the colored stripe should go. Next connect the other end of the cable to the back of the hard drive, again matching the striped edge with the I/O pin position on the drive itself. The I/O pin is usually on the side closest to the power supply.



- 4 Attach the power connector to the new hard drive. There is only one way to connect the power cable—don't force it. Make sure the angled edge of the plastic connector lines up with the angled edge of the pin socket.



- 5 Anchor the drive in the bay area according to the manufacturer's instructions for the machine or the computer bay requirements.



- 6 Change the BIOS to recognize the new hard drive. To change the BIOS settings, watch the bottom of the screen while your machine is booting up. Press , <F1>, <F2>, or <F10> according to the legend that appears. Select **Auto Detect** for both the master and slave drives. Save the BIOS changes and exit. Your machine will reboot automatically.

Copying One Hard Drive to Another Hard Drive

When you have your new hard drive installed, you are ready to copy your old hard drive to the new one.

- 1 From the basic view, click **Copy One Drive to Another**.



- 2 Complete the wizard to copy the drive.

The wizard will guide you through selecting the right drive to copy, the destination drive, and the options for copying the data from one drive to another.

Options

As part of copying a drive from one hard drive to another, you can specify the following options.

Option	Description
Check source for file system errors	Check the source (original) drive for errors <i>before</i> copying it.
Check destination for file system errors	Check the destination (new) drive for errors <i>after</i> copying the drive.
Resize drive to fill unallocated space	Automatically expand the drive to occupy the destination drive's remaining unallocated space.

Option	Description
Set drive active (for booting OS)	<p>Make the destination drive the active partition (the drive the machine boots from). Only one drive can be active at a time. To boot the machine, it must be on the first drive, and it must contain an operating system. When the machine boots, it reads the partition table of the first drive to find out which drive is active and boots from that location. If the drive is not bootable or you are not certain that it is, have a boot disk ready.</p> <p>Set drive active is valid for basic disks only (not dynamic disks).</p>
Disable SmartSector copying	<p>PowerQuest's SmartSector® technology speeds up the copying process by only copying clusters and sectors that contain data. However, in some cases, such as high-security environments, it may be desirable to copy all clusters and sectors in their original layout, whether or not they contain data.</p> <p>To copy both use and unused sectors, click this option. Disabling SmartSector copying increases copying time.</p>
Ignore bad sectors during copy	<p>Copy the drive even if there are errors on the disk.</p>
Destination partition type	<p>Click Primary partition to make the destination (new) drive a primary partition.</p> <p>Click Logical partition to make the destination (new) drive a logical partition inside an extended partition.</p>
Drive letter	<p>Select a drive letter you want assigned to the partition from the Drive letter drop-down list.</p>

Preparing to Reboot the Machine After Copying Drives

After you have copied the old hard drive to the new hard drive, do the following.

- You can remove the old hard drive or keep it as a slave drive.
- Change jumper settings to make the new hard drive the master drive before rebooting the machine.

See “Preparing to Use the Copy Drives Feature” on page 62 for details about performing these tasks.

Troubleshooting

[Installation Troubleshooting](#)

[Creating Scheduled Backup Images](#)

[Checking the Status of the Agent](#)

[PQRE Troubleshooting](#)

[Error Messages](#)

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[V2i Protector Agent and Windows Services Tool](#)

[Storage Devices Supported by the PQRE](#)

[NIC Drivers Supported by the PQRE](#)

Installation Troubleshooting

I just tried to run the management console and I got an error that the dynamic link library mscoree.dll could not be found in the specified path.

You are getting this error because the Microsoft .NET Framework is not installed on the machine where the console is installed. To fix this issue, run the installation on the PowerQuest product CD and you will be prompted to install the .NET Framework. Once installed, you will be able to run the management console with no errors.

I don't know the system information that I'm required to enter.

PowerQuest includes a utility, `sysinfo.exe`, that you can run to have a list of information about your system. You can use this information to specify an IP address, drivers, and so forth when installing the PowerQuest product or setting up the PQRE.

You can also get system information directly from Windows.

- 1 Click **Start** from the Windows desktop, then click **Programs > Accessories > System Tools > System Information**.

Use the tree pane area to select the information group you want to view or print.

I need to change the account name and password for the Agent on the machine.

- 1 Open the Microsoft Services console by clicking **Start** from Window desktop.
- 2 Click **Run**, type `services.msc` in the **Open** text field, then click **OK**.
- 3 Double-click **V2i Protector** under the **Name** column.
- 4 Click the **Log On** tab.
- 5 Change the account name or password for the service.

See “V2i Protector Agent and Windows Services Tool” on page 72 for more information about the Agent service.

Creating Scheduled Backup Images

I created a backup job and set a number of backups that I wanted to maintain on the hard disk. After a while, backups stopped being created. Why?

When you create a backup job, you can specify the number of backup images you want to save on the hard disk before they are rotated out and deleted. When you use this option you must also make sure that you have enough hard disk space to accommodate the number of backup images you specify, *plus* one additional backup image. If you run out of hard disk space before the number of specified backup images is reached, the recurring backup image process will no longer function and a current backup image will not be created. The solution is to either reduce the number of recurring backup images you are creating, or increase the amount of space necessary to maintain the number of backup images you specify.

Checking the Status of the Agent

Because the Agent runs as a service, you can use the Services tool in Windows if you ever need to start, stop, configure the password, or troubleshoot the Agent. Checking the Agent in Services can be an invaluable tool to solving a problem with the software. If the Agent is not starting on a machine, you will have problems creating and restoring backups.

- 1 Open the Microsoft Services console by clicking **Start** from Window desktop.
- 2 Click **Run**, type `services.msc` in the **Open** text field, then click **OK**.
- 3 Select **V2i Protector** under the **Name** column of Services.

The Status column for V2i Protector (you may need to scroll to the right to see the column) should have “Started” listed.

- 4 To stop the service, right-click **V2i Protector** under the **Name** column, then click **Stop**.
To start the service, right-click **V2i Protector** under the **Name** column, then click **Start**.

See “V2i Protector Agent and Windows Services Tool” on page 72 for more information about the Agent service.

PQRE Troubleshooting

I can't boot from the CD.

To run the PQRE, you must be able to boot from the PowerQuest CD.

- 1 Boot your machine.
- 2 While the machine is booting, watch the bottom of the screen for a prompt that tells you how to access the BIOS. Generally, you'll need to press , <F1>, <F2>, or <F10>.
- 3 From the BIOS screen, choose the **Boot** menu.

The boot devices will be listed.

- 4 Change the CD or DVD drive to be the first boot device in the list.
- 5 Save the changes and exit the BIOS setup.

When you boot your machine with the PowerQuest CD in the drive, you will see a prompt telling you to press any key to boot from CD. If you do not press a key, your machine will attempt to boot from the next boot devices listed in the BIOS. There is only a short delay when the prompt to press a key is displayed, so you need to watch carefully as the machine boots.

- 6 Press a key, and the PQRE starts.

I can't access the local drive where my backups are saved.

You may need to load drivers for the storage device where your backups are saved as part of booting to the PQRE.

- 1 Insert the PowerQuest CD, and restart your machine.

- 2 When you see the prompt “Press any key to boot from CD” immediately press <F6>.

If you press a different key, you will not have an opportunity to load special drivers.

By pressing F6, you can add storage drivers for most SCSI devices listed at www.microsoft.com/windows/catalog. For a list of storage devices supported at the time this product was released by PowerQuest, see [“Storage Devices Supported by the PQRE” on page 77](#).

- 3 Press <S> when prompted to specify additional SCSI adapters, CD drives, or special controllers for use with Windows, including those for which you have a device support disk from a mass storage device manufacturer.

If you do not have the drivers available from the device manufacturer and they are not included as part of the PQRE, you will not be able to use that drive.

I can't access the network drive where my backups are saved.

The system where you are running the PQRE may use a NIC driver that is not included as part of the recovery environment. If you are in a corporate environment, the easiest solution may be to run the PQRE from a machine that has a different NIC.

For a list of NICs supported at the this product was released by PowerQuest, see [“NIC Drivers Supported by the PQRE” on page 78](#).

Error Messages

Backup Image Browser

Cannot initialize COM library.

