



C A S P E RTM

TECH EDITION 6.0

USER GUIDE



Future Systems
SOLUTIONS

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Introduction

Casper™ Tech Edition is a hard disk cloning solution engineered specifically for Windows® and designed especially for computer technicians, system integrators, and IT department use.

Casper Tech Edition makes it easy to:

- Perform hard disk upgrades on desktop PCs and laptops. Casper Tech Edition quickly clones all popular Windows configurations, including all Windows 7, Windows Vista, Windows XP, Windows 2000, Windows ME, Windows 98, and Windows 95¹ system disks.
- Create and restore full hard disk backups. Exclusive SmartClone™ technology dramatically reduces the time required to perform managed backups and restores by safely eliminating the redundant transfer of data during the cloning process.
- Replicate system disks for use in a new computer system. When used in combination with Microsoft's Sysprep utility, Casper Tech Edition greatly simplifies the process of cloning a sealed hard disk for deployment to a new computer system.

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

System Requirements

- Windows 7, Windows Vista, Windows XP, Windows Server 2008, Windows Server 2003, Windows 2000, Windows ME, Windows 98, and Windows 95¹
- 50MB available disk space
- 128MB RAM (512MB when booting and running via Casper Tech Edition CD)

Getting Help

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

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

¹Casper Tech Edition is not designed for use with Windows NT, Windows 2000 Server, and Windows 2000 Advanced Server. Background copying not supported on Windows 2000. Windows ME, 98, and 95 systems may be cloned only when booting and running from Casper Tech Edition CD.

Creating and Using the Casper Tech Edition CD

Casper Tech Edition is distributed on a compressed CD-ROM ISO image that must be decompressed and burned to a CD. Once the Casper Tech Edition CD has been created, you can run Casper Tech Edition either by executing the program from the CD within the Windows environment or by booting a computer from the CD. When the CD is used to boot a computer, Casper Tech Edition will start automatically.

Creating the Casper Tech Edition CD

Casper Tech Edition is distributed on a compressed CD-ROM ISO image that must be decompressed and burned to a CD. Running the **Casper Tech Edition CD-ROM ISO Image File Extraction Wizard** will extract and decompress the CD-ROM ISO image to a file named **CASPERTE.ISO**. This file contains the exact sector-by-sector replication of the CD-ROM disc to create.

Extracting the CASPERTE.ISO Image File:

1. Start the **Casper Tech Edition CD-ROM ISO Image File Extraction Wizard** program.

The **Welcome to the CD-ROM ISO Image File Extraction Wizard** dialog will appear.

2. Click **Next**.

The **License Agreement** will appear. In order to proceed with the extraction of CD-ROM ISO image file for Casper Tech Edition, you must agree to the terms of the license that is displayed.

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

The **Choose Image Location** dialog will appear.

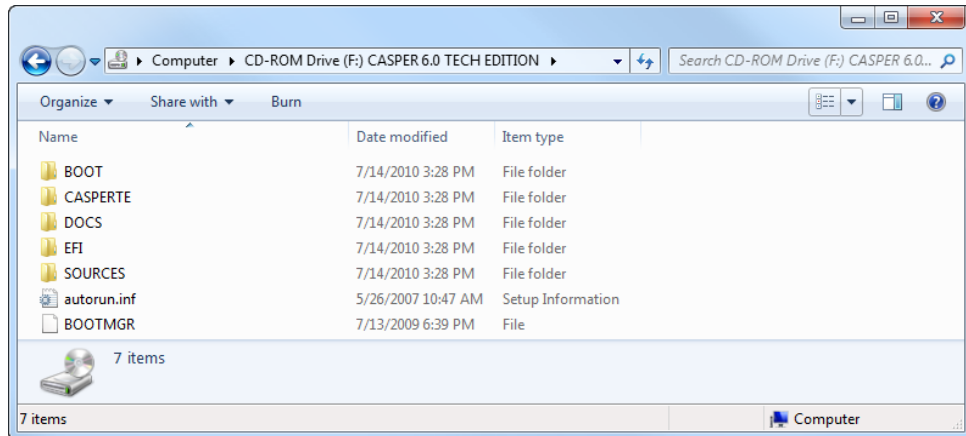
4. Choose the destination folder for the CASPERTE.ISO file and click **Extract** to begin the file extraction and decompression process.

The **Extracting** dialog will appear. When the extraction process has completed, the **Completing the CD-ROM ISO Image File Extraction Wizard** dialog will appear.

5. Click **Finish** to close the wizard.

Burning the CASPERTE.ISO Image to a CD-R Disc:

Once you have the CASPERTE.ISO file extracted, it must be burned to a CD-R disc. In Windows 7, this is accomplished by right-clicking the extracted CASPERTE.ISO file and selecting **Burn disc image** or **Open with -> Windows Disc Image Burner**. On other Windows platforms, you must select the option to create a CD from an Image file in your CD-ROM burning software. Specific examples for Nero, Roxio, and ISO Recorder appear below. After the disc has been burned, the following directory structure should appear on the disc when it is viewed from My Computer or Windows Explorer:



Using Nero to Create the Casper Tech Edition CD:

You can use Nero to create a CD from an ISO image. For more information about this program, visit Nero online at <http://www.nero.com>.

1. From Nero StartSmart, click **Burn Image to Disc** from the **Copy and Backup** options. From Nero Express, select **Disc Image or Saved Project**.
2. Change the File type selection from **All Nero compilations** to **Image Files (*.nrg;*.iso;*.cue)**
3. Navigate to and select the **CASPERTE.ISO** file and then click **Open**
4. For best results, change the **Writing speed** to *half the maximum* supported speed (e.g., 24x if your drive is capable of 48x or 52x)
5. Click **Next**

Using Roxio to Create the Casper Tech Edition CD:

You can use Roxio Disc Copier / Roxio Easy Media Creator 9 to create a CD from an ISO image. For more information about this program, visit Roxio online at <http://www.roxio.com>.

1. Open [My] Computer
2. Navigate to the folder containing the **CASPERTE.ISO** file
3. Right-click on the **CASPERTE.ISO** file and select **Burn with Disc Copier** to start Disc Copier
4. For best results, click **Advanced** to display the advanced settings and change the **Write Speed** to *half the maximum* supported speed (e.g., 24x if your drive is capable of 48x or 52x)
5. Click **Copy Now**

Using ISO Recorder to Create the Casper Tech Edition CD:

You can use the ISO Recorder program to create a CD from an ISO image. This utility is available free from the author's web site. For more information, visit the ISO Recorder web site at <http://isorecorder.alexfeinman.com/isorecorder.htm>.

1. Open [My] Computer
2. Navigate to the folder containing the **CASPERTE.ISO** file
3. Right-click on the **CASPERTE.ISO** file and select **Copy image to CD**
4. Click **Properties** to open the Recorder Properties dialog
5. Change the **Recording speed** to *half the maximum* supported speed (e.g., 24x if your drive is capable of 48x or 52x) and click **Ok**
6. Click **Finish**

Running Casper Tech Edition

You can run Casper Tech Edition either by executing the program from the CD within the Windows environment or by booting a computer from the CD. When the CD is used to boot a computer, Casper Tech Edition will start automatically.

Running Casper Tech Edition within Windows:

1. Insert the Casper Tech Edition CD and browse to the **CASPERTE** folder.
2. Double-click on **CASPERTE.EXE** to open Casper Tech Edition.

Booting and Running Casper Tech Edition from the CD:

The Casper Tech Edition CD may be used to boot a computer and run Casper Tech Edition. When booting a computer from the CD, Casper will start automatically.

Booting a computer from the Casper Tech Edition CD may take several minutes. Once it has completed the boot process, the Casper console will display.



