

# CASPER SECURE™ DRIVE BACKUP USER GUIDE v5.0



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Casper Secure<sup>™</sup> Drive Backup is designed specifically for users of drive encryption technologies looking for a safe, secure, and dependable backup, recovery, and data migration solution.

Casper Secure Drive Backup offers you these unique advantages:

- Designed Specifically for Windows<sup>™</sup> BitLocker<sup>™</sup> and Symantec<sup>™</sup> (PGP<sup>™</sup>) Drive Encryption Technologies — Casper Secure completely eliminates the unnecessary downtime and security and compliance risks associated with other backup and recovery products. With Casper Secure, your data is never placed in an exposed or unencrypted state — all data remains in its original encrypted state before, during, and after backup and recovery.
- Fast, Complete Encrypted Backups Casper Secure creates a complete, fullyencrypted backup of your encrypted Windows system drive in its *original* encrypted state. Everything remains encrypted throughout the process, so you can avoid the arduous and lengthy decryption and encryption steps that are required with other drive imaging and backup solutions. Casper Secure backs up everything, including the operating system, applications, settings, and all of your data.
- Rapid, Fully-Encrypted Recovery Casper Secure completely eliminates the separate data restoration and re-encryption steps required by other drive imaging and backup solutions. Whether you need to recover a single file or your PC's entire system drive, recovery could not be faster or easier. You have complete and immediate access to all of the data on your backup; there are no additional passwords or exotic procedures to follow.
- Bootable Backups Provide Instant Recovery Casper Secure can turn virtually any drive into an instantly bootable encrypted backup drive that you can use to boot and run your PC in an emergency. If your PC's system drive should fail, simply restart your PC to your Casper Secure Bootable Backup or remove the failed drive and replace it with the Casper Secure Bootable Backup. Either way, you can be back up and running in minutes, eliminating a day or more of unnecessary downtime.
- Restore-Point Backups Provide Selectable Point-In-Time Recovery A Casper Secure Restore-Point Backup stores a complete image of your PC's encrypted system drive that you can use to restore selected files and folders or your PC's entire system drive to a previous point in time. Multiple Casper Restore-Point Backups can be stored on a single backup drive and can be restored directly to their original encrypted state without ever putting data at risk or requiring a separate, time-consuming data reencryption step. SmartRestore<sup>™</sup> technology makes recovery as easy as booting to a Casper Restore-Point Backup drive.
- Ensures Compliance with Existing Security Directives Since all data is backed up, maintained, and restored in its original encrypted state, there are no new passwords to manage, and more importantly, there are no new security protocols or encryption technologies to vet. With Casper Secure, the backup is guaranteed to be as secure as the original.

- Safe and Dependable Advanced data verification technology ensures data has not been compromised during the imaging process by faulty RAM, a defective cable, failing disk or bad controller interface. In addition, a Casper Secure Bootable Backup can even be tested immediately after its creation by simply configuring the computer to boot from it completely eliminating any worry about the integrity of the backup.
- Quick and Easy System Drive Upgrades Casper Secure can quickly duplicate your encrypted system drive to another drive without requiring a laborious, time consuming and unsecure backup, restore, and re-encryption process. 1-Click SmartStart<sup>™</sup> technology makes it extraordinarily easy to safely replace your PC's encrypted system drive with a larger drive for increased capacity or with a faster solid state drive for improved system performance.
- Convenient and Easy-to-Use Casper Secure 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. Easy to follow wizards and innovative technologies like 1-Click SmartStart<sup>™</sup> make it easier than ever to create and maintain complete system backups for your encrypted PC.

## **Getting Started**

This User Guide is intended to provide you with an overview of the basic operations of Casper Secure Drive Backup. Additional information regarding Casper can be found in the help file or in one of the following supplementary guides:

**Casper Secure SmartStart™ Guide:** This guide provides an overview of Casper SmartStart. You should refer to this guide when you want to maintain a complete backup for your computer's system disk or when you want to replace your computer's system disk with a new disk to increase speed or storage capacity.

**Casper Secure SmartRestore™ Guide:** This guide provides an overview of Casper SmartRestore. You should refer to this guide when you need to restore a backup.

**Casper Secure Startup Disk Creator Guide:** This guide provides instructions for creating a Casper Secure Startup Disk, which may be required to restore a backup to the primary system drive.

#### **System Requirements**

- Windows 10, Windows 8.x, Windows 7, Windows Vista<sup>™</sup>, or Windows XP (SP3)<sup>1</sup>
- Windows BitLocker Drive Encryption<sup>2</sup>, Symantec Endpoint Encryption (SEE), Symantec Encryption Desktop (SED) version 10.x, or PGP Desktop version 9.6x or later<sup>3</sup>
- 500MB available disk space
- 512MB RAM (1GB or more recommended)
- Backup device (additional internal or external hard disk drive)

<sup>&</sup>lt;sup>1</sup> The Casper Restore-Point Backup and image file backup features are supported only when running on Windows 7 and later or when booting and running from the Casper Secure Startup Disk. The VHDX image file format is supported only when running on Windows 8 and later or when booting and running from a Casper Secure Startup Disk created with the Windows 8 or later ADK.

<sup>&</sup>lt;sup>2</sup> Windows BitLocker Drive Encryption is currently supported only for drives using software encryption that have been formatted with the NTFS file system. BitLocker hardware encrypted drives and BitLocker encrypted drives that are formatted with the FAT file system can be copied only in their unencrypted state.

<sup>&</sup>lt;sup>3</sup> Encrypted cloning and imaging is currently supported only for drives encrypted with software-based drive encryption. Selfencrypting drives (SED), including Opal compliant and Windows BitLocker eDrive compliant drives, may be copied in their encrypted state only when software encrypted.

## 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.

- 1. Start the Casper Secure Drive Backup Setup program
- 2. Read the License terms and conditions and then check I agree to the License terms and conditions
- 3. Click Install
- 4. Click Finish to close the Casper Secure Setup Program

### **Starting Casper Secure Drive Backup**

In Windows 10, follow this procedure:

- 1. Click the Start button.
- 2. Click All apps.
- 3. Click the Casper Secure Drive Backup 5.0 folder.
- 4. Click Casper Secure Drive Backup.

In Windows 8, select **Casper Secure Drive Backup** from the Windows **Start** screen. In Windows 7 and earlier versions, follow this procedure

- 1. Click the Start button.
- 2. Click All Programs.
- 3. Point to the Casper Secure Drive Backup 5.0 menu.
- 4. Click Casper Secure Drive Backup.

## **Getting Help**

For additional assistance, including troubleshooting information, please refer to the online help included with the program. To access help when running Casper Secure Drive Backup, select the **Help** menu or press **F1**.

