



CASPER SECURE™ DRIVE BACKUP

FOR PGP® WHOLE DISK ENCRYPTION

USER GUIDE

v3.0



Future Systems
SOLUTIONS

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Introduction

Casper Secure™ Drive Backup for PGP® Whole Disk Encryption is a hard disk backup solution designed specifically for users of PGP Whole Disk Encryption technology looking for a safe, secure, and dependable backup, recovery, and migration solution for their PGP whole disk encrypted PC.

As a backup and recovery solution, Casper Secure Drive Backup offers you these unique advantages:

- **Fast, Completely Encrypted System Backups.** Casper Secure Drive Backup creates a completely encrypted copy of a PGP whole disk encrypted Windows system drive. Unlike traditional backup and disk imaging solutions, which can produce only an unencrypted backup of a PGP whole disk encrypted PC, Casper Secure Drive Backup creates a backup which actually persists all of the encrypted data in its original encrypted state. In addition, exclusive SmartClone™ technology enables Casper Secure Drive Backup to maintain a complete backup in the same amount of time required by most traditional backup programs to perform a partial or incremental *unencrypted* backup of an encrypted disk.
- **Rapid Recovery.** In the event of a hard disk failure, a backup created by Casper Secure Drive Backup can be used as an immediate and permanent replacement for the failed hard disk. No special rescue disks or arduous data restoration processes are required to facilitate recovery, and most importantly, no lengthy re-encryption process is required.
- **Convenience.** Casper Secure Drive Backup enables complete system backups to be performed at any time without leaving Windows, so there is never a need to restart the computer or stop work to create a backup. In addition, features such as integrated scheduling and exclusive SmartSense technology permit your backup to be performed completely unattended in the background or automatically whenever you attach your portable backup drive.

NOTE: This User Guide is intended to provide you with an overview of the basic operations of Casper Secure Drive Backup. For additional assistance, please refer to the detailed help files included within the program.

System Requirements

- Windows 7, Windows Vista, Windows XP, or Windows 2000 Workstation

NOTE: Background copying not supported on Windows 2000.

- PGP Desktop version 9.6x or later
- 100MB available disk space
- 128MB RAM (512MB or more recommended)
- Backup device (additional internal or external hard disk drive)

Getting Help

The Casper Secure Drive Backup online help includes troubleshooting information. To access online help when running Casper Secure Drive Backup, select **Contents** from the **Help** menu, or press **F1**.

Additional support for Casper Secure Drive Backup is available on the Future Systems Solutions Web site at <http://support.fssdev.com>.

Installing Casper Secure Drive Backup

The installation process takes just a few minutes and an automated wizard will guide you through the process. The instructions below outline in detail the steps for installing Casper Secure Drive Backup.

Running the Casper Secure Drive Backup Setup Program

1. Start the Casper Secure Drive Backup Setup program.

The **Welcome to the Casper Secure Drive Backup 3.0 Setup Wizard** dialog will appear.

2. At the Welcome to the Casper Secure Drive Backup 3.0 Setup Wizard dialog, click Next.

The **Read the Future Systems Solutions, Inc. License Terms** dialog will appear. In order to proceed with the installation of Casper Secure Drive Backup, you must agree to the terms of the license that is displayed.

3. Read the License Agreement, select **I accept the terms of this agreement**, and then click **Next**.

The **Choose the installation you want** dialog will appear.

4. Click Install Now.

The Casper files are added to your system.

5. Click **Run Casper Secure Drive Backup 3.0** to begin using Casper Secure Drive Backup.

Using Casper Secure Drive Backup

Casper Secure Drive Backup makes it easy to upgrade or maintain a backup of your Windows system hard disk, as well as other hard disks used on your computer.

When you use Casper Secure Drive Backup to clone a hard disk, Casper creates a snapshot, representing a single point-in-time view of the disk, and then clones it to another hard disk. The result is hard disk that can be used as an immediate and complete replacement for the original hard disk.

Casper SmartSense™ technology will begin the process of upgrading or creating a backup of your Windows system hard disk automatically when you attach a new hard disk to your computer. If the new disk is installed internally, or if Casper SmartSense is unable to detect the new disk, you can manually launch Casper SmartStart™ to begin the process. For more information about using Casper SmartStart to upgrade or maintain a backup of your Windows system disk, please refer to the **Casper Secure SmartStart Guide**.

To upgrade or maintain a backup for another hard disk on your computer, or customize the upgrade or backup process of your Windows system hard disk, Casper's Copy Drive wizard will guide you as outlined in this user guide.

Starting Casper

1. Click the **Start** button.
2. Click **All Programs**.
3. Point to the **Casper Secure Drive Backup 3.0** menu.
4. Click **Casper Secure Drive Backup**.

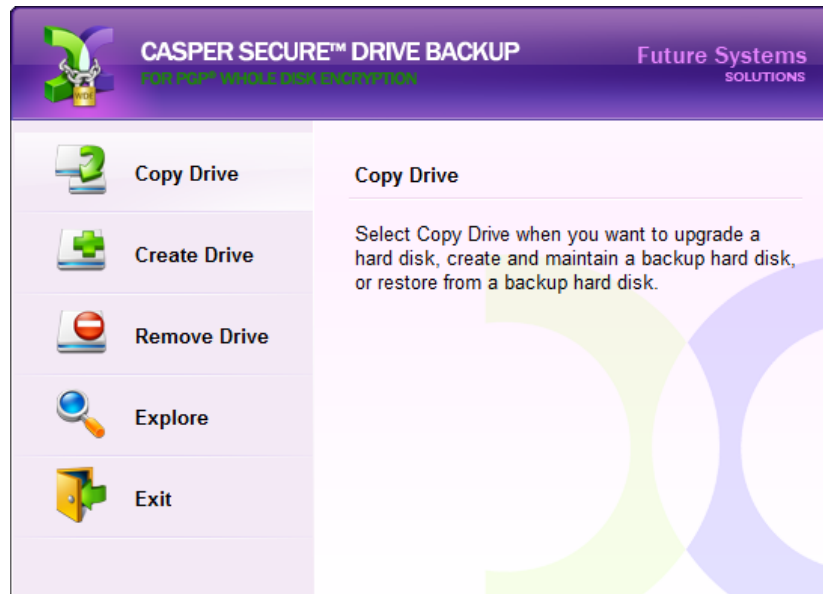
Upgrading a Hard Disk

The procedure for upgrading a hard disk is basically the same whether you are upgrading a hard disk in a desktop or a notebook. For a desktop system, the new hard disk is temporarily installed as a secondary hard disk in the computer or attached as an external hard disk using an external USB, Firewire, or eSATA hard disk enclosure or bridge adapter. For a notebook computer, a secondary media bay or external USB, Firewire, eSATA, or PCMCIA hard disk enclosure or bridge adapter is required to connect the new hard disk to the notebook.

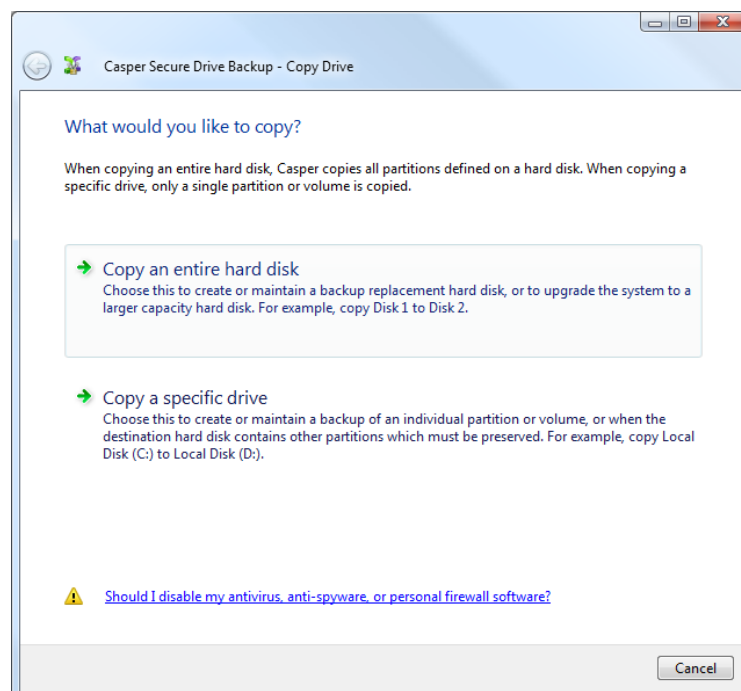
Example 1: Upgrading a Hard Disk

Assuming the new hard disk is currently installed or attached to the system, the following procedure illustrates how Casper may be used to clone the original hard disk to the new hard disk and complete the upgrade.

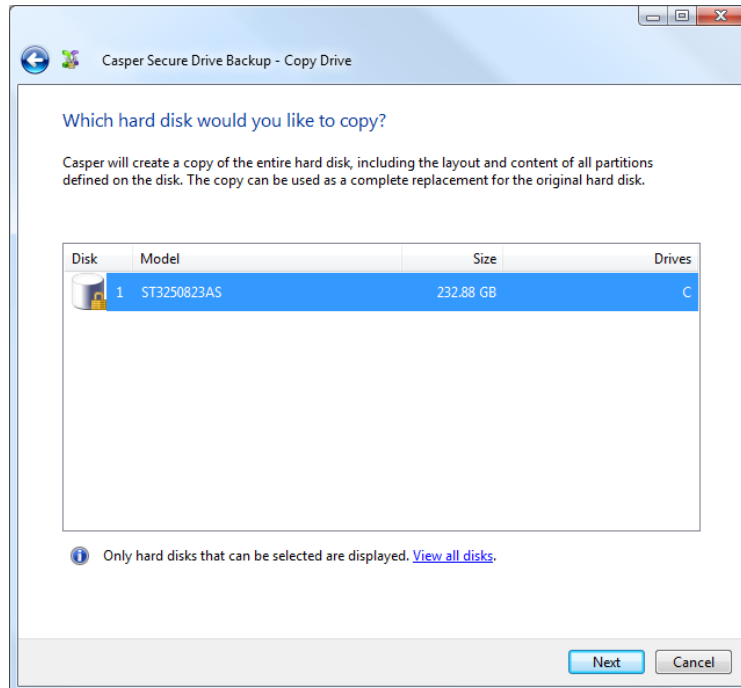
1. Select **Copy Drive**.



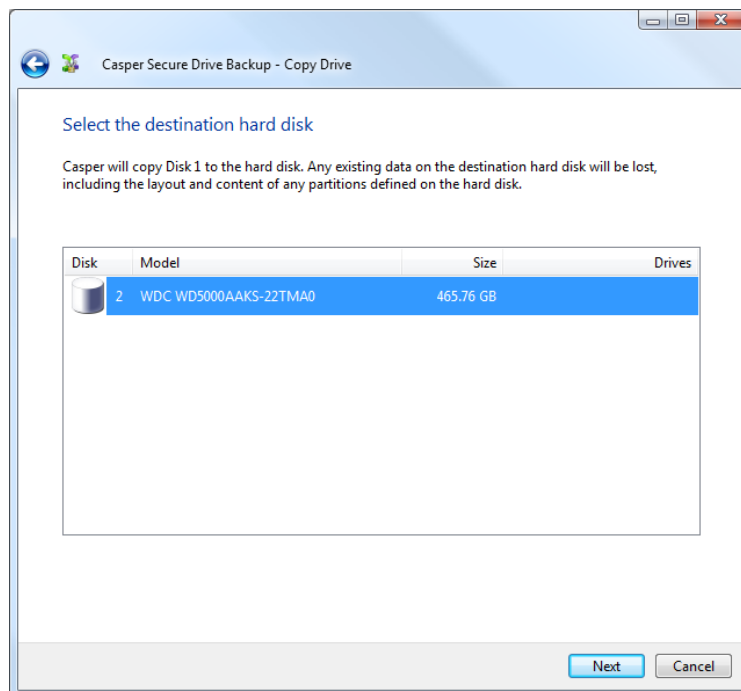
2. Select **Copy an entire hard disk**.



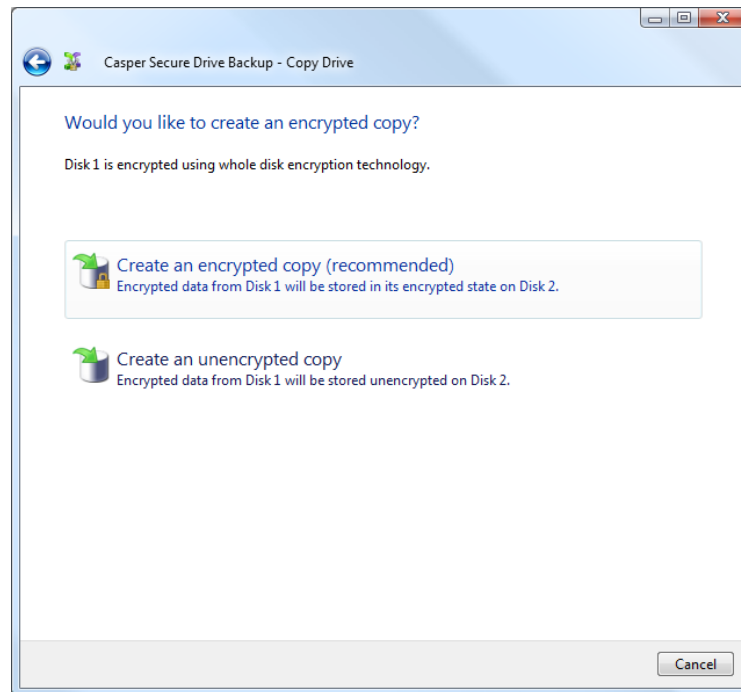
3. Select the hard disk to be upgraded (e.g. the hard disk on which Windows is installed) as the disk to copy, and click **Next**.



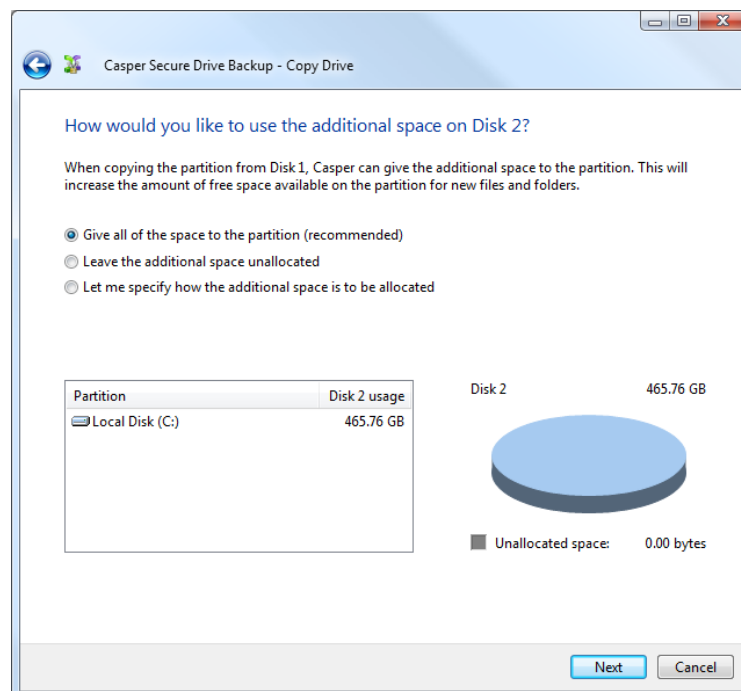
4. Select the new hard disk as the destination, and click **Next**.