The product was unable to initialize the COM subsystem. This can be caused by insufficient resources or corrupt DLLs. Reboot the system, and try to free system resources.

Cannot allocate V2i Protector mount manager instance.

The product was unable to allocate resources for the PowerQuest mount manager. This error is usually reported when the product is partially installed or some of the product's COM objects are missing or incorrectly registered. To correct this condition, reinstall the product.

Cannot retrieve drive information.

The PowerQuest mount manager did not recognize the drive as a mounted backup image. This error is most commonly reported when another process is attempting to dismount the drive. The error may also occur if the drive is corrupt. Close all PowerQuest products, and retry the dismount operation. If the problem persists, reboot the computer to allow Windows to re-enumerate all mounted drives.

Cannot dismount drive. Please verify the drive is not locked by another process.

The PowerQuest mount manager was unable to dismount the drive. To resolve the error, make sure there are no open files on the drive and that the drive is not locked (definition of drive lock) by another application.

General Error Messages

Error EC8A0001: The engine has not been initialized

This error is caused by updated firmware on QLogic drives conflicting with the QLogic driver on the PowerQuest CD. In other cases it could also be caused by any SCSI conflict with particular drivers on the PowerQuest CD.

Try loading the driver manually. See “I can’t access the local drive where my backups are saved.” on page 69 for instructions on how to do this.

If the error continues contact technical support with an SMEdump file, partinfo file, and system information file (if available). Additional log files may also be needed.

Error E0BC000A

The saved initial state for applying changes does not match the current system state.

Error E0B000C: Object BasicDisk SME~Computer~BgM896453 was in the saved state but is not in the current state.

Error E0BC000C: Object MediaCommon:Sme~computer ~Pd1~M896453 was in the saved state but is not in the state.

The preceding two error messages could be caused by changes to the serial number. It could also be caused by the drive information reporting differently.

If the restore was initially set up in Windows, but the entire system was rebooted with the PowerQuest CD, try going through the System Restore wizard on the PowerQuest CD rather than going through the restore from the console in Windows. There could be a change in the drive information in Windows 2000 versus the PQRE. If the error continues to occur during the use of the System Restore wizard from the PQRE, you should contact technical support.

E0710007 can not create a virtual volume image

Contact technical support with an SMEdump file, partinfo file, and system information file. Additional log files may also be needed.

WinBOM error when booting from PQRE

This is an issue with the NIC (Network Interface Card) driver not loading. If the backup image you want to restore is located on the network, then you will need to send the drivers and a system information file to technical support. PowerQuest will load the drivers for the customer.

The month and year are flopped on some international machines

This is an issue with some international servers. Send the .PQH files to technical support.

Getting Help for Volumes on Windows

For more information about basic and dynamic volumes, see the Microsoft Disk Management Help file (DISKMGMT.CHM). The default location for this Microsoft help file is \WINNT\HELP (under Windows 2000 Advanced, 2000, NT 4, or 2003 Server), or \WINDOWS\HELP (under Windows 2000 Professional or Windows XP Professional).

V2i Protector Agent and Windows Services Tool

The V2i Protector Agent runs as a service rather than as a desktop application. Running the Agent as a service allows scheduled backup jobs to run even if no one (or an unprivileged user) is logged on to the machine. The fact that the software runs as a service is also important when machines are being managed from a remote location; remote management is a feature of some PowerQuest products that use the V2i Technology. For example, V2i Protector Server Edition lets administrators back up servers throughout an enterprise from its centralized console. That would not be possible if the V2i Protector Agent ran as a simple desktop application. This flexibility lends power to V2i Technology.

Because the Agent runs as a service, you can use the Services tool in Windows if you ever need to start, stop, configure the password, or troubleshoot the Agent. Checking the Agent in Services can be an invaluable tool to solving a problem with the software. If the Agent is not starting on a machine, you will have problems creating and restoring backups.

Using the Services tool, you can manage the Agent in the following ways:

- Start, stop, or disable the Agent on local and remote computers. See “Starting, Stopping, or Restarting the Agent Service” on page 75.
- Configure the username and password used by the Agent. See “Selecting an Account Under Which the Agent Will Run” on page 74. (To give additional users access rights to the Agent, see “Giving Additional Users the Ability to Back Up a Machine” on page 31.)
- Set up recovery actions to take place if the Agent fails to start. For example, you can restart the Agent automatically or restart the computer (on computers running Windows XP or Windows 2000 only). See “Setting Up Recovery Actions When the Agent Fails to Start” on page 76.

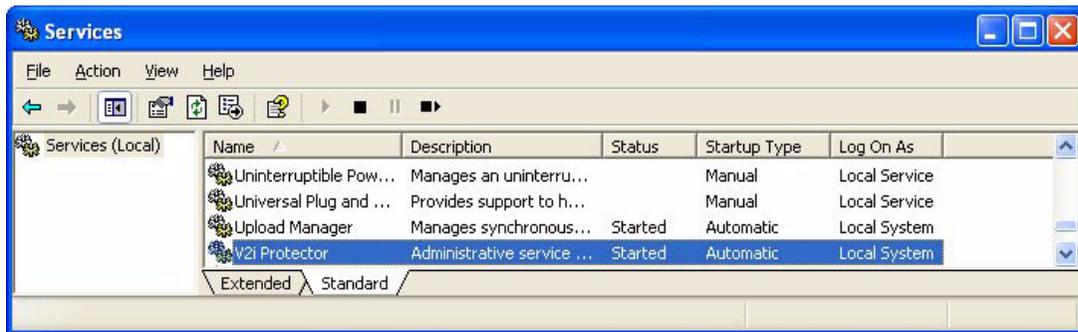
Opening Services

There are several methods you can use to open Services to view the status of the Agent. Use the method that is most convenient for you.

- 1 From the **Start** menu on the Windows desktop, click **Settings > Control Panel > Administrative Tools > Services**.

Or, from the **Start** menu on the Windows desktop, click **Run**. Type `services.msc` in the Open text field, then click **OK**.

Or, from Windows XP, click **Start > Control Panel > Performance and Maintenance > Administrative Tools**, then double-click **Services**.



- 2 Scroll the list of services until you see **V2i Protector** (the name of the Agent) under the **Name** column. Its status be “Started” (if it is not, see “Starting, Stopping, or Restarting the Agent Service” on page 75).

Best Practices for Using Services

Check the Event tab first before using Services.

The **Events** tab in the **Advanced View** of the console should be the first place you check when tracking down the source of a problem, particularly when it is associated with the Agent. Selecting the most recent log entries in the Events tab will often give you information and clues as to what is causing the problem.

Verify that the Agent is starting without user intervention.

When the Agent is installed on a machine it is configured to start automatically when the console starts. You may want to test this by opening the console to verify that the Agent can start without user intervention (the Status area in the Task pane of the console will say “Ready” when the Agent has successfully started).

You can also test that the Agent is starting automatically by looking in Services and checking the status and restarting the service if necessary. If the Startup type is set to automatic, you should try starting the Agent again (see “Starting, Stopping, or Restarting the Agent Service” on page 75).

Use caution when changing default settings for the Agent.

Changing the default settings for services might prevent key services from running correctly. It is especially important to use caution when changing the Startup Type and Log On As settings of services that are configured to start automatically.

Changing the default Agent properties may prevent the console from running correctly. In particular, you should use caution when changing the default **Startup type** and **Log On** settings of the Agent since it is configured to start and (typically) log on automatically when you open the console.

Selecting an Account Under Which the Agent Will Run

To change an account under which the Agent will run, you must be logged on as an administrator to complete the following procedure. If your computer is connected to a network, network policy settings may also prevent you from completing this procedure.

At the time of install, the Agent is configured to start automatically when the computer starts, using the username and password you specified. The Agent does all of its work, such as creating backups, as a specific user. If, for any reason, you need to change the username and password used by the Agent, you can use the Log On tab in the Agent's properties.

Some instances of when you may need to change the account under which the Agent will run include the following:

- At the time of install, you incorrectly entered a username and password because you intended to store backup images on the network. Now, when you start the console, you get an error and the console cannot see the drives on the computer.
- You want to control what account the Agent service to log on with.
- You want the Agent service to run as different user.
- The user's password has changed.
- The user's password has expired.

