



Norton Ghost^{10.0}TM

User's Guide

Norton Ghost User's Guide

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Appendix B Service and support solutions

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Responding to emergencies

1

About responding to emergencies

If you have an emergency, such as lost or corrupted files or folders, or you cannot start Windows, review this chapter for steps you can take to restore files, folders, or your entire computer.

If you have been running Norton Ghost for very long, it is very likely that you have a backup you can use to restore your computer back to a time before the problems occurred.

Deciding what action to take

Review the following table to determine which action you can take to solve your emergency:

Problem	Recovery method
You can start Windows on the computer, but you have lost files, folders, programs, or hardware files on a drive (excluding Windows files).	Recover selected files and folders from within Windows using a current recovery point. See "About recovering files or folders" on page 81.

Problem	Recovery method
You can start Windows on the computer, but you have lost a secondary drive, such as a D or E drive.	Recover a drive from within Windows using a current recovery point. See "About Recovering a drive" on page 89.
You cannot start Windows, but you know which files you need to recover your computer.	Recover selected files and folders from within the Symantec recovery environment using a current recovery point. See "Recovering files and folders from the recovery environment" on page 104.
You cannot start Windows and you do not know the cause.	Recover your entire computer from within the Symantec recovery environment using a current recovery point. See "Recovering your computer" on page 93.

You should also review the troubleshooting section for solutions to many common problems.

See ["Troubleshooting Norton Ghost"](#) on page 125.

Feature summary

2

Overview

Norton Ghost provides advanced backup and recovery for your computer. Protect your documents, financial records, photos, music, videos, historical documents, or any other kinds of data you keep on your computer by making a backup of your computer's entire hard disk.

You can schedule backups to run automatically. Then, at any time, easily restore individual files, folders, or your entire computer.

What's new in Norton Ghost

Norton Ghost 10 includes many enhancements and new features.




If you are familiar with earlier versions of Norton Ghost, review the readme file for information about changes in product terminology. For example, image files are now referred to as *recovery points*.

See "[Viewing the Readme file](#)" on page 43.

Refer to the following table for information about the latest features and enhancements:

Feature	Description
Enhanced ease-of-use	An improved user interface simplifies what you need to know and do to successfully back up or recover files, folders, or your entire computer.
Easy Setup	After activating your product, the Easy Setup dialog appears automatically. Specify a few preferences and Norton Ghost starts backing up your computer on a regular basis.
One-click backup	Quick access to your list of defined backups where you can select a specific backup and then start the backup with a single click. This feature is also available from the Norton Ghost system tray menu.
Simplified schedule editor	You can now easily edit your existing backup schedules without having to click through multiple dialogs or complete the entire backup wizard again.
Recovery points	Recovery points represent points in time. If you need to set your computer back a week to when it was working better, choose the recovery point created one week ago.
Optimize recovery point storage	Because recovery points require storage space, Norton Ghost gives you the freedom of where and how to handle the amount of disk space used for storing recovery points. Norton Ghost offers simple tools for managing your recovery points, and can even manage them for you automatically.

Feature	Description
Backup and recovery status	Now there is a single place you can go to see how protected each of your computer's hard drives really are. Then you can increase or decrease the amount of protection a drive has; an excellent method for ensuring the drives you use most are completely protected when data loss happens.
Automatic recovery point storage detection	Norton Ghost automatically detects when a new storage device is connected to your computer, and can prompt you to change your default recovery point storage location to the new drive.
Browse files and folders inside a recovery point	Enhanced browsing of files and folders inside recovery points, making recovery quick and easy.
Event-triggered backups	In addition to scheduled and manual backups, Norton Ghost can detect certain events and run a backup automatically whenever they occur, providing an added level of protection for your computer.
Performance throttling	Manually adjust the effect of a running backup on the performance of your computer to better match your needs at the moment. This feature is especially useful if you are working on your computer and don't want the backup process to slow you down.
Encryption for recovery points	Encrypt recovery points and assign a password as a means of securing your information from intruders.

Feature	Description
Maxtor OneTouch™ integration	If you have a Maxtor OneTouch™ external hard drive, you can back up your computer with the push of a button. No need to start Ghost.
Enhanced Symantec Recovery Disk	When you cannot start Windows, the newly enhanced Symantec Recovery Disk (SRD) makes recovery easier than ever. Recovering your computer is more intuitive and requires fewer steps.  If you purchased Norton Ghost pre-installed on a new computer, some features in the recovery environment may or may not be included, depending on how the computer manufacturer chose to install it. The recovery environment has likely been pre-installed on a special partition on your computer.

How Norton Ghost works

Norton Ghost backs up your computer by taking a snapshot of your computer's entire hard disk. Each snapshot is stored on your computer as a *recovery point*—a point in time used to restore your computer (or individual files or folders) back to the way it was when the recovery point was created.

When you use Norton Ghost, you typically perform one or more of the following basic tasks:

- [Define a backup](#)
- [Run a backup](#)
- [Manage recovery point storage](#)
- [Recover files or folders](#)
- [Recover an entire computer](#)

Define a backup

When you install Norton Ghost and run it for the first time, the Easy Setup dialog box appears. From there, you define your first backup.

Defining a backup requires that you specify certain settings that determine how and when the backup is run. Key settings you must define when defining a new backup, either from the Easy Setup dialog, or from the Define Backup Wizard, include the following:

Settings	Description
Name	Because you can create multiple backups, specifying a name helps you identify a backup within a list of backups. For example, "Backup of C:" might be a name you assign to a backup that backs up your computer's C drive.
Start time	Choosing when a backup will run is important since a backup cannot run if your computer is turned off.

Settings	Description
Recovery point storage location	Each time a backup runs, it creates a new recovery point. While you can specify a default location for recovery points, you can also specify an alternate location. Whatever location you specify is where recovery points will be created the next time the backup is run.
Event-triggered backups	An event is an action that either you perform or that the computer performs. Norton Ghost can be set up to run a backup when an event occurs. For example, a backup can run each time you install new software onto your computer. This allows you to recover from an installation of a product that might cause problems on your computer.

Run a backup

A defined backup can be run manually or automatically, according to a schedule that you set up. Schedules can be set up either when you first define a backup or added to the backup at a later time.

While a backup is running, you can continue to work. However, depending on the amount of data that is being backed up and the number of programs you have running on your computer, you might need to reduce the speed of the backup in order to free up system resources for use by the programs you are using.

When the backup is complete, a message appears above the system tray to let you know that the backup was complete and successful.

Manage recovery point storage

Over time, your recovery point storage location can be used up. However, Norton Ghost includes powerful

features for managing your recovery point storage location, including the ability to archive them to a hard drive, a USB or FireWire drive, a network drive, or to removable media, such as a writable DVD or CD.

Recover files or folders

When it becomes necessary to recover folders, files, or your entire computer, Norton Ghost makes it quick and easy.

By letting you browse through the contents of recovery points, it is as if you are looking at the original files and folders that existed on your computer when the recovery point was created.

You can then select the files or folders to recover and restore them to your computer in seconds.

Advanced features let you search files and folders in a recovery point and then drag and drop them out of the recovery point into a folder on your computer. You can even mount a recovery point as if it were another drive on your computer and share it over a network. Files and folders can then be restored over your network.

Recover an entire computer

If you must restore your entire computer, simply put your Norton Ghost CD into your computer's CD/DVD ROM drive and restart your computer to start the Symantec recovery environment.

The Symantec recovery environment lets you browse to one of your recovery points and start the recovery process. Within minutes, your computer restarts and is restored back to the date and time the recovery point you chose to use was first created.

Installing Norton Ghost

3

System requirements

Your computer must meet the following minimum requirements:

Operating system	Windows 2000 SP4 or later, XP Home, or XP Pro Other operating systems are supported by Norton Ghost See " Support for older Windows versions " on page 24.
Processor	Pentium 233 MHz
RAM	128 MB for Norton Ghost running on Windows 2000/XP 256 MB for Symantec Recovery Disk Additional computer memory might be required when recovering your computer across a network from within the Symantec recovery environment.
Hard disk free space	45 MB for program files and an additional 40 MB for the Microsoft .NET 1.1 Framework, if it is not already installed Storage space for your recovery points, unless you choose to store them to an alternate locations, such as a network computer or external hard disk.
DVD+R/RW, DVD-R/RW, and CD-R/RW drives	Any speed See a supported drives list at http://service1.symantec.com/SUPPORT/powerquest.nsf/docid/2004030176699562

Software	Microsoft .NET Framework. After registration and when you open the Easy Setup dialog, you are prompted to install .NET if it is not already installed on the computer.
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Supported file systems and removable media

Norton Ghost supports the listed file systems and removable media.

File Systems	Norton Ghost is supported on FAT16, FAT16X, FAT32, FAT32X, NTFS, dynamic disks, Linux Ext2, Linux Ext3, and Linux swap partitions.
Removable Media	<p>Norton Ghost supports the saving of recovery points locally (that is, recovery points that are created and saved on the same computer where Norton Ghost is installed) to most CD-R, CD-RW, DVD-R(W), and DVD+RW recorders on the market today.</p> <p>For an updated list of supported drivers, see the supported drives list at http://service1.symantec.com/SUPPORT/powerquest.nsf/docid/2004030176699562.</p> <p>It also supports saving recovery points to most USB devices, 1394 FireWire devices, JAZ, Zip, SuperDisk, and magneto-optical devices.</p> <p>Norton Ghost does not support RAM drives.</p>

Support for older Windows versions

Norton Ghost 10 does not run on Windows 9x, Windows Me, or Windows NT Workstation 4.0. If you have one of these operating systems, you should use Norton Ghost 2003, which is also included in the retail version of Norton Ghost.

For Norton Ghost 2003, your computer must meet the following minimum requirements:

Operating system	<p>Windows 9x/ME/NT Workstation 4.0</p> <p>Norton Ghost 2003 can also run under Windows 2000 Professional with 64 MB RAM and Windows XP Professional or Home with 128 MB RAM</p>
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Processor	Pentium-compatible processor
RAM	32 MB
Hard drive space	35 MB
CD drive	Any speed
Floppy disk drive	High-density

Installing Norton Ghost

Install Norton Ghost from the Norton Ghost CD.

If you have not already done so, close all other Windows programs.

To install Norton Ghost

- 1 Uninstall any previous versions of Norton Ghost or Drive Image.
- 2 Plug in any USB storage devices you might want to use to store backups.
- 3 Insert the CD into the CD-ROM drive.
If the CD does not start automatically, double-click **AUTOEXEC.EXE** on the Norton Ghost 10 CD.
- 4 In the Norton Ghost window, click **Install** Norton Ghost.
- 5 In the Welcome window, click **Next**.
If the install detects a previous version of Norton Ghost or Drive Image on your system, you must first uninstall the software before you can install Norton Ghost 10.
Norton Ghost 10 can restore backup images created using Norton Ghost 9 and Norton Ghost 2003. If you want to keep your original schedules associated with backup jobs from an older version of Norton Ghost, including Drive Image, be sure to indicate during uninstall that you want to keep existing backups.

- 6 Read the license agreement, then click **I accept the terms in the license agreement**.
If you decline, you cannot continue with the installation.
- 7 Click **Next**.
- 8 Confirm the installation location, and then click **Next**.
- 9 Click **Install** to begin the installation.
- 10 Click **Finish** to complete the installation.
- 11 After installation, click **Yes** to restart your computer.

After installation

At the end of installation and after your computer restarts, you are asked to activate your product and to specify a few basic settings that are used to define your first backup.

- [Activate your product](#)
- [Set up your first backup](#)
- [About the Symantec recovery environment](#)

Activate your product

Product activation is a technology that protects users from pirated or counterfeit software by limiting use of a product to those users who have acquired the product legitimately.

Product activation takes less than a minute to complete.

If you choose not to activate the product when prompted, you will receive alerts that will remind you to activate the product. Activation should take just a few minutes.



You must activate the product within fifteen (15) days after installing it.

If you do not activate the product within the time period specified by the alerts, the product will stop working. You can activate it after the time period has elapsed, but you will not be protected until you do.

Activation requires sending a unique product key to Symantec servers for each installation of the product.

To activate your product at the end of installation

- 1 After your computer restarts at the end of the installation process, click **Next** on the Norton Ghost Welcome screen.
- 2 Select one of the following options:

Activate and register your product now (recommended).	Requires you to fill out registration information, such as your name and contact information. You are then required to enter your product activation key.
Activate your product now, but skip registration.	Skips the registration screens and prompts you for your product activation key.
Activate later.	Reminds you that you have 15 days until you must activate the product, after which time the product will no longer function. See "If you choose to activate later" on page 28.

- 3 When prompted, enter your activation key.
If you are unsure where to find your product key, see [Locate the product key](#).
- 4 After submitting your activation key, click Finish to open the Easy Setup dialog, which helps you define your first backup.
See ["Set up your first backup"](#) on page 28.

Locate the product key

The product key can most frequently be found on a sticker on your CD sleeve. If it is not there, then it will be on an insert in your product package. If you have purchased the product on DVD, look for the sticker on your DVD package. If you have downloaded the product from the Symantec Store, the product key is stored on your computer as part of the download process. Or, if you

purchased the product as part of your computer purchase, a temporary key is used by the computer manufacturer. At the time you activate your product, you will be issued a permanent key, which you should keep for future reference.

If you choose to activate later

If you choose not to activate during the Configuration Wizard, you can activate it later from within Norton Ghost.



If you do not activate the product within 15 days of installing it, the product will stop working. However, you can still activate the product after the 15 days have elapsed.

To activate Norton Ghost after installation

- 1 Start Norton Ghost.
- 2 On the Status panel, click **Activate Product** and follow the on-screen prompts.
- 3 When prompted, enter your product key. See [“Locate the product key”](#) on page 27.

Set up your first backup

After you activate and register your product, the Easy Setup dialog appears where you can quickly define your first backup.

To define your first backup

- 1 In the Easy Setup dialog box, enter a name for your first computer backup.
- 2 In the Start Time field, specify the time of day that the backup should start.
- 3 Specify the path to where recovery points created by your backup are to be stored.
- 4 If you want a recovery point created any time a new software application gets installed, select the first option.
- 5 If you want the new backup to run immediately, select the second option.

About the Symantec recovery environment

To ensure that you can access the recovery environment in the event that you need to restore your entire computer system, you should start the Symantec recovery environment. See [“Starting your computer using the recovery environment”](#) on page 94.

If the recovery environment does not run as expected, you can take action early to fix the problem. Then if your backed up computer experiences a catastrophic failure later and Windows does not start, you will be assured that you can run the recovery environment to recover the system or your data.

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

Here are the most common errors that you may see when you are having problems starting your computer from the Symantec Recovery Disk:

Your computer must be able to start from the Norton Ghost CD where the recovery environment is stored.	See “Cannot start the computer from the CD” on page 131.
You must have the necessary storage drivers to access your backups for a restore.	See “Cannot access the local drive where my backups are saved” on page 132.
You must have the necessary NIC drivers to access files on a network.	See “Cannot access the local drive where my backups are saved” on page 132.
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 125.

Norton Ghost basics

4

Starting Norton Ghost

You can start Norton Ghost from the Windows taskbar or from the Windows system tray.