Using Casper Tech Edition

Casper Tech Edition makes it easy to perform hard disk upgrades, managed backups, and sealed disk image deployment.

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

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. For example, a standard ATA/IDE hard disk may be installed either as a slave to the existing master on the primary ATA/IDE controller or as a master or slave on the secondary ATA/IDE controller. For a notebook computer, a secondary media bay or external USB, Firewire, or PCMCIA hard disk enclosure is required to mount and attach the new hard disk to the notebook.

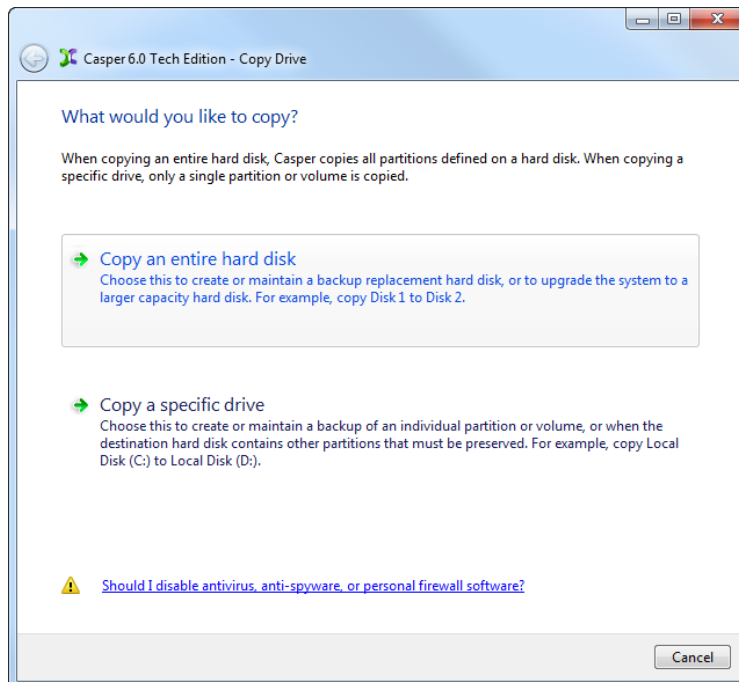
Assuming the new hard disk is currently installed or attached to the system, the following procedure illustrates how Casper may be used to clone the original hard disk to the new hard disk and complete the upgrade.

Example 1: Upgrading a Hard Disk

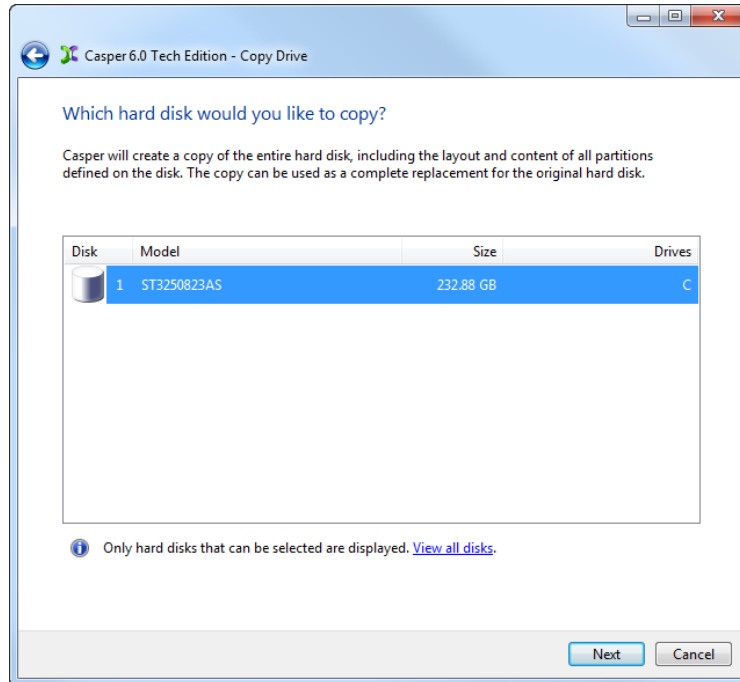
1. Start the Casper Tech Edition program.
2. Select **Copy Drive**.



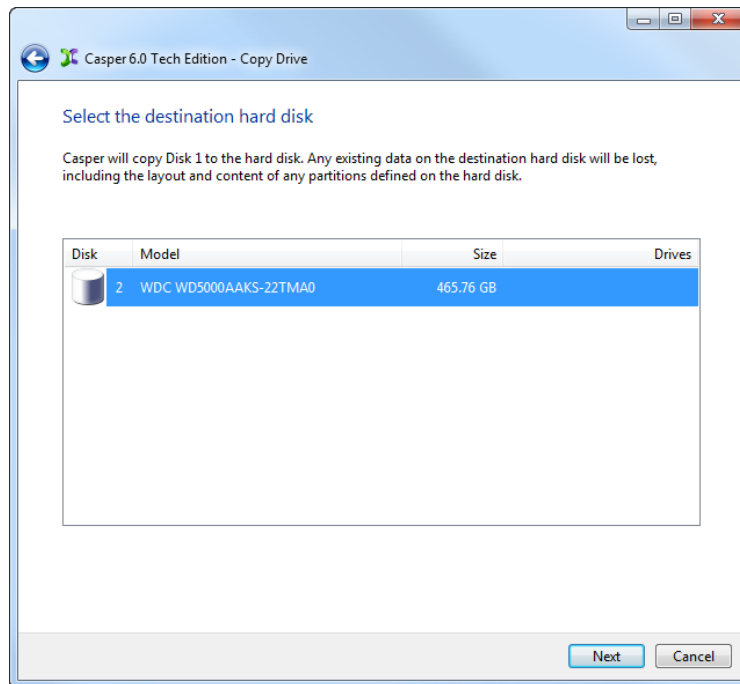
3. Select **Copy an entire hard disk**.



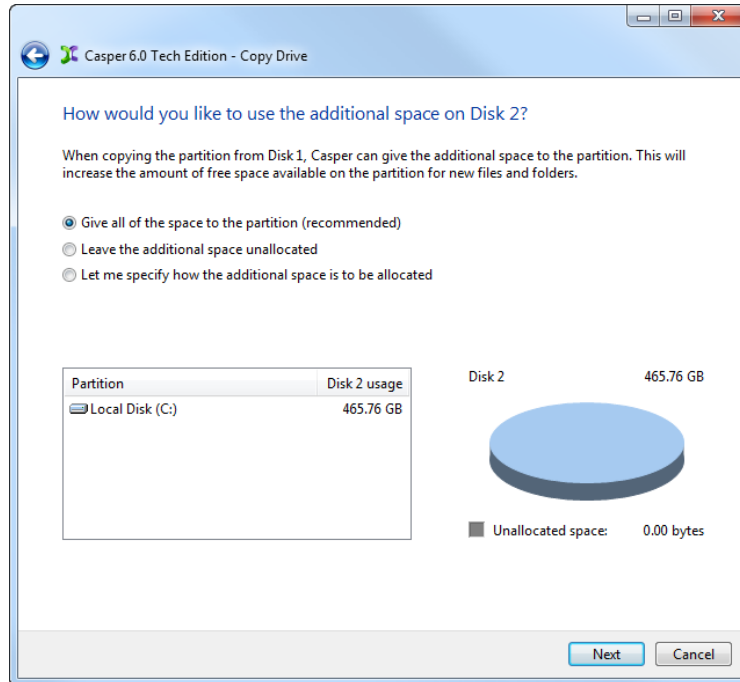
4. Select the hard disk to be upgraded (e.g. the hard disk on which Windows is installed) as the disk to copy, and click **Next**.