1 From the Services window (see "Opening Services" on page 72), select **V2i Protector** under the **Name** column.

2 Click **Action > Properties**.

3 Click the **Log On** tab.

4 Complete one of the following options:

Option	Description
To specify that the Agent log on to the local system account rather than to a user account.	Click Local System account . You will <i>never</i> have any need to select the option Allow service to interact with desktop because the Agent is <i>not</i> configured to interact with the desktop.
To specify another account.	Click This account . Click Browse to display the Select User dialog box, where you can select a user account (with local administrator rights) that the Agent uses to log on. Click OK to return to the Log On tab.

5 Type the password for the user account in the **Password** text field, then retype the password in the **Confirm password** text field.

6 Click **OK**.

IMPORTANT! The Agent will not use the new username and password you specified until you restart the Agent. To restart the Agent, see “Starting, Stopping, or Restarting the Agent Service” on page 75.

If you select an account that does not have permission to log on as a service, the Services tool automatically grants the appropriate permissions to that account on the computer that you are managing.

Starting, Stopping, or Restarting the Agent Service

To start, stop, or restart the Agent service, you must be logged on as an administrator. If your computer is connected to a network, network policy settings may also prevent you from completing this task.

Some instances of when you may need to start, stop, or restart the Agent service include the following:

- **Start** or **Restart** – If the console is unable to connect to the Agent on a machine or you cannot reconnect from the console by clicking **Reconnect** in the Task pane.
- **Restart** – You have just changed the username or password (or both) you use to logon to the Agent service.

Or, if you used the V2i Security Configuration Tool to give additional users the ability to back up machines. (See “Giving Additional Users the Ability to Back Up a Machine” on page 31 for more information.)

- **Stop** – If you believe the Agent may be causing a problem on the computer or you want to temporarily free memory resources. If you have created a backup job, note that stopping the Agent will prevent backup images from being created at the scheduled times you specified.

1 From the Services window (see “Opening Services” on page 72), select **V2i Protector** under the **Name** column.

2 Click **Action > Start, Stop, or Restart**.

IMPORTANT! Stopping the Agent service will prevent you from creating or restoring backups from the console.

If you stop the Agent service, then start the console, the Agent will restart automatically and the Status in the Task pane of the console will indicate that it is “Ready” to perform a task.

If you stop the Agent service while the console is open, you will receive an error message and the console will be disconnected from the Agent. In most cases, you can click **Reconnect** from the Task pane of the console to restart the Agent.

Setting Up Recovery Actions When the Agent Fails to Start

You can specify the computer’s response if the Agent fails to start. Recovery actions are available only on target computers that are running Windows 2000 or Windows XP.

1 From the Services window (see “Opening Services” on page 72), select **V2i Protector** under the **Name** column.

2 Click **Action > Properties**, then click the Recovery tab.

3 Select the action you want from the **First failure**, **Second failure**, and **Subsequent failures** drop-down lists.

Option	Description
Restart the Service	Specify the number of minutes to pass before an attempt to restart the service is made.
Run a Program	Specify a program to run. You should not specify any programs or scripts that require user input.
Restart the Computer	Specify how long to wait before restarting the computer by clicking Restart Computer Options . You can also create a message that you want to display to remote users before the computer restarts.

4 In the **Reset fail count after** text field, specify the number of days that the Agent must run successfully before the fail count is reset to zero.

When the fail count is reset to zero, the next failure triggers the action set for the first recovery attempt.

If you want the Agent to run correctly for several weeks between failures, you should specify a large number.

5 Click **OK**.

Viewing Agent Dependencies

The Agent depends on other required services to run properly. If a system component is stopped or is not running properly, dependent services can be affected.

An instance of when you would want to view the Agent dependencies is if the Agent fails to start; check the dependencies to ensure they are installed and that their **Startup type** (as identified in the General tab) is *not* set to **Disabled**.

- 1 From the Services window (see “Opening Services” on page 72), select **V2i Protector** under the **Name** column.
- 2 Click **Action > Properties**, then click the **Dependencies** tab.

The top list box on the Dependencies tab displays services that are required by the Agent to run properly. The bottom list box does not have any services that need the Agent to run properly.

The following table lists the three services that are required by the V2i Protector Agent to run properly, along with their default Startup type setting (as listed in the **General** tab).

Service	Startup Type
Event Log	Automatic
Logical Disk Manager	Automatic
Remote Procedure Call (RPC)	Automatic

Storage Devices Supported by the PQRE

sparrow = "Adaptec AHA-151X/AHA-152X/AIC-6X60 SCSI Adapter"
aha154x = "Adaptec AHA-154X/AHA-164X SCSI Host Adapter"
aic78xx = "Adaptec AHA-294X/AHA-394X/AIC-78XX SCSI Controller"
aic78u2 = "Adaptec AHA-294XU2/AIC-7890 SCSI Controller"
adpu160m = "Adaptec AIC-789X/AHA-3960 Ultra160 PCI SCSI Card"
afcnt = "Agilent HHBA-510x PCI Fibre Channel Controller"
dpti2o = "Adaptec 2000S/3000S Ultra160 SCSI RAID Controller"
asc3550 = "Advansys 3550 Ultra Wide SCSI Host Adapter"
asc3350p = "Advansys ABP460 PCMCIA SCSI Host Adapter"
abp480n5 = "Advansys ABP480 CardBus SCSI Host Adapter"
asc = "Advansys SCSI Host Adapter"
amsint = "AMD PCI SCSI Controller/Ethernet Adapter"
mraid35x = "AMI MegaRaid RAID Controller"
cpqarray = "Compaq Drive Array"
cpqfcalm = "Compaq Fibre Channel Host Controller"

```

cpqarry2 = "Compaq Smart Array Controller"
cpqcissm = "Compaq Smart Array 5300 Controller"
lp6nds35 = "Emulex LP6000 Fibre Channel Host Adapters"
cd20xrnt = "IBM Portable PCMCIA CD-ROM Drive"
ipsraidn = "IBM ServeRAID Adapter"
nfrd960 = "IBM ServeRAID Adapter"
i2omp = "Intelligent I/O Controller"
atapi = "IDE CD-ROM (ATAPI 1.2)/PCI IDE Controller"
cbidf2k = "CardBus/PCMCIA IDE Miniport Driver"
ini910u = "Initio Ultra SCSI Host Adapter"
tffsport = "M-Systems Flash Disk Adapter"
dac2w2k = "Mylex EXR2000,3000/AR160,170,352 Raid Controllers"
dac960nt = "Mylex DAC960/Digital SWXCR-Ex Raid Controller"
ultra = "Promise Technology Inc. Ultra IDE Controller"
hpt3xx = "HPT370 UDMA/ATA100 RAID Controller"
ql1240 = "QLogic ISP 1240 SCSI Host Adapter"
ql10wnt = "QLogic PCI SCSI Host Adapter"
ql1080 = "Qlogic QLA1080, 64 bit PCI LVD SCSI HBA"
ql1280 = "Qlogic QLA1280, 64 bit PCI LVD SCSI HBA"
ql12160 = "QLogic QLA12160, 64 bit PCI DUAL 160M SCSI HBA"
ql2100 = "QLogic QLA2000/QLA2100 PCI Fibre Channel Adapter"
ql2200 = "QLogic QLA2200 PCI Fibre Channel Adapter"
ql2300 = "QLogic QLA2300 PCI Fibre Channel Adapter"
sym_hi = "LSI Logic C896 PCI SCSI Host Adapter"
sym_u3 = "LSI Logic C1010 PCI SCSI Host Adapter"
symc810 = "LSI Logic C8100 PCI SCSI Host Adapter"
symc8xx = "LSI Logic C8xx PCI SCSI Host Adapter"
symmpi = "LSI Logic PCI Fibre Channel Host Adapter"
hpn = "Hewlett Packard NetRAID-4M RAID Controller"
perc2 = "Dell PERC 2/3 RAID Controller"
perc2gat = "Dell PERC 2/3 RAID Controller (Gatling)"
***** additional *****
lpxnds.DeviceDesc = "Emulex LightPulse PCI Fibre Channel HBA"
lpxfrt.DeviceDesc = "Emulex LightPulse PCI Fibre Channel HBA (with adjunct driver)"
DevDesc1 = "LSI Logic FC909 Fibre Channel Adapter"
DevDesc2 = "LSI Logic FC929 Fibre Channel Adapter"
DevDesc3 = "LSI Logic FC919 Fibre Channel Adapter"
DevDesc4 = "LSI Logic 1020/1030 Ultra320 SCSI Adapter"
NFRD960_FRIENDLY_NAME = "IBM ServeRAID 4Lx Device Driver"