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

# **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 copies it to another hard disk. The result is another hard disk that can be used as an immediate and complete replacement for the original hard disk.

When you use Casper Secure Drive Backup to create an image of a hard disk, Casper creates a snapshot of the disk and then copies it to a file. The result is a file representing a point-in-time image of the disk, which can be used later to restore the disk to the same state it was in when the image was created.

Casper SmartSense<sup>™</sup> 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<sup>™</sup> 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, you should refer to this Casper Secure User Guide or the Casper Secure Help included with the program. See **Getting Help** for more information.

You can use Casper Secure Drive Backup to maintain bootable backups and restore-point backups for your computer. Both provide unique recovery capabilities that you should consider before proceeding.

#### **Bootable Backups**

A bootable backup represents a separate backup device that you can use to temporarily boot and run your computer in an emergency or that you can use as an immediate and permanent replacement for your computer's Windows system disk. A bootable backup is sometimes referred to as a clone backup because it maintains a duplicate copy ("clone") of your Windows system disk.

Bootable backups provide the advantage of instant recovery because a separate data restoration process is unnecessary. Recovery is simply a matter of restarting your computer from the bootable backup. For example, if your Windows system disk fails or becomes corrupted, you can permanently replace it with your bootable backup or temporarily change your computer's boot sequence to designate your bootable backup as the preferred boot device.

Bootable backups also provide you with immediate access to all of your files and data. For example, you can use Windows Explorer to retrieve a specific file or folder directly from your backup without having to separately mount your backup or extract files or folders from the backup.

Because a bootable backup is a copy of your entire system hard disk made to another disk, it provides you with the ability to recover only a single point-in-time. For example, the backup will

contain only those files and folders that were present on your Windows system disk when the backup was created or last updated. Each time you update a bootable backup, the prior contents of the backup are replaced with the current contents of your Windows system disk.

Using two or more separate disks to maintain additional bootable backups in a backup rotation is necessary when additional point-in-time backups are desired. This practice is also recommended to provide redundancy from backup corruption, which can occur when a bootable backup is interrupted during an update.

When relying strictly on a bootable backup to protect your computer, it is good practice to rotate the backup disk between each successive backup. For example, if you update your bootable backup weekly, you might use two separate disks to maintain two independent bootable backups for your computer. On the first week, you would back up your computer to your first backup disk. On the second week, you would back up your computer to your second backup disk. On the third week, you would back up your computer to your second backup disk. On the third week, you would back up your computer to your first backup disk again, and so on. In this way, should a problem develop with one of the backups, you can still fall back to the older backup to recover.

Using Casper 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 removable (mobile) drive bay 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 is also ideal. For a notebook computer, a secondary media bay or external USB, Firewire, or eSATA hard disk enclosure designed specifically for a 2.5" notebook hard disk is recommended to mount and attach the 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.

**Note:** For a hard disk attached as an external USB device, booting from the backup hard disk may require the selection of additional BIOS or EFI Firmware 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 or EFI Firmware does not support booting from external USB hard disk type devices, a bootable 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 Startup Disk to copy the external backup hard disk to the computer's internal hard disk.* 

#### **Restore-Point Backups**

A restore-point backup represents a collection of separate backups stored on a single storage device that you can use to restore your computer's Windows system disk to a previous point-intime. A restore-point backup is also known as an image backup because it consists of one or more image files, each corresponding to the state of your Windows system disk at the time the image was created.

Because multiple restore-points may be maintained on a single backup device, restore-point backups provide additional recovery options that are not available when using a bootable backup. For example, if your Windows system disk fails or becomes corrupted, you can restore

your Windows system disk to any one of the restore-points you have created. Likewise, when only a specific file or folder needs to be restored, you can choose a specific restore-point from which to retrieve the file or folder.

Unlike a bootable backup, a restore-point backup will not overwrite or replace any other data stored on the backup device. For example, the backup device for a restore-point backup can be almost any disk, including a disk that already contains other data such as photos, documents, music, etc.

Using Casper to create and maintain a restore-point backup for your computer system requires a storage device with free space that is at least several times greater than the amount of used space on your Windows system hard disk. An external USB or eSATA connected storage device with the prerequisite amount of free space is often ideal for maintaining restore-point backups. While the exact amount of free space depends on several factors, usually about three times the amount of used space on your Windows system hard disk is enough free space for Casper to create and maintain multiple restore-points for a restore-point backup. For example, if 150GB represents the current amount of used space on your Windows system disk, using a storage device with approximately 450GB of free space is generally sufficient to maintain a restore-point backup with a good variety of restore-points.

As with a bootable backup, when relying strictly on restore-point backups to protect your computer, it is good practice to rotate the backup device between successive backups. This will help to ensure a viable backup exists in the event one of your backup devices suffers an untimely mechanical failure or data corruption, which might otherwise prevent you from restoring a backup.

Unlike a bootable backup, recovery using a restore-point backup requires a separate restoration step from the Casper Secure Startup and Recovery Environment. For example, to restore your Windows system disk from a restore-point backup, you must boot your computer from a Casper Secure Startup Disk to perform the restore. Alternatively, when the Casper Secure Startup and Recovery Environment has been added to your backup device, you can boot your computer directly from your backup device to perform the restore. In most instances, Casper's SmartRestore™ technology will fully automate the restoration process for you. For details on creating a separate Casper Secure Startup Disk, please see the **Casper Secure Startup Disk Creator Guide**.

#### Choosing a Backup Type

For the greatest level of protection, maintaining a combination of bootable backups and restorepoint backups on multiple devices in rotation is ideal. When this is not possible, the type of backup you choose to maintain will depend greatly on your specific situation and recovery needs.

If minimizing downtime is of utmost importance, maintaining two or more bootable backup disks in rotation will be preferable to a restore-point backup. On the other hand, if you frequently create or update content on your system, maintaining a restore-point backup might be a better choice.

Your travel habits may also influence your decision. For example, if you frequently travel with your computer, you may find it difficult to carry multiple backup disks. In this case, a restore-point backup might be the better choice because it can maintain multiple recovery points on a single backup disk.

The following table summarizes the differences between the two backup types.

	Casper Bootable Backup	Casper Restore-Point Backup	
Contains a complete backup of your Windows system disk?	Yes	Yes	
Can be used to boot and run computer if necessary?	Yes	No	
Can be used to recover just one or more files?	Yes	Yes	
Provides multiple restore points?	No	Yes	
Type of storage device required	Dedicated internal or external hard disk device	Internal or external storage device	
Other data can be stored on the backup storage device	No. Backup completely replaces existing content of storage device.	Yes. Backups can coexist with other new and existing files and folders on storage device.	
Size of storage device required	Large enough to accommodate all of the data currently on Windows system disk	Free space equal to three times the amount of used space on current Windows system disk	

#### **Comparison of Bootable Backups and Restore-Point Backups**

NOTE: Restore-Point Backups require the Casper Image File Backup feature, which is available only on computers running Windows 7 and later.