5. If the source hard disk is encrypted using PGP whole disk encryption, Casper will offer the option of creating an unencrypted copy unless prohibited by PGP administrative policy settings. Click **Create an encrypted copy**.



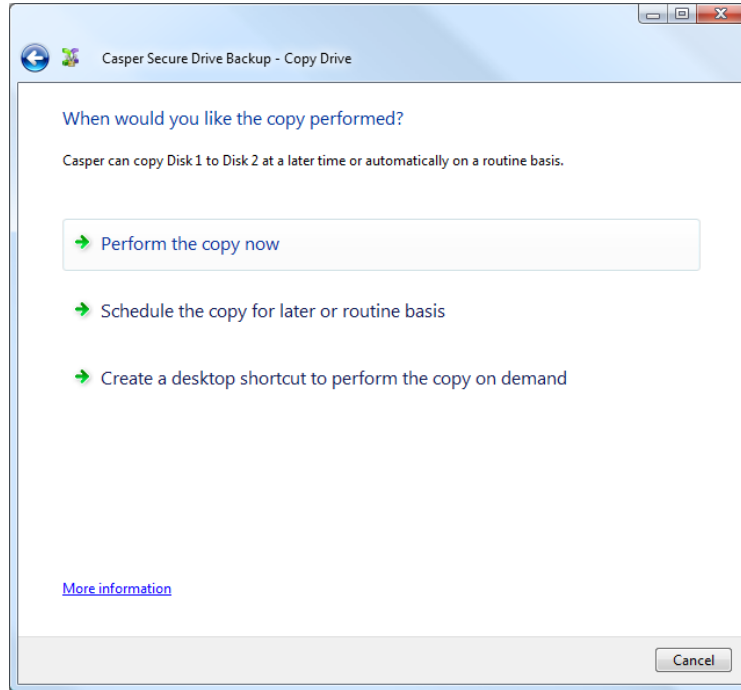
6. When prompted to specify how the additional space on the new hard disk is to be used, retain the default selection and click **Next**.



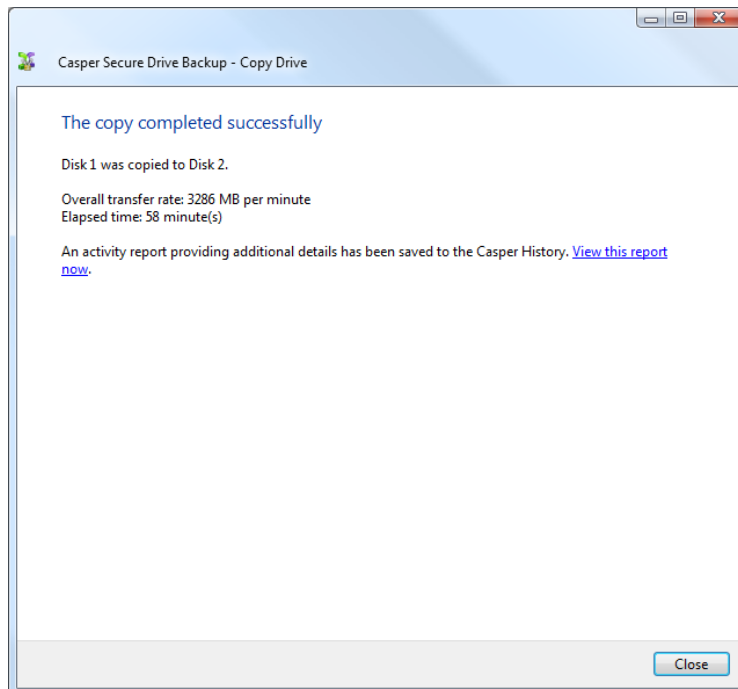
When the destination hard disk is larger than the source, the default option will be *Give all of the space to the partition*, or *Proportionally distribute the space to all partitions* when

there is more than one partition defined on the source disk. For additional help with making a selection, press **F1**.

7. Click **Perform the copy now** to begin the copy.



8. When Casper has completed the cloning process, click **Close**.



9. Shutdown and power-off the computer.
10. Reconfigure the computer to replace the original hard disk with the new hard disk.

If the new hard disk is installed in a secondary media bay of a notebook, or installed in an external USB, Firewire, eSATA, or PCMCIA enclosure, simply remove the hard disk from its enclosure and exchange it with the original hard disk.

For a new hard disk that has been temporarily mounted as a secondary internal hard disk, change the hard disk jumpers and cable connection as required to make the new hard disk the master on the primary IDE or SATA controller.

For detailed instructions on how to replace a hard disk in a desktop system, see **Replacing a hard disk** under **Additional Resources** in the online **Casper Secure Help**.

Creating and Maintaining a Bootable System Backup

Using Casper Secure Drive Backup to create and maintain a bootable backup for your computer system requires a hard disk large enough to accommodate all of the data on the current Windows system hard disk.

For a desktop system, using a second internal hard disk, or one mounted in a mobile drive rack for the backup hard disk is ideal. If the desktop system supports booting from eSATA or USB hard disk type devices, using an external hard disk for the backup also is ideal. For a notebook computer, a secondary media bay or external USB, Firewire, eSATA, or PCMCIA hard disk enclosure designed specifically for a 2.5" notebook hard disk is recommended to mount and attach the second (backup) hard disk to the notebook. Using a 3.5" external desktop hard disk as the backup for a notebook is not recommended unless the notebook supports booting from eSATA or USB hard disk type devices.

The following examples illustrate several ways to create and maintain a bootable system backup. The first example, **Creating a Backup**, demonstrates how to manually create a backup by cloning one hard disk to another. The second example, **Updating a Backup**, shows how to manually update a backup. The third example, **Scheduling a Routine Backup**, illustrates how to create a copy schedule to maintain the backup automatically. The fourth example, **Using Casper SmartSense to Maintain an External Backup**, shows how to configure Casper to perform a backup automatically whenever you attach your external backup drive. The fifth example, **Using 1-Click Cloning to Maintain a Backup**, shows how to create a 1-Click Cloning desktop shortcut to maintain a backup on demand.

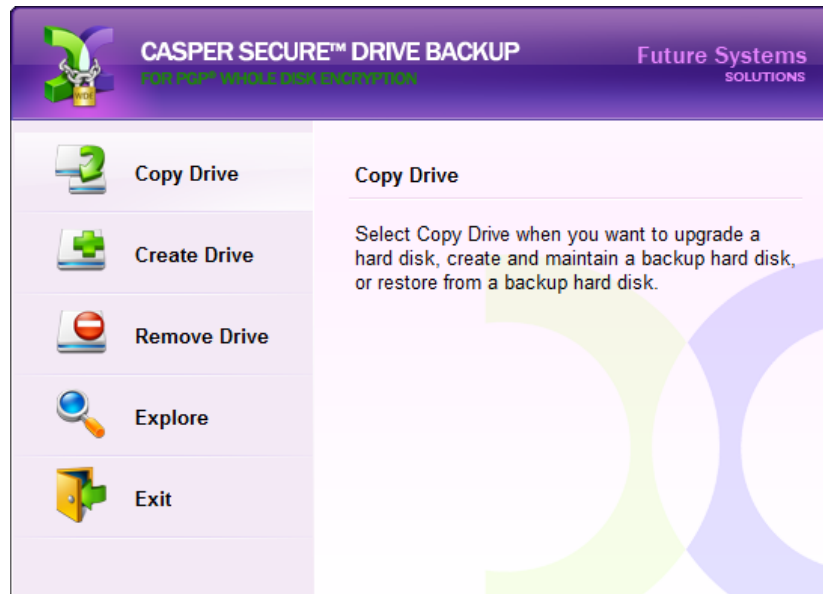
For help with installing a hard disk, see **Installing a new hard disk** under **Additional Resources** in the **Casper Secure Help**.

NOTE: For a hard disk attached as an external USB device, booting from the backup hard disk may require the selection of additional BIOS options to completely enable booting. By default, some BIOS implementations disable USB boot support, or have it configured for floppy or ZIP drive emulation rather than hard disk drive (HDD) emulation. *If the computer's BIOS does not support booting from external USB hard disk type devices, the backup hard disk must be removed from its external enclosure and installed as a replacement for the internal hard disk in order to boot from it.* Alternatively, a restore may be performed by using the Casper Secure Startup Disk to copy the external backup hard disk to the computer's internal hard disk.

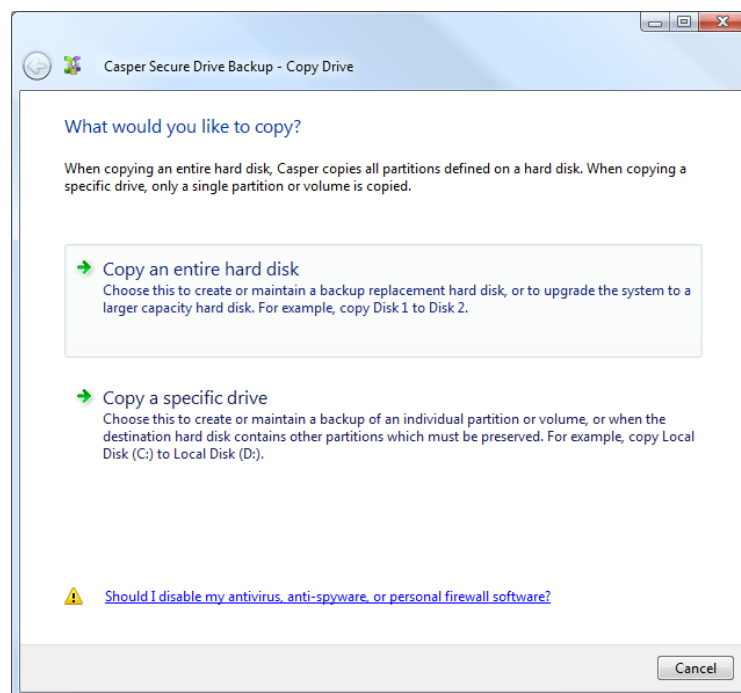
Example 2: Creating a Backup

Assuming the backup hard disk is currently installed or attached to the system, the following procedure illustrates how to clone the Windows system hard disk to the backup hard disk on either a desktop or notebook system.

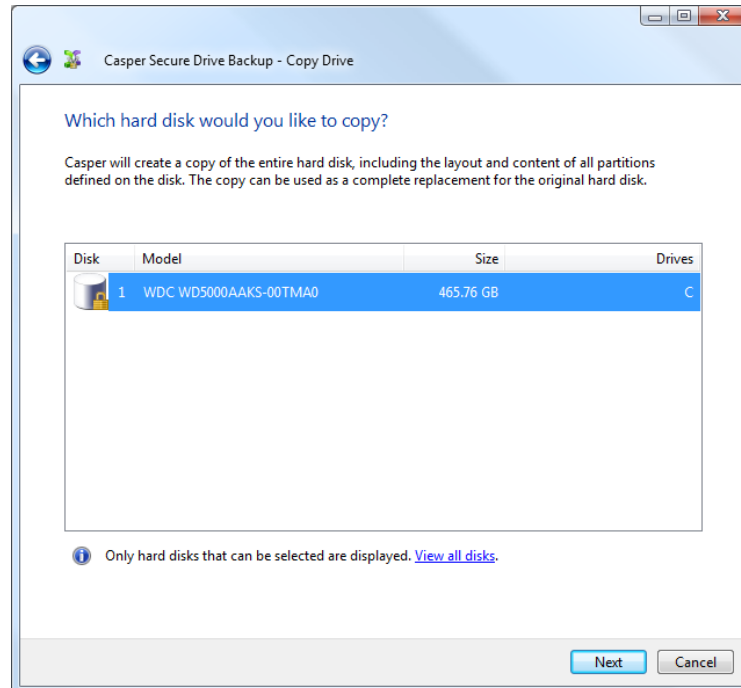
1. Select **Copy Drive**.



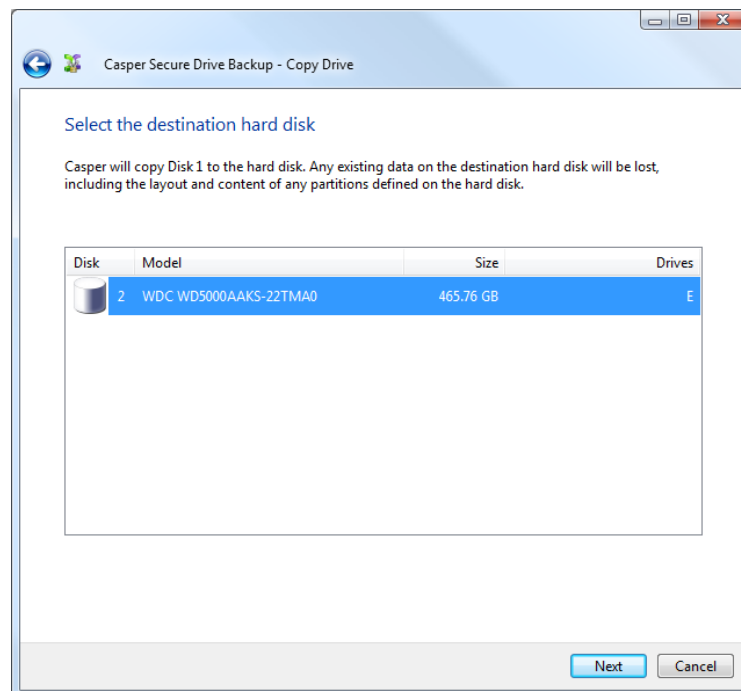
2. Select **Copy an entire hard disk**.



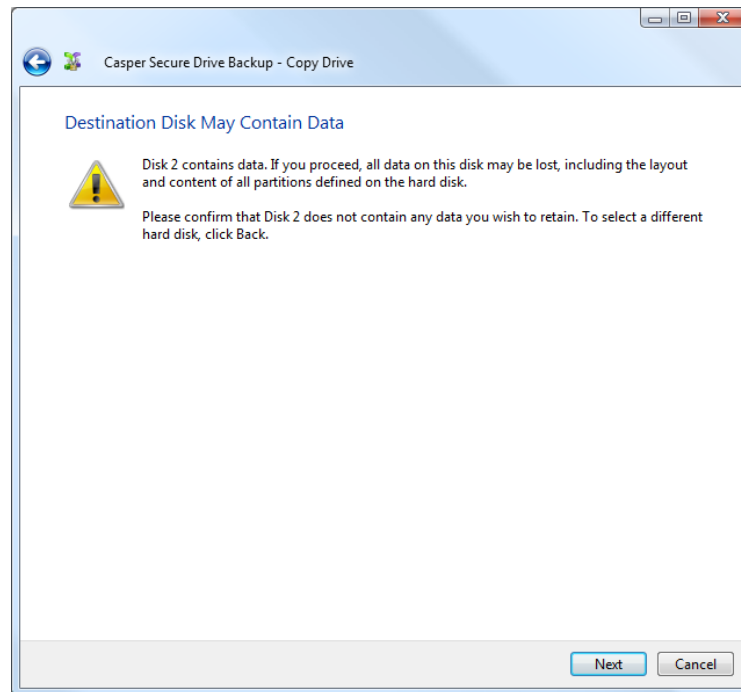
3. Select the hard disk to backup (e.g. the hard disk on which Windows is installed) as the disk to copy, and click **Next**.