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

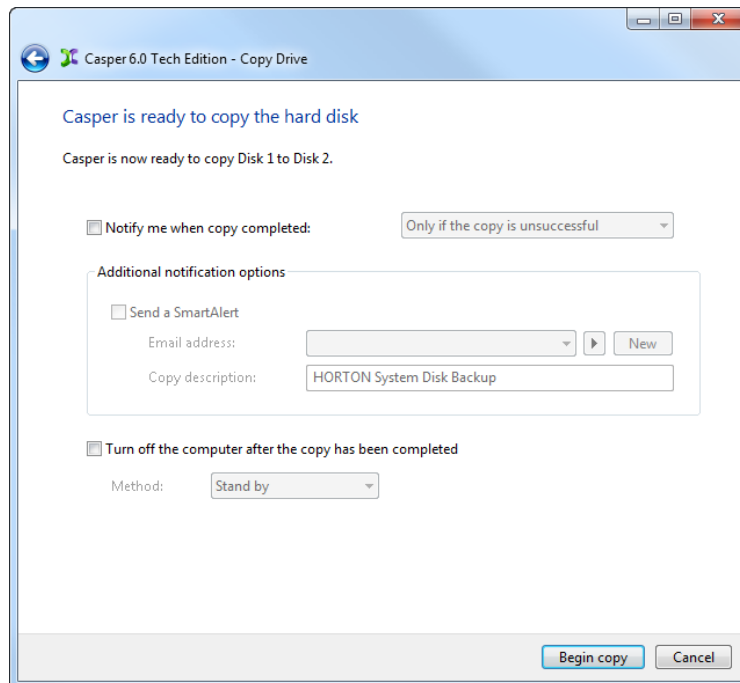


- When prompted to specify how the additional space on the new hard disk is to be used, retain the default selection and click **Next**.

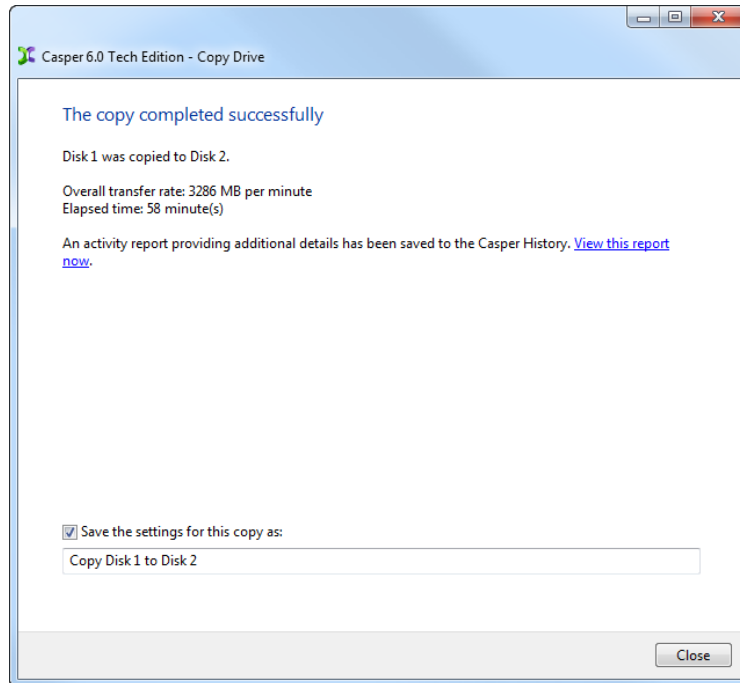


When the destination hard disk is larger than the source, the default option will be *Give all of the space to the partition*, or *Proportionally distribute the space to all partitions* when there is more than one partition defined on the source disk. For additional help with making a selection, press **F1**.

- Click **Begin copy** to start the cloning process.



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



- Shutdown and power-off the computer.
- 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 Help and Documentation**.

Creating and Maintaining a Dedicated System Backup

Using Casper Tech Edition to create and maintain a backup replacement disk for a 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.

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

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

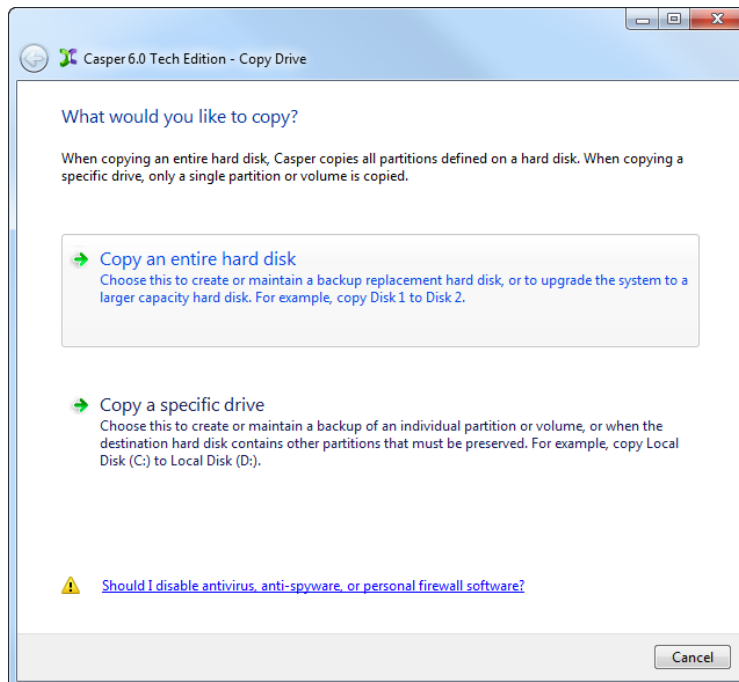
NOTE: For a hard disk attached as an external USB device, booting from the backup hard disk may require the selection of additional BIOS options to completely enable booting. By default, some BIOS implementations disable USB boot support, or have it configured for floppy or ZIP drive emulation rather 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 Tech Edition CD to copy the external backup hard disk to the computer's internal hard disk.

Example 2: Creating and Maintaining a Backup Hard Disk

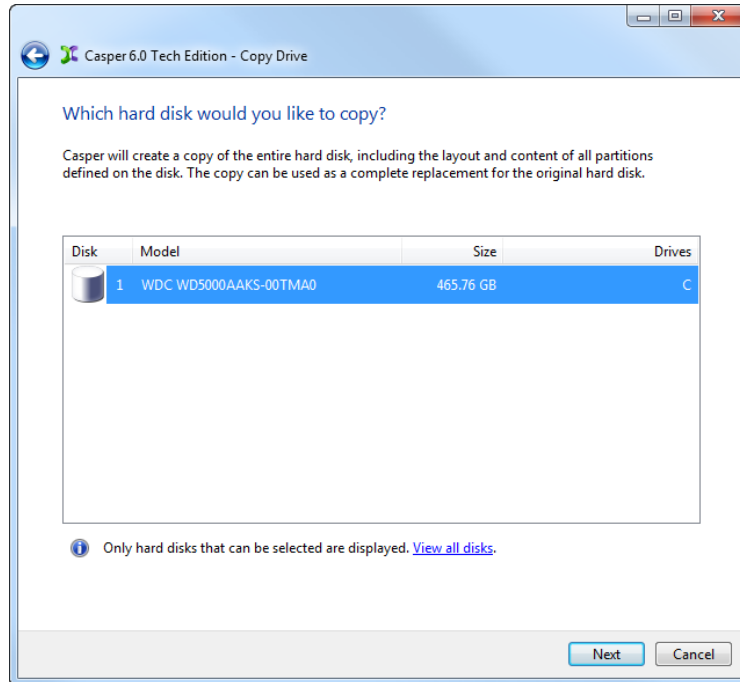
1. Start the Casper Tech Edition program.
2. Select **Copy Drive**.