To start Norton Ghost

- ❖ Do one of the following:
 - On the classic Windows taskbar, click **Start > Programs > Norton Ghost > Norton Ghost**.
 - On the Windows XP taskbar, click **Start > All Programs > Norton Ghost > Norton Ghost**.

Starting Norton Ghost from the system tray

Norton Ghost adds an icon to the Windows system tray. By default, the Norton Ghost tray icon appears in the lower-right corner of your computer monitor on the Windows taskbar.

To start Norton Ghost from the system tray

- 1 In the Windows system tray, double-click the Norton Ghost tray icon.

Using the Norton Ghost system tray menu

From the tray icon, you can quickly access the following Norton Ghost tools and information:

- Create an immediate backup of one or more drives
- Define a new backup
- Edit existing backup schedules

Finding your way around Norton Ghost

- Restore your entire computer
- Restore individual files and folders
- Start Norton Ghost
- View the progress and performance of a currently running backup
- Cancel a currently running backup
- Display the product license and version number
- Check the backup and recovery status of your computer

To display the tray icon menu

- ❖ Right-click the tray icon to display a quick menu of frequently used Norton Ghost tools.

Finding your way around Norton Ghost

Norton Ghost 10 is designed to do most of the work of backing up your computer for you. After initial setup, Norton Ghost can back up your entire computer on a regular basis.

However, there are many features you can use at any time to ensure that your data is backed up and that your backups are being managed in a way that works for you.

For example, you might have just created some critical documents or installed new software. You can use the Back Up Now feature to start a backup immediately to ensure that you have backed up the work. Or you might want to adjust the schedule of your backups, change the location of where your recovery points are stored, or clean up older backups that are taking up valuable hard disk space.

Finding your way around Norton Ghost

Here are the three primary views, or panels, within Norton Ghost:


Backup	Gives you access to all key backup features of Norton Ghost needed for configuring, scheduling, and backing up your computer.
Recovery	Lets you restore your entire computer back to a date and time when it was working normally, restore files and folders, and explore, manage, and optimize recovery points.
Status	Gives you information about your computer's backup and recovery protection status so that you can make sure your computer is backed up.

Backup panel

The Backup panel groups all of the key backup features for configuring, scheduling, and backing up your computer.

The Backup panel appears as the first screen when you start Norton Ghost and gives you access to the following key backup features:

Back Up Now	Opens a list of currently defined backups where you can run one immediately, or define a new backup.
Edit My Backup Schedules	Opens Edit Backup Schedules where you can edit schedules you have defined in current backups, or schedules that were automatically defined for you during the initial setup of Norton Ghost.

View Progress and Performance	<p>Displays the progress of any backup that is currently running and lets you adjust the performance speed of the backup. Adjusting the backup speed affects the performance of your computer during the backup. If you are working on your computer and don't want the backup to affect the speed of your computer, you can set the backup speed to slow, freeing up most of the computer's resources being used by the backup process.</p>
Copy My Hard Drive (Advanced)	<p>When you need to install a new hard disk (or a second hard disk), this feature copies all existing files, programs, and settings directly onto the new disk.</p> <p> If you are using a trial version of Norton Ghost 10, this feature is not available. To use this feature, you must purchase a fully licensed version of Norton Ghost 10.</p>

Recovery Panel

The Recovery panel groups all of the key recovery features for recovering files, folders, or your entire computer. It also lets you explore recovery points using Microsoft Explorer, as well as optimize the hard disk space being used for storing recovery points of your computer.

Finding your way around Norton Ghost

The Recovery panel gives you access to the following key recovery features:

Recover My Computer	Restores your computer to a specific day and time when it was working correctly.
Recover My Files	Recovers files or folders you choose from within a recovery point that have been lost, damaged, changed, or accidentally deleted.
Explore Recovery Points (Advanced)	Lets you explore the files and folders stored in an existing recovery point using Microsoft Explorer.
Optimize Recovery Point Storage	Optimizes the hard disk space being used for storing recovery points of your computer.

Status panel

The Status panel provides information about how well protected your computer is by indicating how many recovery points exist for each of your computer's hard drives, and identifies the last time a recovery point was created. It also provides an event log, which displays information, errors, or warnings that occur.

The Status panel contains the following key status features:


Check Backup and Recovery Status	Displays backup and recovery protection status in a single view.
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View Event Log	Displays information, errors, and warnings that occur within the product.
Purchase the Product	<p>If you are using an evaluation copy of Norton Ghost, this option indicates how many days remain for the trial period, and also provides easy online access for purchasing a licensed copy of the product.</p> <p>After you have upgraded, this option changes to show your new product license.</p>

Configuring Norton Ghost default options

The Options dialog box includes four tabs that let you configure the following default settings:

Tab	Description
Settings	<p>Specify a default location where a backup will create and store recovery points. If the location where you want to create your recovery points is on a network, you can enter your user authentication information.</p> <p>See "Selecting a default recovery point storage location" on page 37.</p>
Notifications	<p>If you want a history of actions taken by Norton Ghost, or of error messages and warnings, you can choose to save them in a log file on your computer, or to have them emailed to an address you specify.</p> <p>See "Enabling email notifications" on page 38.</p>

Tab	Description
Performance	<p>Lets you specify a default speed for backup or recovery processes. Moving the slider closer to Fast increases the speed at which the program backs up or recovers your computer. However, choosing a slower speed could improve the performance of your computer, especially if you are working on your computer during a backup or recovery.</p> <p> During a backup or recovery, you have the option to override this default setting to fit your needs at the time.</p>
Tray Icon	<p>You can turn the system tray icon on or off and specify whether to show only error messages when they occur, or to show both error messages and other information, such as the completion of a backup.</p>

To configure default options

- 1 Start Norton Ghost and click **Options**.
- 2 Select a tab containing the options you want to modify, make any necessary changes, and then click **OK**.

Selecting a default recovery point storage location

You can specify the default location for storing recovery points created when you run a backup. This default location is used if you do not specify a different location when you define a new backup.

Configuring Norton Ghost default options



After installation, when the Easy Setup dialog appeared, you should have specified a default recovery point storage location.

To set a default recovery point storage location

- 1 On the menu bar, click **Options**.
- 2 Click the **Settings** tab.
- 3 Enter a path to a default location for recovery points, or click **Browse** to look for a location.
- 4 If you entered the path to a location on a network, enter the user name and password required to authenticate to the network.
- 5 Click **OK**.

See "About selecting a recovery point storage location" on page 58.

Enabling email notifications

Email notifications can be sent to a specified email address if there are any errors or warnings that occurred when a backup is run.



If you do not have an SMTP server, this feature is unavailable to you.

All notifications are automatically sent to the system event log and a custom log file located in the Agent folder of the product installation.

If notifications are not being delivered, check the setup of your SMTP server to ensure that it is functioning properly.

To enable email notifications

- 1 On the main menu bar, click **Options**.
- 2 Click the **Notifications** tab.
- 3 Select **SMTP E-mail** from the Notifications Are Sent to the Following list, and then click **Properties**.
- 4 Select one or more of the following options:
 - Errors
 - Warnings
 - Information

- 5 In the To address text box, type the email address (for example, admin@domain.com) where notifications are to be sent.
- 6 If desired, type the email address of the sender in the From address text field.
If you do not specify a From address, the name of the product will be used.
- 7 In the SMTP server text box, type the path to the SMTP server that will send the email notification (for example, smtpserver.domain.com).
- 8 From the SMTP Authentication drop-down box, select the method to use to authenticate to the SMTP server specified above.
- 9 Click **OK**.

Adjusting the effects of a backup on computer performance

If you are working on your computer when a backup is running—especially one that is creating an independent recovery point—your computer might slow down. This is because Norton Ghost is using your computer’s hard disk and memory resources to perform the backup.

However, you can actually modify the speed of the backup as a way of minimizing the impact of Norton Ghost on your computer while you work.

To adjust my computer’s speed during a backup

- 1 On the main menu bar, click **Options**.
- 2 Click the **Performance** tab.
- 3 If you want to improve your computer’s speed performance, move the slider bar closer to Slow.
- 4 If you want the backup to complete more quickly, move the slider bar closer to Fast.
- 5 Click **OK**.



During a backup or recovery, you’ll have the option of overriding this default setting to fit your needs at the time.

See “Adjusting the speed of a backup” on page 65.

Enabling network throttling

Similar to computer performance adjustments, you can also limit the impact of a backup on network performance.

To enable network throttling

- 1 On the main menu bar, click **Options**.
- 2 Click the **Performance** tab.
- 3 Check **Enable network throttling**.
- 4 Click **OK**.

Adjusting default tray icon settings

You can turn the system tray icon on or off and specify whether to show only error messages when they occur, or to show both error messages and other information, such as the completion of a backup.

To adjust default tray icon settings

- 1 On the main menu bar, click **Options**.
- 2 Click the **Tray Icon** tab and select one of the following:

Show system tray icon	Displays the Norton Ghost icon in the system tray.
Only show error messages	Displays only error messages as they occur.
Show all status and error messages	Displays all messages as they occur.

- 3 Click **OK**.

Viewing the backup and recovery status of your computer

You can view the backup and recovery status of your computer to determine the current level of protection for each of the drives on your computer.

This is an excellent method for making sure your backups are current so that you are prepared to recover your computer from potential problems.

See [“Monitoring the status of your backups”](#) on page 69.

Browsing recovery points

You can actually view the files and folders contained within recovery points, restore individual program and data files and folders, and even mount a recovery point to make it appear as an actual drive that can be shared across a network.

See [“About recovering files or folders”](#) on page 81.

You can use additional, more advanced recovery point browser features included with Norton Ghost.

See [“Advanced exploring of recovery points”](#) on page 85..

Keeping current with LiveUpdate

Using your Internet connection, you can use LiveUpdate to obtain program updates for your computer.

Program updates are minor improvements to your installed product. These differ from product upgrades, which are newer versions of entire products. Program updates that have self-installers to replace existing software code are called patches. Patches are usually created to extend operating system or hardware compatibility, adjust a performance issue, or fix bugs.

LiveUpdate automates the process of obtaining and installing program updates. It locates and obtains files

from an Internet site, installs them, and then deletes the leftover files from your computer.

When you should update

Run LiveUpdate as soon as you have installed your product. Once you know that your files are up-to-date, run LiveUpdate periodically to obtain program updates. For example, to keep all installed Symantec products current, you may want to use LiveUpdate once a week. Program updates are released by Symantec on an as-needed basis.

Obtaining updates using LiveUpdate

LiveUpdate checks for updates to all of the Symantec products that are installed on your computer.

To obtain updates using LiveUpdate

- 1 At the top of the main window, click **LiveUpdate**.
- 2 In the LiveUpdate window, click **Next** to locate updates.
- 3 If updates are available, click **Next** to download and install them.
- 4 When the installation is complete, click **Finish**. Some program updates may require that you reboot your computer before the changes will take effect.

Obtaining updates from the Symantec Web site

When new updates become available, Symantec posts them on the Symantec Web site. If you can't run LiveUpdate, you can obtain new updates from the Symantec Web site.

Visit <http://www.symantec.com/downloads/>.

For more information

The product documentation provides glossary terms, online Help, a Readme file, and the User's Guide in PDF format.

- [Using online Help](#)
- [Viewing the Readme file](#)
- [Accessing the User's Guide PDF](#)

Using online Help

Help is available throughout your Symantec product. Help menus to more information provide information related to the dialogs you are currently using. The Norton Ghost Help menu item on the Help and Support menu (accessed from the main Norton Ghost panel) provides a comprehensive guide to all of the product features and tasks that you can complete.

To use online Help

- 1 At the top of the main window, click **Help & Support > Norton Ghost Help**.
- 2 In the Help window, in the left pane, select a tab. Your options are:

Contents	Displays the Help by topic
Index	Lists Help topics in alphabetical order by key word
Search	Opens a search field in which you can enter a word or phrase

Viewing the Readme file

The Readme file contains information about installation and compatibility issues. It also contains technical tips and information about product changes that occurred after this guide went to press. It is installed on your hard drive in the same location as the product files.

To read the Readme file

- 1 In Windows Explorer, double-click **My Computer**.
- 2 Double-click the hard disk on which you installed Norton Ghost 10.
In most cases, this will be drive C.
- 3 Click **Program Files > Norton Ghost > Shared**.

- 4 Double-click **Readme.txt**.
The file opens in Notepad or your default word processing program.
- 5 Close the word processing program when you are done reading the file.

Accessing the User's Guide PDF

The *Norton Ghost User's Guide* is provided on the CD in PDF format. You must have Adobe Acrobat Reader installed on your computer to read the PDF.

To read the User's Guide PDF from the CD

- 1 Insert the CD into the CD drive.
- 2 Using Windows Explorer, double-click the **\Docs** folder on the CD.
- 3 Double-click **UserGuide.pdf** to open the Norton Ghost user's guide.
You can also copy the User's Guide to your hard disk and read it from there.

Backing up your computer

5

Best practices for backing up

You can manually back up your computer at any time by running a defined backup. But you can also configure a defined backup to run automatically on a regular basis.

To save you time and to ensure a reliable backup strategy, review these sections as you prepare to back up your computer.

- [Before backing up](#)
- [During a backup](#)
- [After defining your backup](#)

Before backing up

Before defining and running your first backup, consider these best practices:

Best practice	Explanation	How to
Schedule backups when you know your computer will be turned on.	Your computer must be running for a backup to run.	See "Defining a new backup" on page 49. See "Editing a backup schedule" on page 66.

Best practice	Explanation	How to
Use a secondary hard disk as your recovery point storage location	Storing recovery points on a hard disk other than your primary hard disk, such as C, is the most secure method of ensuring you can recover in the event that your primary hard disk fails.	See “About selecting a recovery point storage location” on page 58.
Run backups on a regular (frequent) basis	When you define your backups, schedule them to run frequently so that you have recovery points that span at least the last two months.	See “Editing a backup schedule” on page 66. See “Running an existing backup immediately” on page 55. See “Enabling event-triggered backups” on page 57.
Define one backup for each drive	When defining backups, you should define one backup for each drive. For example, define a scheduled backup for C, another scheduled backup for D, and if you have a E drive on your hard disk that you rarely use, you might set up a manual backup that you can run whenever you think it necessary.	See “Defining a new backup” on page 49. See “Running an existing backup immediately” on page 55.

Best practice	Explanation	How to
<p>Keep your personal data and programs on a separate drive from where Windows is installed</p>	<p>Separating Windows from your own data speeds the creation of recovery points and reduces the amount of information that could need to be restored. For example, keep C as your Windows drive and then use D as your data drive where you install new programs and store files and folders you create.</p>	<p>If you're computer already has a secondary drive that has a large amount of disk space available, you can adopt this strategy today.</p> <p>If your computer is not set up this way, you can use Norton PartitionMagic to resize your C drive and create additional drives.</p> <p>Visit http://www.symantec.com/partitionmagic/</p>
<p>Improve your computers performance during a backup</p>	<p>If a backup is run while you are working on your computer and you notice that the performance of your computer has slowed down, you can reduce the speed of the backup to improve computer performance until you are finished working.</p>	<p>See "Adjusting the effects of a backup on computer performance" on page 39.</p>
<p>Use the Verify recover point after creation option to ensure the stability of recovery points</p>	<p>When defining a backup, you should select the Verify recovery point after creation option to ensure that the recovery point can be used to recover lost data, if and when you might need to.</p>	<p>See "Defining a new backup" on page 49.</p>

During a backup

While a backup is running, consider the following best practices:

Best practice	Explanation	How to
Improve your computer's performance during a backup	If a backup is run while you are working on your computer and you notice that the performance of your computer has slowed down, you can reduce the speed of the backup to improve computer performance until you are finished working.	See "Adjusting the effects of a backup on computer performance" on page 39.