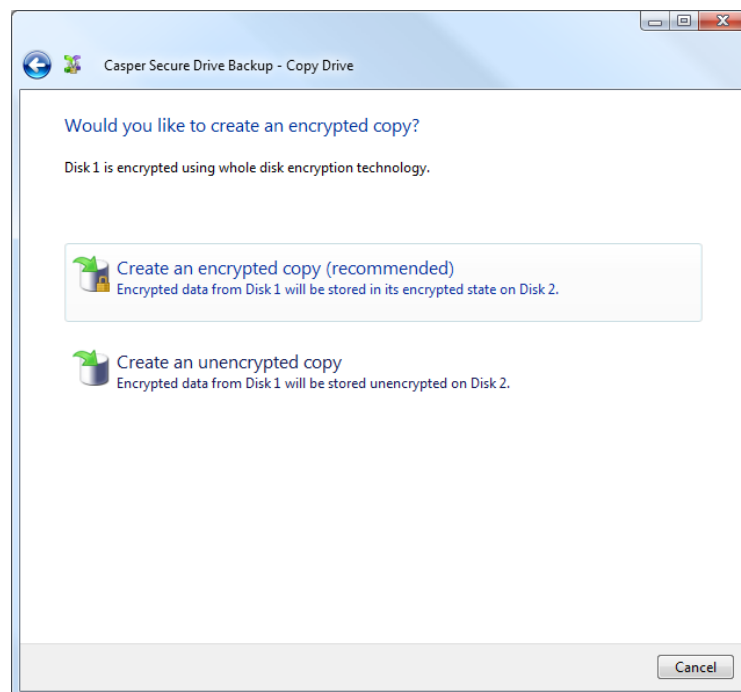
4. Select the backup hard disk as the destination, and click **Next**.



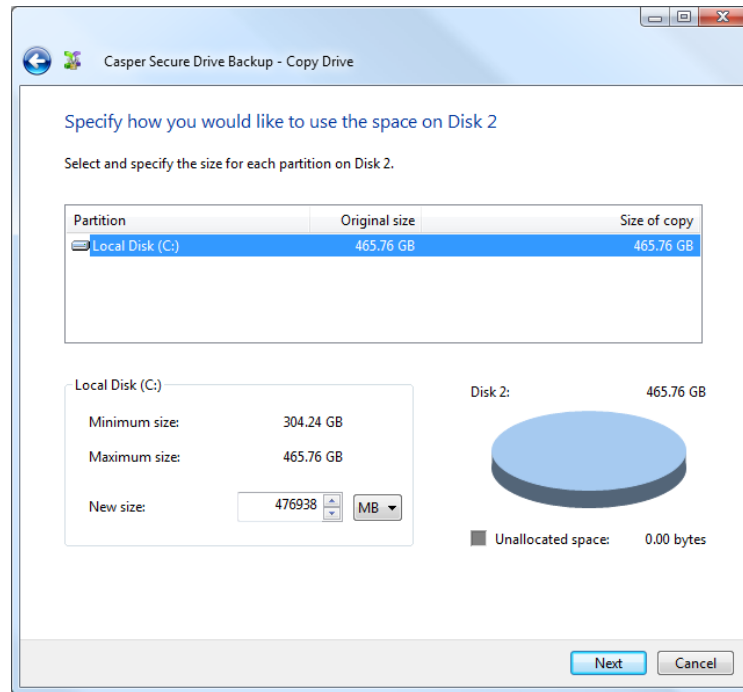
5. If the selected destination hard disk defines a partition or contains data, Casper will warn you that the contents will be overwritten. Confirm you have selected the correct hard disk to receive the backup, and click **Next** to proceed.



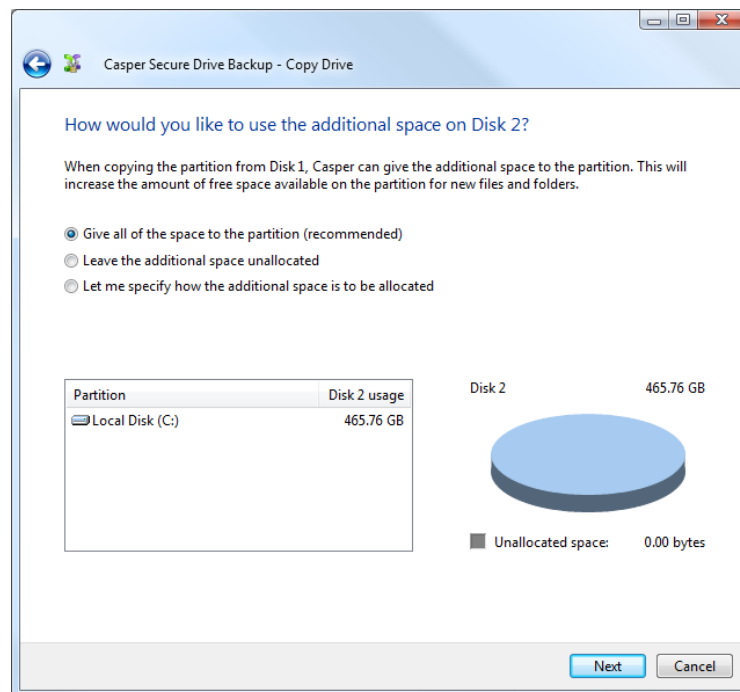
6. If the source hard disk is encrypted using PGP whole disk encryption, Casper will offer the option of creating an unencrypted copy unless prohibited by PGP administrative policy settings. Click **Create an encrypted copy**.



- When prompted to specify how the space on the backup hard disk is to be used, retain the default selection and click **Next**. If the destination hard disk is the same size or smaller than the source hard disk, Casper will ask you to manually configure how the space is to be used.

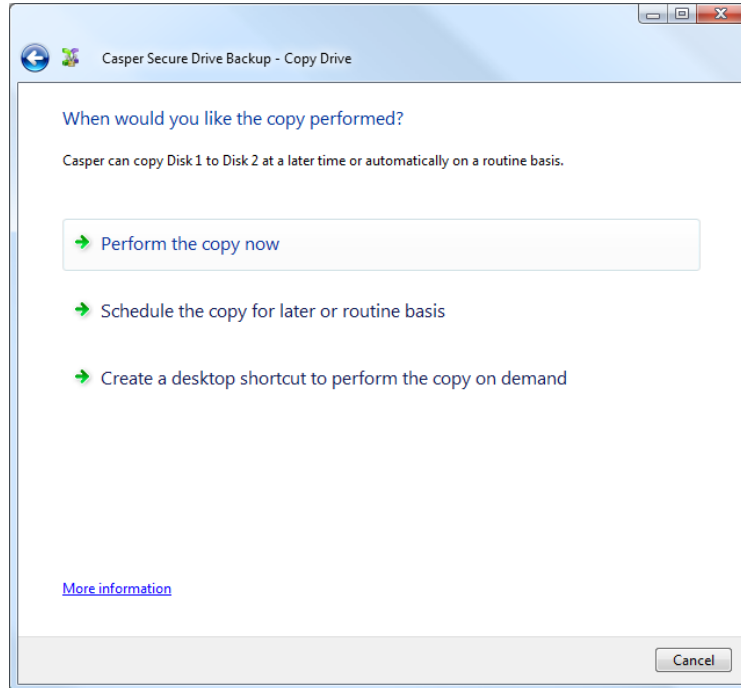


When the destination hard disk is larger than the source, the default option will be *Give all of the space to the partition*, or *Proportionally distribute the space to all partitions* when there is more than one partition defined on the source disk.

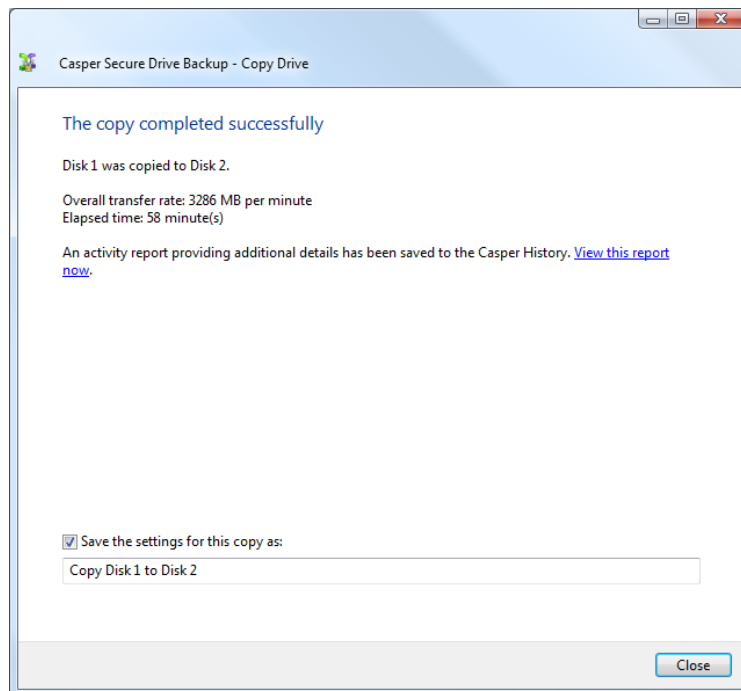


Simply clicking **Next** to accept the default selection or value is generally best. For additional help with making a selection, press **F1**.

8. Click **Perform the copy now** to begin the copy.



9. When Casper has completed the cloning process, click **Close**.

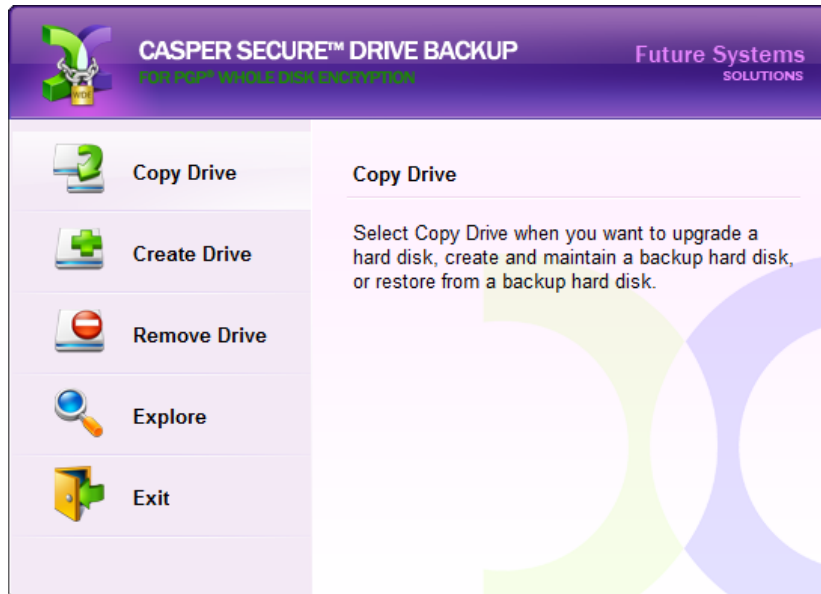


Example 3: Updating a Backup

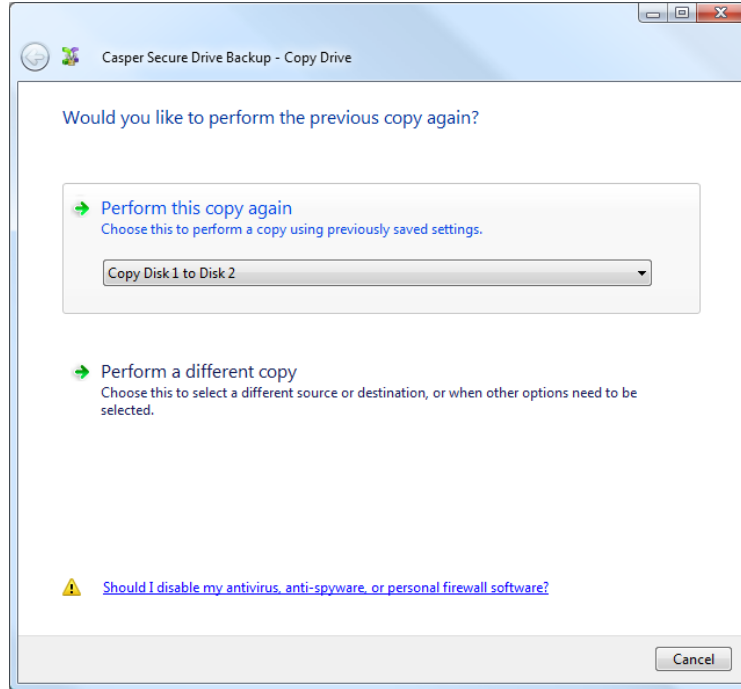
You can manually update a backup by repeating the procedure used to create the backup. When the settings for the copy have been saved as shown in the final step of the preceding example, you can use Casper's SmartStart functionality to jumpstart the process. Assuming the backup hard disk is currently installed or attached to the system, the following two procedures illustrate how a prior copy may be quickly repeated.

Repeating a Copy via *Perform this copy again*

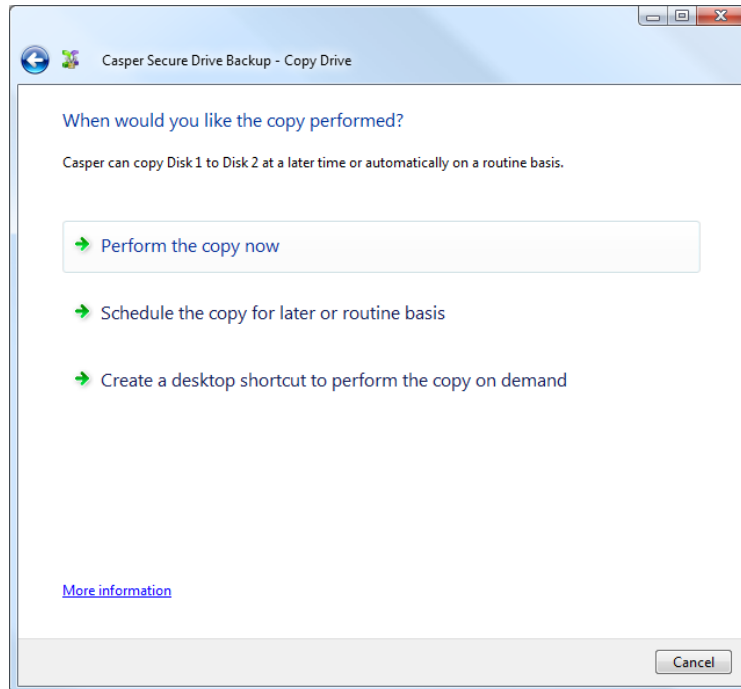
1. Select **Copy Drive**.