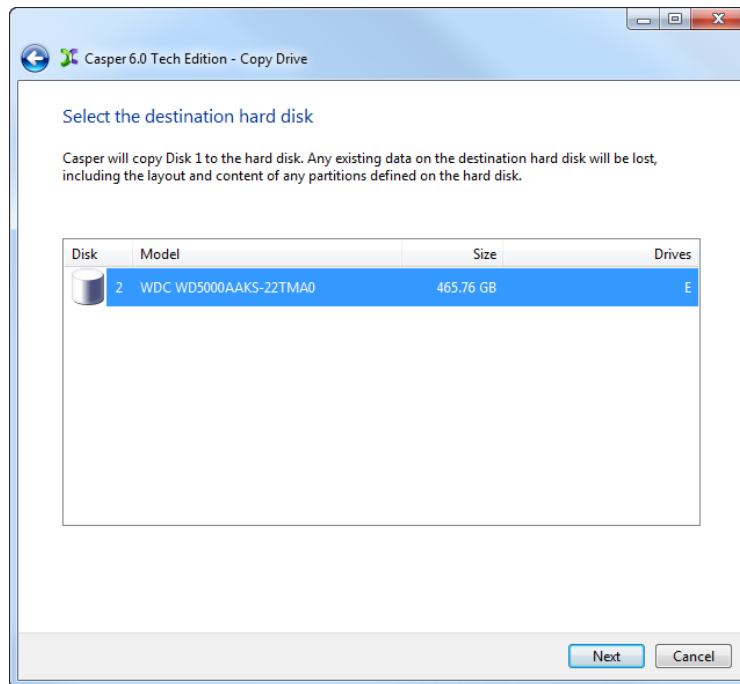
3. Select **Copy an entire hard disk**.



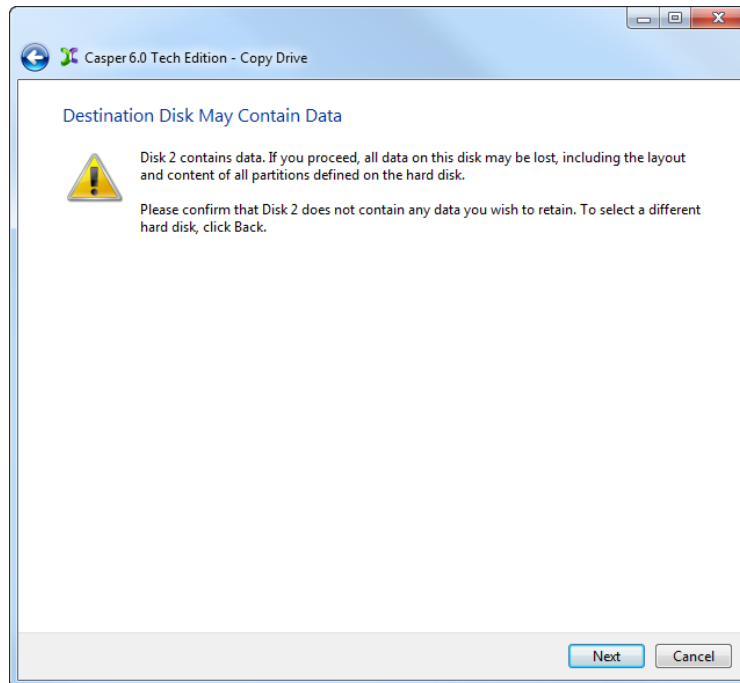
4. Select the hard disk to backup (e.g. the hard disk on which Windows is installed) as the disk to copy, and click **Next**.



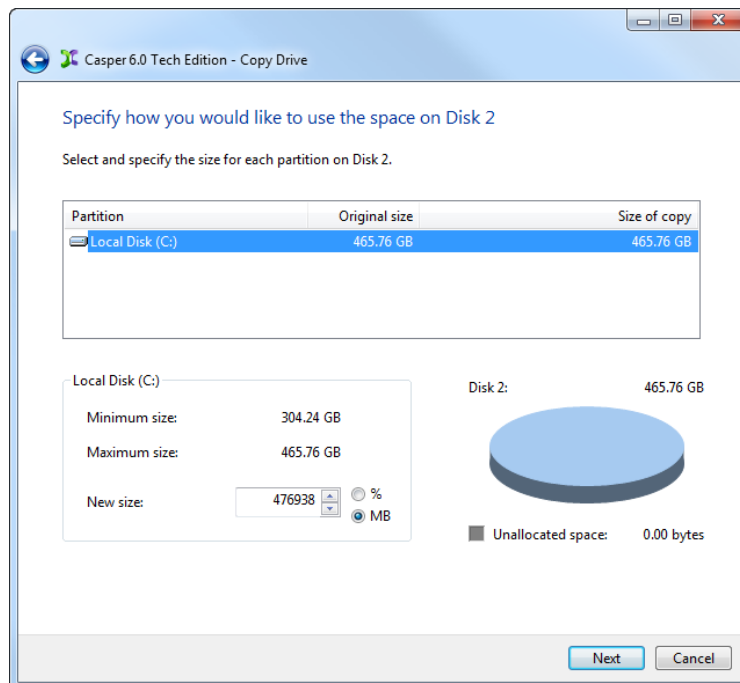
5. Select the backup hard disk as the destination, and click **Next**.



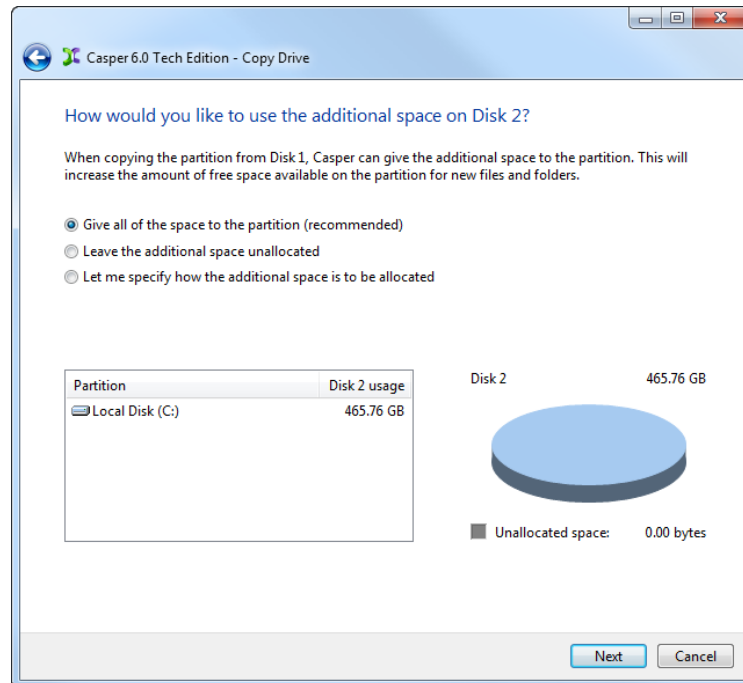
6. If the selected destination hard disk defines a partition or contains data, Casper will warn you that the contents will be overwritten. Confirm you have selected the correct hard disk to receive the backup, and click **Next** to proceed.



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.