```

NIC Drivers Supported by the PQRE

```

1394 Net Adapter
3Com 10/100 LAN PCCard-Fast Ethernet
3Com 10/100 Mini PCI Ethernet Adapter
3Com 10/100 PCI NIC w/3XP (3CR990B-TX-M)

```

3Com 10/100 PCI NIC w/3XP (3CR990B-TX-M)
3Com 10/100 PCI NIC w/3XP (3CR990-TX-95)
3Com 10/100 PCI NIC w/3XP (3CR990-TX-97)
3Com 10/100 PCI Server NIC w/3XP (3C990BSVR)
3Com 10/100 PCI Server NIC w/3XP (3CR990B-TX-M)
3Com 10/100 PCI Server NIC w/3XP (3CR990SVR95)
3Com 10/100 PCI Server NIC w/3XP (3CR990SVR97)
3Com 3C450 Fast Ethernet Adapter
3Com 3C575TX-Based CardBus Fast Ethernet Adapter (Generic)
3Com 3C900B-COMBO Ethernet Adapter
3Com 3C900B-FL Ethernet Adapter
3Com 3C900B-TPC Ethernet Adapter
3Com 3C900B-TPO Ethernet Adapter
3Com 3C900COMBO-based Ethernet Adapter
3Com 3C900TPO-based Ethernet Adapter
3Com 3C905B-COMBO Fast Ethernet Adapter
3Com 3C905B-FX Fast Ethernet Adapter
3Com 3C905T4-based Ethernet Adapter
3Com 3C905TX-based Ethernet Adapter
3Com 3C918 Integrated Fast Ethernet Controller (3C905B-TX Compatible)
3Com 3C920 Integrated Fast Ethernet Controller (3C905C-TX Compatible)
3Com 3C985 Gigabit Ethernet Adapter
3Com 3CRWE62092A Wireless LAN PC Card
3Com 3CRWE737A AirConnect Wireless LAN PC Card
3Com 3CRWE777A AirConnect Wireless LAN PCI Card
3Com 3CSOHO Fast Ethernet Adapter
3Com 656C-Based PCCard Fast Ethernet Adapter
3Com EtherLink 10/100 PCI
3Com EtherLink III ISAPNP Ethernet Adapter (Generic 3C509b)
3Com EtherLink III LAN PC Card (3C589) (Ethernet)
3Com EtherLink III LAN PC Card (3C589B/3C589C) (Ethernet)
3Com EtherLink III LAN PC Card (3C589D) (Ethernet)
3Com EtherLink Server 10/100 Dual Port A
3Com EtherLink Server 10/100 Dual Port B
3Com EtherLink Server 10/100 PCI (3C980B-TX)
3Com EtherLink Server 10/100 PCI (3C980C-TXM)
3Com EtherLink XL 10/100 PCI For Complete PC Management NIC (3C905C-TX)
3Com EtherLink XL 10/100 PCI TX NIC (3C905B-TX)
3Com Fast Etherlink III ISAPNP Ethernet Adapter (Generic 3C515Tx)
3Com Fast Etherlink ISA 10/100BASE-T4 Network Card 3Com 3C574 TX Fast EtherLink PC Card
3Com Fast Etherlink ISA 10/100BASE-TX Network Card (3C515-TX)
3Com Fast EtherLink XL PC Card (3C575-TX)
3Com FEM656-Based CardBus Fast Ethernet Adapter (Generic)
3Com FEM656B-Based CardBus Fast Ethernet Adapter (Generic)
3Com Megahertz (B) 10-100 LAN + 56K Modem (Ethernet)
3Com Megahertz (BI) 10-100 LAN + 56K Modem (Ethernet)
3Com Megahertz 10/100 LAN CardBus PC Card
3Com Megahertz 10-100 LAN + 56K Modem (Ethernet)
3Com Megahertz LAN + 56K Modem PC Card (B) (Ethernet Interface)
3Com Megahertz LAN + 56K Modem PC Card (BI) (Ethernet Interface)
3Com Megahertz LAN + 56K Modem PC Card (Ethernet Interface)
3Com Megahertz LAN PC Card (589E) (Ethernet)
3Com OfficeConnect 3CXSH572BT
82557-based Integrated Ethernet with Wake on LAN

82562EH based Phonenumber Desktop Adapter
82562EH based Phonenumber Network Connection
Accton EN1207D-TX PCI Fast Ethernet Adapter
Accton EN1208 PCI Ethernet Adapter
Accton Fast Ethernet-16 10/100 PC Card
Acer ALN-330 10/100 PCI Fast Ethernet Adapter
ACER NIC-559A PRO/100+ with Alert On LAN 2*
ACER NIC-559A PRO/100+ with WOL
ACER T62L158 PRO/100+ with Alert On LAN 2*
AcerLAN ALN-201 PCI Ethernet Adapter
AcerLAN ALN-325 10/100M Ethernet Adapter
Adaptec ANA-62011/TX 64-bit PCI Fast Ethernet Adapter
Adaptec ANA-62022 PCI Fast Ethernet Adapter
Adaptec ANA-62044 PCI Fast Ethernet Adapter
Adaptec ANA-69011 32-bit PCI Fast Ethernet Adapter
Addtron AEF-380TXD PCI Fast Ethernet Adapter (21140-AF)
ADMtek AN983 10/100 PCI Adapter
ADS USB-Ethernet Adapter
ADS USB-Ethernet Adapter
ALi PCI Fast Ethernet Controller
Allied Telesis LA100-PCI-T Z1 LAN Adapter
Allied Telesyn AT-2450v4 PCI 10Mb Ethernet Adapter
AmbiCom 10/100 Ethernet CardBus PC Card
AmbiCom 16-Bit 10Mbps Ethernet PC Card (AMB8002/AMB8002T)
AMD PCNET Family Ethernet Adapter PCI
AMD PCNET Family Ethernet Adapter/ISA+ PnP
AMD PCnet-Home Based Network Adapter (Generic)
Amertek C110TX PCI Fast Ethernet Adapter
ASANTE USB To Ethernet Adapter
ATEN USB-Ethernet Adapter
ATI AT-2500TX PCI Fast Ethernet Adapter
BCM 4412 10/100 Ethernet Network Adapter
BreezeNET Wireless LAN PC Card
Broadcom Compatible USB Phonenumber Network Adapter
Broadcom NetXtreme Gigabit Ethernet (BCM5701)
Broadcom USB iLine 10(tm) Network Adapter
BUFFALO LPC2-CLT Ethernet Adapter
Buffalo LPC2-T PCMCIA Ethernet Adapter
Buffalo LPC2-T PCMCIA Ethernet Adapter
Buffalo LPC2-T PCMCIA Ethernet Adapter
Buffalo LPC-T PCMCIA Ethernet Adapter
Buffalo WLI-PCM-L11 Wireless LAN Adapter
Cabletron DE500B PCI Fast Ethernet Adapter (21143-PC)
Cisco PC2500 DS Wireless PCMCIA LAN Adapter
Cisco PC3100 FH Wireless PCMCIA LAN Adapter
Cisco PC3500 FH Wireless PCMCIA LAN Adapter
Cisco PC4500 DS Wireless PCMCIA LAN Adapter
Cisco PC4800 DS Wireless PCI LAN Adapter
Cisco PC4800 DS Wireless PCMCIA LAN Adapter
Cisco Systems 340 Series PCI Wireless LAN Adapter
Cisco Systems 340 Series Wireless LAN Adapter
Cisco Systems 350 Series PCI Wireless LAN Adapter
Cisco Systems 350 Series Wireless LAN Adapter
Cisco Wireless ISAPNP LAN Adapter (Generic PC2500 DS)