After backing up

After a backup has finished running, consider the following best practices:

Best practice	Explanation	How to
Review the contents of recovery points	Ensure that you are backing up essential data by periodically reviewing the contents of recovery points.	See "Viewing files and folders in a recovery point" on page 83.
Review the events log to verify backups have happened and to spot any potential problems	Periodically review the event messages found in the View Events Log window. This feature records events when they occur, such as backups and any errors that might have occurred during or after a backup.	See "Verifying that a backup is successful" on page 56.

Best practice	Explanation	How to
Optimize recovery point storage	Delete outdated recovery points and consolidate incremental recovery points as a method for freeing up hard disk space for more current recovery point.	See "Deleting a recovery point set" on page 76. See "Deleting recovery points within a set" on page 76. See "About recovery points" on page 73.
Review the level of protection being provided for each of your computer's drives	Check the Backup and Recovery Status panel on a regular basis to ensure each drive has a defined backup.	See "Viewing the level of backup protection for each drive" on page 69. See "Changing drive protection levels" on page 71.
Maintain duplicate recovery points for safety	Store recovery points elsewhere on a network, or create CDs, DVDs, or tapes of recovery points for off-site storage in a safe and secure place.	See "Archiving recovery points" on page 77.

Defining a new backup

The first step in backing up your computer is to define a backup. A backup is a description of what you want backed up and where you want to keep the recovery points created when the backup is run.

A backup might also include a schedule, indicating a date and time when you want the backup to run.



When you ran Norton Ghost for the first time, you should have created a default backup in the Easy Setup dialog. If you didn't create a default backup, the Easy Setup dialog appears when you click Define New Backup from the Back Up Now dialog.

To define a new backup

- 1 On the Backup panel, click **Back Up Now**.

- 2 In the Back Up Now window, click **Define New Backup**.
- 3 Click **Next** on the first panel of the Define Backup Wizard.
- 4 Select which drives you want backed up, and then click **Next**.
- 5 If you selected a drive that has not yet been included in a backup, you might be asked if you want to add the selected drive to an existing backup, or if you want to continue to define a new backup.
If you choose to add the drive to an existing backup, the Wizard finishes and you are done.
If you select Define a new custom backup, click **Next** and continue with the Define Backup Wizard.
- 6 Select one of the following types of backups:

Recovery point set	Creates a base recovery point with additional recovery points that contain only incremental changes made to your computer since the creation of the base recovery point. Incremental recovery points are created faster than the first (base) recovery point and use less storage space than an independent recovery point. If the Recovery Point Set option is disabled, it is because you have already assigned a selected drive to an existing recovery point set and you can only have one recovery point set defined for each drive. Or, you might have selected an unmounted drive that cannot be part of a recovery point set.
Independent recovery point	Creates a complete, independent copy of the drives you selected. This backup type requires more storage space.

- 7 Click **Next**.
- 8 Click **Browse** to locate a folder for storing recovery points, and then click **Next**.
- 9 In the Name field, enter a name for your new backup.
- 10 In the Compression drop-down list, select one of following compression levels:
 - None
 - Standard (Recommended)
 - Medium
 - High
- 11 If you want to determine whether a recovery point is valid immediately following its creation, click **Verify recovery point after creation**.
- 12 If you want to limit the total number of independent or recovery point sets saved for each drive, select the check box and specify the number in the Maximum field.
- 13 In the Description text box, type a description that you want associated with each recovery point that will be created.
- 14 If you want to set additional options such as adding a password to the recovery points, click **Advanced**.
- 15 When you finish setting the advanced options, click **OK** to return to the Wizard.
- 16 Select one of the following methods to choose when the backup should be run:

See "Selecting a default recovery point storage location" on page 37.

See "About setting a compression level" on page 61.

See "Verifying a recovery point after creation" on page 63.

See "Setting advanced backup options" on page 62.

Manually (No Schedule)	Select this option if you want this backup to run only when you choose to run it yourself.
Scheduled	Select this option if you want to specify dates and times when Norton Ghost should run the backup for you.

■ :

- 17 If you chose Manually, click **Next** and skip to Step 21.
If you chose Scheduled, click **Define Custom Schedule**.

- 18 If you selected *recovery point set* as your recovery point type, refer to the following table for information about your options:

Tab	Description
Scheduling	<ul style="list-style-type: none"> ■ Click Schedule recovery point creation and then check the days and a start time for when each incremental recovery point is created. Alternatively, you can uncheck Schedule recovery point creation and run the backup only when specific events occur. See “Enabling event-triggered backups” on page 57. ■ If you want changes you make to files on your computer captured more than once each day, select Create more than one recovery point per day and specify how many and how much time should elapse between each capture. ■ If you chose to create more than one incremental recovery point per day and you want Norton Ghost to optimize them, click the Automatically optimize drop-down list and select how often optimization should occur. ■ Click the Start a new recovery point set drop-down list to specify how frequently a new recovery point set should be started.
Event Triggers	<p>Select which events should automatically start the backup.</p> <p>See “Enabling event-triggered backups” on page 57.</p>

If you selected *independent recovery point* as your recovery point type, refer to the following table for information about your options:

Option	Description
Weekly	A complete, independent copy of the drives you include in the backup are created at the time and days of the week you specify.
Monthly	A complete, independent copy of the drives you include in the backup are created at the time and days of the month you specify.
Only run once	One independent recovery point is created at the date and time you specify.
Manually (no schedule)	Save all the backup settings except the schedule. You can later run the backup at your convenience by selecting the Backup panel and clicking Back Up Now . You can assign a schedule at a later time by selecting the Backup panel and clicking Edit My Backup Schedules .

- 19 Click **OK**, and then click **Next**.
- 20 Click **Next** to review the backup options you have selected.
- 21 If you want to run the new backup immediately, click **Create the first recovery point now**.
- 22 Click **Finish**.

After defining your backup

All backups you define are automatically saved so that you can edit or run them later. There is no need to remember to save a backup or the recovery points created by a backup, although archiving recovery points

Running an existing backup immediately

to CD or DVD is an excellent way of ensuring you have a backup available, even if your hard disk crashes.

After defining and scheduling backups, exit Norton Ghost. The program does not need to be open for a backup to run. After you define a backup and schedule it to run on a specific date and at a specific time, you can exit the program.

However, your computer must be running at the time a backup is to occur. If your computer is not running, the backup will not occur until the next scheduled time (if it is scheduled) and if the computer is turned on.

Running an existing backup immediately

You can run a backup at any time, provided you have one defined.

See [“Defining a new backup”](#) on page 49.

This is particularly useful when you are about to install a new product and want to make sure you have a current recovery point in the event that something goes wrong with the installation.



Norton Ghost can be configured to run a backup automatically when an event occurs on your computer, such as installing a new software program.

See [“Enabling event-triggered backups”](#) on page 57..

Also, it is a great way to ensure you have a backup of your work after you have modified a large number of files and you don't want to wait for a regularly scheduled backup.



When running a backup, you should exit any partitioning software that is running, such as Norton PartitionMagic. Also, you should not run any disk defragmenting software during a backup.

To run an existing backup immediately

- 1 On the Backup panel, click **Back Up Now**.
- 2 Select a backup from the list, and then click **Back Up Now** to run the selected backup.



You can also schedule backups to run automatically on a reoccurring schedule.

See [“Editing a backup schedule”](#) on page 66..

Verifying that a backup is successful

When a backup is completed, you have three methods for ensuring that the backup contains valid data:

- Select the Verify recovery point after creation option when you define a backup.
See [“Defining a new backup”](#) on page 49.
- Browse the contents of a recovery point to make sure the files you wanted to back up are included.
See [“Viewing files and folders in a recovery point”](#) on page 83.
- Review the event log for information about successfully completed backup and other information and error messages.

For the last option, you can use the View Event Log feature to review information and errors related to your backups.

To verify the success of a backup using the events log

- ❖ On the Status panel, click **View Event Log**.

About the Event Log

The event log should be the first place you check when tracking down the source of problem or to verify the successful completion of a backup.

Log entries provide information and clues to the success or failure of numerous actions taken either by Norton Ghost or by a user. It offers a single, easy to read view of all information and program error messages.

Event details provided by the events log include:

Type	Indicates if the event is an error message or other information, such as the successful completion of a backup.
Source	Identifies if the message was generated by Norton Ghost or another program.
Date	Displays the exact date and time that a selected event occurred.
Description	Offers additional details about an event that can give valuable clues to any problems that might have occurred.

Files not included in recovery points

The `hibernate.sys` and `pagefile.sys` files are intentionally excluded from backups. These files contain temporary files that can take up a large amount of disk space. They are not needed and there will be no negative impact on your computer system after a complete system recovery.

Even though these files appear in recovery points, they are only placeholders.

Enabling event-triggered backups

In addition to scheduled and manual backups, Norton Ghost can detect certain events and run a backup whenever they occur.

For example, to protect your computer when you install new software, Norton Ghost can run a backup when it detects that new software is being installed. In the event that the software harms your computer, you can “undo” the install by restoring your computer using the recovery point created when Norton Ghost ran the backup.

About selecting a recovery point storage location

Norton Ghost can run a backup when:

- Any application is installed
- Any user logs on to the computer
- Any user logs off from the computer
- The data added to a drive exceeds an amount (in megabytes) you specify
- The Maxtor OneTouch• (an external hard drive) button has been pushed.

To enable event-triggered backups

- 1 On the Backup panel, click **Edit My Backup Schedules**.
- 2 Select the backup schedule that includes the drives you want backed up after an event occurs, and then click **Edit Schedule**.
- 3 Click the **Event Triggers** tab.
- 4 Select the events you want Norton Ghost to detect, and then click **OK**.



About selecting a recovery point storage location

When deciding where to store recovery points, you should carefully review the following information.



If you choose to use CDs or DVDs as your recovery point storage location (not recommended), you cannot back up to a sub-folder on the disk. Recovery points must be created at the root of CDs and DVDs.

About selecting a recovery point storage location

Recovery point storage location	Information to consider
On the computer being backed up	<p>Use this method to store recovery points on the computer that is being backed up. It is possible to save recovery points to the same hard disk that you are backing up; however, it is not recommended because as the number or size of recovery points grow, you will have less disk space available for regular use. In addition, the recovery points themselves are then included in subsequent backups of the drive, increasing the size of those backups.</p> <p> If you choose this option and then attach a second hard disk, such as an external USB drive, Norton Ghost automatically detects the new drive and asks if you want to use the new drive for recovery point storage. This is because using a secondary hard disk is the optimal recovery point storage location. Saving recovery points to a separate drive, a network location, or removable media eliminates this problem. You can use Norton PartitionMagic to create new partitions (drives) on your computer hard disk that are dedicated to storing recovery points.</p>
Network file	<p>If your computer is connected to a network, you can save your recovery points to a network folder.</p>
CD-RW/ DVD-RW	<p>When you save recovery points to removable media, they are automatically split into the correct sizes if the backup spans more than one media.</p> <p>The scheduling of backups is not available when this option is used.</p> <p> Using CD-RWs or DVD-RWs as your recovery point storage location is not the best option because you will be required to swap disks during the process.</p>

About selecting a recovery point storage location

The following table gives you additional information regarding the advantages and disadvantages of different types of storage locations for recovery points.

Location	Advantages	Disadvantages
Hard drive (recommended)	<ul style="list-style-type: none"> ■ Fast backup and recovery ■ 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
Network drive (recommended)	<ul style="list-style-type: none"> ■ Fast backup and recovery ■ 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 the recovery environment ■ Must understand and assign the appropriate rights for users who will run backups and restore data
USB or FireWire drive (recommended)	<ul style="list-style-type: none"> ■ Fast backup and recovery ■ 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 the Symantec Recovery Disk CD; could require additional media along with the Symantec Recovery Disk CD

About selecting a recovery point storage location

Location	Advantages	Disadvantages
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 ■ Cannot create recovery point sets; independent recovery points only ■ Media can be expensive ■ Recovery can be slower than from other locations, especially for individual files and folders ■ You cannot save recovery points to DVD-RAM drives under Windows 2000 ■ Requires swapping of disks and can be very time-consuming

About setting a compression level


Compression results may vary depending on the types of files saved in the drive you are backing up.

Compression level	Description
None	This is the best option if storage space is not an issue. However, if the backup is being saved 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 recovery points. This is the default.
Medium	Uses medium compression for a 45% average data compression ratio on recovery points.

Compression level	Description
High	Uses high compression for a 50% average data compression ratio on recovery points. This is usually the slowest method. When a high compression recovery point is created, CPU usage may be higher than normal. Other processes on the computer may also be slower.

Setting advanced backup options

You can set the following additional options when creating a recovery point.

Option	Action
Use password	This option sets a password on the recovery point that is created. Passwords can use standard characters, not extended characters or symbols. (Use characters with an ASCII value of 128 or lower.) A user must type this password before restoring a backup or viewing the contents of the recovery point.
Use encryption	You can encrypt your password to add another level of protection to your recovery points. You can choose from low (8+ character password), Medium (16+ character password), or High (32+ character password) encryption levels.
Divide into smaller files to simplify archiving	You can split the recovery point into smaller files and specify the maximum size (in MB) for each file. For example, if you plan to copy a recovery point to ZIP disks from your recovery point storage location, specify a file size of 100 MB or less, according to the size of each ZIP disk.  When archiving to CDs or DVDs, this is done for you automatically.
Ignore bad sectors during copy	This option lets you run a backup even if there are bad sectors on the hard drive. Although most drives do not have bad sectors, the potential for problems increases during the lifetime of the hard drive.

About selecting a recovery point storage location

Option	Action
Disable SmartSector Copying	<p>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>This option lets you copy both used and unused clusters and sectors. Selecting this option increases processing time and usually results in a larger recovery point.</p>

To set advanced backup options

- 1 In the Advanced Options dialog box, click **Use password**, and then type the password and confirmation password.
- 2 To encrypt the password, check **Use encryption**, click the drop-down list, and then select a level of encryption to match the number of characters in your password.
The higher the encryption level chosen, the more number of characters are required in your password.

To ignore bad sectors during copying

- ❖ In the Advanced Options dialog box, click **Ignore bad sectors during copy**.

To disable SmartSector copying

- ❖ In the Advanced Options dialog box, click **Disable SmartSector Copying**.

Verifying a recovery point after creation

If this option is selected, the **recovery point** is checked to see that all of the files in the recovery point are available for you to open, the internal data structures in the recovery point match the data that is available, and the recovery point can be un-compressed to create the expected amount of data (if you selected a compression level at the time of creation).



Be aware that verifying a recovery point can approximately double the time required to create the recovery point.

If you decide not to verify the recovery point at the time of creation, you can still check the integrity of a recovery point any time after it is created by opening it in the Recovery Point Browser.