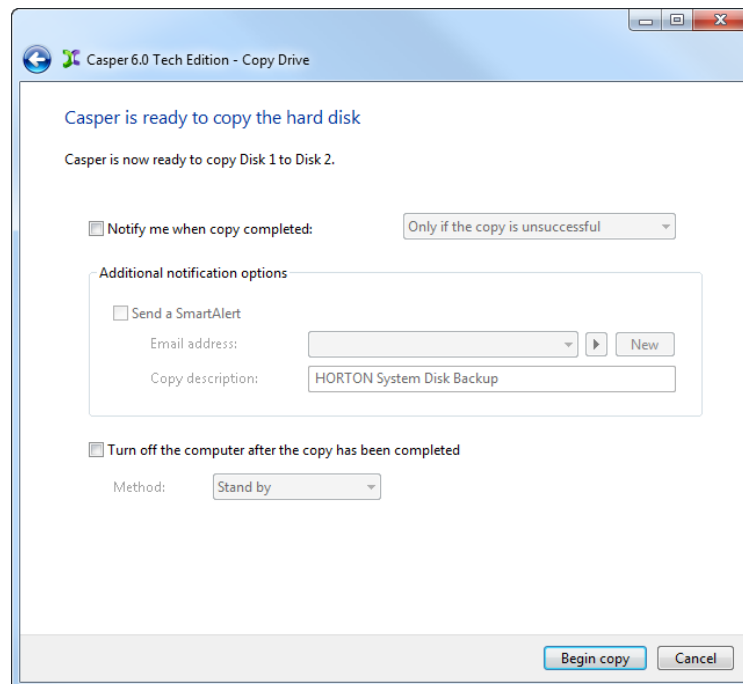


When the destination hard disk is larger than the source, the default option will be *Give all of the free space to the partition*, or *Proportionally distribute the free space to all partitions* when there is more than one partition defined on the source disk.

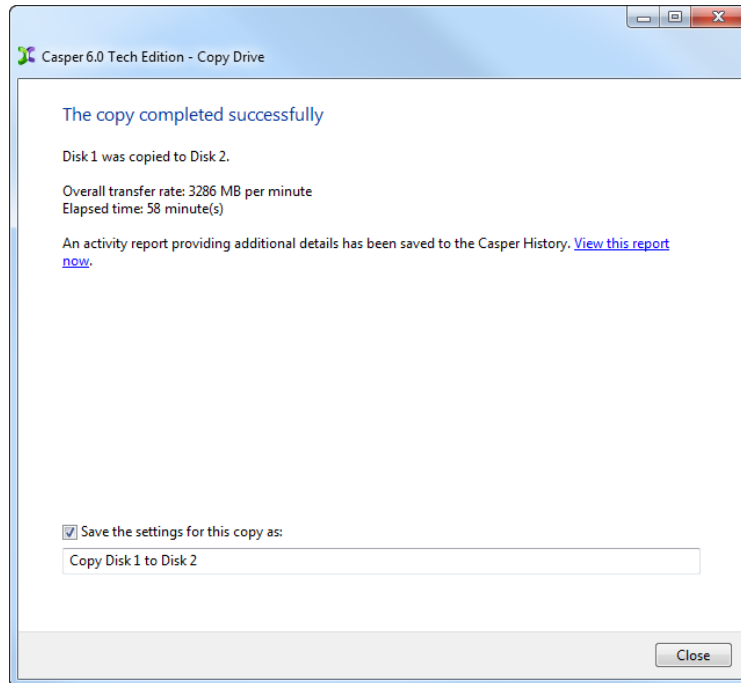


Simply clicking **Next** to accept the default selection or value is generally best. For additional help with making a selection, press **F1**.

8. Click **Begin copy** to start the cloning process.



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



Creating and Deploying Windows System Images

By booting and running Casper Tech Edition directly from the Casper Tech Edition CD, you can create an image of a Windows system drive that has been prepared for replication by Microsoft's Sysprep utility, and then deploy the image to one or more other computers. An external USB, Firewire, or eSATA hard disk may be used to store multiple system drive images, each within a separate partition on the external hard disk.

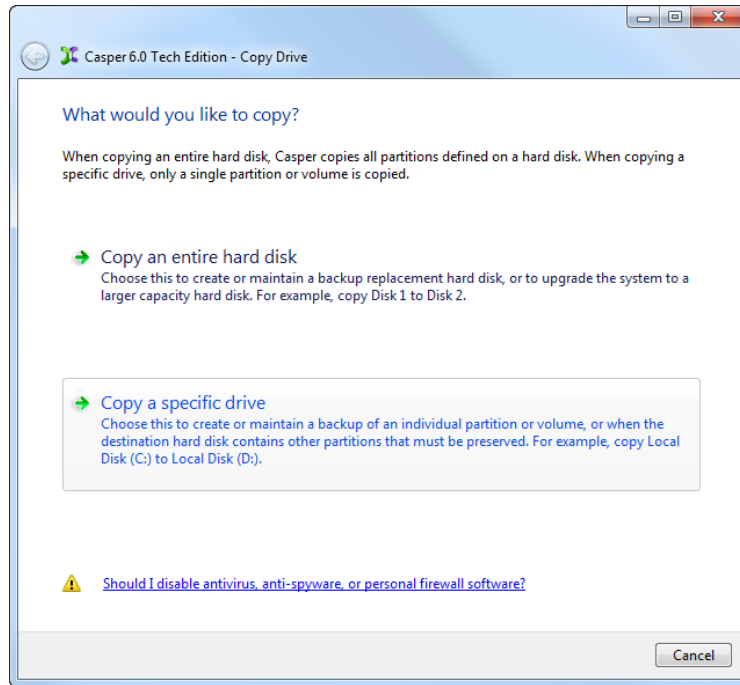
In the first of the following two examples, Casper Tech Edition is used to configure a new external USB hard disk with a Windows system image, which has been prepared for replication with Microsoft's Sysprep utility. In the second example, Casper Tech Edition is used to deploy the image on the external USB hard disk to a new computer containing an uninitialized disk.

Example 3: Creating a Windows System Image for Deployment

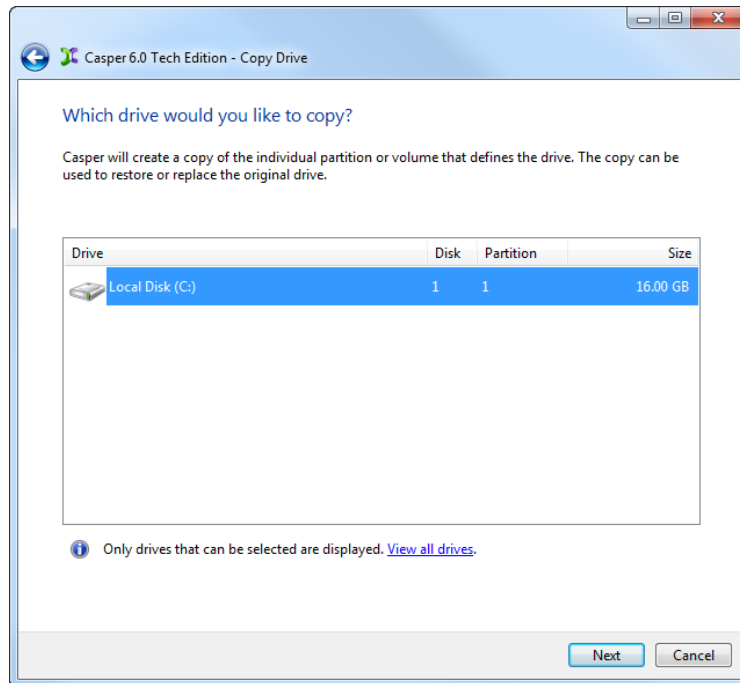
1. With the external hard disk attached, start the computer from the Casper Tech Edition CD
2. Select **Copy Drive**.