Cisco Wireless ISAPNP LAN Adapter (Generic PC3100 FH)
Cisco Wireless ISAPNP LAN Adapter (Generic PC3500 FH)
Cisco Wireless ISAPNP LAN Adapter (Generic PC4500 DS)
Cisco Wireless ISAPNP LAN Adapter (Generic PC4800 DS)
CNet CN40BC PCMCIA Ethernet Card
CNet PRO200 PCI Fast Ethernet Adapter
CNet PRO200WL PCI Fast Ethernet Adapter
Compaq 10_100 MiniPCI Ethernet NIC
Compaq CPQTRND5 Token-Ring Adapter driver
Compaq Ethernet or Fast Ethernet NIC Driver
Compaq Ethernet PCMCIA LAN Card
Compaq Gigabit NIC Driver
Compaq Microcom 550 56k Modem + 10/100 Ethernet
Compaq NC3120 Fast Ethernet NIC
Compaq NC3121 Fast Ethernet NIC
Compaq NC3122 Fast Ethernet NIC
Compaq NC3123 Fast Ethernet NIC
Compaq NC3131 Fast Ethernet NIC
Compaq NC3132 Fast Ethernet Module
Compaq NC3133 Fast Ethernet Module
Compaq NC3134 Fast Ethernet NIC
Compaq NC3135 Fast Ethernet Upgrade Module
Compaq NC3160 Fast Ethernet NIC
Compaq NC3161 Fast Ethernet NIC
Compaq NC3162 Fast Ethernet NIC
Compaq NC3163 Fast Ethernet NIC
Compaq NC4621 PCI Token-Ring Adapter
Compaq NC6132 Gigabit Module
Compaq NC6133 Gigabit Module
Compaq NC6134 Gigabit NIC
Compaq NC6136 Gigabit Server Adapter
Compaq NC7131 Gigabit Server Adapter
Compaq NC7132 Gigabit Upgrade Module
Compaq Netelligent 10/100 PC Card
Compaq Netelligent 100 FDDI PCI DAS Fiber SC
Compaq Netelligent 100 FDDI PCI DAS UTP
Compaq Netelligent 100 FDDI PCI SAS Fiber MIC
Compaq Netelligent 100 FDDI PCI SAS Fiber SC
Compaq Netelligent 100 FDDI PCI SAS UTP
Compaq WL110 Wireless LAN PC Card
Compex FreedomLINE PCI Fast Ethernet Adapter (21143-PD)
Conexant RS7112 Network Adapter
DAVICOM 9102-Based PCI Fast Ethernet Adapter
DEC FDDIcontroller/EISA
DEC FDDIcontroller/PCI
Dell TrueMobile 1150 Series Wireless LAN Card
Dell TrueMobile 1150 Series Wireless LAN Mini PCI Card
Digi AccelePort RAS 4 Adapter
Digi AccelePort RAS 8 Adapter
Digi DataFire Prime Dual T1 ISA Adapter
Digi DataFire Prime E1 Adapter
Digi DataFire Prime T1 Adapter
Digi DataFire RAS 24 PT1 Adapter
Digi DataFire RAS 30 PE1 Adapter

Digi DataFire RAS 48 PT2 Adapter
Digi DataFire RAS 60 PE2 Adapter
Digi DataFire RAS BRI S/T Adapter
Digi DataFire RAS BRI U Adapter
D-Link DE-528 Ethernet PCI Adapter
D-Link DE-530+ PCI Ethernet Adapter
D-Link DE650 Ethernet Card PCMCIA
D-Link DE660 PCMCIA LAN adapter
D-Link DFE-500TX PCI Fast Ethernet Adapter (Rev B/C)
D-Link DFE-500TX PCI Fast Ethernet Adapter (Rev D)
D-Link DFE-500TX PCI Fast Ethernet Adapter (Rev E)
D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.A)
D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.A)
D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.B)
D-Link DFE-530TX+ PCI Adapter
D-Link DFE-538TX 10/100 Adapter
D-Link DFE-550TX 10/100 Adapter
D-Link DFE-650 Fast Ethernet PC Card
D-Link DFE-650TXD Fast Ethernet PC Card
D-Link DFE-680TXD DirectPort CardBus
D-Link DHN-120 10Mb Home Phonenumber USB Adapter
D-Link DHN-520 10Mb Home Phonenumber Network Adapter
D-Link DL10050-based Ethernet Adapter
D-Link DMF-560TXD DirectPort PC Card (LAN)
Edimax EN-9130TX(A/L) PCI Fast Ethernet Adapter
Elecom Lanced LD-CDS PCMCIA Ethernet
ELSA Airlancer MC11 High Rate Wireless LAN PC Card
Endpoints USB Ethernet Adapter
Entrega USB Ethernet Adapter
Ericsson DSSS Wireless LAN PC Card
Ericsson DSSS Wireless LAN PCI Card
Ethernet 10/100 PC Card
Ethernet 10/100 PC Card + 56Modem
Farallon USB Home Phonenumber Adapter
FE575C-3COM 10/100 LAN CardBus-Fast Ethernet
FEM656-3Com 10-100 LAN+56K Modem CardBus PC Card (Fast Ethernet)
FEM656B-3Com 10-100 LAN+56K Modem CardBus PC Card (Fast Ethernet)
FEM656C-3Com Global 10-100+56K CardBus PC Card-(Fast Ethernet)
ForeRunner PCA-200EPC ATM Adapter
ForeRunnerHE ATM Adapter
Fujitsu FMV-J182
Fujitsu FMV-J182A
Fujitsu ISAPNP Ethernet Adapter (Generic FMV18x)
Fujitsu Siemens Computers 82558-based Onboard Ethernet with WoL
Fujitsu Siemens Computers 82559-based Onboard Ethernet with WoL
Fujitsu Siemens Computers 82559-based Onboard Ethernet with WoL and AoL
Fujitsu Siemens Computers Server Onboard LAN with Intel 82558
Fujitsu Siemens Computers Server Onboard LAN with Intel 82558
Fujitsu Siemens Computers Server Onboard LAN with Intel 82559C
Genius LAN GF100TXRIII Fast Ethernet Adapter
Grey Cell 2200 Ethernet Card
HP EN1207D-TX PCI 10/100 Fast Ethernet Adapter
HP NetServer 10/100TX PCI LAN Adapter
IBM 10/100 Dual Port Server Adapter

IBM 10/100 EtherJet Integrated LAN with Alert on LAN
IBM 10/100 EtherJet PCI Adapter
IBM 10/100 EtherJet PCI Adapter with Alert on LAN
IBM 10/100 EtherJet PCI Management Adapter
IBM 10/100 EtherJet Secure Management Adapter
IBM 10/100 EtherJet Secure Management Adapter
IBM 16/4 Token-Ring Credit Card Adapter
IBM 16/4 Token-Ring PCI Adapter 2
IBM 16/4 Token-Ring PCI Adapter 2 with Wake on LAN
IBM 16/4 Token-Ring PCI Special
IBM Auto 16/4 Token-Ring Credit Card Adapter
IBM Auto 16/4 Token-Ring ISA Adapter (PnP Config)
IBM Auto Wake Token-Ring ISA Adapter (PnP Config)
IBM EtherJet PC Card
IBM Ethernet Credit Card Adapter II
IBM Gigabit Ethernet Server Adapter
IBM Gigabit Ethernet SX Server Adapter
IBM High Rate Wireless LAN Mini PCI Card
IBM High Rate Wireless LAN PC Card
IBM High-Speed 100/16/4 Token-Ring PCI Adapter
IBM Internal High Rate Wireless LAN PC Card
IBM Netfinity 10/100 Ethernet Adapter
IBM Netfinity 10/100 Ethernet Security Adapter
IBM Netfinity 10/100 Ethernet Security Adapter
IBM Netfinity 10/100 Ethernet Security Adapter 2
IBM Netfinity Gigabit Ethernet SX Adapter
IBM PCI Token-Ring Adapter
IBM PCI Wake On LAN Token-Ring Adapter
IBM Turbo 16/4 Token-Ring ISA Adapter (PnP Config)
IBM Turbo 16/4 Token-Ring PC Card
IBM Turbo 16/4 Token-Ring PC Card 2
IBM-Based Ethernet Credit Card Adapter
Intel 21040-Based PCI Ethernet Adapter (Generic)
Intel 21041-Based PCI Ethernet Adapter (Generic)
Intel 21140-Based PCI Fast Ethernet Adapter (Generic)
Intel 21143-Based PCI Fast Ethernet Adapter (Generic)
Intel 82542-based Gigabit Adapter
Intel 82543GC-based F Gigabit Adapter
Intel 82543GC-based T Gigabit Adapter
Intel 82557-based Integrated Ethernet PCI (10/100)
Intel 82558-based Integrated Ethernet
Intel 82558-based Integrated Ethernet with Wake on LAN
Intel 8255x-based Fast Ethernet
Intel 8255x-based PCI Ethernet Adapter (10/100)
Intel EtherExpress 10 ISAPNP Ethernet Adapter
Intel EtherExpress PRO/100 Mobile PC Card 16 Adapter
Intel EtherExpress (tm) PRO/100 LAN/Modem PC Card Adapter
Intel EtherExpress(TM) PRO/100 ISA Adapter
Intel EtherExpressPro 10 ISAPNP Ethernet Adapter
Intel TokenExpressPro ISAPNP Token Ring Adapter (Generic)
Intel(R) 82559 Fast Ethernet LAN on Motherboard
Intel(R) 82559 Fast Ethernet LOM with Alert on LAN 2*
Intel(R) 82559 Fast Ethernet LOM with Alert on LAN*
Intel(R) 82559 Fast Ethernet LOM with Basic Alert on LAN*