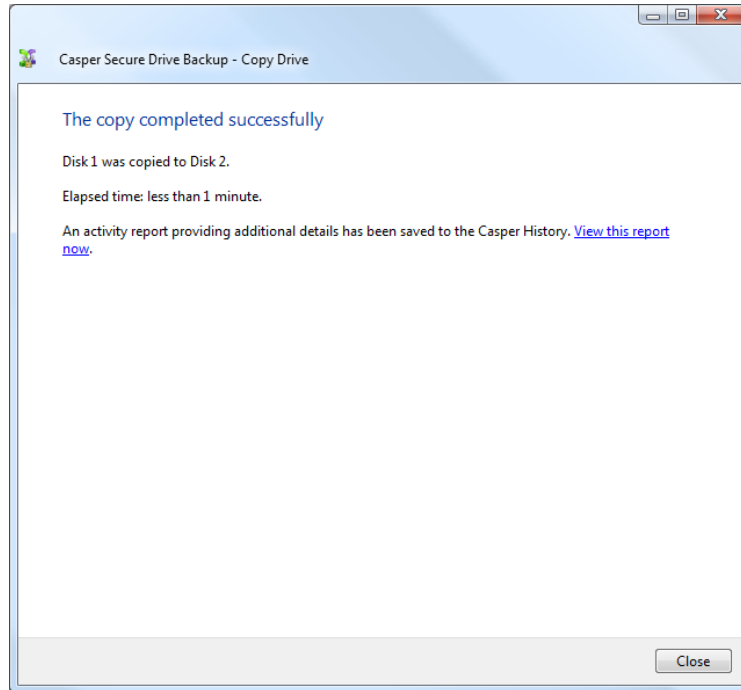
2. Select the previous copy to be repeated from the list provided and click **Perform this copy again**.



3. Click **Perform the copy now** to begin the copy.

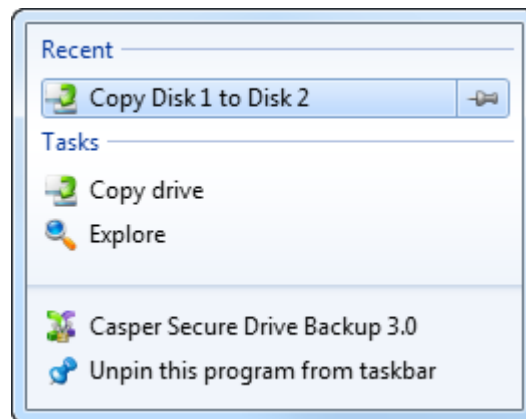


4. When Casper has completed the cloning process, click **Close**.

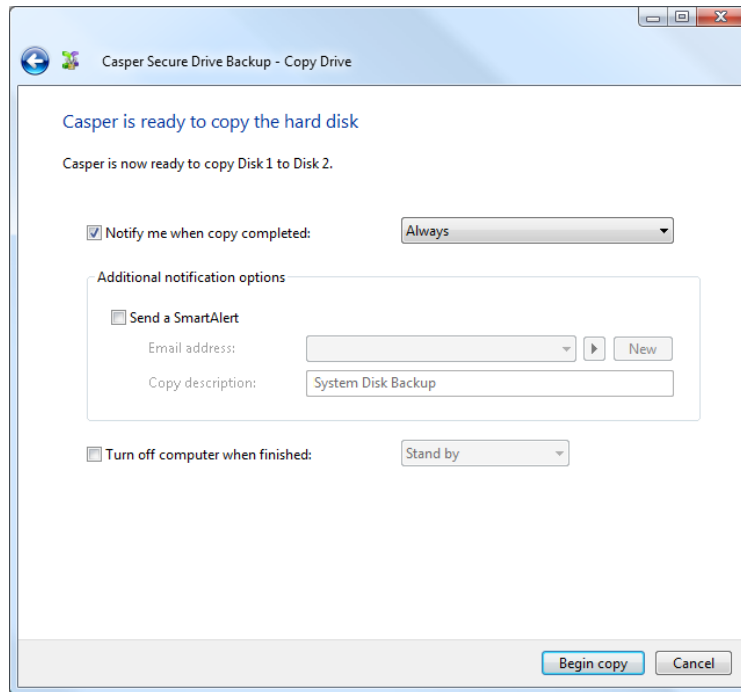


Repeating a Copy via the Casper Taskbar Icon (Windows 7 only)

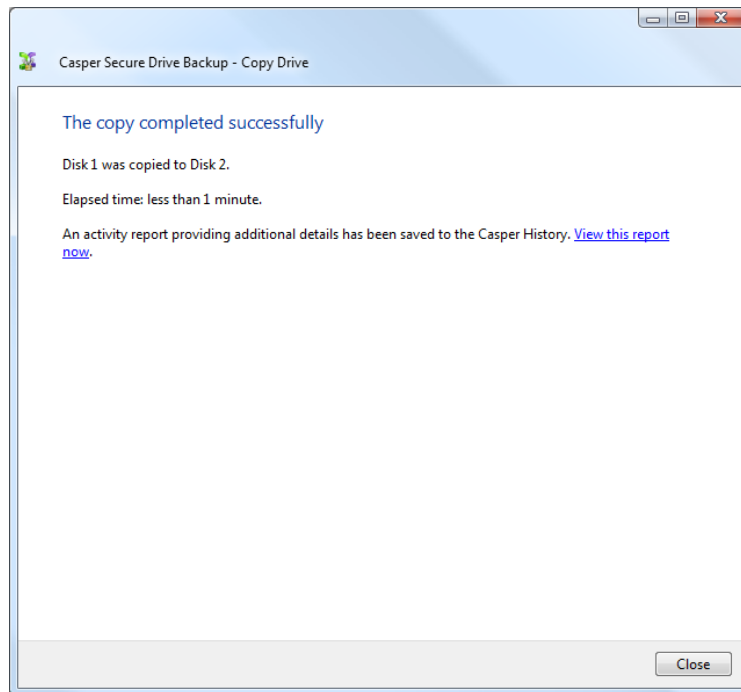
1. Right-click the Casper icon appearing on the Windows 7 taskbar to display the icon's taskbar menu.
2. Click the previous copy to be repeated from the **Recent** list.



3. Click **Begin copy** to begin the copy.



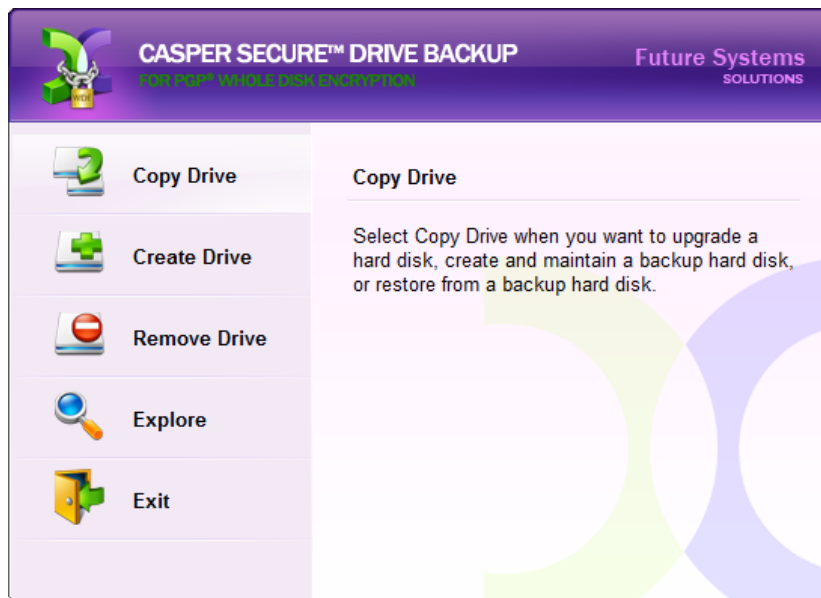
4. When Casper has completed the cloning process, click **Close**.



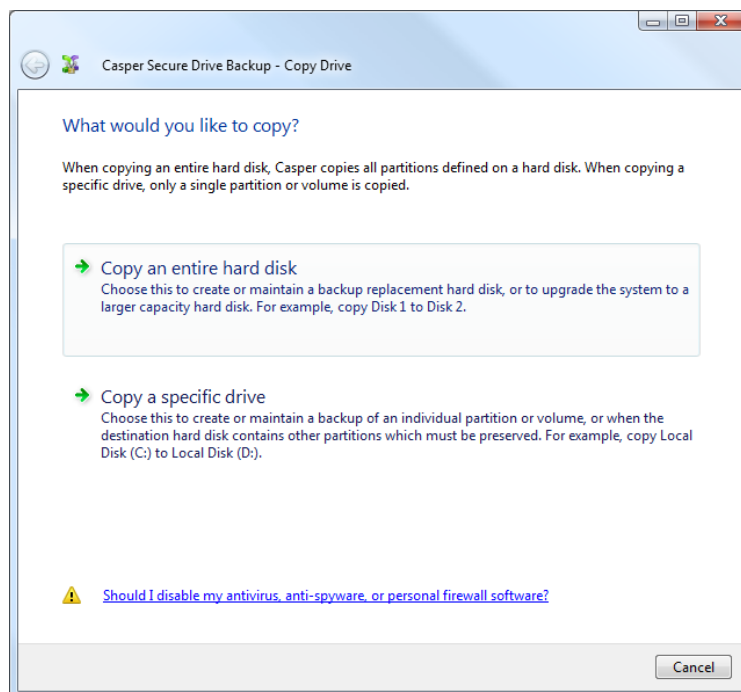
Example 4: Automating a Routine Backup

You can fully automate the process of creating and maintaining a backup replacement hard disk for your computer by scheduling Casper to run on a routine basis. Assuming the backup hard disk is currently installed or attached to the system, the following procedure shows how to schedule a copy to be performed on a routine basis.

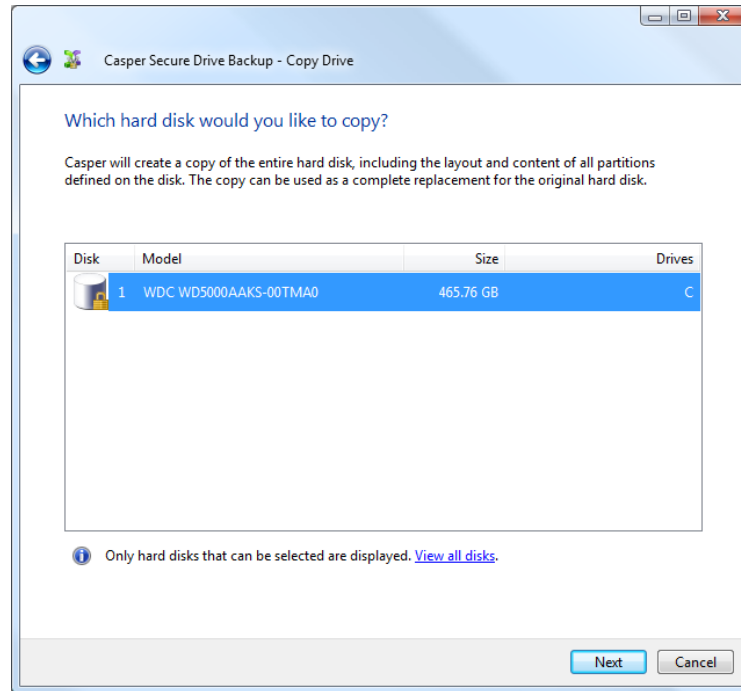
1. Select **Copy Drive**.



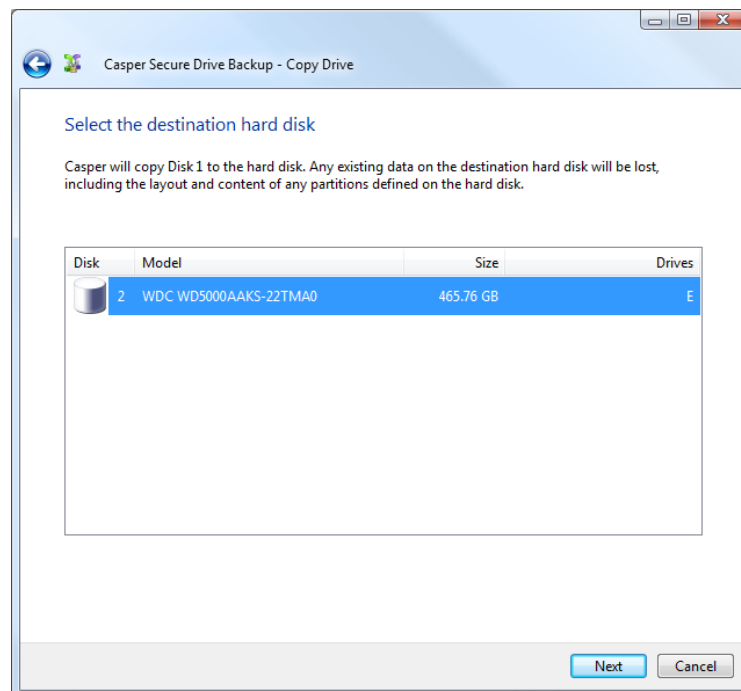
2. Select **Copy an entire hard disk**.



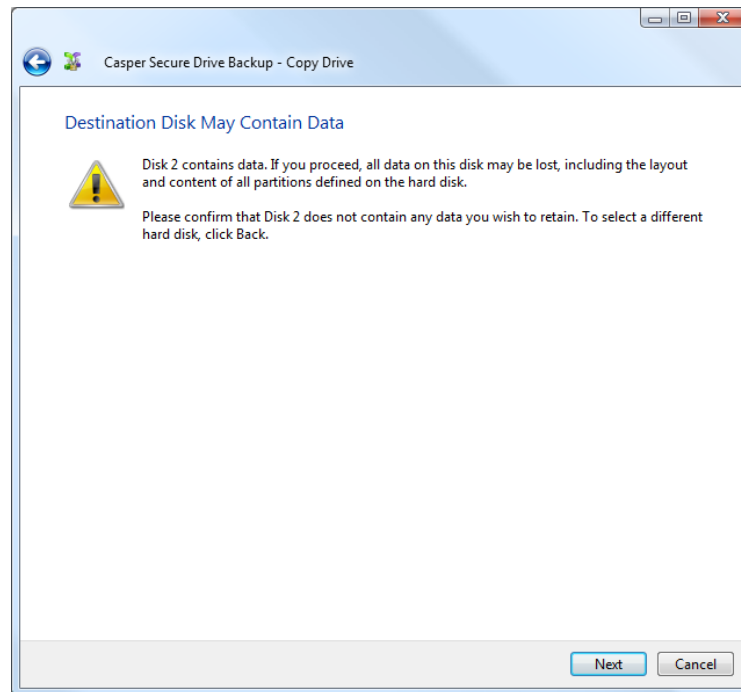
3. Select the hard disk to backup (e.g. the hard disk on which Windows is installed) as the disk to copy, and click **Next**.



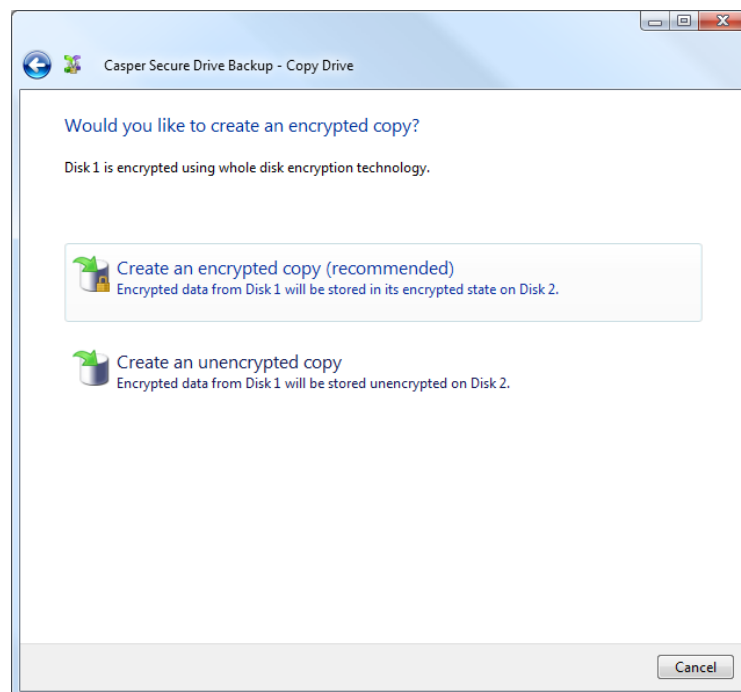
4. Select the backup hard disk as the destination, and click **Next**.