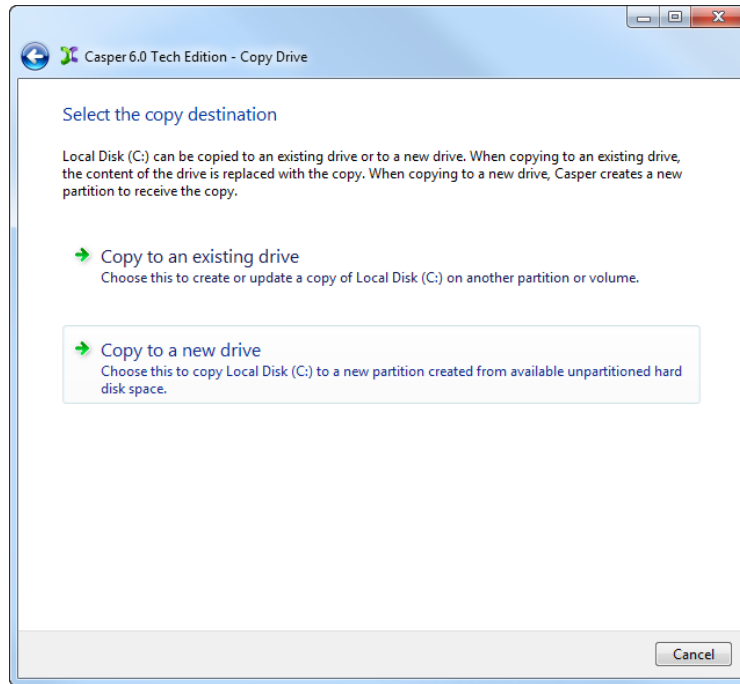
3. Select **Copy a specific drive**.



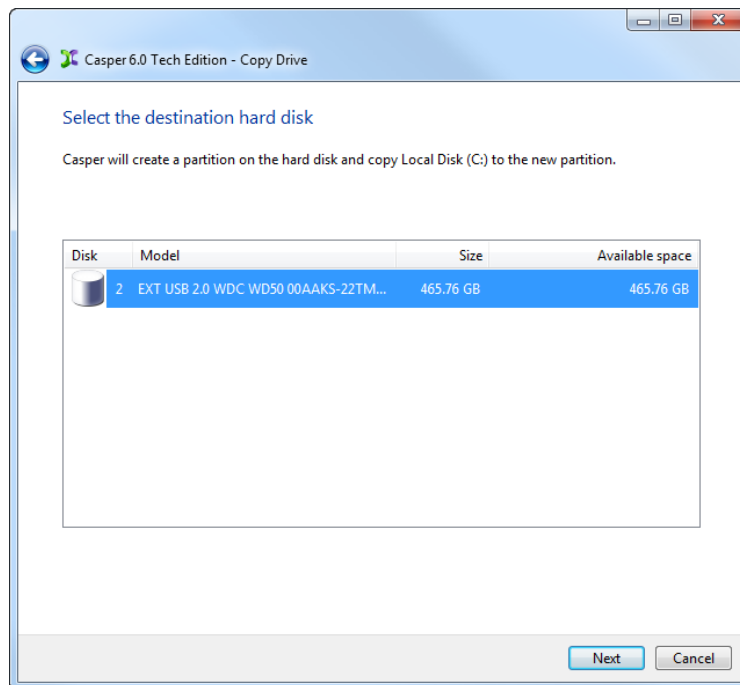
4. Select the system drive to be replicated, and click **Next**.



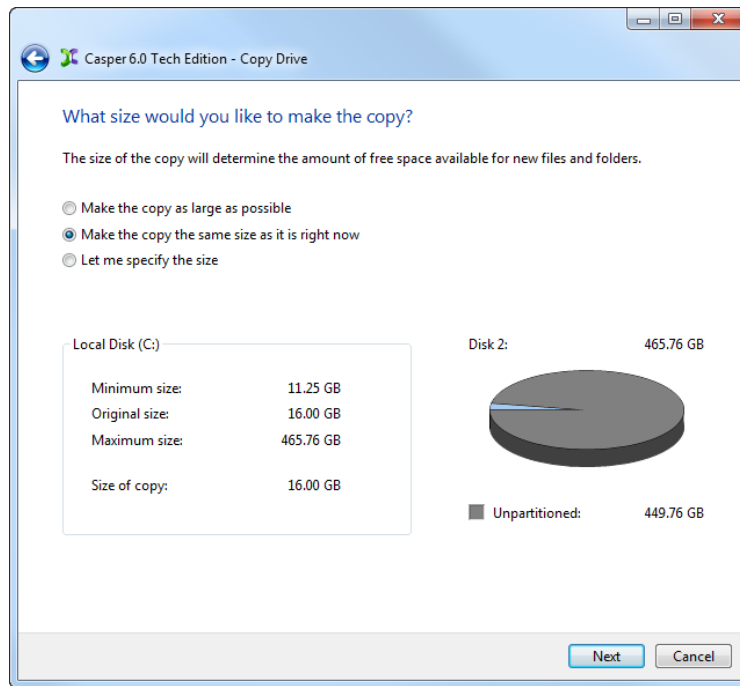
- When both unpartitioned hard disk space and another existing drive may be selected for the destination, Casper will prompt you to select the copy destination. Select **Copy to a new drive**.



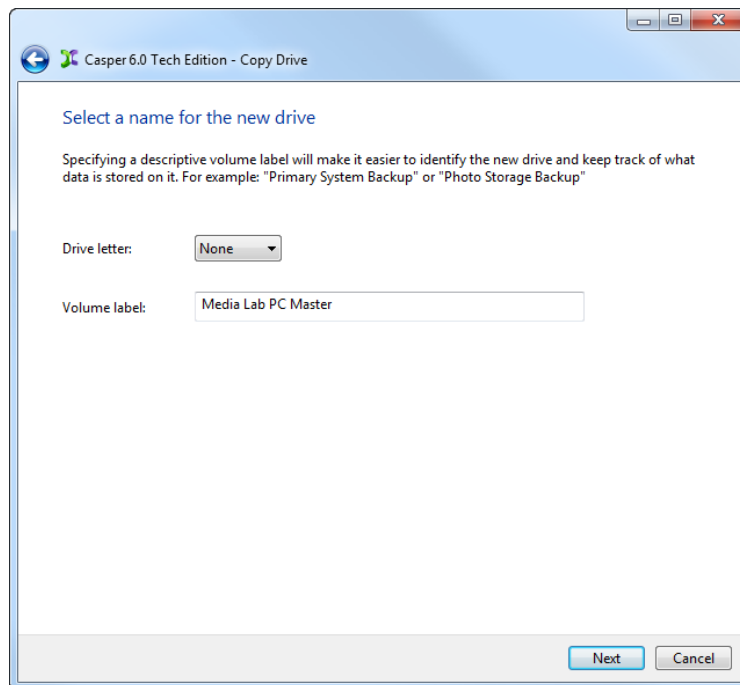
- Select the external hard disk as the destination, and click **Next**.