Intel(R) InBusiness(TM) 10/100 Network Adapter
Intel(R) PRO/10+ PCI Adapter
Intel(R) PRO/100 CardBus II
Intel(R) PRO/100 Desktop Adapter
Intel(R) PRO/100 Dual Port Server Adapter
Intel(R) PRO/100 LAN+Modem56 CardBus II
Intel(R) PRO/100 Network Connection
Intel(R) PRO/100 Network Connection
Intel(R) PRO/100 Network Connection
Intel(R) PRO/100 P Mobile Adapter
Intel(R) PRO/100 P Mobile Adapter
Intel(R) PRO/100 P Mobile Combo Adapter
Intel(R) PRO/100 P Mobile Combo Adapter
Intel(R) PRO/100 S Advanced Management Adapter
Intel(R) PRO/100 S Desktop Adapter
Intel(R) PRO/100 S Desktop Adapter
Intel(R) PRO/100 S Dual Port Server Adapter
Intel(R) PRO/100 S Management Adapter
Intel(R) PRO/100 S Mobile Adapter
Intel(R) PRO/100 S Mobile Combo Adapter
Intel(R) PRO/100 S Mobile LAN on Motherboard
Intel(R) PRO/100 S Network Connection
Intel(R) PRO/100 S Server Adapter
Intel(R) PRO/100 S Server Adapter
Intel(R) PRO/100 S Server Adapter
Intel(R) PRO/100 Server Adapter
Intel(R) PRO/100 SP Mobile Adapter
Intel(R) PRO/100 SP Mobile Combo Adapter
Intel(R) PRO/100 SR Mobile Adapter
Intel(R) PRO/100 SR Mobile Combo Adapter
Intel(R) PRO/100 VE Adapter
Intel(R) PRO/100 VE Desktop Adapter
Intel(R) PRO/100 VE LOM
Intel(R) PRO/100 VE Network Connection
Intel(R) PRO/100 VE Network Connection
Intel(R) PRO/100 VM Desktop Adapter
Intel(R) PRO/100 VM Network Connection
Intel(R) PRO/100 WfM PCI Adapter
Intel(R) PRO/100+ Alert On LAN 2* Adapter
Intel(R) PRO/100+ Dual Port Server Adapter
Intel(R) PRO/100+ Management Adapter
Intel(R) PRO/100+ Management Adapter with Alert On LAN*
Intel(R) PRO/100+ Management Adapter with Alert On LAN* G Server
Intel(R) PRO/100+ Management Adapter with Alert On LAN* GC
Intel(R) PRO/100+ MiniPCI
Intel(R) PRO/100+ PCI Adapter
Intel(R) PRO/100+ Server Adapter
Intel(R) PRO/100+ Server Adapter (PILA8470B)
Intel(R) PRO/1000 F Server Adapter
Intel(R) PRO/1000 Gigabit Server Adapter
Intel(R) PRO/1000 T Server Adapter
Intel(R) PRO/100B PCI Adapter (T4)
Intel(R) PRO/100B PCI Adapter (TX)
Intel(R) PRO/Wireless 2011 LAN PC Card

Intel(R) PRO/Wireless 2011 LAN PCI Card
Intel(r) PRO/100 VE Desktop Connection
Interphase 5525/5575 PCI ATM Adapter
I-O DATA ET100-PCI-R Fast Ethernet Adapter
I-O DATA ET100-PCI-S Fast Ethernet Adapter
I-O DATA PCET/TX-R Fast Ethernet Adapter
Jaton USB Ethernet Device Adapter
Kingston EtherRx KNE111TX PCI Fast Ethernet Adapter
Kingston EtherX IC PCCard Ethernet Adapter (KNE-PC2)
Kingston EtherX KNE100TX PCI Fast Ethernet Adapter (21143-PD)
Kingston Etherx PC Card Ethernet Adapter (KNE-PCM/M)
Kingston Etherx PC Card Ethernet Adapter (KNE-PCM/T)
Kingston Technology USB Ethernet Adapter
KLSI USB Ethernet Adapter
KLSI USB Ethernet Adapter
KLSI USB Ethernet Adapter
KTI KF-230TX/2 10/100 Base-TX Fast Ethernet Adapter
KTI KF-230TX/3 10/100 Base-TX Fast Ethernet Adapter
LAN83C175 EPIC/C Ethernet CardBus Integrated Controller
Legend Easy 56k Modem+10-100 Ethernet+GSM Adapter
Linksys Combo PCMCIA EthernetCard
Linksys EtherFast 10&100 + 56K PC Card (PCMLM56) (LAN)
Linksys EtherFast 10/100 CardBus PC Card
Linksys EtherFast 10/100 PC Card (PCMPC100)
Linksys EtherFast Integrated 10/100 CardBus PC Card(PCM200)
Linksys HomeLink Phoneline 10M USB Network Adapter
Linksys LNE100Tx Version 2.0 Fast Ethernet PCI Card
Lite-On Communications Compatible PCI Fast Ethernet Adapter
Lite-On Communications LC82C115-Based 10/100 Ethernet Adapter
LNE100TX Fast Ethernet Adapter Version 1.0
Macronix MX98715-Based Ethernet Adapter (Generic)
Madge 16/4 CardBus Adapter
Madge 16/4 CardBus Adapter Mk2
Madge Presto PCI
Madge Presto PCI 2000
Madge Presto PCI Plus
Madge Smart 100/16/4 PCI Ringnode
Madge Smart 100/16/4 PCI-HS Ringnode
Madge Smart 16/4 PCI Ringnode Mk2
Madge Smart 16/4 PCI Ringnode Mk3
Madge Smart 16/4 PCMCIA Ringnode
Madge Smart 16/4 PCMCIA Ringnode Mk2
Megahertz CC10BT Ethernet Adapter
Megahertz CCXJ10BT Ethernet Adapter
Megahertz CCXJEM1144 Multi-function (Network Interface)
Megahertz CCXJEM2288 Multi-function (Network Interface)
Megahertz CCXJEM3336 Multi-function (Network Interface)
MELCO LCI3-TXI Fast Ethernet Adapter
Microdyne EtherMAX 10/100 ISA Adapter
Microdyne NE10/100 ISA Adapter
Microsoft Ethernet PVC
Microsoft Ethernet PVC - RFC2684
Microsoft Loopback Adapter
Mobility USB-Ethernet Adapter