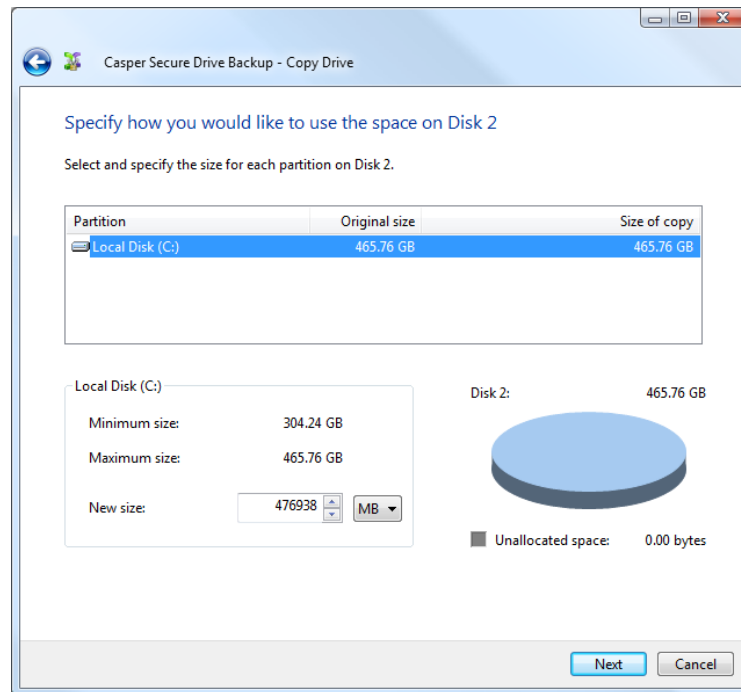
5. If the selected destination hard disk defines a partition or contains data, Casper will warn you that the contents will be overwritten. Confirm you have selected the correct hard disk to receive the backup, and click **Next** to proceed.



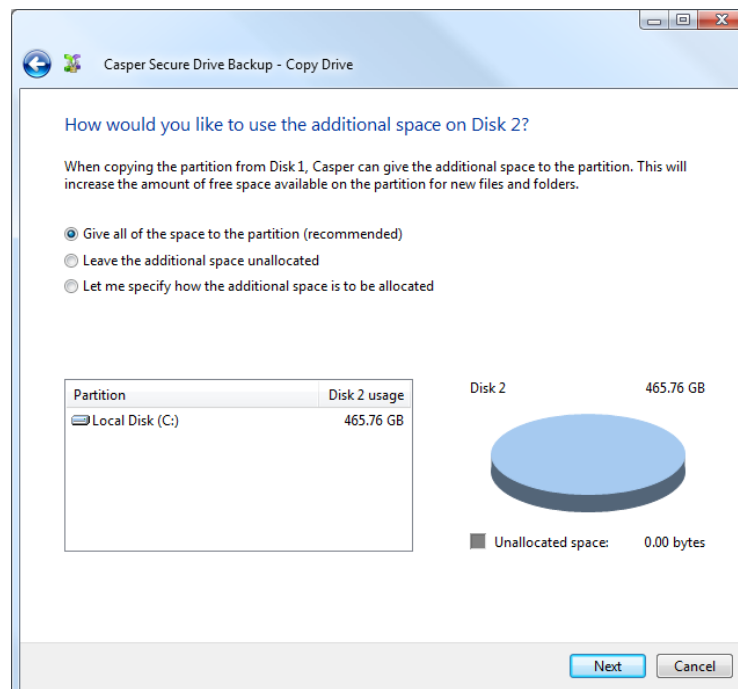
6. If the source hard disk is encrypted using PGP whole disk encryption, Casper will offer the option of creating an unencrypted copy unless prohibited by PGP administrative policy settings. Click **Create an encrypted copy**.



- When prompted to specify how the space on the backup hard disk is to be used, retain the default selection and click **Next**. If the destination hard disk is the same size or smaller than the source hard disk, Casper will ask you to manually configure how the space is to be used.

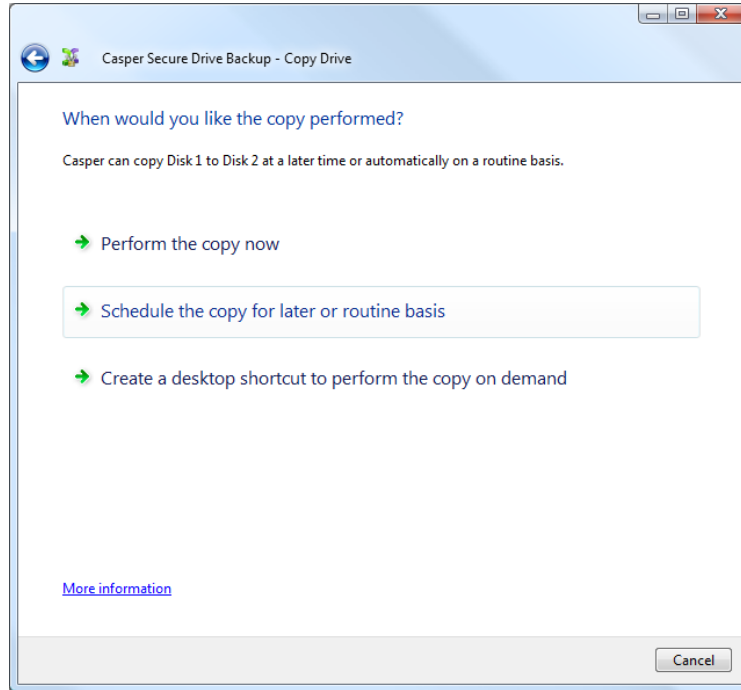


When the destination hard disk is larger than the source, the default option will be *Give all of the space to the partition, or Proportionally distribute the space to all partitions* when there is more than one partition defined on the source disk.

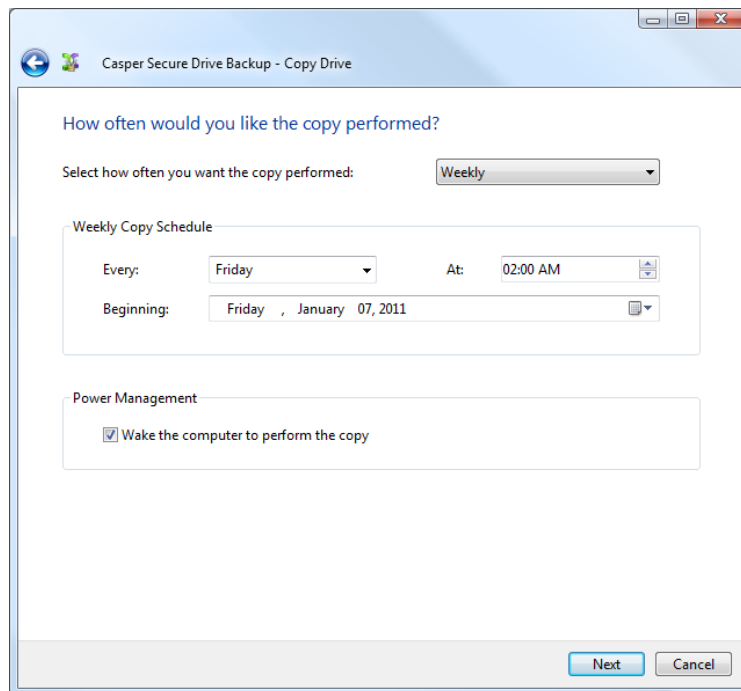


Simply clicking **Next** to accept the default selection or value is generally best. For additional help with making a selection, press **F1**.

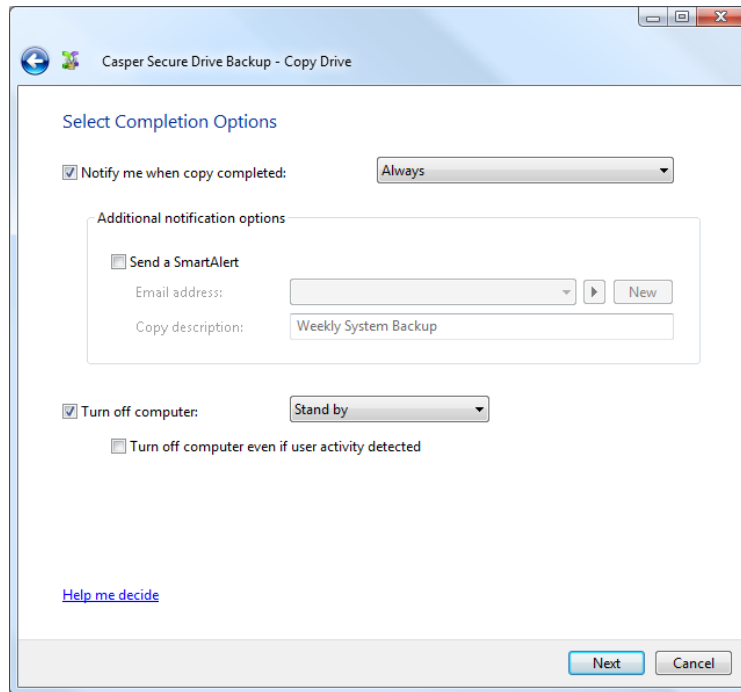
8. Click **Schedule the copy for later or routine basis**.



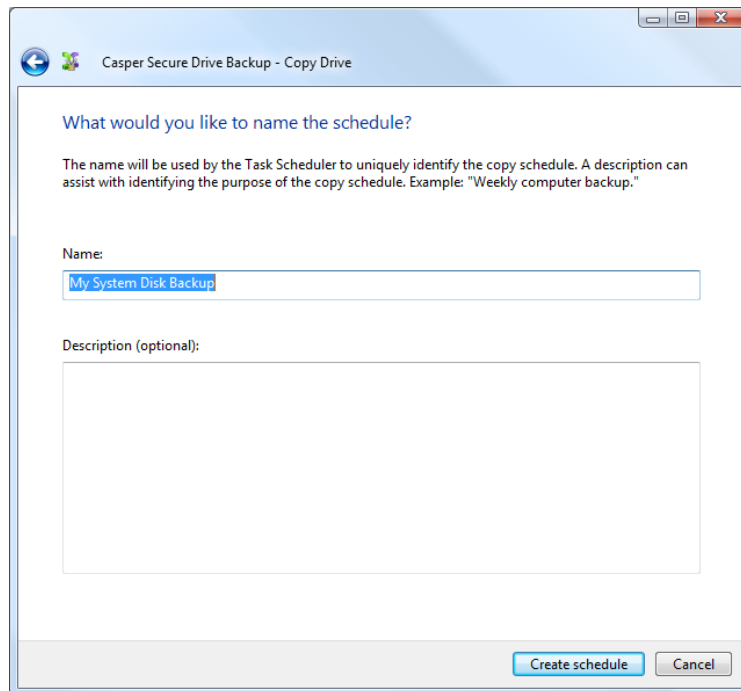
9. Select the schedule you would like Casper to follow to maintain the backup, and click **Next**. For help with the schedule, press **F1**.



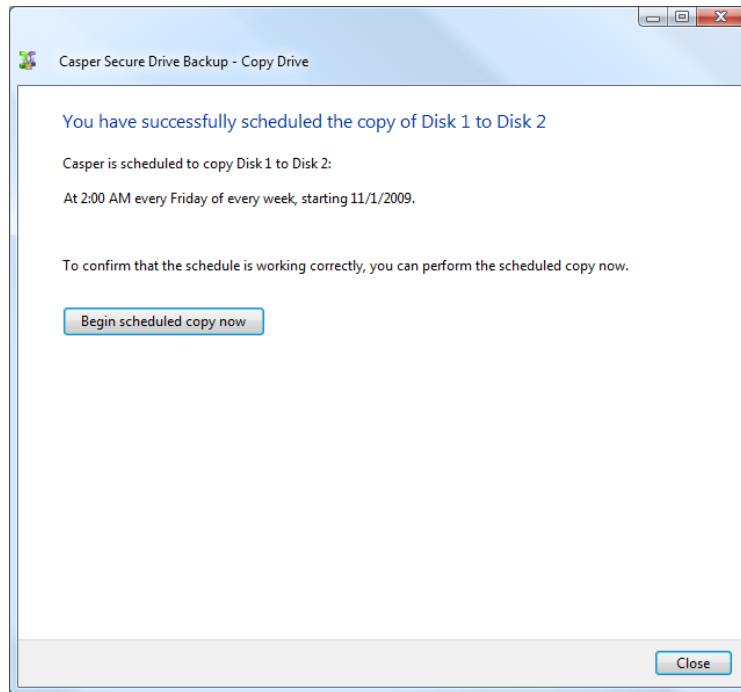
10. Select the desired completion options, and click **Next**.



11. Enter a name for the schedule, or retain the name suggested by Casper, and then click **Create schedule** to add the backup schedule to your Windows Scheduled Tasks.



12. Click **Close** to return to the Casper console.



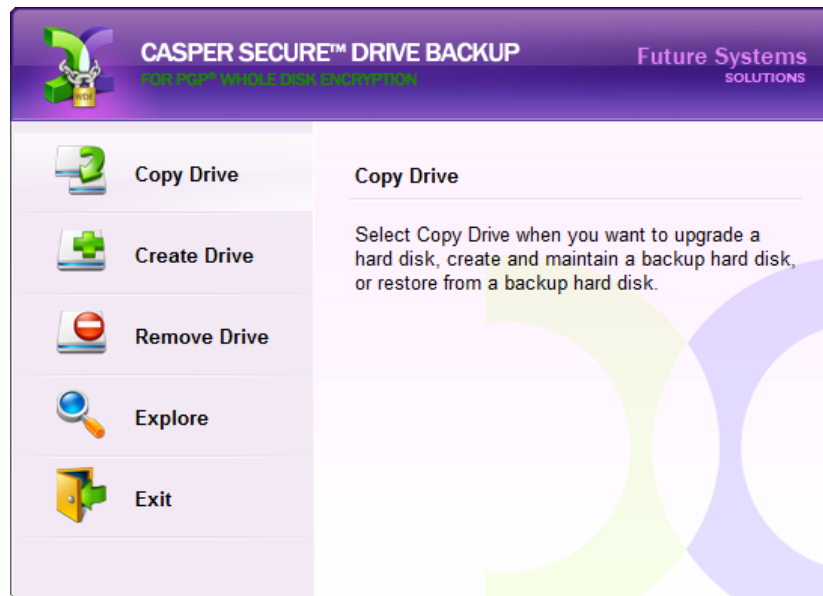
Example 5: Automating an External Backup

When using a portable drive such as an external USB or Firewire drive for your backup, you can configure Casper to automatically perform a backup whenever you attach your backup drive.