## **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 is also ideal. For a notebook computer, a secondary media bay or external USB, Firewire, or eSATA 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 various ways to create and maintain a bootable backup of your Windows system disk.

**Example 1: Creating a Bootable Backup**. This example demonstrates how to initialize a new disk for use as a complete backup replacement for your Windows system disk.

**Example 2: Updating a Bootable Backup.** This example shows how to manually update an existing bootable backup of your Windows system disk.

**Example 3: Automating a Bootable Backup.** This example illustrates how to fully automate a bootable backup.

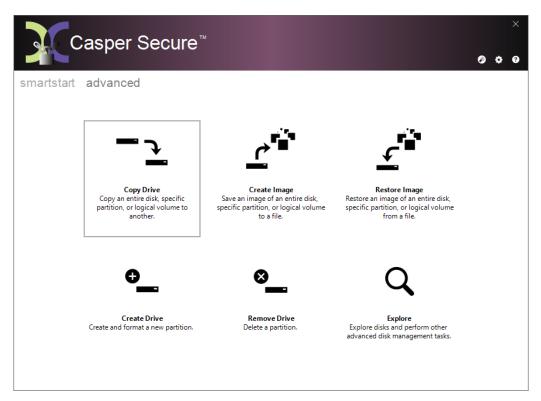
**Example 4: Automating a Bootable Backup to a Portable Device.** This example shows how to automate a bootable backup maintained on a portable device such as a USB, Firewire, or eSATA connected disk.

**Example 5: Performing a Bootable Backup On-Demand.** This example demonstrates how to create a desktop shortcut to maintain a bootable backup on-demand.

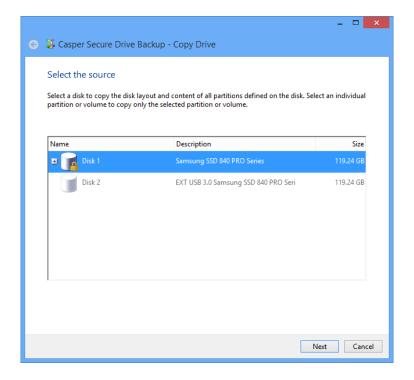
## Example 1: Creating a Bootable Backup

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 to produce a bootable backup on either a desktop or notebook system.

1. From the Casper console select the **Advanced** tab and then click **Copy Drive**.



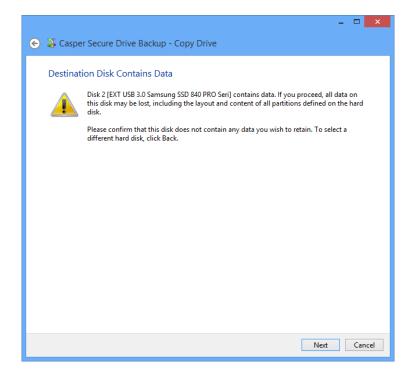
2. Select the hard disk to backup (e.g., the hard disk on which Windows is installed) as the source and click **Next**.



3. Select the backup hard disk as the destination and click Next.

		- 🗆 🗙
🕘 🐉 Casper Secure Dri	ive Backup - Copy Drive	
	on hard disk amsung SSD 840 PRO Series] to the hard disk. Any existing dat be lost, including the layout and content of any partitions defi	
Name	Description	Size
Disk 2	EXT USB 3.0 Samsung SSD 840 PRO Seri	119.24 GB
		Next Cancel

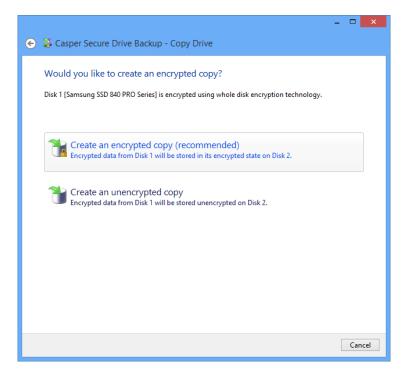
4. If the selected destination hard disk defines a partition or contains data, Casper will warn you that the contents will be overwritten. Confirm you have selected the correct hard disk to receive the backup and click **Next** to proceed.



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.

<ul> <li>Casper Secure Drive Backup - Copy Drive</li> </ul>
Would you like to assign a name to Disk 2? Disk 2 [EXT USB 3.0 Samsung SSD 840 PRO Seri] is a removable disk whose unit number is subject to change depending on the order in which disks are identified by the Windows operating system. To avoid confusion, Casper can refer to this disk using a name of your choosing.
✓ Yes, use the following name when referring to Disk 2 Name: My Portable Backup
Next Cancel

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



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.

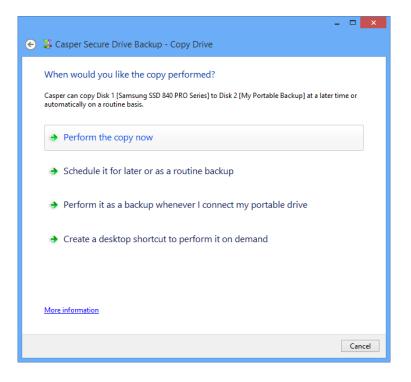
	ve Backup - Copy Drive uld like to use the space or	n Disk 2	_ □
Select and specify the size Partition Disk 1, Partition 1 [Sys	for each partition on Disk 2 [My Po	rtable Backup]. Original size 350.00 MB	Size of copy 350.00 MB
<ul> <li>Local Disk (C:)</li> </ul>		118.90 GB	118.90 GB
– Disk 1, Partition 1 [Syster Minimum size: Maximum size:	n Reserved] 350.00 MB 350.00 MB	Disk 2:	119.24 GB
New size:	350 🔪 MB 🗸	Unallocated space	e: 0.00 bytes
		1	Next Cancel

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* if there is more than one partition defined on the source disk.

			- 🗆 🗙
📀 🍒 Casper Secure Drive Bac	ckup - Copy Drive		
How would you like to us	e the additional space	e on Disk 2?	
1400 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	D: 1 4 /2		1.00
When copying the partitions from space to the partitions. This will in files and folders.			
Proportionally distribute the sp	pace to all partitions (recom	imended)	
C Leave the additional space una	allocated		
◯ Let me specify how the addition	onal space is to be allocated		
Partition	Disk 2 usage	Disk 2	465.76 GB
System Reserved	350.00 MB		
Local Disk (C:)	465.42 GB		
			0.00 history
		Unallocated space:	0.00 bytes
		Nex	t Cancel

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 cloning process.