Checking the integrity of a recovery point

You can verify a recovery point anytime after a backup is run to determine whether the recovery point is valid or corrupt. The Recovery Point Browser checks to see that all of the files in the recovery point are available for you to open, the internal data structures in the recovery point match the data that is available, and the recovery point can be un-compressed and create the expected amount of data.

To check the integrity of a recovery point

- 1 On the Recovery panel, click **Recover My Files**.
- 2 Do one of the following:
 - Select a recovery point from the list and click **Browse Contents**.
 - If you don't see the recovery point you are looking for, click **View All Recovery Points** on the toolbar.
- 3 In the tree panel of the Recovery Point Browser, select the recovery point.
For example, C_Drive001.v2i.
- 4 On the menu bar, click **File > Verify Recovery Point**.
If the Verify Recovery Point option is unavailable, you must first un-mount the recovery point. Right-click the recovery point and click **Dismount Recovery Point**.
- 5 When the check is complete, click **OK**.
If you prefer, you can have recovery points automatically verified for integrity at the time they are created.
See [“Verifying a recovery point after creation”](#) on page 63.

Back up dual-boot systems

You can back up dual-boot systems, or computers that are running more than one operating system, even if you have drives (partitions) that are hidden under the operating system where you run Norton Ghost.

Everything on the drive you select will be included in the backup, so it will be bootable later if you restore it. An exception to this is if you back up a bootstrapped operating system, you must back up—and then restore—every drive that includes operating system boot information in order for your computer to boot the same from a restored system as it did from the original configuration.

Viewing the progress of a backup

You can view the progress of a backup while it is running to determine how much time remains until the recovery point is created.

To view the progress of a backup

- ❖ While a backup is running, click **View Progress and Performance** on the Backup panel.

Adjusting the speed of a backup

Depending on the speed of your computer, how much RAM you have installed, and the number of programs you are running during a backup, your computer could become sluggish.

However, you can manually adjust the effect of a backup on the performance of your computer to match your needs at the moment. This feature is especially useful if you are working on your computer and don't want the backup process to slow you down.

To adjust the performance of a backup

- 1 While a backup is running, click **View Progress and Performance** on the Backup panel.
- 2 Do one of the following:

- If you want to increase the speed of your computer by reducing the speed of the backup, drag the slider toward **Slow**.
 - If you want the backup to complete as quickly as possible and you are not doing extensive work on your computer, drag the slider toward **Fast**.
- 3 When you are finished, click **Hide**.

Verifying that a backup completed

You can verify when a backup has completed successfully by opening the Backup and Recovery Status dialog.

To verify that a backup completed

- ❖ On the Status panel, click **Check Backup and Recovery Status**.
See [“Monitoring the status of your backups”](#) on page 69.

Editing a backup schedule

You can edit any of the schedule properties for a defined backup.

To edit a backup schedule

- 1 In the Backup panel, click **Edit My Backup Schedules**.
- 2 In the list box, select a backup to edit.
- 3 Click **Edit Schedule**.
- 4 Make changes to the schedule, and then click **OK**.

Disabling a backup

You can disable or “turn off” a backup, and then re-enable it later.

To disable a backup

- 1 In the Backup panel, click **Edit My Backup Schedules**.

- 2 In the list box, select a backup to edit.
- 3 Click **Edit Schedule**.
- 4 Uncheck **Enable Backup**, and then click **OK**.

Adding users who can back up a computer

You can use the Norton Ghost Security Configuration Tool to give additional users and groups rights to access your copy of Norton Ghost.

To add users who can back up a computer

- 1 On the Windows taskbar, click **Start > Programs > Norton Ghost > Security Configuration Tool**.
- 2 Click **Add**.
- 3 In the Add Users and Groups window, select a user or group, then click **Add**.
The user or group will appear in the text box at the bottom of the window.
- 4 Click **OK**.
- 5 To delete users or groups, select a user or group, then click **Remove**.
- 6 In the Security Configuration Tool dialog box, click **Close** to exit the dialog box.

Deleting backups

You can delete backups when they are no longer needed.

To delete a backup

- 1 In the Backup panel, click **Back Up Now**.
- 2 In the list box, select a backup, and then click **Tasks > Remove Backup**.
- 3 Click **Yes**.
Deleting a backup does not delete recovery points from the storage location. Only the defined backup is deleted. But you can delete recovery points. See [“Optimizing recovery point storage”](#) on page 73..

Monitoring the status of your backups

6

About monitoring backups

You should monitor your backups to ensure that you can effectively recover lost data whenever needed. Norton Ghost includes a Backup and Recovery Status panel where you can see which drives on your computer are protected, and how effectively they are protected. You can then add or remove protection, or adjust the schedules of any of your backups to better match the way you use your computer.



In addition to ensuring that you are backing up each drive on your computer, you should carefully review and follow best practices for backing up your computer.

See [“Best practices for backing up”](#) on page 45.

Viewing the level of backup protection for each drive




You should review the level of backup protection being provided by your currently defined backups for each of the drives on your computer.

Norton Ghost provides a single place where you can quickly identify the level of backup protection for each drive on your computer.

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Viewing the level of backup protection for each drive

The following table identifies each level of backup protection assigned to each drive on your computer and describes the meaning of each level.

Icon	Protection Level	Meaning
	Protected	A backup is defined and is running on a regular basis. A protected drive can be fully recovered.
	Partially Protected	A backup is defined, but is either not scheduled or has not been run for a long time, meaning that existing recovery points are probably old. A partially protected drive can be recovered, but if the recovery points are older, it will not contain the latest versions of files or folders.
	No Protection	There is no defined backup and there are no recovery points available from which to recover the drive. An unprotected drive cannot be recovered and is at risk.

To view the status of backup protection

- ❖ From the Status panel, click **Check Backup and Recovery Status**.

About viewing other drive details

The Backup and Recovery Status dialog displays the following details of each drive:

Name	This is the name you assigned to the backup when you defined it. By default, Norton Ghost assigns the default name, "Backup of drive", where drive is the drive letter assigned to the drive to be backed up.
Type	Identifies the type of recovery point the backup creates when it is run. See " Defining a new backup " on page 49 for more information about types of recovery points.
Destination	Identifies the recovery point storage location, or where the drive will be backed up.
Last Run	Displays the day and time when the backup was last run.
Next Run	Displays the day and time of the next scheduled backup.

Changing drive protection levels

The level of protection for a drive changes when you add or remove the drive from a defined backup, or when you modify how often the backup is run.

Drives that store information you modify frequently should be backed up regularly. For example, if you are making daily changes to drive C, you should make sure that drive is included in a backup and that the backup is run on a daily basis. By doing so, the protection level is increased.



A drive can be configured to be hidden. Hidden drives do not have a drive letter assigned to them. An asterisk (*) is used in place of a drive letter.

To change the protection level

- 1 From the Status panel, click **Check Backup and Recovery Status**.
- 2 Select a drive from the list.
- 3 Select one of the following:

Add Protection	Starts the Define Backup Wizard where you can define a backup for the selected drive.
Remove Protection	Removes the selected drive from all defined backups.
Edit Schedule	Modifies how frequently the drive is backed up.
Edit Settings	Runs the Define Backup Wizard where you can modify settings of the selected backup.
Show Hidden Drives	Shows any hidden drives that might be configured on your computer.

Optimizing recovery point storage

7

About recovery points

Recovery points require disk space. Norton Ghost includes features for keeping recovery points under control so that you can utilize disk space for other purposes.

Norton Ghost backs up your computer by taking a snapshot of everything stored on your computer's hard disk. Each snapshot is stored on your computer as a *recovery point*—a point in time used to recover your computer (or individual files or folders) back to the way it was when the recovery point was created.

There are two types of recovery points: *independent recovery points* and *recovery point sets*:

Independent recovery point	Creates a complete, independent copy of the drives you selected. This backup type requires more storage space.
Recovery point set	Includes a base recovery point (a complete copy of your entire drive, similar to an independent recovery point) and additional recovery points that capture only incremental changes made to your computer since the creation of the base recovery point.

Regardless of which type of recovery points your backups are creating, recovery points require space on your computer. If you keep too many, they can take up space you might want to use for other things.

You can manually optimize your recovery point storage, or you can let Norton Ghost do it for you.

Viewing the properties of a recovery point

At any time, you can view the properties of a recovery point to learn when it was created and how large it is.

Here are the properties you can view:

Type	Identifies the method of creation and type of recovery point made. For example, Manual Independent indicates that the recovery point was created manually (rather than automatically as the result of a defined schedule) and that it is an Independent recovery point.
Location	The path to where the recovery point is stored.
Size	The total size (in megabytes) of the recovery point.
Date	The date and time when the recovery point was created.
Description	The relative time from the present to when the recovery point was created. For example, "10 minutes ago", or "15 days ago".

To view the properties of a recovery point

- 1 On the Recovery panel, click **Explore Recovery points (Advanced)**.
- 2 Right-click a recovery point in the list and click **Properties**.

Optimizing recovery point storage manually

Norton Ghost includes several features that help you optimize your recovery point storage space. The key is to prevent recovery points from taking up too much hard disk space on your computer while providing adequate backup protection in the event that you need to recover your computer, files, or folders.

To optimize recovery point storage manually

- 1 In the Recovery panel, click **Optimize Recovery Point Storage**.
- 2 From the Optimize Recovery Point Storage dialog box, you can do any of the following tasks:

Clean Up	See " Cleaning up old recovery points " on page 75.
Delete Set	See " Deleting a recovery point set " on page 76.
Delete Points	See " Deleting recovery points within a set " on page 76.
Archive	See " Archiving recovery points " on page 77.

Cleaning up old recovery points

Over time, you will end up with recovery points that you no longer need. For example, you might have several recovery points created months ago that you know you no longer need since you have more current ones containing your latest work.

The Clean Up feature deletes all but the most current recovery point set, freeing up space on your hard disk for other uses.



Once a recovery point is deleted, access to the files or system recovery from that point in time is no longer

available. If you are unsure, you might want to first explore the contents of the recovery point.

See “[Viewing files and folders in a recovery point](#)” on page 83.

See “[Advanced exploring of recovery points](#)” on page 85.

To clean up old recovery points

- 1 In the Recovery panel, click **Optimize Recovery Point Storage**.
- 2 Click **Clean Up** on the toolbar.
Suggested recovery point sets that can be safely removed without eliminating your latest recovery point are selected for you. However, you can check or uncheck recovery point sets to specify which ones to remove.
- 3 Click **Delete**.
Once you delete a recovery point, access to file or system recovery from that point in time is no longer available.
- 4 Click **Yes** to confirm the deletion.

Deleting a recovery point set

If you know that you no longer want a particular recovery point set, you can select and delete it at any time.



Once you delete a recovery point, access to file or system recovery from that point in time is no longer available.

To delete a recovery point set

- 1 In the Recovery panel, click **Optimize Recovery Point Storage**.
- 2 Select a recovery point set to delete from the list, and then click **Delete Set** on the toolbar.
- 3 Click **Yes** to confirm the deletion, and then click **OK**.

Deleting recovery points within a set

A recovery point set can contain multiple recovery points created over time that can be deleted to reclaim storage space.

When you use the Delete Points option, all recovery points created between the first and last recovery point in the set are deleted.



Be careful about which recovery points you choose to delete. For example, if you created a new document that was then captured in the third recovery point in your recovery points list, but then you deleted the file accidentally, at which time the deletion was captured by the fourth recovery point, you could lose the file permanently if you delete the third recovery point. If you are unsure, you can explore a recovery point before deleting it.

See [“Viewing files and folders in a recovery point”](#) on page 83.

You can manually select which recovery points to remove, a helpful feature if you know which recovery points that you want to keep within a set.

To delete recovery points in a set

- 1 In the Recovery panel, click **Optimize Recovery Point Storage**.
- 2 Select a recovery point set from the list, and then click **Delete Points** on the toolbar.
- 3 To automatically delete all but the first and last recovery point in the set, click **Automatic**.
- 4 To manually select which recovery points in the set to delete, click **Manual**, and then select the recovery points you want deleted from the list.
- 5 Click **OK**.

Archiving recovery points

An excellent method of further protecting your computer is to archive recovery points to another location, such as another hard disk, another computer on a network, or on removable media such as DVDs or CDs. You can then store your backups somewhere remote from where you use your computer.

Archiving is also an effective method of freeing up hard disk space.

To archive recovery points

- 1 In the Recovery panel, click **Optimize Recovery Point Storage**.
- 2 Select a recovery point set from the list, and then click **Archive**.
- 3 If you select a recovery point set containing multiple recovery points, select the ones you want to archive from the list of recovery points that appears, and then click **OK**.
- 4 Type the path to where you will archive your recovery points, or click **Browse** to browse to a location such as a DVD or CD burner.
- 5 If you are archiving to your hard disk but you plan on copying the archive to CDs or DVDs at a later point in time, select **Divide into smaller files for archiving**, and then enter a size in megabytes.
- 6 Select a level of compression for the archived recovery points.
See [“About setting a compression level”](#) on page 61..
- 7 To prevent others from accessing the contents of your archived recovery points, click **Use password**, and then type a password containing eight or more characters.
- 8 Re-type the password to confirm it, and then select **Encrypt recovery point** if you want to add encryption to the file as an added security measure. The higher the encryption level chosen, the more number of characters are required in your password. See the **Use encryption** drop-down list.
- 9 Click **OK**.

Automating management of recovery point storage

Norton Ghost can monitor your recovery point storage space and either notify you when it is getting too full, or automatically clean up old recovery points for you. You specify how much hard disk space is allowed for storing recovery points. When recovery points approach the

amount of space you specified, Norton Ghost notifies you. If you do not specify an amount, Norton Ghost notifies you when the disk reaches 90% of its total capacity.

To configure automatic recovery point storage

- 1 In the Recovery panel, click **Optimize Recovery Point Storage**.
- 2 Click **Options** in the lower right corner.
- 3 Click **Monitor disk space usage for recovery point storage**, and then drag the slider to indicate the amount of disk space to be used for recovery point storage.

If you indicate that all disk space should be used, Norton Ghost notifies you when the disk reaches 90% of its total capacity.

- 4 Do one of the following:
 - If you want Norton Ghost to notify you when the storage size you specified is exceeded, click **Warn me when recovery point storage exceeds threshold**.
 - If you want Norton Ghost to manage the storage space for you without prompting you, select **Automatically optimize storage**.

When you select this option, Norton Ghost automatically deletes old recovery points to prevent them from exceeding the storage size you specified.

- 5 Click **OK**.

Changing your recovery point storage location

You can change your recovery point storage location at any time. For example, if you decide to purchase an external hard disk to store backups of your computer, you can then instruct Norton Ghost to start creating recovery points on the new hard disk.

To change your recovery point storage location

- 1 In the Recovery panel, click **Optimize Recovery Point Storage**.

- 2 Click **Change Location**.
- 3 In the Change Storage Location dialog box, click **Browse** to find the new recovery point storage location.
- 4 If you want only some of your currently defined backups to use the new location, uncheck any of the backups in the list that should not use the new backup location to store recovery points.
- 5 If you want any new backups you define to use this new location for recovery point storage, select **Set as default storage location for recovery points**.
- 6 Click **OK**.

Recovering files and folders

8

About recovering files or folders

Norton Ghost makes recovering files or folders easy. By letting you browse through the contents of recovery points, it is as if you are looking at the original files and folders that existed on your computer when the recovery point was created.