National Semiconductor DP83815-Based PCI Fast Ethernet Adapter
NatSemi-Based NE4100 Infomover Ethernet Adapter
NCR-WaveLAN Wireless LAN PC Card
NE2000 Compatible PCMCIA Ethernet Adapter (Generic)
NE2000 Compatible ISAPNP Ethernet Adapter (Generic)
NE2000 Compatible PCMCIA Ethernet Adapter (Generic)
NEC 82559-based Fast Ethernet Adapter
NEC PC-9821X-B06(PCI) or compatible/Intel 82557-based Ethernet
NEC PK-UG-X006(PCI) or compatible Fast Ethernet Adapter
Netelligent 10 T/2 PCI UTP Coax Controller
Netelligent 10/100TX PCI Embedded UTP Coax Controller
Netelligent 10/100TX PCI Embedded UTP Coax Controller
Netelligent 10/100TX PCI Embedded UTP Controller
Netelligent 10/100TX PCI Embedded UTP/AUI Controller
Netelligent 10/100TX PCI UTP Controller
Netelligent 10T PCI UTP Controller
Netelligent Dual 10/100TX PCI UTP Controller
NetFlex-3/P Controller (TLAN 1.0)
NetFlex-3/P Controller (TLAN 2.3)
NETGEAR EA101 USB Ethernet Adapter
NETGEAR EA101 USB Ethernet Adapter
NETGEAR FA310TX Fast Ethernet Adapter (NGRPCI)
NETGEAR FA311 Fast Ethernet Adapter
NETGEAR FA312 Fast Ethernet Adapter
NETGEAR FA330 Fast Ethernet Adapter
NETGEAR FA410TX Fast Ethernet PC Card
NETGEAR FA510 Fast Ethernet CardBus Card
NETGEAR PA101 USB Phonenumber10X Adapter
Network of Xircom CreditCard Ethernet 10/100 + Modem 56
Nortel BayStack Wireless PCMCIA Adapter
Nortel Networks e-mobility 802.11b Wireless LAN PC Card
Nortel Networks e-mobility 802.11b Wireless LAN PCI Card
Olicom GoCard 3250 Token-Ring 16/4 CardBus PC Card
Olicom GoCard Token-Ring PC Card (OC-3221)
Olicom RapidFire 3139 Token-Ring 16/4 PCI Adapter
Olicom RapidFire 3140 Token-Ring 16/4 PCI Adapter
Olicom RapidFire 3141 Token-Ring 16/4 PCI Fiber Adapter
Olicom RapidFire 3540 HSTR 100/16/4 PCI Adapter
Olicom Token-Ring PCI/II 16/4 Adapter (OC-3137)
ORiNOCO Wireless LAN PC Card (3.3 and 5 volt)
ORiNOCO Wireless LAN PC Card (3.3 volt)
ORiNOCO Wireless LAN PC Card (5 volt)
Ositech 4oD 10Mbps Ethernet Adapter
Ositech 7oD 10/100Mbps Ethernet Adapter
Ositech 7oS CardBus 10/100 Ethernet Adapter
Ositech JoD 10Mbps Ethernet Adapter
Ositech JoH 10Mbps Ethernet Adapter
Ositech JoS CardBus 10/100 Ethernet Adapter
OvisLink LFE-8139ATX Fast Ethernet Adapter
Ovislink PCI Ethernet Adapter
Planex FNW-9700-T Fast Ethernet Adapter
Planex FNW-9702-T Fast Ethernet Adapter
PortGear Ethernet Adapter
PortGear Ethernet Adapter

PortGear Ethernet Adapter
Portsmith Express Ethernet Adapter
PortStation Ethernet module
RadioLAN 10BaseRadio PC Card
RadioLAN/10 PC Card RadioNET Interface
Raytheon RayLink WireLess PCMCIA LAN Adapter
Realtek RTL8029(AS) PCI Ethernet Adapter
Realtek RTL8029(AS)-based Ethernet Adapter (Generic)
Realtek RTL8139 Family PCI Fast Ethernet NIC
Realtek RTL8139 Family PCI Fast Ethernet NIC
RoamAbout 802.11 DS (Cabletron)
RoamAbout 802.11 DS (Enterasys)
RocketModem II 4 Port, PCI-BUS
RocketModem II 6 Port, PCI-BUS
RocketPort-PCI 16 Port, PCI-BUS
RocketPort-PCI 2 Port, PCI-BUS
RocketPort-PCI 32 Port, PCI-BUS
RocketPort-PCI 4 Port, PCI-BUS
RocketPort-PCI 8 Port, PCI-BUS
Rubytch PCI Ethernet Adapter
RubyTech/Danpex FE-1439TX PCI 10/100 Ethernet Adapter
Samsung HomePNA 1M CNR
Samsung SEM-2000 MiniPCI LAN Adapter
Samsung SEM-2100iL MiniPCI LAN Adapter
Sierra Wireless AirCard 300 CDPD Driver
Silicom FastEthernet CardBus Adapter
Silicom USB Ethernet Adapter
Silicom USB Ethernet Adapter
Silicom USB Home Phonenumber Network Adapter
Silicom USB HomeRun Adapter
Silicom USB LongRun Adapter
SiS 900 PCI Fast Ethernet Adapter
SiS 900-Based PCI Fast Ethernet Adapter
SiS Integrated 10/100 Ethernet Controller
SMC EtherEZ 8020BT/T PCMCIA Ethernet Adapter
SMC EtherPower II 10/100 Ethernet Adapter
SMC EZ Card 10/100 PCI (SMC1211TX)
SMC EZ Card PCI 10 Adapter (SMC1208)
SMC ISAPNP Ethernet Adapter (Generic 8416)
SMSC LANEPIC CardBus Ethernet 10/100 (NDIS 5)
SMSC LANEPIC PCI Ethernet 10/100 (NDIS 5)
Socket EA Credit Card Ethernet Adapter
Socket EA Low Power Credit Card Ethernet Adapter
SOHOware 10/100 PCI Network Adapter
Sony PCWA-C100 Wireless PC Card
Sundance ST201 based Adapter NT Driver
Sundance ST201 based PCI Fast Ethernet Adapter
SURECOM EP-320X-R 100/10/M PCI Adapter
Symbol LA-41x1 Spectrum24 Wireless LAN PC Card
Symbol LA-41x3 Spectrum24 Wireless LAN PCI Card
Symbol Spectrum24 WLAN PC Card
SysKonnnect FDDI PCI Adapter (Generic)
SysKonnnect FDDI PCI Adapter SK-5521 (SK-NET FDDI-UP)
SysKonnnect FDDI PCI Adapter SK-5522 (SK-NET FDDI-UP DAS)

SysKonnnect FDDI PCI Adapter SK-5541 (SK-NET FDDI-FP)
SysKonnnect FDDI PCI Adapter SK-5543 (SK-NET FDDI-LP)
SysKonnnect FDDI PCI Adapter SK-5544 (SK-NET FDDI-LP DAS)
SysKonnnect FDDI PCI Adapter SK-5821 (SK-NET FDDI-UP64)
SysKonnnect FDDI PCI Adapter SK-5822 (SK-NET FDDI-UP64 DAS)
SysKonnnect FDDI PCI Adapter SK-5841 (SK-NET FDDI-FP64)
SysKonnnect FDDI PCI Adapter SK-5843 (SK-NET FDDI-LP64)
SysKonnnect FDDI PCI Adapter SK-5844 (SK-NET FDDI-LP64 DAS)
SysKonnnect SK-9841 Gigabit Ethernet Server Adapter (SK-NET GE-LX)
SysKonnnect SK-9842 Gigabit Ethernet Server Adapter (SK-NET GE-LX dual link)
SysKonnnect SK-9843 Gigabit Ethernet Server Adapter (SK-NET GE-SX)
SysKonnnect SK-9844 Gigabit Ethernet Server Adapter (SK-NET GE-SX dual link)
SysKonnnect SK-984x-Based Gigabit Ethernet Adapter (Generic)
TDK LAK-CB100BX for CardBus
TDK LAK-CB100BX for CardBus Driver
TDK LAK-CD031 for PCMCIA
TDK Netflyer Cardbus Fast Ethernet Adapter
Tiger Jet PCI 128K ISDN Adapter
Tiger Jet PCI 128K ISDN-S/T (A) with POT Adapter
Tiger Jet PCI 128K ISDN-S/T Adapter
Tiger Jet PCI 128K ISDN-S/T Adapter
Tiger Jet PCI 128K ISDN-U (K) Adapter
Tiger Jet PCI 128K ISDN-U (K) with POT Adapter
Tiger Jet PCI 128K ISDN-U Adapter
Tiger Jet PCI 128K ISDN-U with POT Adapter
Toshiba ATM Meteor 155 PCI Adapter
Toshiba Fast Ethernet Cardbus LAN Card
Toshiba Fast Ethernet PCI LAN Card (21142-PA)
Toshiba IPC5008A 10/100 Ethernet PC Card
Toshiba Modem+Ethernet PC Card
Toshiba Wireless LAN Card
Toshiba Wireless LAN Mini PCI Card
USB HPNA 10 Mbps Network Adapter Driver
VIA Compatable Fast Ethernet Adapter
VIA PCI 10/100Mb Fast Ethernet Adapter
VIA PCI 10/100Mb Fast Ethernet Adapter
VIA PCI 10/100Mb Fast Ethernet Adapter
VIA VT86C100A Fast Ethernet Adapter
VIA VT86C100A-Based Fast Ethernet Adapter
WebDav Client Redirector
Winbond PCI Fast Ethernet Adapter (Generic W89C840)
Winbond W89C840 PCI Fast Ethernet Adapter
Winbond W89C926 Based PCMCIA Ethernet Adapter
Winbond W89C940-Based Ethernet Adapter (Generic)
Xircom CardBus Ethernet 10/100 Adapter
Xircom CEII Performance Series PCMCIA Ethernet Adapter
Xircom CreditCard Ethernet+Modem 28.8 (Ethernet)
Xircom CreditCard Ethernet+Modem 33.6 (Ethernet)
Xircom CreditCard ISDN Adapter
Xircom Ethernet + Modem 56
Xircom Ethernet Adapter 10/100
Xircom RealPort2 Ethernet 10/100 Adapter