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

×
🍒 Casper Secure Drive Backup - Copy Drive
The copy completed successfully
Disk 1 [Samsung SSD 840 PRO Series] was copied to Disk 2 [My Portable Backup].
Elapsed time: 2 minutes.
An activity report providing additional details has been saved to the Casper History. <u>View this report</u> now.
Save the settings for this copy as:
Copy System Disk to My Portable Backup
Close

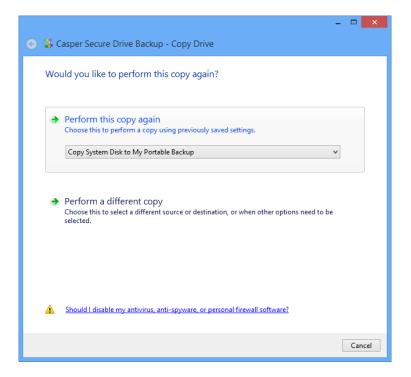
## Example 2: Updating a Bootable Backup

You can manually update a bootable 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, Casper makes this process even easier. Assuming the backup hard disk is currently installed or attached to the system, the following procedure illustrates how a prior copy may be quickly repeated to update an existing bootable backup.

1. From the Casper console select the Advanced tab and then click Copy Drive.



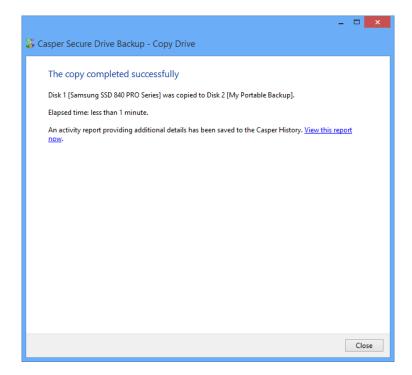
2. Select the copy to be repeated from the list provided and click **Perform this copy again**.



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

📀 🐺 Casper Secure Drive Backup - Copy Drive	
When would you like the copy performed?	
Casper can copy Disk 1 [Samsung SSD 840 PRO Series] to Disk 2 [My Portable Backup] at a later time or automatically on a routine basis.	
Perform the copy now	
Schedule it for later or as a routine backup	
Perform it as a backup whenever I connect my portable drive	
Create a desktop shortcut to perform it on demand	
More information	
Cancel	

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



## Example 3: Automating a Bootable Backup

You can fully automate the process of creating and maintaining a bootable backup for your computer by scheduling Casper to run on a routine basis. The procedure outlined below is the same whether you are performing an initial backup as demonstrated in Example 1 or updating an existing backup as demonstrated in Example 2.

1. When prompted by the Copy Drive wizard, click **Schedule it for later or as a routine backup**.

- 🗆 💌
When would you like the copy performed? Casper can copy Disk 1 [Samsung SSD 840 PRO Series] to Disk 2 [My Portable Backup] at a later time or automatically on a routine basis.
Perform the copy now
Schedule it for later or as a routine backup
Perform it as a backup whenever I connect my portable drive
Create a desktop shortcut to perform it on demand
More information
Cancel

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

			_ 🗆 🗙
📀 🏅 Casper Secure	Drive Backup - Copy Drive		
How often woul	d you like the backup perfo	rmed?	
Select how often you	want the backup performed:	Weekly	y v
Weekly Backup Sch	edule		
Every:	Wednesday, Friday 🗸 🗸	At:	02:00 AM
Beginning:	Monday , July 1, 2013		
Power Managemen	t omputer to perform the backup		
			Next Cancel

3. Select the desired completion options and click Next.

	×			
📀 🥈 Casper Secure Drive Backu	up - Copy Drive			
Select completion options				
✓ Notify me when completed:	Always 🗸			
Additional notification options	Additional notification options			
Send a SmartAlert				
Email address:	V New			
Description:	JETSON System Disk Backup			
Turn off computer:	Hibernate $\lor$			
Turn off computer even i	if user activity detected			
🗌 Prepare Disk 2 [My Portable Back	Prepare Disk 2 [My Portable Backup] for safe removal			
Help me decide				
	Next Cancel			

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

X
📀 🍒 Casper Secure Drive Backup - Copy Drive
What would you like to name the schedule?
The name will be used by the Task Scheduler to uniquely identify the backup schedule. A description can assist with identifying the purpose of the backup schedule. Example: "Weekly computer backup."
Name:
My System Disk Backup
Description (optional):
Create schedule Cancel

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

-	•		×
🐉 Casper Secure Drive Backup - Copy Drive			
You have successfully scheduled the backup			
Casper will back up Disk 1 [Samsung SSD 840 PRO Series] to Disk 2 [My Portable Backup]:			
At 2:00 AM every Wednesday, Friday of every week, starting 7/13/2013.			
To confirm that the schedule is working correctly, you can perform the scheduled backup now.			
Begin scheduled backup now			
		Clo	se

## Example 4: Automating a Bootable Backup to a Portable Device

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

#### Configuring a SmartSense Backup

The procedure outlined below is the same whether you are performing an initial backup as demonstrated in Example 1 or updating an existing backup as demonstrated in Example 2.

1. When prompted by the Copy Drive wizard, click **Perform it as a backup whenever I** connect my portable drive.

-	×
📀 🐺 Casper Secure Drive Backup - Copy Drive	
When would you like the copy performed? Casper can copy Disk 1 [Samsung SSD 840 PRO Series] to Disk 2 [My Portable Backup] at a later time automatically on a routine basis.	or
Perform the copy now	
Schedule it for later or as a routine backup	
Perform it as a backup whenever I connect my portable drive	
Create a desktop shortcut to perform it on demand	
More information	
	Cancel

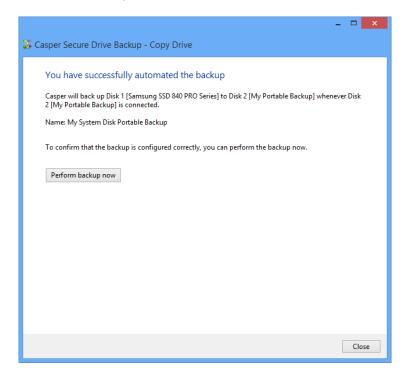
2. Select the desired completion options and click Next.

<ul> <li></li></ul>
Select completion options
Notify me when completed:
Additional notification options
Send a SmartAlert         Email address:         Description:         JETSON System Disk Backup
□ Turn off computer: Hibernate ∨
Prepare Disk 2 [My Portable Backup] for safe removal
Help me decide
Next Cancel

3. 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.