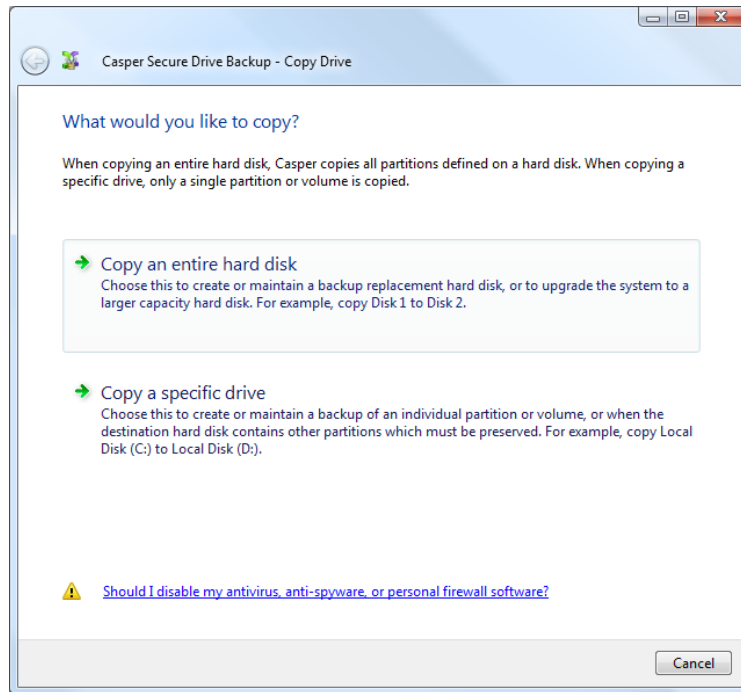
Configuring a SmartSense Backup

Assuming the external backup drive is currently attached to the system, the following procedure shows how to register the drive with the Casper SmartSense Service so that the backup will be started automatically whenever you attach your external backup drive.

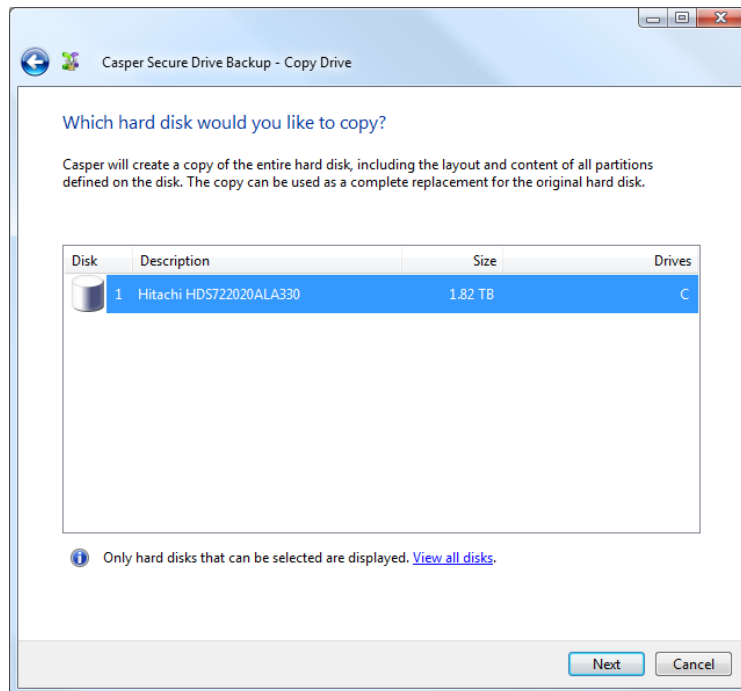
1. Select **Copy Drive**.



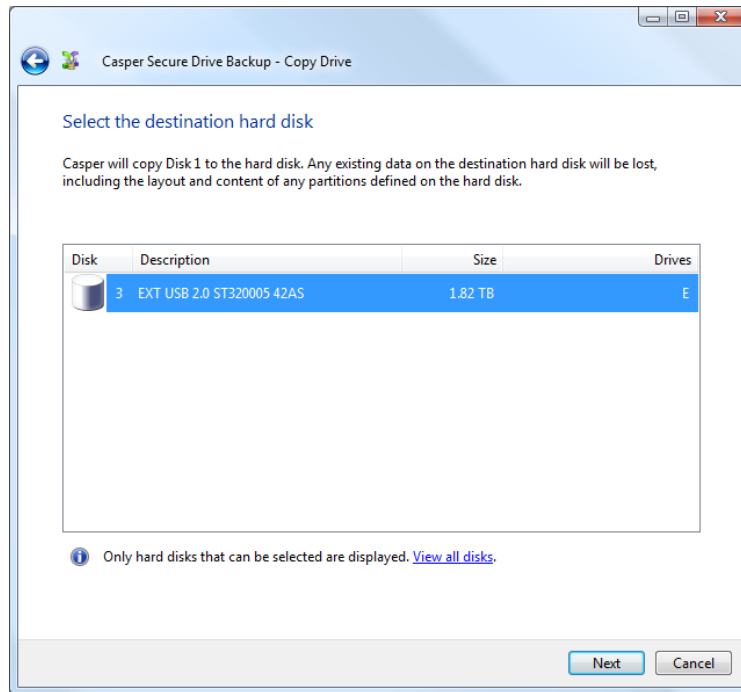
2. Select **Copy an entire hard disk**.



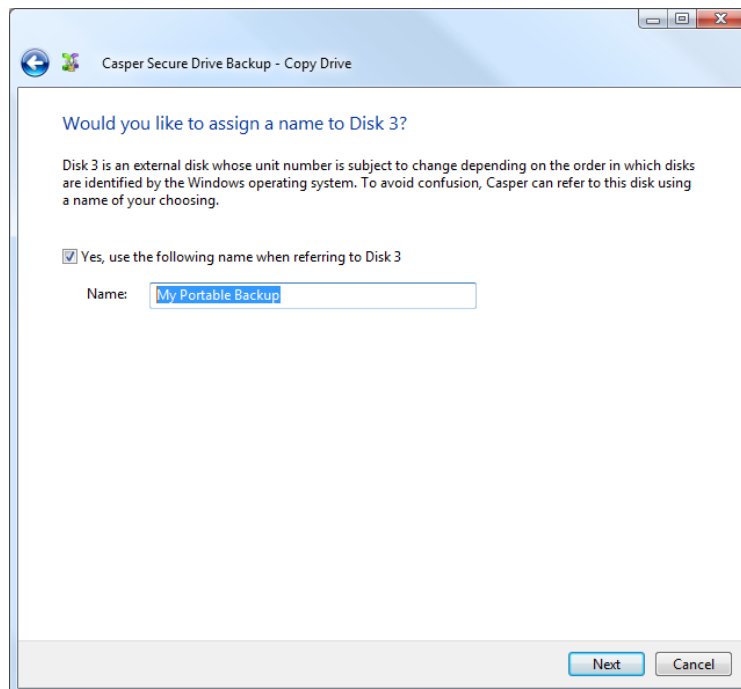
3. Select the hard disk to backup (e.g., the hard disk on which Windows is installed) as the disk to copy, and click **Next**.



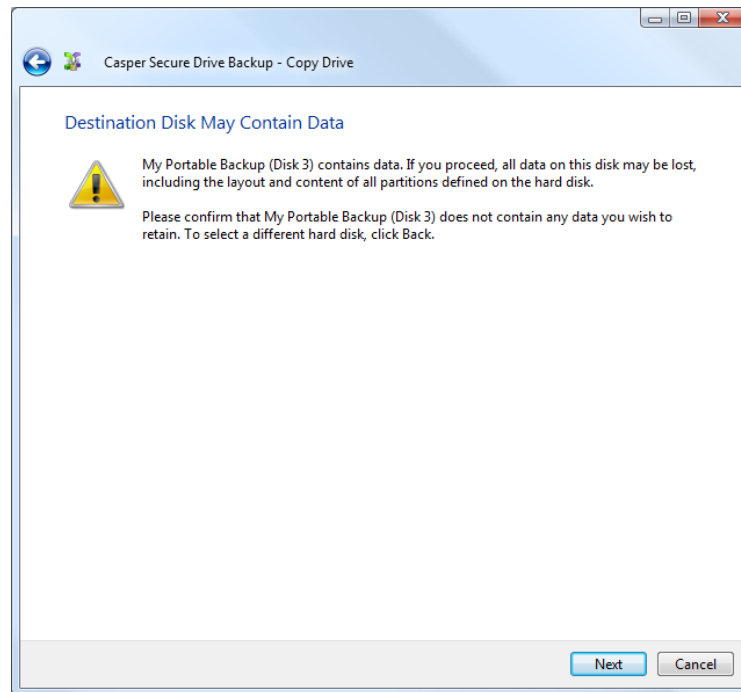
4. Select the backup hard disk as the destination, and click **Next**.



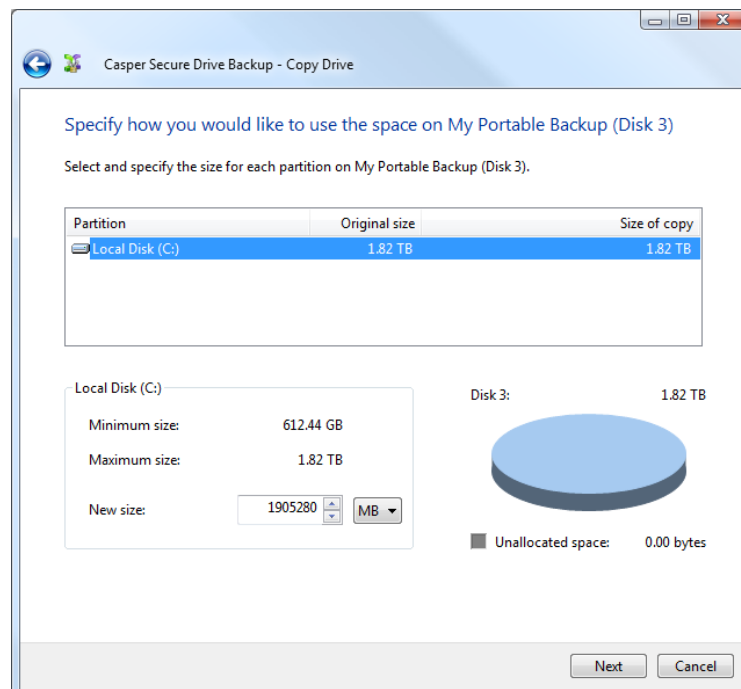
5. When selecting an external hard disk as the destination, Casper will prompt you to assign a name to the disk. A name is optional. If you use multiple external hard disks, a name can make it easier to identify which external hard disk is being used for a Casper backup. Click **Next** to proceed.



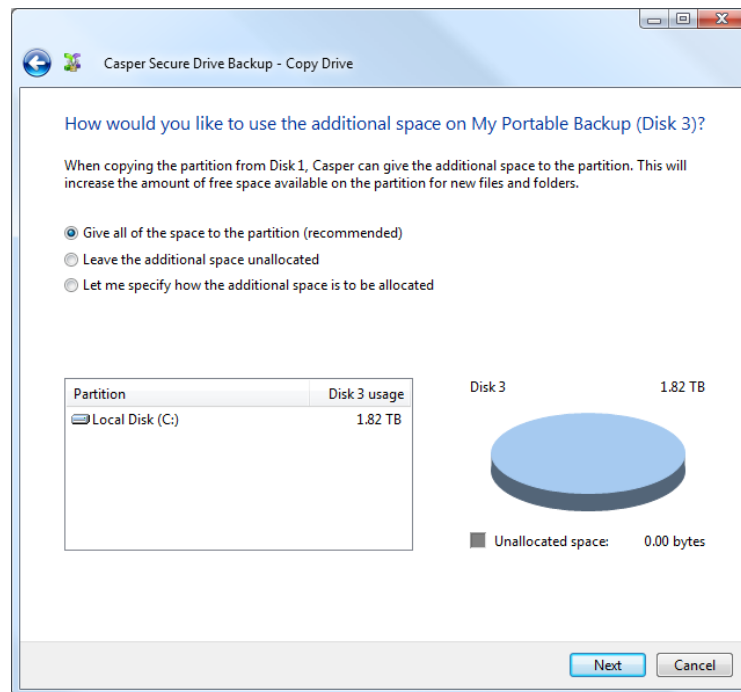
6. If the selected destination hard disk defines a partition or contains data, Casper will warn you that the contents will be overwritten. Confirm you have selected the correct hard disk to receive the backup, and click **Next** to proceed.



7. When prompted to specify how the space on the backup hard disk is to be used, retain the default selection and click **Next**. If the destination hard disk is the same size or smaller than the source hard disk, Casper will ask you to manually configure how the space is to be used.

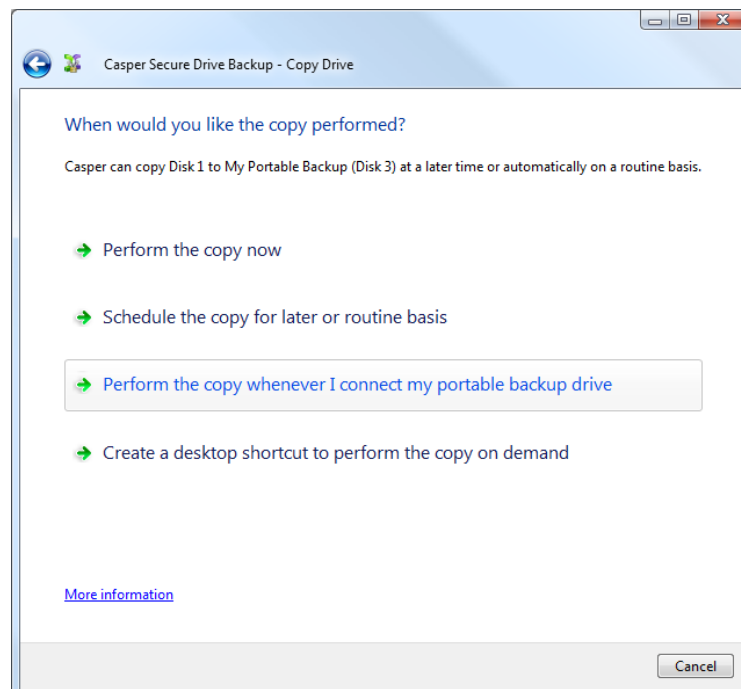


When the destination hard disk is larger than the source, the default option will be *Give all of the space to the partition*, or *Proportionally distribute the space to all partitions* when there is more than one partition defined on the source disk.