PowerQuest Technical Support

[Technical Support Options](#)

[Complimentary Technical Support](#)

[Fee-Based Support](#)

Technical Support Options

PowerQuest offers a variety of technical support solutions. You can choose the level of technical support that best fits your needs.

When you encounter a problem, you can often find solutions by consulting the product's online help, the quick start guide, the README file, or PowerQuest's technical support web site (www.powerquest.com/support) or by applying the most recent patch or upgrade of the software (www.powerquest.com/updates).

Technical support for PowerQuest products is available beginning with the release of the product and ending six months after the release of the next major version of the product or after PowerQuest discontinues the product line.

Complimentary Technical Support

PowerQuest's complimentary technical support consists of self-help support tools that are available at www.powerquest.com/support (in English only).

- An easy-to-use, powerful [knowledge base](#) that helps you find answers to the most frequently asked product questions, as well as “how-to” procedures and technical information about all PowerQuest products.
- Easy-to-use [video clips](#) that step you through product features.
- [Product updates and patches](#) for the most recent versions of PowerQuest products.
- A list of the [supported removable media drives](#).
- An automated e-mail form you can fill out to request written assistance from a PowerQuest technician. (Requests for e-mail support in North America are processed 8:00 am to 5:00 pm MST, Monday through Friday.) To obtain e-mail technical support for specific technical questions, fill out the form at the web site specified below.

Language	Location of E-mail Support Form
English	www.powerquest.com/support/emsupport.cfm
French	www.powerquest.com/support/emsupport.cfm?language=FR
German	www.powerquest.com/support/emsupport.cfm?language=DE

Fee-Based Support

PowerQuest's fee-based technical support program consists of live telephone support during regular business hours (8:00 a.m. to 5:00 p.m. MST, Monday through Friday).

Step-by-step consultations on product features and functionality fall under the fee-based support program.

Language	Location	Telephone Number and Fee
English	U.S.A.	800-757-5049 at \$30.00 USD per incident, charged to a credit card
English	U.K.	+44 (0)20 7341 5517 at \$30.00 USD or €34.50 (Euros) per incident, charged to a credit card
French	France	+33 (0)1 69 32 49 30 at \$30.00 USD or €34.50 (Euros) per incident, charged to a credit card
German	Germany	+49 (0)69 66 568 516 at \$30.00 USD or €34.50 (Euros) per incident, charged to a credit card

Fee-Based After-Hours Support

PowerQuest offers fee-based after-hours support by telephone only. After-hours support is designed for anyone who requires support outside of regular business hours (8:00 a.m. to 5:00 p.m. MST, Monday through Friday). The price is \$95.00 USD per incident.

Glossary

Active Directory

The directory service that stores information about objects on a network and makes this information available to users and network administrators. Active Directory gives network users access to permitted resources anywhere on the network using a single logon process. It provides network administrators with an intuitive, hierarchical view of the network and a single point of administration for all network objects.

backup image

An exact copy of a drive (either containing data or the operating system) that is usually compressed and stored as a file. A backup image file has a .V2i (Virtual Volume Image) file extension. Backup images are what you use to restore files and folders or an entire drive. A backup image is also sometimes known as an *image*, or *backup*. You can view the contents of a backup image file using Backup Image Browser.

bare metal recovery

The complete recovery of a computer after a catastrophic hard disk failure. It includes the restoration of the operating system, file system, partitions, volumes, and data, from a complete backup image (such as a .V2i file made with V2i Protector or Drive Image).

cluster

The smallest allocation unit in the FAT, FAT32, and NTFS file systems. One cluster consists of a fixed number of disk sectors.

delayed apply

Restoring an operating system partition using the Restore Drive wizard from the V2i Protector management console or from Drive Image (as opposed to using the RecoveryWizard from the PQRE).

drive lock

A request by V2i Protector or Drive Image for exclusive use of a selected drive before making any modifications to the file system of the hard drive. By locking down a drive, you prevent other software programs from changing the file system while V2i Protector is trying to change it. This ensures that any data on the drive is current and accurate at the time of restoration.

extended partition

A special kind of primary partition that was developed to overcome the four- partition limit. The extended partition is a container inside of which you can create logical partitions. The extended partition itself does not hold any data, nor is it assigned a drive letter. But logical partitions inside the extended partition can hold applications and data and are assigned drive letters.

hot backup

A backup image taken in real-time without interrupting system operation on the computer. You can create hot backups with V2i Protector or Drive Image.

hot restore

The restoration of a backup image while the server remains up and running. You can perform hot restores of data or applications with V2i Protector or Drive Image. Performing a hot restore of an operating system partition is not available.

image

See *backup image*.

logical partition

a) A contiguous area inside an extended partition that can be used by the operating system to store and retrieve files. The operating system typically assigns a letter (for example, D:, E:) to the logical drive. b) Any partition, CD, or other storage device that contains a file system and is assigned a drive letter.

mount a volume

The ability to see and use a volume within a backup image that is physically located somewhere else on the network. The volume has a drive letter assigned to it, so it looks like it is a part of the local computer system. Though a mounted volume is read-only, you can open files and folders, scan for viruses, and even run some executables from within a mounted volume.

primary partition

A partition referenced in the master boot record (MBR) partition table. Only four primary partitions can exist on a hard disk. One of these may be an extended partition. Only one primary partition on a drive may be active at a time. When one primary partition is active, the other primary partitions are typically not accessible. Data and programs are often placed on a logical partition inside an extended partition. This enables the data to be accessed by all primary partitions.

protect drive

Protecting a drive means the drive is placed under the full-time protection of the Agent. When you protect a drive, you are specifying a schedule for creating consistent backup images, the backup image storage location, and any backup storage options you want.

PowerQuest Recovery Environment (PQRE)

A graphical, secondary boot environment (or operating system) that gives you the minimal functionality needed to access backup image files on your network and restore them. This environment is typically used when a drive cannot be restored from within Windows or when the machine has suffered a catastrophic failure and you need to restore the entire hard drive. For more information on PowerQuest Recovery Environment, see the online help topic *How Does the PowerQuest Recovery Environment Work?*

remote machine

A computer that is physically located somewhere else on a network but is accessible from a local computer.

service

A program, routine, or process that performs a specific system function to support other programs, particularly at a low (close to the hardware) level. The V2i Protector Agent is an example of a service.

.sv2i

An index file is saved as part of a backup image in the same folder where the backup image resides. It stores information about the drive and its location. When you specify a .sv2i file during a restore, you do not need to specify where to restore the backup image file since that information is already contained in the index file.

UNC (Universal Naming Convention)

A method used to identify folders, files, and programs on a network computer. A UNC path begins with two backslashes \ and is followed by the server name, the share name, and usually the directory and/or the filename. For example, \\server_name\share_name\backup_name.v2i

.v2i

A backup image is saved with the .v2i extension. The .v2i file includes all the data (operating system, applications, data, and settings) needed to restore the drive to the state it was in when the backup was performed.

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