X
📀 🕉 Casper Secure Drive Backup - Copy Drive
How would you like to identify this backup?
How would you like to identify this backup:
The name will be used by the Casper SmartSense Service to identify the backup. A description can assist with identifying the purpose of the backup. Example: "Secondary backup for offsite storage."
Name:
My System Disk Portable Backup
Description (optional):
Save Cancel

4. 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.

X.	Casper Secure Drive Backup	×
*	Casper is ready to begin the following backup	
	My System Disk Portable Backup	
	The backup will begin in 24 seconds.	
	Begin the backup now	
	Cancel the backup Do not perform the backup now, but perform it the next time I connect Disk 2 [My Portable Backup].	
	Disable the backup Stop performing automatic backups to Disk 2 [My Portable Backup].	
⊘ Se	ee details	

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 5: Performing a Bootable Backup On-Demand

You can create a desktop shortcut to perform a bootable backup on-demand.

#### Creating a Desktop Shortcut for a Bootable Backup

The procedure outlined below is the same whether you are performing an initial backup as demonstrated in Example 1 or updating an existing backup as demonstrated in Example 2.

1. When prompted by the Copy Drive wizard, click **Create a desktop shortcut to perform it on demand**.

X
📀 🐉 Casper Secure Drive Backup - Copy Drive
When would you like the copy performed?
Casper can copy Disk 1 [Samsung SSD 840 PRO Series] to Disk 2 [My Portable Backup] at a later time or automatically on a routine basis.
Perform the copy now
Schedule it for later or as a routine backup
Perform it as a backup whenever I connect my portable drive
Create a desktop shortcut to perform it on demand
More information
Cancel

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

×
📀 🍒 Casper Secure Drive Backup - Copy Drive
What would you like to name the shortcut? The name will appear as the title of the shortcut on your desktop. A description can assist with identifying the purpose of the shortcut or provide additional instructions for its use. Example: "Use this shortcut to back up the computer."
Name: Back up System Disk to My Portable Backup
Description (optional):
Create shortcut Cancel

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

– – <mark>×</mark>
🍒 Casper Secure Drive Backup - Copy Drive
You have successfully created a desktop shortcut
A new shortcut to Casper has been created on your desktop to back up Disk 1 [Samsung SSD 840 PRO Series] to Disk 2 [My Portable Backup].
Name: Back up System Disk to My Portable Backup
To confirm that the shortcut is working correctly, you can perform the backup now.
Perform backup now
Close

#### Performing a Bootable Backup On-Demand

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

	- 🗆 ×
📀 🍒 Casper Secure Drive Backu	kup - Copy Drive
Casper is ready to copy the Casper will copy Disk 1 [Samsung SS	e hard disk ISD 840 PRO Series] to Disk 2 [My Portable Backup].
✓ Notify me when completed:	Always 🗸
Additional notification options	15
Send a SmartAlert	
Email address:	V New
Description:	JETSON System Disk Backup
Turn off computer when finis	ished: V
Prepare Disk 2 [My Portable E	Backup] for safe removal
	Begin now Cancel

# **Creating and Maintaining a Restore-Point System Backup**

Using Casper Secure Drive Backup to create and maintain a restore-point backup for your computer system requires a storage device with free space that is at least several times greater than the amount of used space on your Windows system hard disk. An external USB or eSATA connected storage device with the prerequisite amount of free space is often ideal for maintaining restore-point backups. While the exact amount of free space depends on several factors, usually about three times the amount of used space on your Windows system hard disk is enough free space for Casper to create and maintain multiple restore-points for a restore-point backup. For example, if 150GB represents the current amount of used space on your Windows system disk, using a storage device with approximately 450GB of free space is generally sufficient to maintain a restore-point backup with a good variety of restore-points.

The following examples illustrate various ways to create and maintain a restore-point backup of your Windows system disk.

**Example 6: Creating a Restore-Point Backup.** This example demonstrates how to create a restore-point backup for your Windows system disk.

**Example 7: Updating a Restore-Point Backup.** This example shows how to manually update an existing restore-point backup by creating a new restore point.

**Example 8: Automating a Restore-Point Backup.** This example illustrates how to fully automate a restore-point backup.

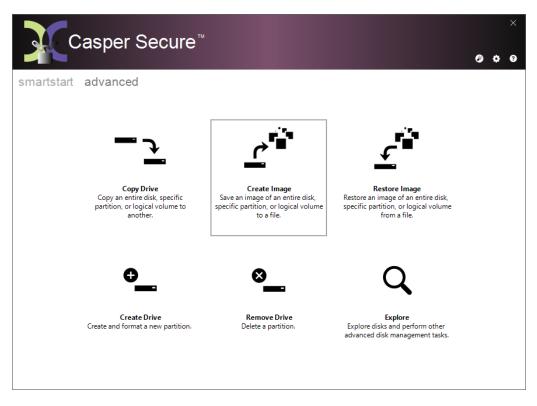
**Example 9: Automating a Restore-Point Backup to a Portable Device.** This example shows how to automate a restore-point backup maintained on a portable device such as a USB, Firewire, or eSATA connected disk.

**Example 10: Performing a Restore-Point Backup On-Demand.** This example demonstrates how to create a desktop shortcut to maintain a restore-point backup on-demand.

## Example 6: Creating a Restore-Point Backup

Assuming the backup hard disk is currently installed or attached to the system, the following procedure illustrates how to create an image of the Windows system hard disk to produce a restore-point backup on either a desktop or notebook system.

1. Select Create Image.



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

<ul> <li>Select the source</li> </ul>	_ Drive Backup - Create Image	×
	the disk layout and content of all partitions defined on the disk. Select an individual o copy only the selected partition or volume.	
Name	Description Size	
🗉 📊 Disk 1	Samsung SSD 840 PRO Series 119.24 GB	
a Disk 2	EXT USB 3.0 Seagate FreeAgent GoFlex 465.76 GB	
	Next Can	cel

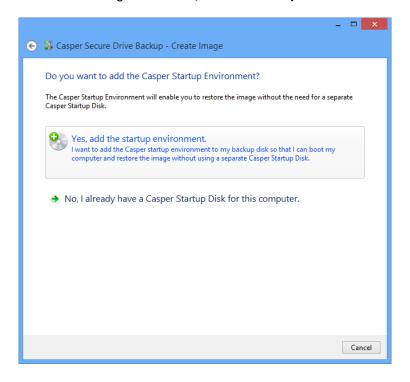
 Enter a name for the restore-point backup, or retain the name suggested by Casper, and then select the location where the image file(s) will be stored. To allow future restore-points to be managed by Casper, choose Create using backup semantics and click Next. For additional help, press F1.