Before you can recover files or folders, you must have a recovery point already created. You cannot restore data on a computer if a recovery point of that computer does not exist.

If you are able to run Windows on a troubled computer, you can restore individual files or folders from a recovery point without having to exit Windows.



If you cannot run Windows, you might need to use the Symantec recovery environment.

See [“Recovering files and folders from the recovery environment”](#) on page 104.

This method of recovery, sometimes known as a hot restore, is useful if you have traced the cause of a computer failure to a certain file or folder of files, or you have simply lost important files and do not want to restore your entire computer.



If your recovery point is on removable media (DVD or CD), you can copy the recovery points to a fixed drive and restore files from the fixed drive.

To restore files or folders

- 1 Start Norton Ghost, and then click **Recovery**.
- 2 Click **Recover My Files**.
- 3 Select a recovery point from the list, and then click **Browse Contents**.
- 4 To select the files or folders you want to restore, do one of the following:

To select all items	Press Ctrl+A
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

- 5 Click **Recover Files**.
Where possible, the Recover Items dialog box will automatically fill in the Restore to this folder text field with the original path when the recovery point was created. If the original location does not include a drive letter (because the drive was hidden when you created the recovery point), you must enter a drive letter for the drive before you can restore any files or folders.
- 6 If the original path is unknown, or you want to restore the selected files to a different location, click **Browse** to locate the destination.
- 7 Click **Recover Files** to restore the files.
When file restoration is complete, you are returned to the Recovery Point Browser main window.

Viewing files and folders in a recovery point

If you are not sure what files you want to restore, you can open and view them from within a recovery point 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 box 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.

To view a file within a recovery point

- 1 Start Norton Ghost and click **Recovery**.
- 2 Click **Recover My Files**.
- 3 Select a recovery point from the list and click **Browse Contents**.
- 4 In the Recovery Point Browser, select a drive in the tree panel (on the left).
- 5 In the content panel (on the right), double-click a folder that contains the file you want to view.
- 6 Select the file, and then click **File > View File**.
The View option is dimmed (unavailable) if you selected a program file that has a .exe, .dll, or .com file extension.

If you can't find the files or folders you need

If you cannot locate the files or folders you want to restore by browsing through a recovery point, you can use the Norton Ghost Explore feature. This feature actually mounts a drive letter in a recovery point as if it were a working drive. You can then use the Windows Explorer search feature to search for the files you need. You can even drag and drop files to restore them.

If you can't find the files or folders you need

See [“Advanced exploring of recovery points”](#) on page 85.

Advanced exploring of recovery points

9

About advanced exploring of recovery points

Norton Ghost includes advanced features for exploring recovery points, including the ability to mount a drive letter contained in a recovery point. By mounting a recovery point drive, you can share the recovery point over a network, edit and save changes to files, and run programs that exist in the recovery point.

You can explore files in a recovery point by assigning it a drive letter that is visible from the Recovery Point Browser and Windows Explorer. You can perform a variety of tasks on the drive, such as run ScanDisk (or CHKDSK), perform a virus check using antivirus software such as Norton AntiVirus, 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 recovery point.

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 recovery point.

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

All security on NTFS volumes remains intact when they are mounted.

It is not necessary to mount a drive to restore files or folders from within a recovery point.



Any data written to a mounted recovery point, including creating, editing, or deleting files, is lost when it is dismounted.

Mounting a recovery point as a drive

You can mount a recovery point as a drive. You can also mount a drive in a recovery point so that it appears as a mounted drive on your computer.

For each drive included in the recovery point, a new mounted drive letter is created. For example, if your recovery point contains backups of drive C and D, two newly mounted drives appear (such as E and F). The mounted drives include the original drive labels of the drives that were backed up.

To mount recovery point as a drive

- 1 Start Norton Ghost and click **Recovery**.
- 2 Click **Explore Recovery Points (Advanced)**.
- 3 Select a recovery point from the list, and then click **Explore**.
- 4 To mount additional recovery points, repeat these steps.

Mounting a recovery point from Windows Explorer

When you mount a recovery point as a drive from within Windows Explorer, you can then use key Windows Explorer features to navigate the contents of the recovery point.

You can search the contents of the recovery point. If you cannot remember where a particular file was originally stored, you can then use the Explorer search feature to

locate the file, just as you would locate a file on your hard drive.

You can also drag and drop files to a location on your computer as a quick way of restoring files or folders.

To mount a recovery point from Windows Explorer

- 1 In Windows Explorer, navigate to a recovery point (located where you set up your default recovery point storage when you defined your backup).
- 2 Right-click the recovery point, and then click **Mount**.
- 3 In the Mount Recovery Point window, select the drive label you want mounted.
- 4 In the Drive letter drop-down list, select a letter that you want associated with the drive.
- 5 Click **OK**.
- 6 To mount additional drives, repeat steps 1-5.
Mounted backup drives appear in both Recovery Point Browser and Windows Explorer.

Dismounting a recovery point drive

Restarting the computer will dismount all mounted recovery point drives in Windows Explorer and the Recovery Point Browser. You can also dismount them without restarting.

To dismount a recovery point in Windows Explorer

- 1 In Windows Explorer, navigate to the mounted recovery point.
- 2 Right-click the drive, and then click **Dismount Recovery Point**.

To dismount a recovery point in Recovery Point Browser

- 1 Close the Explore Recovery Points dialog box.
- 2 Click **Yes** when asked if you want to end exploring of all recovery points.

Viewing properties of a drive within recovery point

You can view the following drive properties of a recovery point:

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, or NTFS) used within the drive.
Primary/Logical	The selected drive's 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.

To view the drive properties of a recovery point

- 1 In the tree panel of the Recovery Point Browser, double-click the recovery point that contains the desired drive.
- 2 Select a drive.
- 3 Do one of the following:
 - On the menu bar, click **File > Properties**.
 - Right-click the recovery point, and then click **Properties**.

About Recovering a drive

You can restore all lost information to a secondary drive, which is a drive other than the primary drive where Windows is installed (typically C).

For example, if your computer has a D drive and the data has been lost, you can use the Recover My Computer feature to restore drive D back to an earlier date and time before data was lost.



If you cannot start Windows, you may need to recover your computer.

See [“Recovering your computer”](#) on page 93.

To recover a drive, you must have a current recovery point that includes the drive to be recovered. If you are not sure, you can use the Check Backup and Recovery Status feature.

See [“Viewing the level of backup protection for each drive”](#) on page 69.



When you recover a drive, all current data on the drive being recovered is replaced by the data contained in the latest recovery point. This means that if you made changes on the drive after the latest recovery point was created, such as the creation of a new file, those changes will not be recovered.

To recover a drive

- 1 In the Recovery panel, click **Recover My Computer**.

- 2 Select a recovery point, and then click **Recover My Computer**.
- 3 Do one of the following:

To automatically detect where the drive should be restored	Click Express > OK > Yes .
To modify where and how the drive is restored	Click Custom > OK .

- 4 Click **Next**.
- 5 Either use the recovery point already selected, or click **Browse** to locate a different recovery point, and then click **Next**.
If you need to access recovery points on a network that requires user authentication, enter your user name and password, and then click **Next**.
- 6 Select the destination (the drive being restored), and then click **Next**.
If there is not enough free space to restore a recovery point, you can press **Shift** to select multiple, contiguous destinations that exist on the same hard disk.
- 7 If the recovery point is password-protected, type the password in the Password text box, and then click **OK**.

See ["Recovering your computer"](#) on page 93.

- 8 Set options for how you want the restore to be performed. Your options are:

Options	Description
Verify recovery point before restore	Determines whether a recovery point is valid or corrupt before restoring it. Enabling this option will significantly increase the time required for the recovery to complete. However, it can ensure that the recovery point being restored is valid.
Check for file system errors	Checks the restored drive for errors after restoring the recovery point.
Resize drive to fill unallocated space	Automatically expands the drive to occupy the destination drive's remaining unallocated space.
Set drive active (for booting OS)	Makes the restored drive the active partition (the drive the computer starts from).
Restore original disk signature	Restores the original physical disk signature of the hard drive. This option is recommended for advanced users.
Partition type	Select one of the following: <ul style="list-style-type: none"> ■ Primary partition: To restore as a primary partition ■ 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.

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

- 9 Click **Next** to review the restore options you have selected.
- 10 Click **Finish** to restore the drive.
If the Wizard cannot lock the drive to perform the recovery under Windows, it will prompt you to insert the product CD and manually start the recovery environment so you can complete the recovery. When the recovery is finished, the computer is restarted automatically.

About Symantec Recovery Disk

When you can no longer start Windows, you can recover your computer using the Symantec recovery environment.



If you can start Windows but you need to restore all data on a secondary drive that has been lost, such as drive D or E, for example, you can do so from within Windows. See the “Recovering a drive” chapter in the *Norton Ghost User's Guide*.

The recovery environment makes restoring your computer possible under almost any computer disaster.

Occasionally, a computer failure can leave the operating system intact but prevent you from restoring a recovery point after restarting. Or, a computer failure can leave the operating system inoperative, making a restoration seem impossible.

For these types of situations, you can restore your computer using a recovery point from within the recovery environment (Symantec Recovery Disk).

In the recovery environment, you can run, among other tools, the Recover My Computer Wizard (to restore your computer) or the Recover My Files Wizard (to restore files or folders).

After running the Recover My Computer Wizard, you can restart the computer into its previous, usable state.



If you purchased Norton Ghost pre-installed on your computer, some features in the recovery environment may or may not be included, depending on how the computer manufacturer chose to install Norton Ghost. Typically, the recovery environment has also been pre-installed on your computer's hard disk. It can then be started without the use of a CD and after restarting your computer. Typically, keyboard keys have been assigned for the purpose of starting the recovery environment. When restarting your computer, watch for instructions on your computer monitor, or refer to your manufacturer's instructions.

If you have been given a product CD, be sure to store it in a safe and secure place.

Starting your computer using the recovery environment

The Norton Ghost product CD is used both to install the product *and* to start a computer using the recovery environment, known as Symantec Recovery Disk. Be sure to store the CD in a safe place.

If you need to restore your computer, files, or folders using Symantec Recovery Disk (due to the inability of being able to start Windows normally due to lost hardware, data, or program files on a drive), you can use the product CD to start the computer using the recovery environment.



The recovery environment requires a minimum of 256 MB of RAM to run. If your computer's video card is configured to share your computer's RAM, you might need more than 256 MB of RAM to use the recovery environment.

To start your computer using the recovery environment

- 1 If you want to use a USB device while you are running the recovery environment, attach the device.

Starting your computer using the recovery environment

- 2 Insert the product CD into the media drive of the computer.
If you purchased Norton Ghost pre-installed on your computer from a computer manufacturer, the recovery environment is likely installed on your computer's hard drive.
- 3 Restart the computer.
You may need to modify your system to make it startable from the CD.
If you cannot start the computer from the CD, you might need to configure your computer to do so. See [“Getting your computer to start from the CD”](#) on page 96.
- 4 As soon as you see the prompt "Press any key to boot from CD" appears, press a key to start the recovery environment.
- 5 If you need to install storage drivers for the computer's hard disk subsystem, press **F6** when prompted while starting the recovery environment. If you cannot access the drive containing your recovery points, review related troubleshooting information.
See “I cannot access the local drive where my backups are saved”, and “I cannot access the network drive where my recovery points are saved” in the troubleshooting section of the Norton Ghost Help or the *Norton Ghost User's Guide*.
- 6 Read the license agreement, and then click **Accept**.
If you decline, you cannot start the recovery environment and your computer will restart.
- 7 Click the time zone field at the bottom of the main window.
In the Select Time Zone dialog box, select the time zone location you are in from the Time Zone drop-down list, and then click **OK**.
If you want to see accurate recovery point dates and times, you might need to set the correct time zone while in the recovery environment.

Getting your computer to start from the CD

To run Symantec Recovery Disk, you must be able to start your computer using the Norton Ghost product CD.

To start from the product CD

- 1 Turn on your computer.
- 2 While the computer is starting, watch the bottom of the screen for a prompt that tells you how to access the BIOS.

Generally, you will need to press Del, F1, F2, or F10.

- 3 From the BIOS screen, choose the Boot menu.



The term *boot* refers to the location where software required to start a computer is stored. The Symantec Recovery Disk contains a simple version of the Windows operating system. By changing the boot sequence of your computer to your CD drive, the computer can then load this version of Windows. *Boot* is also used synonymously with *start*.

- 4 Change the CD or DVD drive to be the first bootable device in the list.
- 5 Save the changes and exit the BIOS setup.
When you start your computer with the product 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 computer will attempt to start from the next bootable device 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 computer starts.
- 6 Press any key to start the recovery environment (Symantec Recovery Disk).

Preparing to recover your computer

Before starting the recovery process, you might want to scan your computer for viruses, a feature available from the Symantec recovery environment. You can also scan

your hard disk to check it for corrupted data or even surface damage.

- [Scanning for viruses](#)
- [Checking your hard disk for errors](#)

Scanning for viruses

If you suspect that your computer was damaged by a virus or other threat, you might want to scan for any viruses that might be the cause of your computer problems.

To scan for viruses

- 1 On the Analyze panel, click **Scan for Viruses**.
- 2 Select one of the following:

Use the virus definitions on this CD	Uses the definitions included on your product CD.
Use Update Locator virus definitions folder	Select this option if you have downloaded the latest virus definitions to a disk.

For instructions on how to obtain the latest virus definitions, refer to the next topic.

See [“Locating the latest virus definitions”](#) on page 97.

Locating the latest virus definitions

Although virus definitions are included on the product CD, you have a better chance of success when you use the newest virus definitions. The Update Locator locates virus definitions available from Symantec servers. However, you must run the Update Locator on a working computer that has Internet access.

To locate the latest virus definitions

- 1 Load the Norton Ghost product CD into the CD drive of a working computer that has Internet connectivity.
- 2 Browse to the root of the CD and double-click **UPDILCTR.EXE**.

- 3 Click **Find and retrieve virus definitions**.
If more recent virus definitions are not found, you can still use Update Locator to scan your damaged computer, but it will not find viruses or threats that were released after the manufacture date of this CD.
- 4 When prompted, click **OK**.
- 5 Insert a floppy disk (or blank, writable CD or DVD) into the computer's floppy disk drive (or CD/DVD recordable drive).
- 6 Locate the newly created Update Locator Virus Definitions folder on your computer's desktop and copy it to the blank disk.
- 7 Eject the disk, place it in a floppy drive (or CD/DVD drive) of the troubled computer and select it when prompted for virus definitions.

Checking your hard disk for errors

If you suspect that your hard disk is damaged, you can examine it for errors.

To check your hard disk for errors

- 1 In the Analyze panel, click **Check Hard Disks for Errors**.
- 2 Select the drive you want to check.
- 3 Select the options you want.

Fix errors on disk	Fixes errors on the selected disk. When not selected, displays errors found on the disk, but does not fix them.
Verbose output	Displays the name of each file in every directory.
Find and correct bad sectors	Locates bad sectors and recovers readable information.
Skip check if drive is clean	Stops the check if no files exist on the drive.

- 4 Click **OK**.
- 5 To save the report, click **Save**, specify a file name, and then click **OK**.