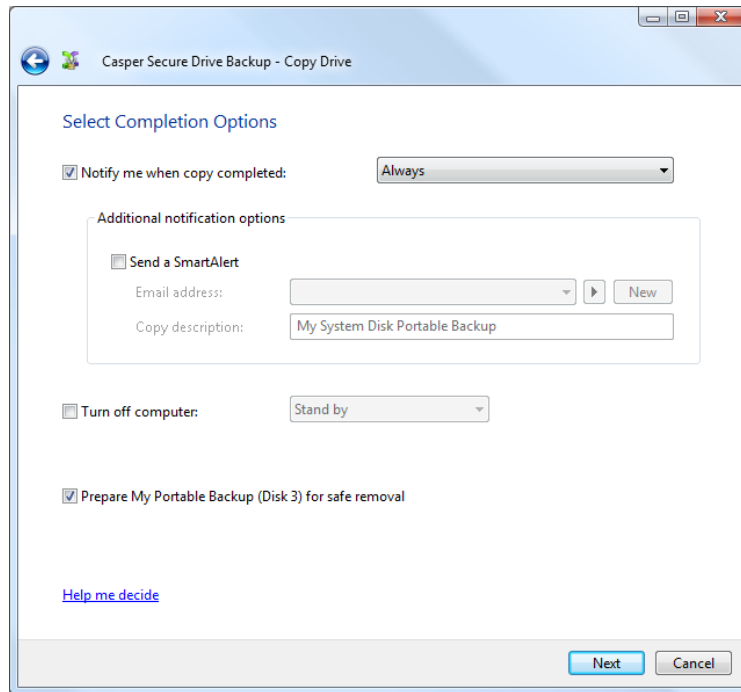


Simply clicking **Next** to accept the default selection or value is generally best. For additional help with making a selection, press **F1**.

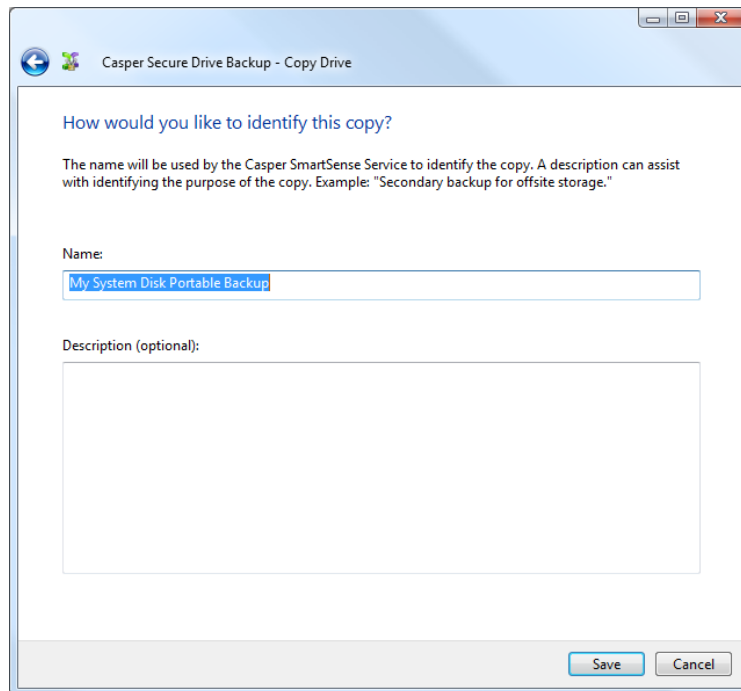
8. Click **Perform the copy whenever I connect my portable backup drive**.



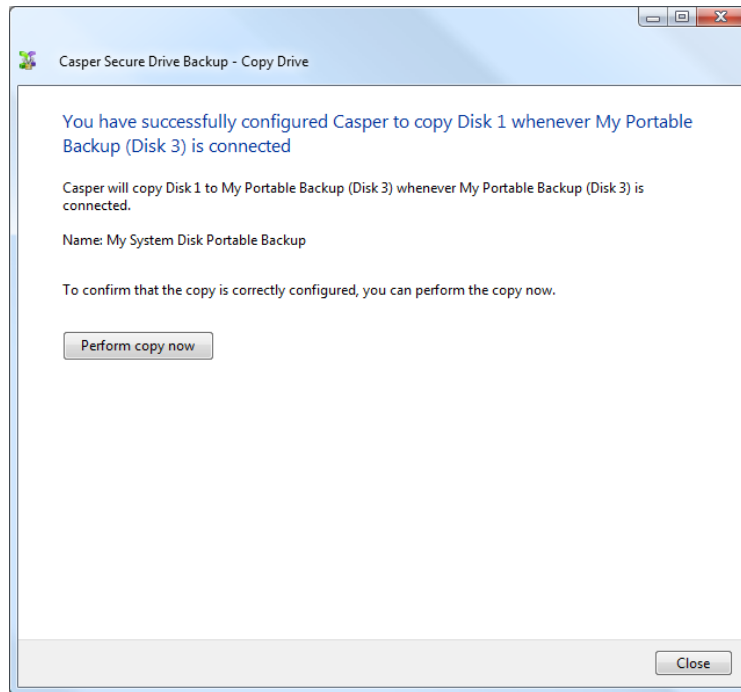
9. Select the desired completion options, and click **Next**.



10. Enter a name to uniquely identify the backup, or retain the name suggested by Casper, and then click **Save** to register the backup with the Casper SmartSense Service.

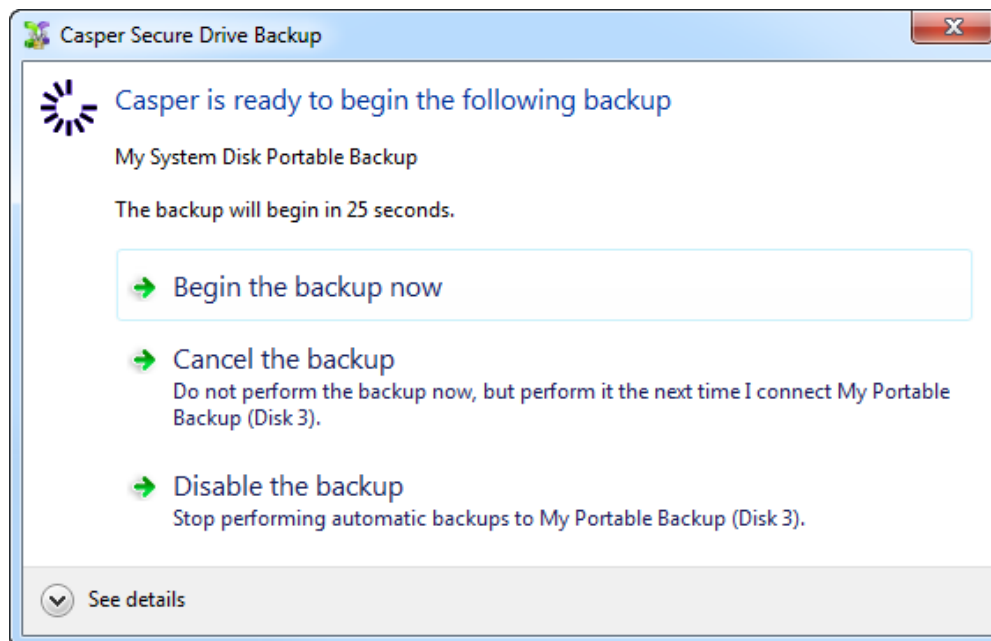


11. Click **Close** to return to the Casper console.



Starting a SmartSense Backup

Once your portable backup drive has been registered with the Casper SmartSense Service, the backup can be started by simply attaching the portable drive to the computer.



The backup will start automatically after a short delay. You can begin the backup immediately by selecting **Begin the backup now**. Click **Cancel the backup** to skip the backup, or **Disable the backup** to skip the current backup and prevent future backups from beginning automatically.

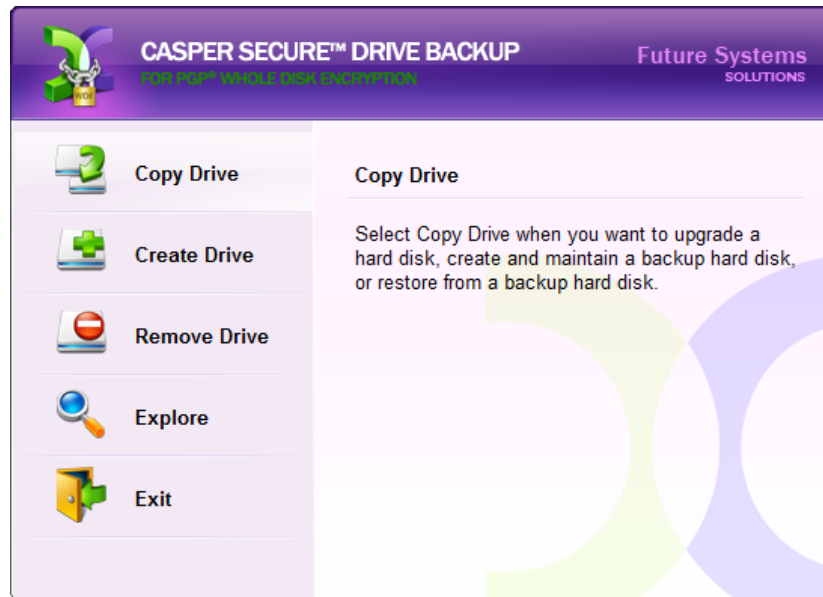
Example 6: Performing a Routine Backup On-Demand

You can create a 1-Click Cloning desktop shortcut to perform a routine backup on-demand.

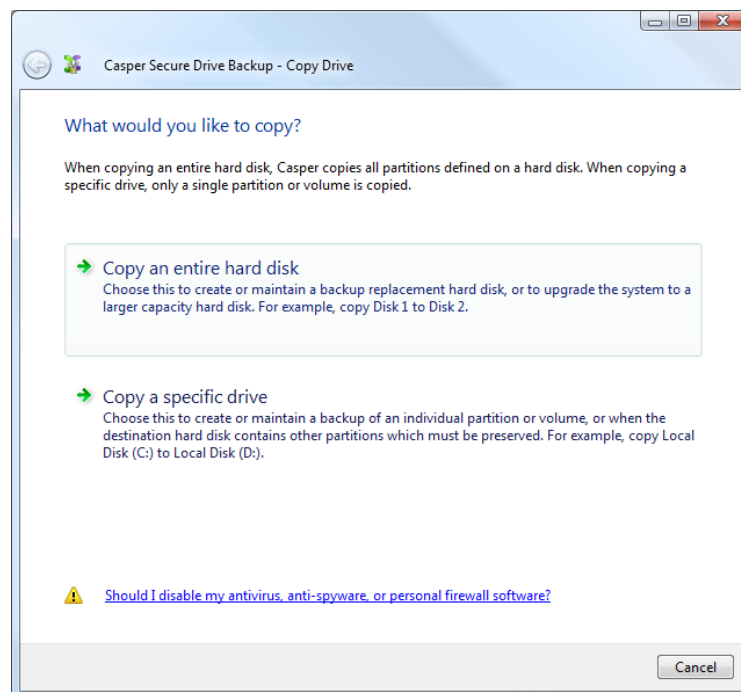
Creating a 1-Click Cloning Shortcut

Assuming the backup hard disk is currently installed or attached to the system, the following procedure shows how to create a 1-Click Cloning Shortcut to perform a copy on-demand.

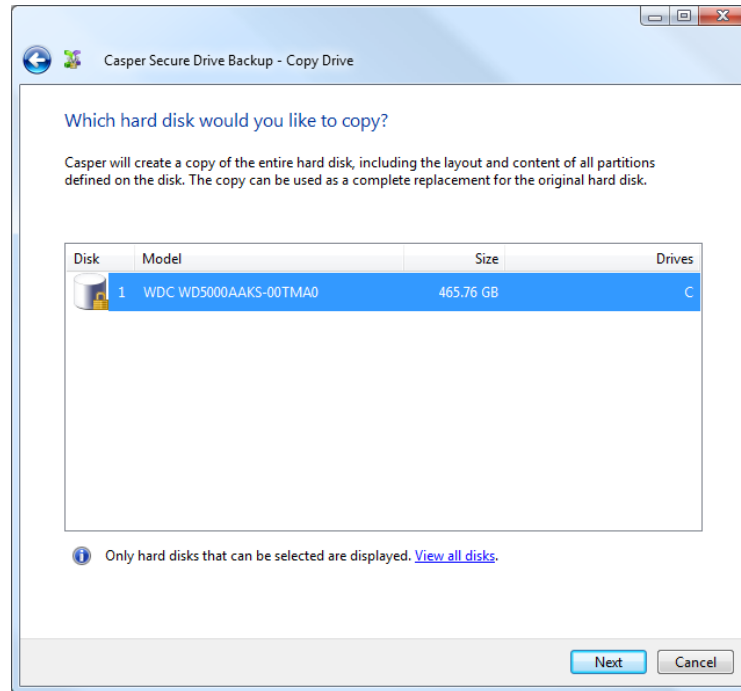
1. Select **Copy Drive**.



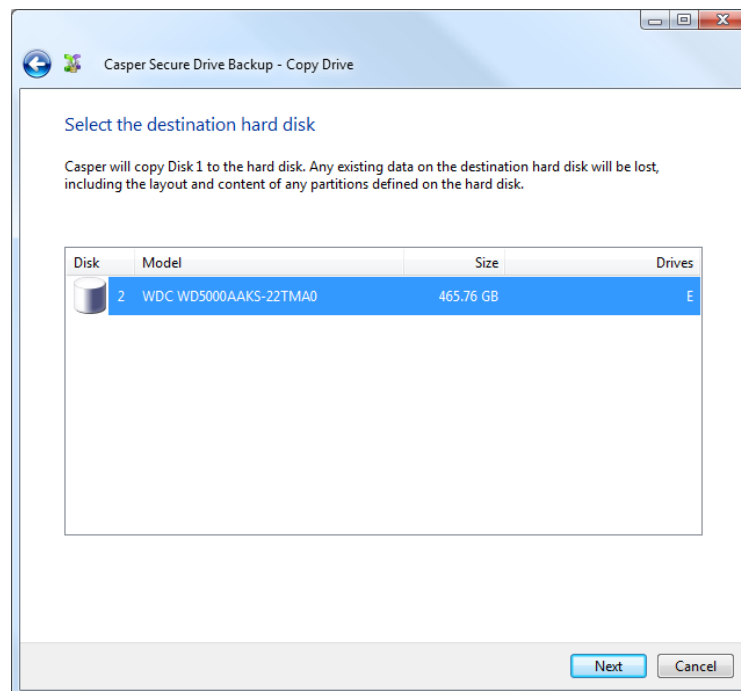
2. Select **Copy an entire hard disk**.



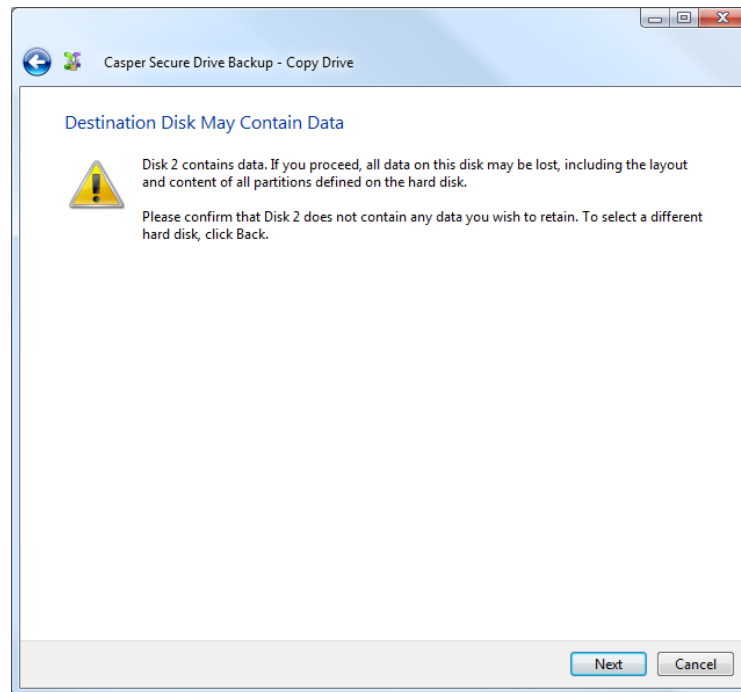
3. Select the hard disk to backup (e.g. the hard disk on which Windows is installed) as the disk to copy, and click **Next**.