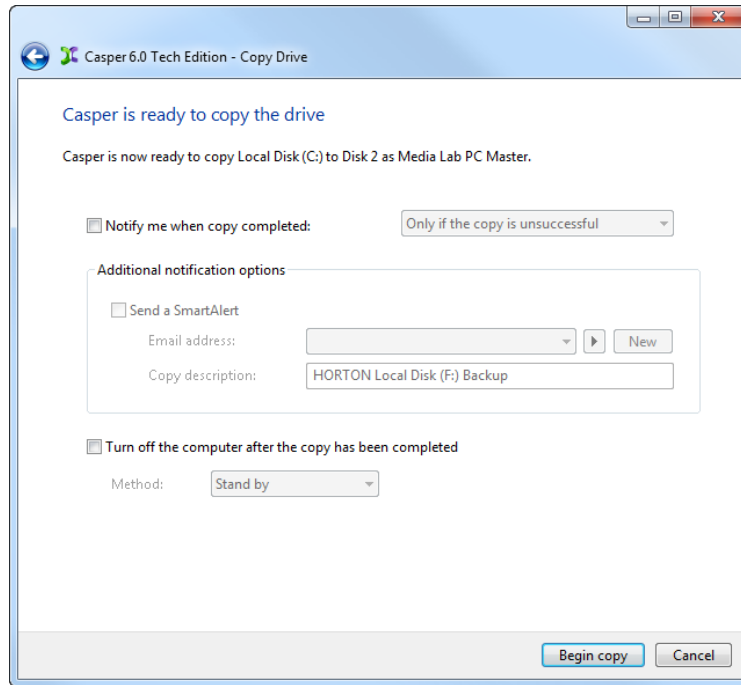
- When prompted to specify the size for the new drive, select the second option, **Make the copy the same size as it is right now**, and then click **Next**.



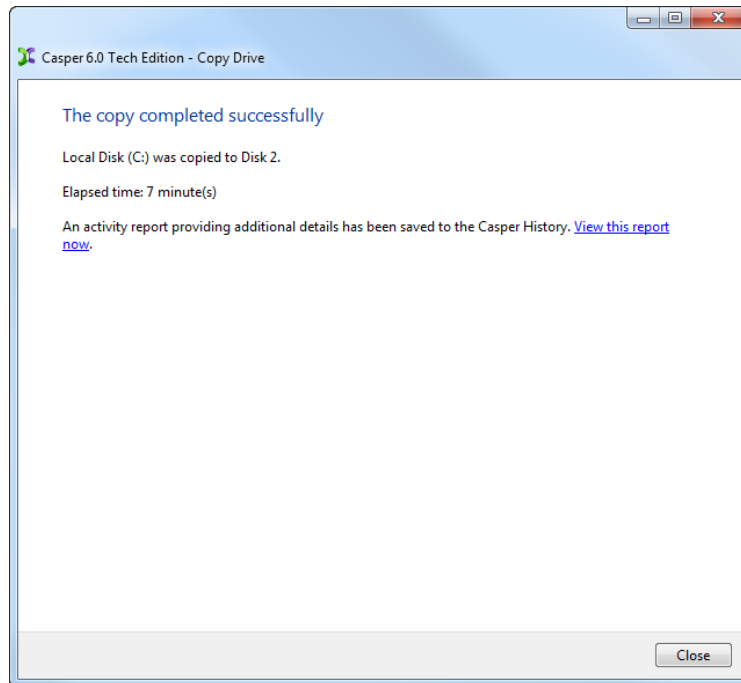
- Enter a descriptive volume label for the copy and then click **Next**.



9. Casper is ready to begin the cloning process. Click **Begin copy**.



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

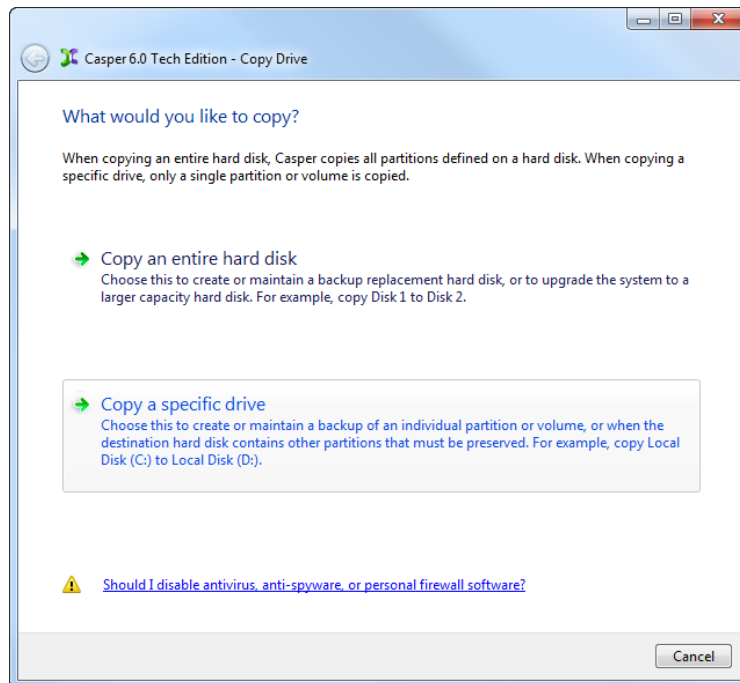


Example 4: Deploying a Windows System Image to a New Disk

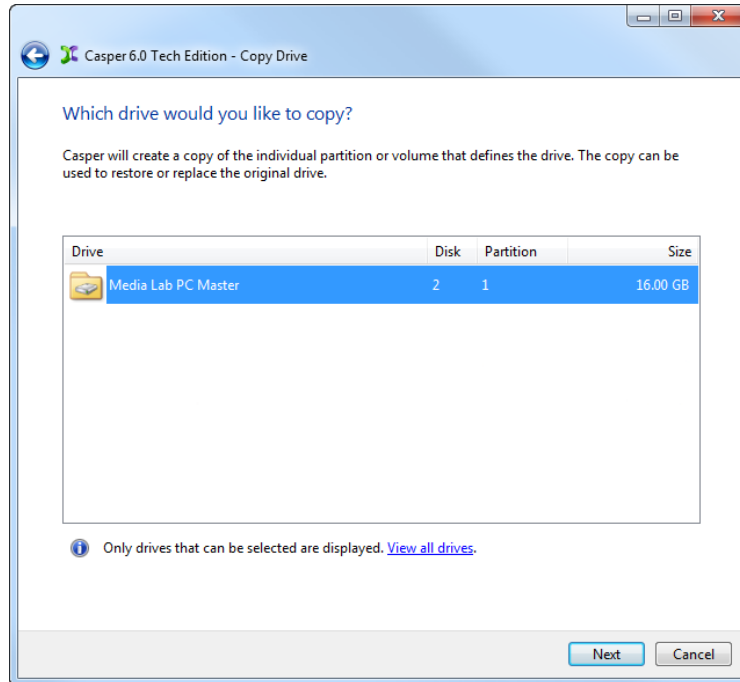
1. With the external hard disk attached, start the computer from the Casper Tech Edition CD
2. Select **Copy Drive**.



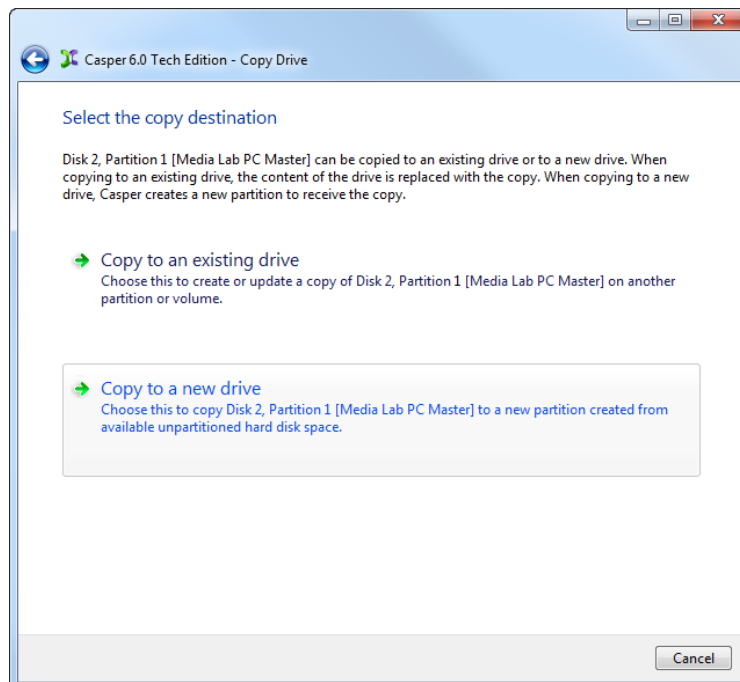
3. Select **Copy a specific drive**.