Recovering your computer

You can restore your computer (or any other drive or hard disk for which you have a recovery point) from within the recovery environment.

You can use the Recover My Computer Wizard from the Symantec Recovery Disk to return your computer to full functionality.



All data on the drive being recovered is replaced by the data contained in the latest recovery point. This means that if you made changes on the drive after the latest recovery point was created, such as the creation of a new file, those changes will be lost.

In such a case, you could restore the files and save them to another drive before running the Recover My Computer Wizard.

See [“Recovering files and folders from the recovery environment”](#) on page 104.

To recover your computer

- 1 Start the computer using the Symantec Recovery Disk.
See [“Starting your computer using the recovery environment”](#) on page 94.
- 2 From the Home panel, click **Recover My Computer**. If the Symantec Recovery Disk cannot locate any recovery points, you are prompted to locate one. To locate a recovery point, **Open another location**, find a current recovery point, and then select it from the Select Recovery Point list.
When locating your recovery point storage during the recovery process, note that drive letters under the recovery environment may not match those in the Windows environment. For example, what was drive D under Windows might appear as drive E (or some

other name, such as the volume name assigned to the drive) while in the recovery environment.

3 Click **Recover My Computer**.

4 Select one of the following:

Express	<ul style="list-style-type: none">■ Select to automatically detect where the drive should be restored.■ Check Reboot when finished if you want Symantec Recovery Disk to restart your computer when the recovery process is finished.■ Then click OK > Yes to begin the recovery process.
Custom	<ul style="list-style-type: none">■ Select to modify where and how the drive is restored.■ Click OK.

5 Review the recovery point details to make sure you are using the recovery point you intended to use, and then click **Next**.

6 Select the destination drive, or the drive you intend to recover.

When recovering your computer, this is the drive where Windows is installed. On most computer systems, this would be the C drive. However, while in Symantec Recovery Disk, drive letters and labels might not match what you would see if running in Windows. You might have to identify the correct drive based on its label, the name assigned to it, or by browsing files and folders in the recovery point. See [“Recovering files and folders from the recovery environment”](#) on page 104.

- 7 To free up disk space, select a drive, and then click **Delete Drive**.
 This will free space if a single volume space on the hard drive is not adequate.
 When you click **Delete Drive**, the drive is only marked for deletion. The actual deletion of the drive takes place after you click Finish in the wizard.
- 8 If you change your mind before clicking Finish, go back to the Recovery Destination window, and then click **Undo Delete** to unmark the drive for deletion.
- 9 Click **Next**.
- 10 Select which options you want performed during the recovery process. Your options include:

Verify recovery point before restore	Determines whether a recovery point is valid or corrupt before restoring it. Enabling this option will significantly increase the time required for the recovery to complete. However, it can also ensure that the recovery point being restored is valid.
Check for file system errors after recovery	Check the restored drive for errors after restoring the recovery point.
Resize drive to fill unallocated space	Automatically expand the drive to occupy the destination drive's remaining unallocated space.
Set drive active (for booting OS)	Makes the restored drive the active partition (the drive the computer starts from). When restoring a drive where Windows (your operating system) is installed, you should select this option.

Partition type	Select one of the following: <ul style="list-style-type: none">■ Primary partition: To restore as a primary partition■ Logical partition: To restore as a logical partition inside an extended partition
Restore original disk signature	<p>Restores the original physical disk signature of the hard drive. 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 and is available when restoring a whole drive only.</p>

<p>Restore Master Boot Record (MBR)</p>	<p>Restores 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 and is available only when restoring a whole drive under the recovery environment.</p>
<p>Preserve domain trust token on destination</p>	<p>Preserves the token used to authenticate a user/computer on a domain. This is a method for making sure that a recovered computer is recognized by a network domain after it is recovered.</p>

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

- 11 Click **Next** to review the restore options you have selected.
- 12 Check **Reboot when finished** if you want the computer restarted for you automatically when the recovery process finishes.
- 13 Click **Finish > Yes** to restore the drive.

Recovering files and folders from the recovery environment

You can start your computer using the Symantec Recovery Disk and restore files and folders from within a recovery point.

When you are running the recovery environment, there are several support utilities available that you can run to troubleshoot networking or hardware issues you may encounter. For example, you can ping a computer, renew IP addresses, or get information about a hard disk partition table.

To restore files and folders using the recovery environment

- 1 Start the computer using the recovery environment. See [“Starting your computer using the recovery environment”](#) on page 94.
- 2 Click **Recover My Files**.
- 3 If the Symantec Recovery Disk cannot locate any recovery points, you are prompted to locate one.
 - Click **OK > Open another location**.
 - Browse to an alternate folder where current recovery points are stored.
 - Click **OK**, select a recovery point from the resulting list, and click **Browse Contents**.



If you are attempting to restore files or folders from a network location and you are having trouble, make sure you type the name of the computer and share that holds your recovery points, in the File name text box. For example, \\computer_name\share_name.you might have to modify some settings.

If you are still having problems, see [“Using the networking tools in the recovery environment”](#) on page 106.

- 4 In the tree view panel of the Recovery Point Browser, double-click the drive containing the files or folders you want to restore to expand it.

Recovering files and folders from the recovery environment

- 5 In the content panel of the Recovery Point Browser, do the following to select the files or folders you want to restore.

To select all items	Press Ctrl+A
To select a group of files that are next to each other	Select the top file, press Shift , and then select the last file in the list
To select a group of files that are not next to each other	Press Ctrl while selecting the files

- 6 Click **Recover Files**.
Where possible, the Recover Items dialog box will automatically fill in the Restore to this folder text box with the original path where the files originated. If the original location does not include a drive letter (because the drive was hidden when you created the recovery point), you must enter a drive letter for the drive before you can restore any files or folders.
- 7 If the original path is unknown, or you want to restore the selected files to a different location, click **Browse** to locate the destination.
- 8 Click **Recover** to restore the files.

Exploring your computer

You can explore the files and folders on your computer from within the recovery environment using the Explore My Computer feature.

This feature actually uses the Recovery Point Browser as a tool for exploring your computer and functions similarly to Windows Explorer in that you can browse the file structure of any drive attached to your computer from within the recovery environment.

To explore your computer

- ❖ From the Analyze panel, click **Explore My Computer**.

Using the networking tools in the recovery environment

If you store your recovery points on a network, you will need access to the network to restore your computer, or files and folders from the recovery environment.



Additional computer memory might be required when recovering your computer across a network.

Starting networking services

If you need to start networking services, you can do so manually.

To start networking services

- ❖ On the Network panel, click **Start My Networking Services**.

To verify connection to the network, you can map a network drive. See [“Mapping a network drive in the recovery environment”](#) on page 108.

Using the pcAnywhere Thin Host for a remote recovery

Using the Symantec Recovery Disk, you can host a remote control session by starting pcAnywhere Thin Host. Once started, the thin host waits for a connection that can be used to remotely manage a recovery or perform other tasks in the recovery environment.

To connect to the thin host, you must use Symantec pcAnywhere on a remote computer.

The pcAnywhere Thin Host contains the minimum settings needed to support a single-use remote control session. The thin host requires an IP address for hosting a remote control session.



A thin host cannot be deployed to the recovery environment. The thin host can only be started from Symantec Recovery Disk to host a remote control session. The thin host in Symantec Recovery Disk does

Using the networking tools in the recovery environment

not support file transfers and cannot be used to add drivers for network or storage devices.

To start the pcAnywhere Thin Host

- ❖ In the recovery environment main window, go to the Home panel, and then click **Start the pcAnywhere Thin Host**.

If not started, the Networking services are started.
The thin host establishes a connection.

Remotely connecting to the thin host

Symantec pcAnywhere can be used on a computer to remotely connect to a computer that has already started using the recovery environment and that has started the pcAnywhere Thin Host. Once connected, the client computer can remotely manage a recovery or perform other tasks supported in the recovery environment.



The client computer cannot transfer files or add additional drivers for network or storage devices on the computer running the thin host.

To remotely connect to the thin host

- 1 Ensure that the computer to be remotely managed (the host) has been started using Symantec Recovery Disk and that the pcAnywhere Thin Host has been started and is waiting.
- 2 Obtain the IP address of the thin host computer.
- 3 On the client computer, in Symantec pcAnywhere, use the Remote Setup Wizard to configure the remote control session.
 - Specify a TCP/IP connection type.
 - Specify the IP address of the host computer.
 - Choose to automatically login to the host on connection.
 - Type the following login name:
symantec

- Type the following password:

recover

The thin host shuts down when there is an attempt to connect using any incorrect configuration settings.

The thin host does not support encryption.

To prevent unauthorized users from tampering with your settings or launching a session without your permission, set a password for your remote connection item using the Protect Item properties page in Symantec pcAnywhere.

- 4 Start the remote control session.

If the connection attempt is unsuccessful, the thin host must be restarted on the host computer before making another attempt to connect.

- 5 Remotely perform necessary tasks on the host computer.

The remote control session ends when the thin host is closed, the thin host computer is restarted, or when the remote control session is ended.

After the host computer has started Windows, the client computer can deploy and connect a thin host on the computer to verify the success of tasks that were performed while using the recovery environment.

Mapping a network drive in the recovery environment

The following information applies only if you started networking services after starting the recovery environment.

If there is no DHCP server (or the DHCP server is down), you must enter a static IP address and a subnet mask address for the computer on which you are running Symantec Recovery Disk.

See [“Configuring network connection settings”](#) on page 109.

After the static IP address and subnet mask address are correctly entered, you will be able to enter the recovery environment. However, because there is no way to resolve computer names, when you run the Recover My

Using the networking tools in the recovery environment

Computer Wizard or the Recovery Point Browser, you will only be able to browse the network using IP addresses to locate a recovery point. To resolve this issue, you can map a network drive.

To map a network drive in the recovery environment

- 1 In the recovery environment main window, click the **Network** panel, and then click **Map a network drive**.
- 2 Map a network drive using a UNC path of the computer where the recovery point is located. For example: \\computer_name\share_name or \\IP_address\share_name
You will now be able to browse to that drive mapping and select a recovery point that you want to restore.

Configuring network connection settings

You can access the Network Configuration window to configure basic network settings while running in the recovery environment.

To open the Network Configuration window

- 1 In the recovery environment main window, click the **Network** panel, and then click **Configure Network Connection Settings**.
- 2 If you are prompted to start networking services, click **Yes**.

Getting a static IP address

If you are trying to restore a recovery point 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 recovery environment. You can then map to the network drive/share.

To get a static IP address

- 1 In the list box of the Network Configuration window, click **IP Address 1**.

Using the networking tools in the recovery environment

- 2 In the Enter Adapter Address dialog, 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.
- 3 Click **OK**, and then click **Close** to return to the recovery environment main menu.
- 4 From the Network panel, click **Ping a Remote Computer**.
- 5 Specify the address of a computer you want to ping on the network segment using one of the following address methods. (Usually it is the computer that holds the recovery points you need to use.)

Computer name	Specify a computer name if you use the domain or workgroup to resolve computer names. For example, ComputerA
Computer name and domain	Specify a computer name and domain if you are using an Active Directory domain to resolve computer names. For example, computera.domain.com
IP address	Specify an IP address if there is no computer name resolution available on the segment. For example, 127.167.68.255

- 6 Click **OK**.
If you specified a computer name or computer name and domain as the address method, make note of the IP address that is returned from the computer you are pinging.
If communication to the storage computer is operating as expected, you can use the Map Network Drive utility to map a drive to the recovery point location.

Getting a static IP address if the ping is unsuccessful

If you ping an address and the address does not respond, you can use the *ipconfig /all* command to find out the correct IP address.

To get an IP address if the ping is unsuccessful

- 1 On the computer that holds the recovery point you are wanting to restore, at a DOS prompt, type **ipconfig /all**, and then press **Enter**.
- 2 Write down the IP address that is displayed.
- 3 Return to the computer that is running the recovery environment and run the utility Ping Remote Computer using the IP address you wrote down.

Mapping a network drive

You can map a drive from within the recovery environment.

To map a network drive

- 1 In the recovery environment main window, click the **Network** panel, and then click **Map a network drive**.
- 2 In the Drive drop-down list, select a drive letter.
- 3 In the Folder text box, type the IP address of the storage computer and the share where the recovery point is located.
For example: \\IP_address\share_name\
- 4 Click **Connect** using a different user name.
- 5 In the User name box, type the IP address and username.
For example: IP_address\user_name
- 6 In the Password text box, type the username and password.
- 7 Click **OK**.
You should now have a drive mapped to the recovery point location on the storage computer.

Viewing properties of recovery points and drives

You can view the properties of recovery points and the drives contained in them.

- [Viewing properties of a recovery point](#)
- [Viewing properties of a drive within a recovery point](#)

Viewing properties of a recovery point

You can view various properties of a recovery point using the Recovery Point Browser. The following properties are available for viewing:

Description	A user-assigned comment associated with the recovery point
Size	The total size (in megabytes) of the recovery point
Created	The date and time that the recovery point file was created
Compression	The compression level used in the recovery point
Spanned	Whether the entire recovery point file is spanned over several files
Password protected	The password protection status of the selected drive
Encryption	The encryption strength used with the recovery point
Version	The version number of the recovery point
Computer name	The name of the computer on which the recovery point was created
Created by	Identifies which version of Norton Ghost created the recovery point

To view the properties of a recovery point

- 1 In the tree panel of the Recovery Point Browser, select the desired recovery point.
- 2 Do one of the following:

Viewing properties of recovery points and drives

- On the File menu, click **Properties**.
- Right-click the recovery point, and then click **Properties**.

Viewing properties of a drive within a recovery point

You can view the following properties of a drive within a recovery point:

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, or NTFS) used within the drive
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

To view the drive properties of a recovery point

- 1 In the tree panel of the Recovery Point Browser, double-click the recovery point that contains the desired drive.
- 2 Select a drive.
- 3 Do one of the following:
 - On the menu bar, click **File > Properties**.
 - Right-click the recovery point, and then click **Properties**.

About the Support Utilities

When you are running in the recovery environment, there are several support utilities available (from the Utilities panel in the main window of the recovery environment) that Symantec Technical Support might have you use to troubleshoot hardware issues you might encounter.

You might be required to supply information generated by these utilities if you call Symantec Technical Support for help resolving problems.



You should only use these tools as directed by Symantec Technical Support.

About copying drives

You can copy the contents of one hard disk to another. You can also copy your operating system, applications, and data to a new hard disk. If the hard disk you are copying contains more than one partition, you must copy the partitions one at a time to the new hard disk.

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



If you are using a trial version of Norton Ghost, the Copy My Hard Drive feature is not enabled. To use this feature, you must upgrade to a licensed version of Norton Ghost 10.

Before using the Copy My Hard Drive feature

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

To install and configure a hard disk

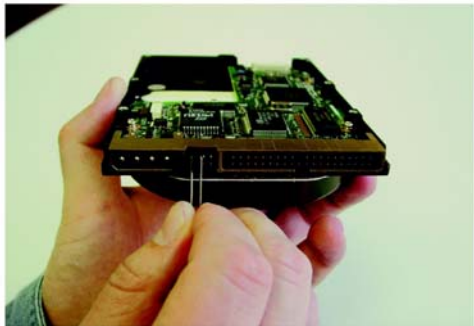
- 1 Prepare the computer. Get the manufacturer's directions for installing the drive. Shut down the computer, and disconnect the power cord. Discharge

Before using the Copy My Hard Drive feature

electricity by touching a grounded metal object. Remove the computer cover.