📀 🥻 Casper	Secure Drive Backup - Create Image
Select the	e destination image file
Disk 1 [Sams	ung SSD 840 PRO Series] will be copied to the image file.
Name:	JETSON System Disk Backup 🗸
Location:	E:\Casper Backups v
Туре:	<ul> <li>Create using backup semantics</li> <li>Choose this to allow incremental updates to be stored and managed by Casper within separate image files.</li> <li>Create as standard image file</li> <li>Choose this to create a single image file exactly as specified.</li> </ul>
	Next Cancel

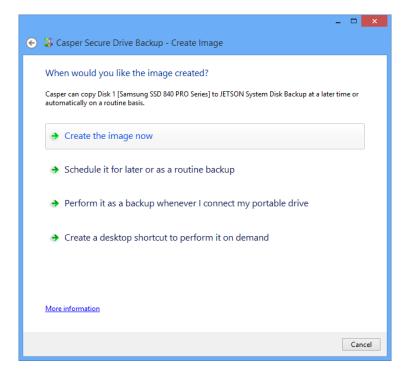
4. When using backup semantics, Casper will prompt you to specify the storage and retention policy for the backup. This policy governs how restore-points are created and managed. It also defines what happens when additional storage space is needed to create a new restore-point. Click **Next** to proceed.

ackup Storage and Retention Policy	
<ul> <li>Use default backup retention policy</li> </ul>	
Retain daily backups for:	5 🔶 days
Retain weekly backups for:	4 🔹 weeks
Retain monthly backups for:	6 🐥 months
Create a full backup every: Limit space usage to:	100 🗘 backups No limit 🚑 GB
<ul> <li>Automatically remove backups when insuff</li> </ul>	icient space exists to maintain policies
Configure backup priority	

5. If creating an image of the Windows System disk on a disk that can be used to boot the Casper Startup and Recovery Environment, Casper will offer to add the Casper Startup and Recovery Environment. This eliminates the need to create and use a separate Casper Startup Disk to restore the image. Click **Yes, add the startup environment**.



6. Click Create the image now to begin the imaging process.



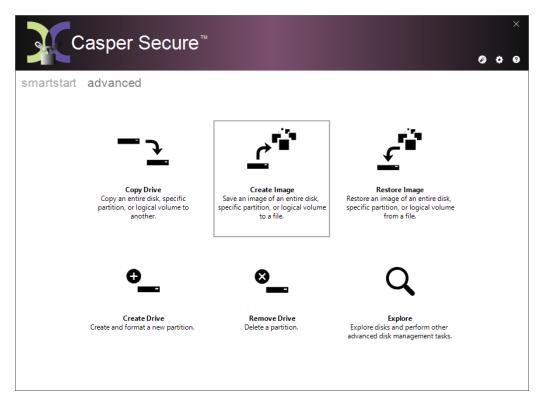
7. When Casper has completed the imaging process, click **Close**.

– 🗆 🗙
🐉 Casper Secure Drive Backup - Create Image
The image was created successfully
Disk 1 [Samsung SSD 840 PRO Series] was copied to JETSON System Disk Backup.
Overall transfer rate: 2187 MB per minute. Elapsed time: 11 minutes.
An activity report providing additional details has been saved to the Casper History. <u>View this report</u> now.
✓ Save the settings for this image as:
Create JETSON System Disk Backup
Close

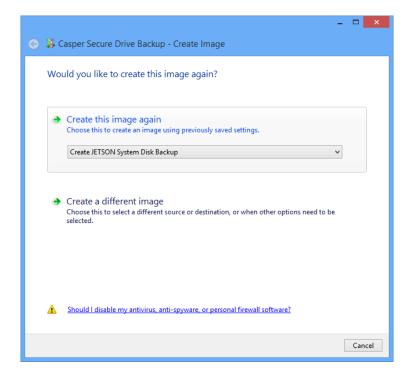
# Example 7: Updating a Restore-Point Backup

You can manually update a restore-point backup with a new restore-point by repeating the procedure used to create the initial restore-point backup. When the settings for the image have been saved as shown in the final step of the preceding example, Casper makes this process even easier. Assuming the backup hard disk is currently installed or attached to the system, the following procedure illustrates how to quickly create the image again to produce a new restore-point.

1. Select Create Image.



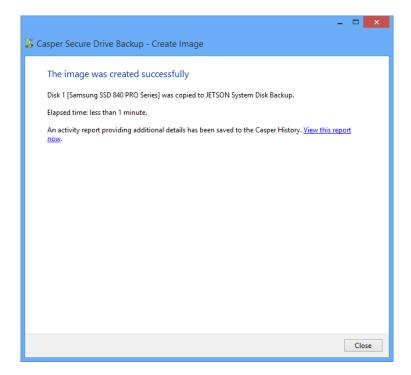
2. Select the image from the list provided and click Create this image again.



3. Click Create the image now to begin the imaging process.

– – ×
📀 🐉 Casper Secure Drive Backup - Create Image
When would you like the image created? Casper can copy Disk 1 [Samsung SSD 840 PRO Series] to JETSON System Disk Backup at a later time or automatically on a routine basis.
Create the image now
Schedule it for later or as a routine backup
Perform it as a backup whenever I connect my portable drive
Create a desktop shortcut to perform it on demand
More information
Cancel

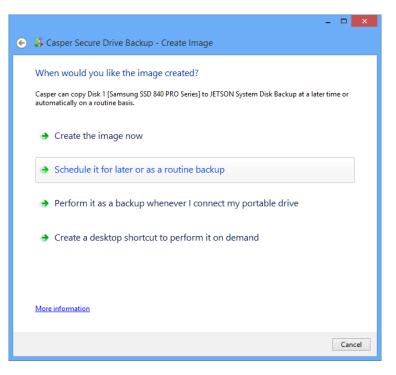
4. When Casper has completed the imaging process, click **Close**.



## Example 8: Automating a Restore-Point Backup

You can fully automate the process of creating and maintaining a restore-point backup for your computer by scheduling Casper to run on a routine basis. The procedure outlined below is the same whether you are performing an initial backup as demonstrated in Example 6 or updating an existing backup as demonstrated in Example 7.