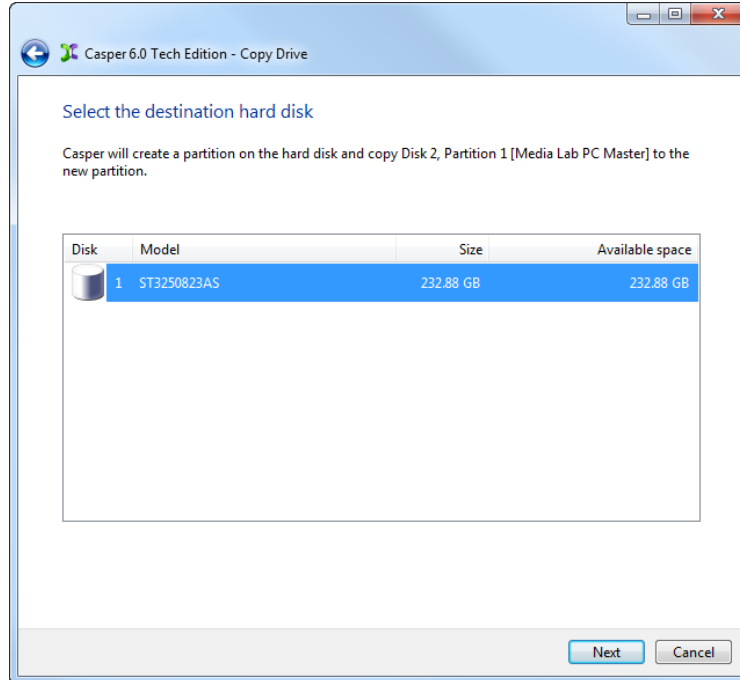
4. Select the drive representing the system image to be deployed from the external hard disk, and click **Next**.



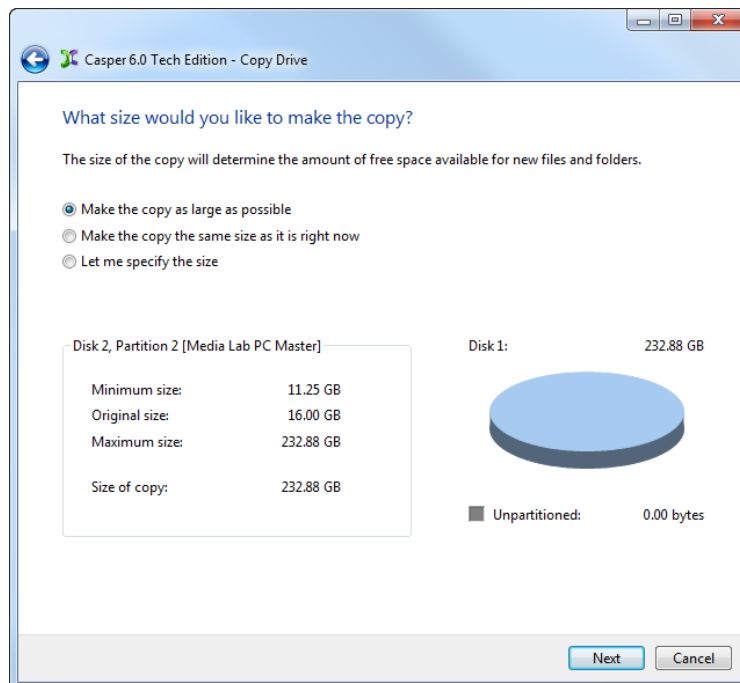
5. If both unpartitioned hard disk space and another existing drive may be selected for the destination, Casper will prompt you to select the copy destination. Select **Copy to a new drive**.



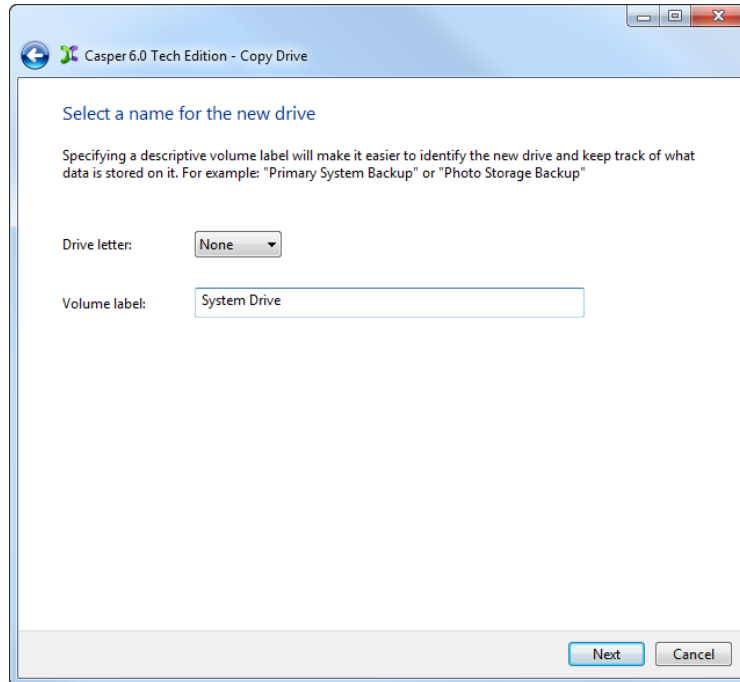
6. Select the computer's internal system hard disk as the destination, and click **Next**.



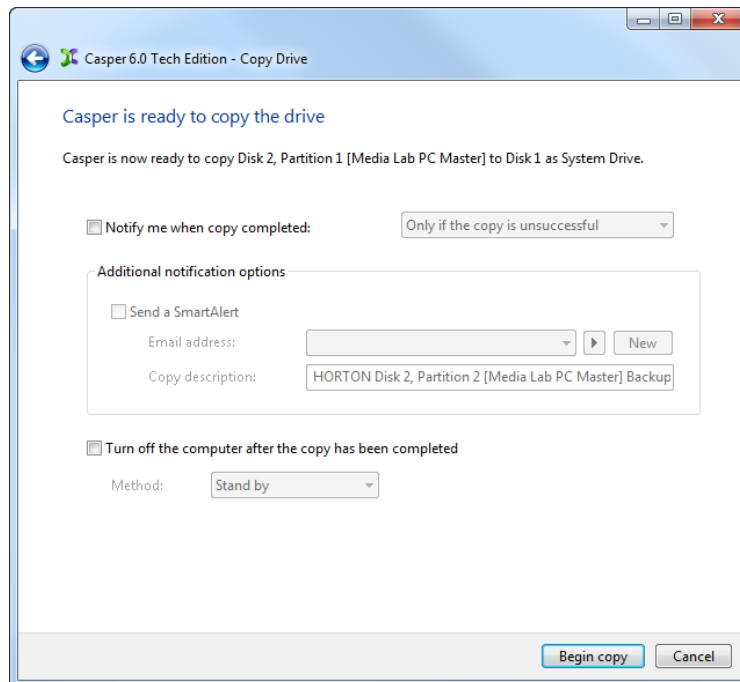
7. When prompted to specify the size for the new drive, select **Make the copy as large as possible**, and then click **Next**.



8. Enter a volume label for the deployed system drive image and then click **Next**.



9. Casper is ready to begin the cloning process. Click **Begin copy**.



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