- 2 Change the hard disk jumper settings to make the new hard disk 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.



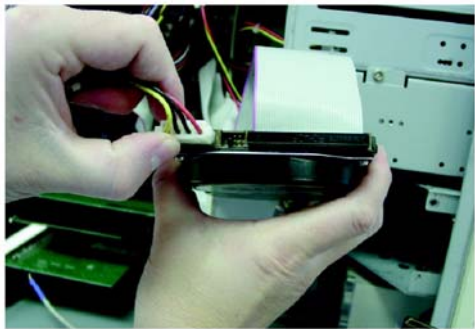
- 3 Attach the new hard disk. Connect the cable so that the colored stripe on the edge lines up with the I/O pins on the motherboard. The motherboard is marked Pin1 or 1 where the colored stripe should go. Next, connect the other end of the cable to the back of the hard disk, again matching the striped edge with the I/

Before using the Copy My Hard Drive feature

0 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 disk. There is only one way to connect the power cable—do not force it. Make sure the angled edge of the plastic connector lines up with the angled edge of the pin socket.



Copying one hard disk to another hard disk

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



- 6 Change the BIOS to recognize the new hard disk. To change the BIOS settings, watch the bottom of the screen while your computer is starting up. Press **Del**, **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 then exit. Your computer will restart automatically.

Copying one hard disk to another hard disk

When your new hard disk is installed, you are ready to copy your old hard disk to the new one. The new hard disk does not need to be formatted.

If the hard disk you are copying contains more than one partition (for example, a C:\ drive, a D:\ drive, an E:\ drive, and so forth), you must copy each partition, one at a time, to the new hard disk.

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.

Copying one hard disk to another hard disk

To copy one hard disk to another

- 1 On the Backup panel, click **Copy My Hard Drive**.
- 2 Follow the instructions in 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.

About Copy My Hard Drive Wizard options

As part of copying one hard disk to another hard disk, your options are as follows:

Check source for file system errors	Checks the source (original) drive for errors before copying it.
Check destination for file system errors	Checks the destination (new) drive for errors after copying the drive.
Resize drive to fill unallocated space	Automatically expands the drive to occupy the destination drive's remaining unallocated space.

Copying one hard disk to another hard disk

<p>Set drive active (for starting OS)</p>	<p>Makes the destination drive the active partition (the drive the computer starts from). Only one drive can be active at a time. To start the computer, it must be on the first drive, and it must contain an operating system. When the computer starts, it reads the partition table of the first drive to find out which drive is active, and then starts 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>
<p>Disable SmartSector copying</p>	<p>Symantec'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>Using this option increases the time required for the copy because all clusters and sectors, regardless of whether or not they contain data, are copied.</p>

Copying one hard disk to another hard disk

Ignore bad sectors during copy	Copy the drive even if there are errors on the disk. (However, if there are too many errors that cannot be ignored, Ghost will not perform the copy.)
Destination partition type	Lets you specify the destination drive as either a primary partition or 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.
Copy MBR	Copy the master boot record from the source drive to the destination drive. Select this option if you are copying the C:\ drive to a new, empty hard disk. You should not select this option if you are copying a drive to another space on the same hard disk as a backup or if you are copying the drive to a hard disk with existing partitions that you will not be replacing. Additionally, if you are copying multiple drives to a new, empty hard disk, you only need to select this option once.

Restarting the computer after copying drives

After you have copied the old hard disk to the new hard disk, do one of the following:

- Either remove the old hard disk or keep it as a slave drive.
- Change jumper settings to make the new hard disk the master drive before restarting the computer.

See ["Before using the Copy My Hard Drive feature"](#) on page 115.

Troubleshooting Norton Ghost



About troubleshooting Norton Ghost

If you need more information about resolving a problem, please check the Symantec Web site.

You should also see the Readme.txt file on the product CD which also includes valuable troubleshooting information beyond what is included in this section.

See “Exploring the Symantec service and support Web site” on page 123.

Exploring the Symantec service and support Web site

On the Symantec service and support Web site, you can find the latest protection and program updates, patches, online tutorials, Knowledge Base articles, error codes, and virus removal tools.

To explore the Symantec service and support Web site

- 1 On the Internet, go to www.symantec.com/techsupp.
- 2 On the service and support Web page, under the heading home & home office/small business, click **Continue**.
- 3 Follow the links to the information that you want.

Searching the Web site

If you cannot find what you are looking for using the links on the introduction page, try searching the Symantec Web site.

To search the Symantec service and support Web site

- 1 At the top of any Symantec Web site page, click **Search**.
- 2 On the search page, type a word or phrase that best represents the information for which you are looking. Use the following guidelines when searching the Symantec Web site:
 - Type a single word in lowercase letters to find all occurrences of the word, including partial matches. For example, type “install” to find articles that include the word install, installation, installing, and so on.
 - Type multiple words to find all occurrences of any of the words. For example, type “virus definitions” to find articles that include virus or definitions or both.
 - Type a phrase enclosed in quotation marks to find articles that include this exact phrase.
 - Type a plus (+) sign in front of all of the search terms to retrieve documents containing all of the words. For example, +Internet +Security finds articles containing both words.
 - For an exact match, type the search words in uppercase letters.
 - To search for multiple phrases, enclose each phrase in quotation marks, and use commas to separate the phrases. For example, “purchase product”, “MAC”, “Norton Ghost” searches for all three phrases, and finds all articles that include any of these phrases.
- 3 Select the area of the Web site that you want to search.
- 4 Click **Search**.

Troubleshooting Norton Ghost

Check this section for possible solutions to issues that might arise with Norton Ghost. Key troubleshooting areas include the following:

- ❖ [Troubleshooting installation](#)
- ❖ [Troubleshooting recovery points](#)
- ❖ [Troubleshooting scheduled backups](#)
- ❖ [Troubleshooting restoring recovery points from Windows](#)
- ❖ [Troubleshooting the recovery environment](#)

Troubleshooting installation

Following are some of the most common installation problems:

- ❖ [I don't know the system information that I'm required to enter](#)
- ❖ [Drive letter changes](#)
- ❖ [Which version of Microsoft .NET Framework do I install](#)

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

You can get system information directly from Windows. This information can be used to specify an IP address, drivers, and so forth when installing the Symantec product or setting up the recovery environment.

To get system information from Windows

- ❖ On the Windows taskbar, click **Start > Programs > Accessories > System Tools > System Information**.

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

Drive letter changes

If the drive letter of the CD drive has changed since you installed the product, you will get an error message (the MSI file cannot be found) when you run the “Repair” or “Modify” installation option from the Norton Ghost CD. This error typically occurs if you are adding or removing external devices to a desktop PC or internal devices to a laptop.

To avoid this issue, make sure that Windows “sees” the CD drive as the same drive letter as when Norton Ghost was first installed.

Which version of Microsoft .NET Framework do I install

If you have Microsoft .NET Framework 1.1 already installed, version 1.1 will not be installed from the Norton Ghost CD.

Troubleshooting recovery points

Following are some of the most common issues when trying to create recovery points:

- [Burning recovery points to a CD or DVD](#)
- [Support for CD/DVD burners](#)
- [Support for DVD-ROM drives](#)
- [About Hibernate.sys and pagefile.sys files](#)

Burning recovery points to a CD or DVD

Following are the most common issues when trying to burn recovery points to a CD or DVD:

- Difficulties while recovery points are being burned to CD might be resolved by downloading the latest CD or DVD drivers and firmware updates from the manufacturer of your CD or DVD writer. When you have completed the update, be sure you turn off the power to the computer (if your CD/DVD burner is internal), then turn the power back on. This will ensure that the computer recognizes the drive. If

your CD/DVD burner is external, unplug the power source to the burner, and then plug it back in.

- If you create a recovery point of two drives and the first recovery point fills one and a half CDs, you will be prompted to insert new media before the second drive is backed up. It helps to think of the two drives as two separate backup sets. This process makes it easier to restore recovery points from removable media later.

Support for CD/DVD burners

Check the Symantec Web site to make sure that your CD/DVD burner is supported:

<http://service1.symantec.com/SUPPORT/powerquest.nsf/docid/2004030176699562>.

Supported burners allow variable packet writing, a necessary feature if you are writing a recovery point to CD or DVD. Most burners manufactured since 1998 support variable packet writing. If your burner is not listed, you should check your burner's documentation to see if variable packet writing is supported before you attempt to write recovery points to it.

Support for DVD-ROM drives

Some DVD-ROM drives cannot play DVD+R media. If you plan to run a backup and store recovery points on DVD+R media and later restore from a DVD-ROM drive, you should check the drive compatibility list at the following URL:

<http://www.dvdplusrw.org/>

About Hibernate.sys and pagefile.sys files

The hibernate.sys and pagefile.sys files are intentionally excluded from backups. These files contain temporary files that can take up a large amount of disk space. They are not needed and there will be no negative impact on your computer system after a complete system recovery.

Even though these files appear in recovery points, they are only placeholders.

Troubleshooting scheduled backups

Following are some of the most common issues that occur while scheduling backups:

- [Recovery points are no longer being created](#)
- [Checking the status of the agent](#)
- [I want to test the scheduling of my backups](#)
- [I deleted a drive and now I get backup errors](#)

Recovery points are no longer being created

When you define a backup, you can specify the number of recovery points 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 recovery points you specify, *plus* one additional recovery point.

If you run out of hard disk space before the number of specified recovery points is reached, the recurring recovery point process will no longer function and a current recovery point will not be created.



You can configure Norton Ghost to notify you when a specified amount of disk space has been used up. You can then remove old recovery points using the Clean Up feature.

See [“Optimizing recovery point storage”](#) on page 73.

The solution is to either reduce the number of recurring recovery points you are creating, or increase the amount of space necessary to maintain the number of recovery points you specify.

If this does not solve the issue, you should review the events log for clues as to what else might be happening. See [“Verifying that a backup completed”](#) on page 66.

Checking the status of the agent

If you have problems with the agent, you should check its status.

To check the status of the agent

- 1 On the Windows taskbar, click **Start > Run**.
- 2 In the Open text box, type **services.msc**.
- 3 Click **OK**.
- 4 In the Name column, select Norton Ghost. The Status column for Norton Ghost (you may need to scroll to the right to see the column) should have “Started” listed.
- 5 Do one of the following:
 - To stop the service, in the Name column, right-click **Norton Ghost**, then click **Stop**.
 - To start the service, in the Name column, right-click **Norton Ghost**, then click **Start**.

I want to test the scheduling of my backups

To test the scheduling of your backups, you can stop the Norton Ghost agent service in the Microsoft Services console (SERVICES.MSC), change the date forward on the computer to a time when a scheduled backup should occur, and then restart the Norton Ghost service. If the date is changed while the service is running, the change will not be noticed by the Norton Ghost service.

I deleted a drive and now I get backup errors

When a drive is deleted, Norton Ghost should detect that the drive is no longer available and remove the deleted drive from any defined backups that include the deleted drive.

However, if you delete a drive, you should remove the drive from all backups associated with it to avoid any errors.

Troubleshooting restoring recovery points from Windows

Check here for suggestions to help resolve problems that are encountered while restoring recovery points from Windows.

- [Restore from a recovery point that is spanned](#)
- [Restore a system drive](#)

Restore from a recovery point that is spanned

Following are the most common issues when trying to restore from a recovery point that has been spanned across multiple CDs or DVDs:

- When you restore a system drive under Windows from Norton Ghost and the recovery point is on multiple CDs, Norton Ghost will not prompt correctly for the next media. To avoid this problem, restore the backup manually from the System Restore Wizard in the recovery environment.
- When you are restoring from CD, you are prompted to insert the first CD, followed by the last CD, the first CD, the last CD, then the first CD again. Then the restore begins and prompts you for the media in sequence. After restoring a recovery point, you will be prompted again to insert the first CD one more time. For example, if you had a recovery point that spanned across five CDs, the order you would insert the CDs would be as follows: 1-5-1-5-1-2-3-4-5-1.

Restore a system drive

Following are the most common issues when trying to restore a system drive (typically, drive C):

- If you begin restoring a backup of a system drive under Windows and encounter an error, you will have to start the recovery environment and run the Recover My Computer Wizard to manually restore the backup.
- When you restore a system drive under Windows, the restore may not complete successfully if the recovery

environment assigns different letters to drives other than what was assigned under Windows. This discrepancy is sometimes caused by USB and FireWire devices or CD devices, or if you have manually changed drive letter assignments. (Under Windows fixed drives are assigned first; under the recovery environment, removable drives are assigned first.) The work-around is to restore the backup manually from the recovery environment using the Recover My Computer Wizard.

Troubleshooting the recovery environment

Check here for suggestions to help resolve problems that you might encounter while running Symantec Recovery Disk.

You should also see the Readme.txt file on the product CD, which includes valuable troubleshooting information in addition to what is included in this section.

- [Cannot start the computer from the CD](#)
- [Cannot access the local drive where my backups are saved](#)
- [Cannot access the network drive where recovery points are saved](#)
- [Supported storage devices and NIC drivers](#)
- [My recovery point is on CD but I can't use the drive because the Norton Ghost CD is running the recovery environment](#)
- [Warning appears indicating that Windows might not run correctly due to insufficient memory](#)

Cannot start the computer from the CD

To run the recovery environment, you must be able to start your computer from the Norton Ghost CD.

To start your computer using the product CD

- 1 Turn on your computer.
- 2 While the computer is starting, watch for a prompt that tells you how to access the BIOS. Generally, you will need to press , <F1>, <F2>, or <F10>.



- 3 From the BIOS screen, choose the Boot menu.
The term *boot* refers to the location where software required to start a computer is stored. The Symantec Recovery Disk contains a simple version of the Windows operating system. By changing the boot sequence of your computer to your CD drive, the computer can then load this version of Windows. *Boot* is also used synonymously with *start*.
- 4 Change the CD or DVD drive to be the first bootable device in the list.
- 5 Save the changes and exit the BIOS setup.
When you start your computer with the product 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 computer will attempt to start from the next bootable device 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 computer starts.
- 6 Press a key, and the recovery environment will start.

See “Starting your computer using the recovery environment” on page 94.

Cannot 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 starting the recovery environment.

To access the local drive

- 1 Start your computer using the Norton Ghost CD.
- 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.
- 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

See “Supported storage devices and NIC drivers” on page 133.

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 recovery environment, you will not be able to use that drive.

Cannot access the network drive where recovery points are saved

See [“Supported storage devices and NIC drivers”](#) on page 133.

The system where you are running the recovery environment may use a NIC driver that is not included as part of the recovery environment. Contact Symantec services and support if your NIC is not detected by the recovery environment.

Supported storage devices and NIC drivers

For a list of storage devices and NIC drivers that are supported by the recovery environment, please see www.symantec.com.

See [“Starting your computer using the recovery environment”](#) on page 94.

If your storage device is not listed, you can press **F6** when starting a computer using the recovery environment and manually load the necessary drivers.

If your NIC card is not listed and the recovery environment does not detect the driver, contact Symantec technical support.