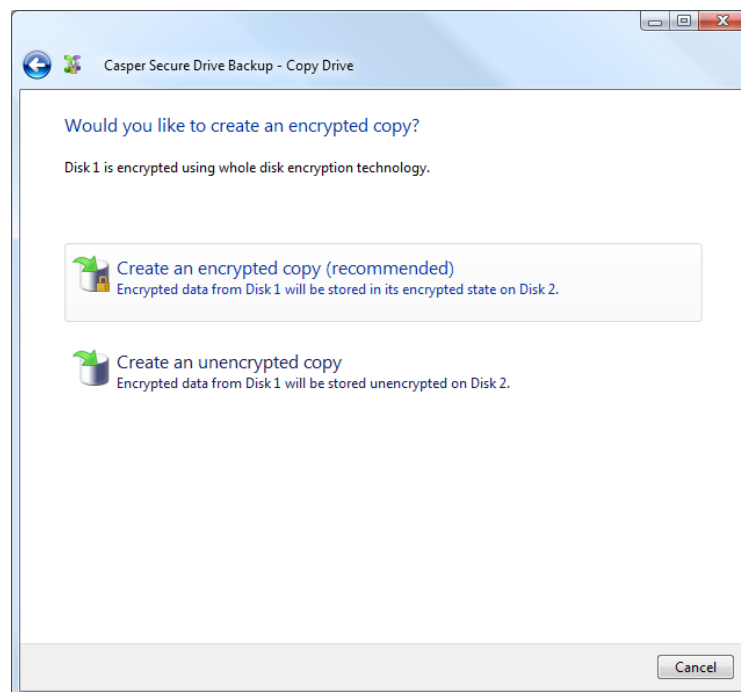
4. Select the backup hard disk as the destination, and click **Next**.



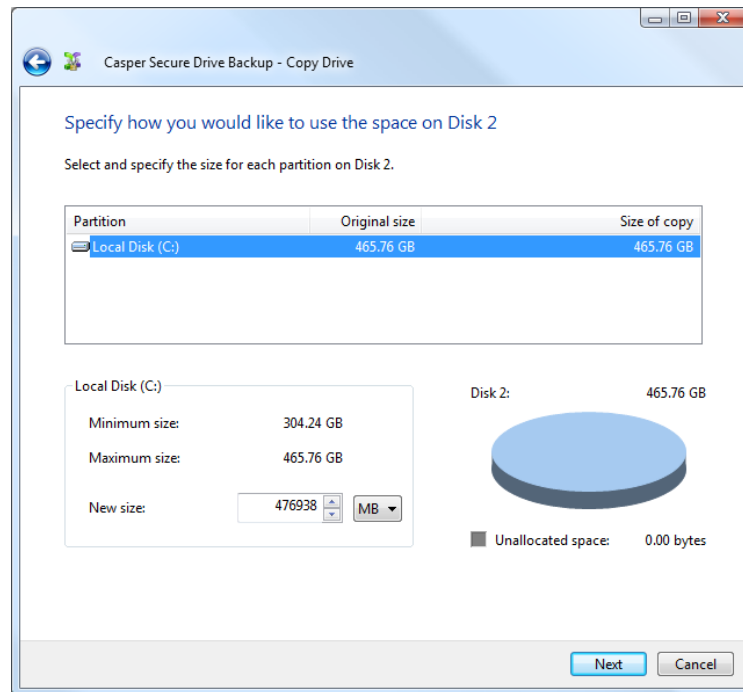
5. If the selected destination hard disk defines a partition or contains data, Casper will warn you that the contents will be overwritten. Confirm you have selected the correct hard disk to receive the backup, and click **Next** to proceed.



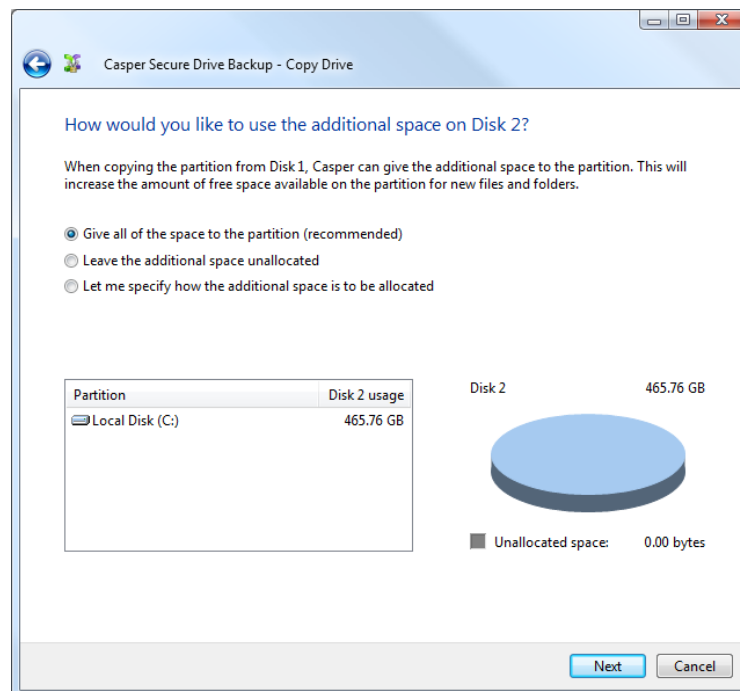
6. If the source hard disk is encrypted using PGP whole disk encryption, Casper will offer the option of creating an unencrypted copy unless prohibited by PGP administrative policy settings. Click **Create an encrypted copy**.



- When prompted to specify how the space on the backup hard disk is to be used, retain the default selection and click **Next**. If the destination hard disk is the same size or smaller than the source hard disk, Casper will ask you to manually configure how the space is to be used.

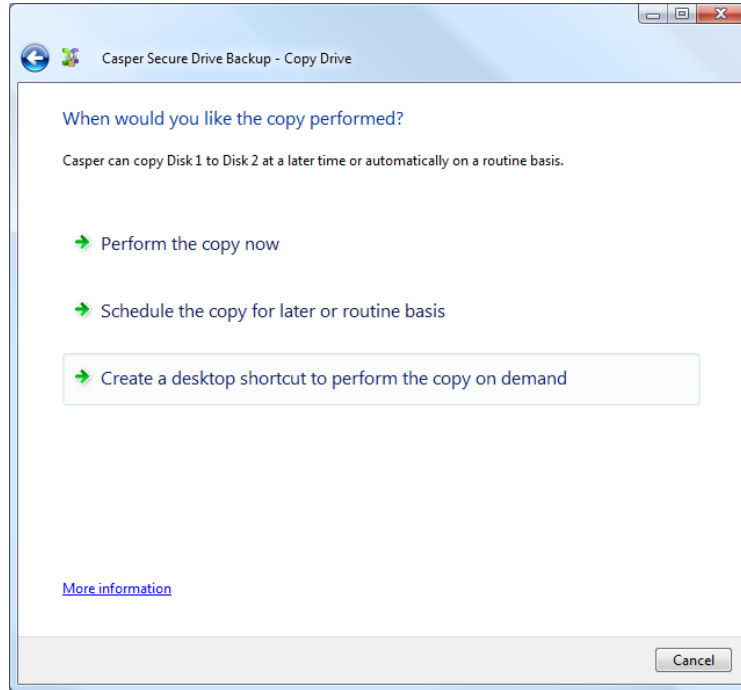


When the destination hard disk is larger than the source, the default option will be *Give all of the space to the partition, or Proportionally distribute the space to all partitions* when there is more than one partition defined on the source disk.

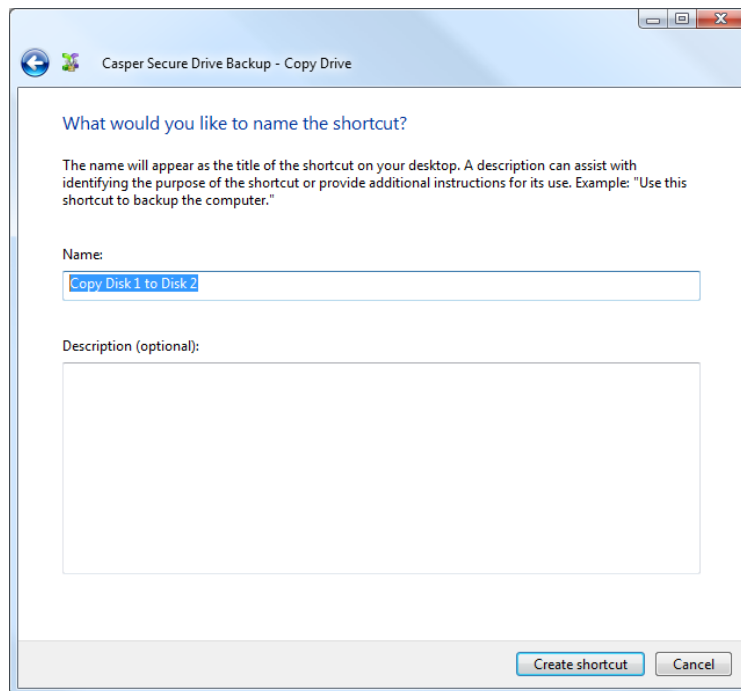


Simply clicking **Next** to accept the default selection or value is generally best. For additional help with making a selection, press **F1**.

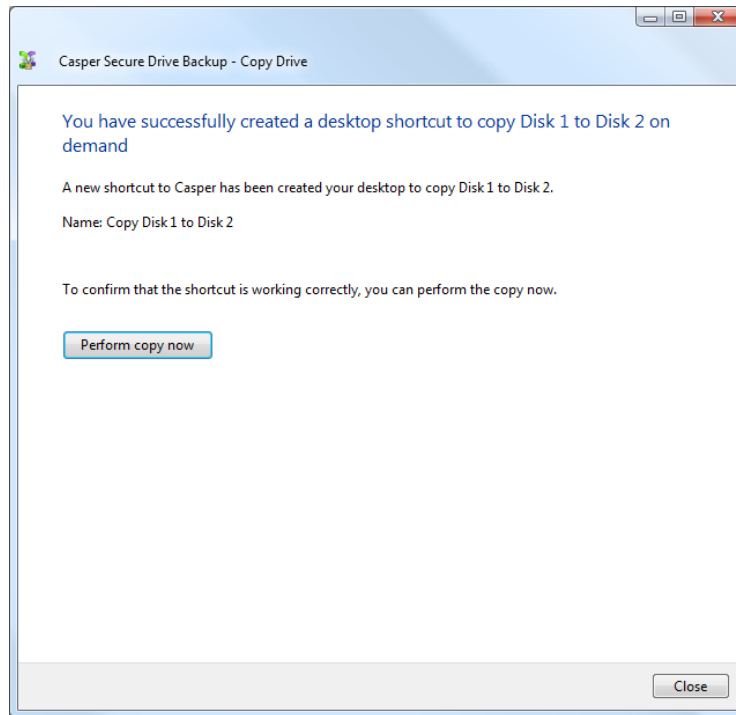
8. Click **Create a desktop shortcut to perform the copy on demand**.



9. Enter a name for the shortcut, or retain the name suggested by Casper, and click **Create shortcut**.

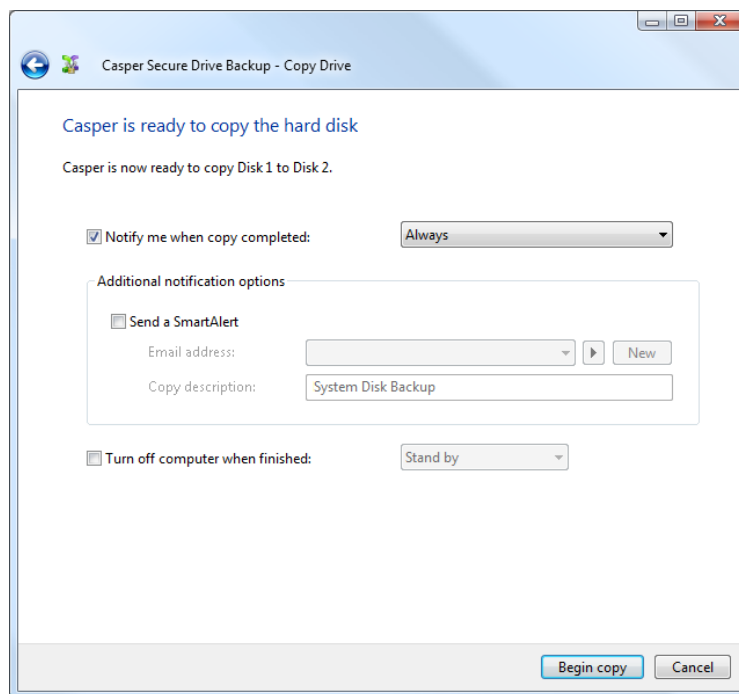


10. Click **Close** to return to the Casper console.



Performing a 1-Click Cloning Backup

After creating a 1-Click Cloning shortcut, you can use the Casper shortcut appearing on your desktop to begin the backup. Click **Begin copy** to start the backup.



Booting from a Backup Hard Disk

If you have used Casper Secure Drive Backup to create a bootable backup of your computer's primary hard disk, and your primary hard disk fails or its contents become corrupted, you can boot your computer from the backup hard disk.

When the backup hard disk is installed as an internal hard disk, or attached externally as an eSATA or USB device, booting from the backup hard disk is accomplished by changing the computer's BIOS boot priority setting to designate the backup hard disk as the preferred boot device.

If the computer's BIOS does not offer an option to select the designated backup hard disk as the preferred boot device, or if the original hard disk fails completely, the backup hard disk must be reconfigured to replace the original hard disk. For an internally mounted backup hard disk, this is accomplished by changing the hard disk jumpers and cable connection as required to make the backup hard disk the master on the primary IDE or SATA controller. For a backup hard disk installed in a secondary media bay of a notebook, or installed in an external USB, Firewire, or PCMCIA enclosure, the backup hard disk is removed from its enclosure and exchanged with the original, internally mounted hard disk.

NOTE: For a hard disk attached as an external USB device, booting from the backup hard disk may require the selection of additional BIOS options to completely enable booting. By default, some BIOS implementations disable USB boot support, or have it configured for floppy or ZIP drive emulation rather than hard disk drive (HDD) emulation. *If the computer's BIOS does not support booting from external USB hard disk type devices, the backup hard disk must be removed from its external enclosure and installed as a replacement for the internal hard disk in order to boot from it.* Alternatively, a restore may be performed by using the Casper Secure Startup Disk to copy the external backup hard disk to the computer's internal hard disk. For more information about creating and using the Casper Secure Startup Disk, please see the **Casper Secure Startup Disk Creator Guide**.

For detailed instructions on how to replace a hard disk in a desktop system, see **Replacing a hard disk** under **Additional Resources** in the online **Casper Secure Help**.