1. When prompted by the Create Image wizard, click **Schedule it for later or as a routine backup**.



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

-		×
📀 🐉 Casper Secure Drive Backup - Create Image		
How often would you like the backup performed?		
Select how often you want the backup performed: Daily v		
Daily Backup Schedule		
At: 02:00 AM 💌 Beginning: Monday , July 1, 2013 🔍 🕶	]	
Power Management		
✔ Wake the computer to perform the backup		
		_
Next	Car	ncel

3. Select the desired completion options and click Next.

📀 🥈 Casper Secure Drive Backu	up - Create Image
Select completion options	
☑ Notify me when completed:	Only if unsuccessful v
Additional notification options	
Send a SmartAlert	
Email address:	V New
Description:	JETSON System Disk Backup
Turn off computer:	Hibernate V f user activity detected
Prepare JETSON System Disk Back	cup for safe removal
Help me decide	
	Next Cancel

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

- D ×
📀 🐉 Casper Secure Drive Backup - Create Image
What would you like to name the schedule?
The name will be used by the Task Scheduler to uniquely identify the backup schedule. A description can assist with identifying the purpose of the backup schedule. Example: "Weekly computer backup."
Name:
My System Disk Backup
Description (optional):
Create schedule Cancel

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

-		×
🐉 Casper Secure Drive Backup - Create Image		
You have successfully scheduled the backup Casper will back up Disk 1 [Samsung SSD 840 PRO Series] to JETSON System Disk Backup: At 2:00 AM every day, starting 7/1/2013.		
To confirm that the schedule is working correctly, you can perform the scheduled backup now.		
Begin scheduled backup now		
	Clos	e

# Example 9: Automating a Restore-Point Backup to a Portable Device

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

#### Configuring a SmartSense Backup

The procedure outlined below is the same whether you are performing an initial backup as demonstrated in Example 6 or updating an existing backup as demonstrated in Example 7.

1. When prompted by the Create Image wizard, click **Perform it as a backup whenever I** connect my portable drive.

- D ×
📀 🐉 Casper Secure Drive Backup - Create Image
When would you like the image created?
Casper can copy Disk 1 [Samsung SSD 840 PRO Series] to JETSON System Disk Backup at a later time or automatically on a routine basis.
Create the image now
Schedule it for later or as a routine backup
Perform it as a backup whenever I connect my portable drive
Create a desktop shortcut to perform it on demand
More information
Cancel

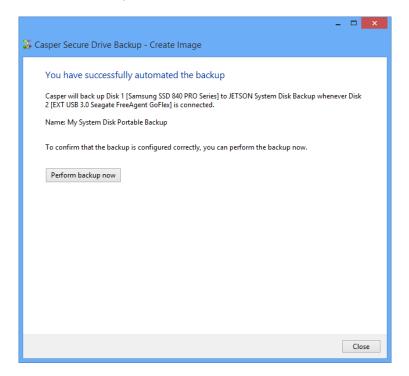
2. Select the desired completion options and click Next.

📀 🍒 Casper Secure Drive Backup - Create Image	- <b>-</b> ×
Select completion options	
✓ Notify me when completed: Always	~
Additional notification options	
Send a SmartAlert Email address:	✓ ▶ New
Description: JETSON System Disk Backup	
☐Turn off computer: Hibernate ∨	
Prepare JETSON System Disk Backup for safe removal	
Help me decide	
	Next Cancel

3. 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.

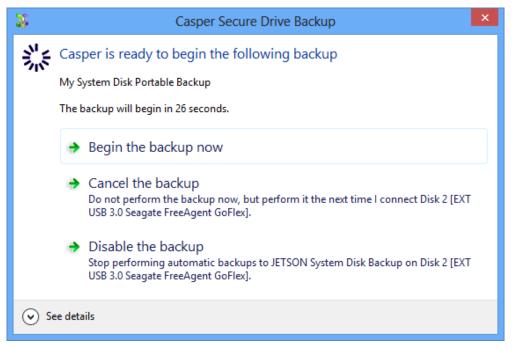
<mark>×</mark>
📀 🕉 Casper Secure Drive Backup - Create Image
How would you like to identify this backup?
The name will be used by the Casper SmartSense Service to identify the backup. A description can assist with identifying the purpose of the backup. Example: "Secondary backup for offsite storage."
Name:
My System Disk Portable Backup
Description (optional):
Save Cancel

4. 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 10: Performing a Restore-Point Backup On-Demand

You can create a desktop shortcut to perform a bootable backup on-demand.

#### Creating a Desktop Shortcut for a Restore-Point Backup

The procedure outlined below is the same whether you are performing an initial backup as demonstrated in Example 6 or updating an existing backup as demonstrated in Example 7.

1. When prompted by the Create Image wizard, click **Create a desktop shortcut to perform it on demand**.

×
📀 🍒 Casper Secure Drive Backup - Create Image
When would you like the image created?
Casper can copy Disk 1 [Samsung SSD 840 PRO Series] to JETSON System Disk Backup at a later time or automatically on a routine basis.
Create the image now
Schedule it for later or as a routine backup
Perform it as a backup whenever I connect my portable drive
Create a desktop shortcut to perform it on demand
More information
Cancel

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

X
📀 🐉 Casper Secure Drive Backup - Create Image
What would you like to name the shortcut?
The name will appear as the title of the shortcut on your desktop. A description can assist with identifying the purpose of the shortcut or provide additional instructions for its use. Example: "Use this shortcut to back up the computer."
Name:
Back up System Disk to JETSON System Disk Backup
Description (optional):
Create shortcut Cancel

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

_ <b>_</b> ×
🐉 Casper Secure Drive Backup - Create Image
You have successfully created a desktop shortcut
A new shortcut to Casper has been created on your desktop to back up Disk 1 [Samsung SSD 840 PRO Series] to JETSON System Disk Backup.
Name: Back up System Disk to JETSON System Disk Backup
To confirm that the shortcut is working correctly, you can perform the backup now.
Perform backup now
Close

#### Performing a Restore-Point Backup On-Demand

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

			- 🗆 🗙
) 😸 🍒 Casper Secure Drive Back	up - Create Im	age	
Casper is ready to create th	ne image		
Casper will copy Disk 1 [Samsung S	SD 840 PRO Series	to JETSON System	Disk Backup.
✓ Notify me when completed:		Always	¥
☐ Additional notification option	15		
Send a SmartAlert			V New
	JETSON System	Disk De skuur	V V New
Description:	JETSON System	ыяк васкир	
	:	Hibernate	
Turn off computer when fini	isned:	Hibernate	*
Prepare JETSON System Disk	Backup for safe re	emoval	
			Begin now Cancel

If you have used Casper Secure Drive Backup to create a backup of your computer's Windows system disk, and the disk fails or its contents become corrupted, you can restore your computer to working order by using your Casper backup.

If you created a bootable backup, you can run your computer directly from your backup either by replacing your computer's existing Windows system disk with the backup hard disk or by temporarily reconfiguring your computer to boot and run directly from the backup hard disk. For details, please see **Booting from a Bootable Backup**.