See [“Service and support solutions”](#) on page 149.

My recovery point is on CD but I can't use the drive because the Norton Ghost CD is running the recovery environment

When you restore a backup from a CD or DVD from within the recovery environment and you only have one CD or DVD drive, you must leave the product CD in that drive until *after* you have clicked Browse to locate the backup. After the Open dialog box has displayed, you can remove the Norton Ghost CD or the Symantec Recovery Disk CD and insert the media that contains the backup.

If you remove the product CD before clicking Browse, the recovery environment will exit back to the recovery environment main window.

Warning appears indicating that Windows might not run correctly due to insufficient memory

The recovery environment requires a minimum of 256 MB of RAM to run. If your computer's video card is configured to share your computer's RAM, you might need more than 256 MB of RAM to use the recovery environment.

If you are not sure, you can continue. If you have difficulties using the recovery environment, you might need to upgrade your computer's memory.

Recovery Point Browser error messages

Check here for suggestions to help resolve error messages that are encountered while running the Recovery Point Browser.

- ❏ [Cannot initialize COM library](#)
- ❏ [Cannot allocate Norton Ghost mount manager instance](#)
- ❏ [Cannot retrieve drive information](#)
- ❏ [Cannot dismount drive. Please verify the drive is not locked by another process](#)

Cannot initialize COM library

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

Cannot allocate Norton Ghost mount manager instance

The product was unable to allocate resources for the Symantec 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 Symantec mount manager did not recognize the drive as a mounted recovery point. 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 Symantec products, and then retry the dismount operation. If the problem persists, restart 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 Symantec mount manager was unable to dismount the drive. To resolve the error, make sure that there are no open files on the drive and that the drive is not locked by another application.

General error messages

Following is a list of the most common, general error messages:

- [E0710007](#)
- [E0B000C](#)
- [E0BB0004](#)
- [E0BB001B](#)
- [E0BB0097](#)
- [E0BB0147](#)
- [E0BC000A](#)
- [E7C3000F](#)
- [E7D1001F](#)
- [E926001F](#)
- [EA39070A](#)

- ❏ EA390712
- ❏ EBAB001A
- ❏ EC8A0001:The engine has not been initialized
- ❏ EC8F0007
- ❏ EC8F000C
- ❏ EC950001
- ❏ Error: The object invoked has disconnected from its clients
- ❏ Catastrophic error
- ❏ WinBOM error when starting the recovery environment
- ❏ The month and year are reversed on some international computers

If you don't see an error message here that matches the error message you are seeing, please visit the Symantec technical support Web site.

See "[Service and support solutions](#)" on page 149.

E0710007

Cannot create a virtual volume image.

If the error continues, run the recovery environment support utilities Display SME Disk Information and View Partition Information, obtain system information, then contact technical support. Additional log files, such as.txt files from the Agent folder, may also be needed.

E0B000C

This error may also display one of the following:

- ❏ Object BasicDisk SME~Computer~BgM896453 was in the saved state but is not in the current state.
- ❏ Object MediaCommon:Sme~computer ~Pd1 ~M896453 was in the saved state but is not in the state.

These two error messages could be caused by changes to the serial number. They could also be caused by the drive information being reported differently.

If the restore was initially set up in Windows, but the entire system was restarted with the product CD, try going through the Recover My Computer Wizard in the recovery environment on the product CD. There could be a change in the drive information in Windows 2000 compared to the recovery environment.

If the error continues to occur during the use of the Recover My Computer Wizard from the recovery environment, you should contact technical support.

EoBB0004

You are creating or restoring a recovery point using Norton Ghost. Immediately after you click Finish, you see "Error EoBB0004: Function Copy Volume argument Destination is invalid." You can back up other volumes without seeing error messages.

Be sure that files and free space are not fragmented. Run a disk defragmentation tool that not only defragments files, but also defragments free space (moves the files to the beginning of the partition). Norton Speed Disk is recommended.

Severe fragmentation can prevent Norton Ghost from getting a "clear" recovery point of the drive.

EoBB001B

Cannot lock volume "\\volume_name" because it contains the operating system or it has an active paging file.

Norton Ghost can back up operating system partitions and other partitions containing page files. This error is usually caused by a driver conflict with another application that may have control of the partition.

Check for other applications that may have a lock on the drive and temporarily disable any suspected conflicting drivers, then run Norton Ghost again to create the recovery point.

EoBB0097

If the error occurs when attempting to restore a recovery point to a partition, delete the partition first. If the error occurs when attempting to create a recovery point of a partition, please contact Symantec technical support.

EoBB0147

When trying to perform a backup operation, Norton Ghost reports, "Error E0BB0147: The operation 'Snap Volume' is not currently enabled for this Volume."

One of the following may cause this error message with the SymSnap.sys driver:

- The driver does not load properly during the Windows startup process.
- The driver is not properly registered in the Windows registry.
- The driver does not exist in the %SystemRoot%\System32\Drivers folder

To resolve the problem, check the following:

- Confirm that SymSnap.sys exists in the %SystemRoot%\System32\Drivers folder.
- Confirm that SymSnap appears in System Information > Software Environment > System Drivers.

EoBC000A

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

You should try restoring using Symantec Recovery Disk.

- This error can also be caused by fiber channel devices.
Disconnect the devices to confirm whether or not they are causing the problem.
- This error may also be caused by Emulex controllers. Occasionally there are phantom volumes or partition table errors that can cause this error. Contact Symantec technical support.

E7C3000F

This error message may indicate that there are bad sectors or corrupted files on the hard disk. Run CHKDSK /R (or CHKDSK /P) at least four to six times, and then try backing up again.

If the problem persists, you can still create a recovery point by disabling bad-sector checking and recovery point verification in Norton Ghost. However, this does not solve the problem of bad sectors on the hard disk. As a result, there is no guarantee that the recovery point will be valid or capable of being successfully restored.

E7D1001F

Unable to write to the file. This error can occur if you do not have the correct rights. However, it could also be caused by slow bandwidth, dropped packets, or other network-related issues.

Contact Symantec technical support.

E926001F

File cluster chain length does not match file size requirements.

Run the Windows chkdsk utility on the source drive before you copy the recovery point or you create a recovery point. If this is not possible, and you have confirmed that the recovery point is valid, you can bypass the error by deselecting the restore option Check file system after restore. After you have finished restoring the recovery point, run chkdsk on the drive to eliminate any file system errors.

EA39070A

The internal structure of the recovery point file is invalid or unsupported when saving the file to a network location.

This error can also occur for one of the following reasons:

- The recovery point file is damaged or corrupted. Damage can occur when you create a recovery point over a network and there is significant packet loss during the creation of the recovery point file. You should verify recovery point after they are created to ensure their integrity. Create a new recovery point file to a different location, or create a new recovery point with a different file name to the same location.
- The recovery point file is fine, but there may be a conflict with spyware detection software (such as Pest Control or Spybot) causing the recovery point file to become corrupt or appear to be corrupted. While using the product or Recovery Point Browser, disable all spyware detection software.
- If you copy a recovery point file from one FireWire drive to another FireWire drive while connected to a FireWire expansion card that uses a Via chipset (such as the Kouwell card). To work around this issue, replace your Via-based FireWire expansion card with a card that uses a non-Via chipset (such as the Adaptec 4300 Fireconnect, which uses a TI chipset).

EA390712

Open failed.

This error is usually caused by insufficient rights to the Norton Ghost agent service. A user must have administrator and domain administrator rights on the sub-share folder. Check that the Norton Ghost agent services Log On information is correct.

EBAB001A

Cannot read data from drive. An unknown exception has occurred.

This error is reported when you are attempting to save a recovery point to removable media. If you are saving a recovery point to removable media, insert a disk into the

drive. If that does not work, disconnect the removable media drive and remove any attached USB devices.

EC8A0001: The engine has not been initialized

See ["Cannot access the network drive where recovery points are saved"](#) on page 133.

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

Try loading the driver manually.

If the error continues, run the recovery environment support utilities Display SME Disk Information and View Partition Information, obtain system information, and then contact technical support. Additional log files may also be needed.

EC8F0007

The error is usually caused by a driver conflict with another application that may have control of the partition. Check for other applications that may have a lock on the drive. Temporarily disable any suspected conflicting drivers and run Norton Ghost again.

EC8F000C

Cannot find the virtual volume image driver.

This error typically occurs when the virtual volume imaging driver (symsnap.sys) has been incorrectly installed. You should uninstall and then reinstall the product to correct this error. Your existing backups and recover points will not be affected, provided you instruct the uninstall not to remove them.

EC950001

This error occurs when the driver for the storage controller does not load in Symantec Recovery Disk. Restart the computer using Symantec Recovery Disk and press F6 to load the necessary drivers.

Error: The object invoked has disconnected from its clients

If you encounter this error, the computer (typically a remotely managed computer) has either crashed or the agent service has stopped running.

Catastrophic error

This may be caused by a conflict with another program. Contact technical support.

WinBOM error when starting the recovery environment

This is an issue with the NIC (Network Interface Card) driver not loading. If the recovery point you want to restore is located on the network, you should first try a different NIC card. If that is unsuccessful, you will need to send the drivers and a system information file to technical support.

The month and year are reversed on some international computers

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

Norton Ghost agent and Windows Services

The Norton Ghost agent runs as a service rather than as a desktop application. Running the agent as a service allows scheduled backups to run even if no one (or an unprivileged user) is logged on to the computer.

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 for solving a problem with the software. If the agent is

not starting on a computer, you will have problems creating and restoring recovery points.

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 145.
Configure the user name and password used by the agent	See "Adding users who can back up a computer" on page 67.
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. See "Setting up recovery actions when the agent fails to start" on page 147.

Viewing the status of a agent

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.

To view the status of the agent

- On the Windows taskbar, do one of the following:
 - Click **Start** > **Settings** > **Control Panel** > **Administrative Tools** > **Services**.
 - Click **Start** > **Run**. In the Open text field, type **services.msc**, and then click **OK**.
 - If you are running Windows XP, click **Start** > **Control Panel** > **Performance and Maintenance** > **Administrative Tools**, and then double-click **Services**.
- Scroll the list of services until you see Norton Ghost (the name of the agent) under the Name column. Its status should be set as Started.

See ["Starting, stopping, or restarting the agent service"](#) on page 145.

Best practices for using services

The agent service is a critical component for creating recovery points. To minimize problems with the agent, there are a number of steps you can take.

The following table lists various tasks that you should check or use.

Check the event log first before using Services	The event log 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 often gives you information and clues as to what is causing the problem. On the Status panel, click View Event Log .
---	---

<p>Verify that the agent is starting without user intervention</p>	<p>When the agent is installed on a computer, it is configured to start automatically when Norton Ghost starts. You can test that the agent is starting automatically by looking in Services, checking the status, and then restarting the service if necessary. If the Startup type is set to automatic, you should try starting the agent again.</p> <p>See "Starting, stopping, or restarting the agent service" on page 145.</p>
<p>Use caution when changing default settings for the agent</p>	<p>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.</p> <p>Changing the default agent properties may prevent Norton Ghost 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 run Norton Ghost.</p>

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 Norton Ghost is unable to connect to the agent on a computer.
Restart	You have just changed the user name or password (or both) you use to log on to the agent service, or you used the Security Configuration Tool to give additional users the ability to back up computers. See "Adding users who can back up a computer" on page 67.)
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 defined a backup, note that stopping the agent will prevent recovery points from being created at the scheduled times you specified.

See ["Viewing the status of a agent"](#) on page 143.

To start, stop, or restart the Agent

- 1 In the Services window, select Norton Ghost under the Name column.
- 2 Do one of the following:

Click Action > Start	Starts the agent
Click Action > Stop	Stops the agent
Click Action > Restart	Restarts the agent

Stopping the agent service will prevent you from creating or restoring recovery points from Norton Ghost.

If you stop the agent service and then start Norton Ghost, the agent will restart automatically.

If you stop the agent service while Norton Ghost is open, you will receive an error message and Norton Ghost will be disconnected from 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.

To set up recovery actions

See ["Viewing the status of a agent"](#) on page 143.

- 1 In the Services window, select Norton Ghost under the Name column.
- 2 Click **Action > Properties**.
- 3 Click **Recovery**.
- 4 In the First failure, Second failure, and Subsequent failure drop-down list, select one of the following actions:

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.

- 5 In the Reset fail count after text box, 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.
- 6 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.

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 Norton Ghost 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

To view agent dependencies

- 1 In the Services window, select Norton Ghost under the Name column.
- 2 Click **Action > Properties**.
- 3 Click **Dependencies**.

See ["Viewing the status of a agent"](#) on page 143.

Service and support solutions

B

The Service & Support Web site at <http://service.symantec.com> supports Symantec products. Customer Service helps with nontechnical issues such as orders, upgrades, replacements, and rebates. Technical Support helps with technical issues such as installing, configuring, or troubleshooting Symantec products.

Methods of technical support and customer service can vary by region. For information on support offerings in your region, check the appropriate Web site listed in the sections that follow.

If you received this product when you purchased your computer, your computer manufacturer may be responsible for providing your support.

Customer service

The Service & Support Web site at <http://service.symantec.com> tells you how to:

- Subscribe to Symantec newsletters.
- Locate resellers and consultants in your area.
- Update your product registration.
- Find out about orders, returns, or a rebate status.
- Access Customer Service FAQs.
- Post a question to a Customer Service representative.
- Obtain product information, literature, or trialware.

For upgrade orders, visit the Symantec Store at:
<http://www.symantecstore.com>

Technical support

Symantec offers two technical support options for help with installing, configuring, or troubleshooting Symantec products:

- **Online Service and Support**
Connect to the Symantec Service & Support Web site at <http://service.symantec.com>, select your user type, and then select your product and version. You can access hot topics, Knowledge Base articles, tutorials, contact options, and more. You can also post a question to an online Technical Support representative.
- **PriorityCare telephone support**
This fee-based (in most areas) telephone support is available to all registered customers. Find the phone number for your product at the Service & Support Web site. You will be led through the online options first, and then to the telephone contact options.

Support for old and discontinued versions

When Symantec announces that a product will no longer be marketed or sold, telephone support is discontinued 60 days later. Technical information may still be available through the Service & Support Web site at: <http://service.symantec.com>

Subscription policy

If your Symantec product includes virus, firewall, or Web content protection, you may be entitled to receive updates via LiveUpdate. Subscription length varies by Symantec product.

After your initial subscription ends, you must renew it before you can update your virus, firewall, or Web

content protection. Without these updates, you will be vulnerable to attacks.

When you run LiveUpdate near the end of your subscription period, you are prompted to subscribe for a nominal charge. Simply follow the instructions on the screen.

Worldwide service and support

Technical support and customer service solutions vary by country. For Symantec and International Partner locations outside of the United States, contact one of the service and support offices listed below, or connect to <http://service.symantec.com> and select your region or language under Global Support.

Service and support offices

North America	
Symantec Corporation 555 International Way Springfield, OR 97477 U.S.A.	http://www.symantec.com/
Australia and New Zealand	
Symantec Australia Level 2, 1 Julius Avenue North Ryde, NSW 2113 Sydney Australia	http://www.symantec.com/region/reg_ap/ +61 (2) 8879-1000 Fax: +61 (2) 8879-1001
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