If you are unable to boot your computer to your bootable backup, or if you created a restorepoint backup, you must boot the computer to the Casper Secure Startup and Recovery Environment and restore the backup. Restoration may be made to either the existing Windows system disk or a replacement disk (e.g., when the existing disk is no longer operable). For details, please see **Restoring a System Backup**.

If you created a restore-point backup and added the Casper Secure Startup and Recovery Environment to the backup disk, you can boot your computer directly from the backup disk to perform the restore. When restoring a bootable backup, or when the Casper Secure Startup and Recovery Environment has not been added to the backup disk, the Casper Secure Startup Disk can be used to boot the computer to perform the restore. For details on creating and using a Casper Secure Startup Disk, please see the **Casper Secure Startup Disk Creator Guide**.

The following table summarizes the available system recovery options for each type of backup.

Casper Bootable Backup	Casper Restore-Point Backup
Permanently replace existing system disk with backup disk.	If Casper Secure Startup and Recovery Environment was added to backup disk, boot computer to backup disk and restore backup.
Temporarily configure computer to boot and run from backup disk and optionally restore backup.	Boot computer to Casper Secure Startup Disk and restore backup from backup disk.
Boot computer to Casper Secure Startup Disk and restore backup from backup disk.	

#### **System Recovery Options**

# Booting from a Bootable Backup

If you have used Casper Secure Drive Backup to create a bootable backup of your computer's Windows system disk, you can run your computer directly from your backup either by replacing your computer's existing Windows system disk with the backup hard disk or by temporarily reconfiguring your computer to boot and run directly from the backup hard disk. Either way, the backup hard disk will take on the identity of the original Windows system disk. For example, if your computer's system disk normally boots and appears as Local Disk (C:), your backup disk will boot and appear as Local Disk (C:) whenever your computer has been configured to boot and run from it. In addition, all of your programs, settings, and data will run and appear just they did on the original Windows system disk when your backup was created.

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 boot priority setting in the computer's BIOS or EFI Firmware to designate the backup hard disk as the preferred boot device.

If the computer's BIOS or EFI Firmware 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 cable connection to make the backup hard disk the primary SATA drive or the master on the primary IDE/ATA controller. For a backup hard disk installed in a secondary media bay of a notebook, or installed in an external USB, Firewire, eSATA, 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 or EFI Firmware 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 or EFI Firmware does not support booting from external USB hard disk type devices, a bootable 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.* 

# **Restoring a System Backup**

If you created a restore-point backup, or if you are unable to boot your computer to your bootable backup, a system backup can be restored by booting your computer to the Casper Secure Startup and Recovery Environment.

If the Casper Secure Startup and Recovery Environment was added your backup disk, you can boot your computer directly from the backup disk to perform the restore. When restoring a bootable backup, or when the Casper Secure Startup and Recovery Environment is not present on the backup disk, the Casper Secure Startup Disk can be used to boot the computer to perform the restore.

Booting a computer from the Casper Secure Startup and Recovery Environment may take several minutes. Once it has completed the boot process, Casper SmartRestore™ will attempt to automatically identify your backup and prompt you to begin the restore. If SmartRestore is unable to locate your backup, the Casper Secure Drive Backup console will display. For more information on using Casper SmartRestore to perform a restore, please see the **Casper Secure SmartRestore Guide**.

The following examples illustrate how to manually restore a system backup when Casper SmartRestore is unable to locate your backup.

**Example 11: Manually Restoring a Restore-Point Backup.** This example shows how to manually restore a backup using the **Restore Image** wizard.

**Example 12: Manually Restoring a Bootable Backup.** This example demonstrates how to manually restore a bootable backup using the **Copy Drive** wizard.

## Example 11: Manually Restoring a Restore-Point Backup

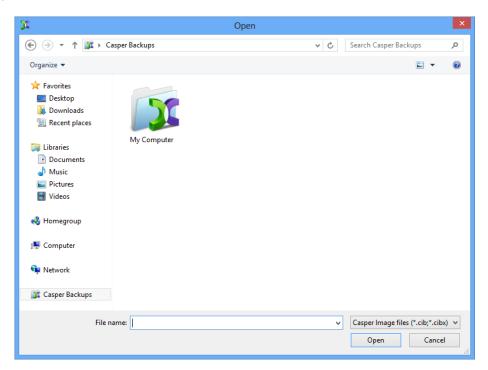
Assuming the computer is presently booted to the Casper Secure Startup and Recovery Environment and SmartRestore was unable to locate your backup, the following procedure illustrates how to manually restore an image of the Windows system hard disk to either the original Windows system disk or a replacement disk.

- Casper Secure<sup>™</sup> . . . smartstart advanced Copy Drive Copy an entire disk, specific Create Image Save an image of an entire disk, Restore Image Restore an image of an entire disk, partition, or logical volume to another. specific partition, or logical volume specific partition, or logical volume to a file. from a file. Create Drive Remove Drive Explore Create and format a new partition. Explore disks and perform other advanced disk management tasks. Delete a partition.
- 1. Select Restore Image.

2. Click Select image file.

	- 🗆 🗙
📀 🐉 Casper Secure Drive Backup - Restore Image	
Select the image source	
You can restore an entire disk or an individual partition or volume from the selecte	d image file.
	Select image file
	Next Cancel

 In the Open dialog, navigate to the folder that contains the backup you want to restore. By default, the Casper Backups folder will be selected. This special folder provides direct access to all of the restore-point backups that were discovered. Double-click the My Computer folder to see all of the restore-point system backups that were located for your computer.



4. Select the image you want to restore and click **Open**.

X	Ор	en				×
€ ∋ - ↑ ጆ «	My Computer 🔸 JETSON System Disk Backu	р	v ♂ Sea	rch JETSON Syste	em Disk B	Q
Organize 🔻					-	0
🔆 Favorites	Name	Date created	Туре	Size	Status	
📰 Desktop	🕼 Before installing Windows Updates	7/17/2013 1:58 PM	Differential	2,628,928 KB	Complete	
🗼 Downloads	🐙 Manual backup	7/16/2013 1:18 PM	Differential	736,984 KB	Complete	_
📃 Recent places	輝 Manual backup	7/16/2013 12:59 PM	Full	11,495,548 KB	Complete	
<ul> <li>□ Libraries</li> <li>□ Documents</li> <li>□ Music</li> <li>□ Pictures</li> <li>□ Videos</li> <li>□ Homegroup</li> <li>□ Computer</li> <li>○ Network</li> <li>○ Casper Backups</li> </ul>						
						_
File	e name: Before installing Windows Updates		✓ Ca:	sper Image files (	*.cib;*.cibx)	*
				Open	Cancel	

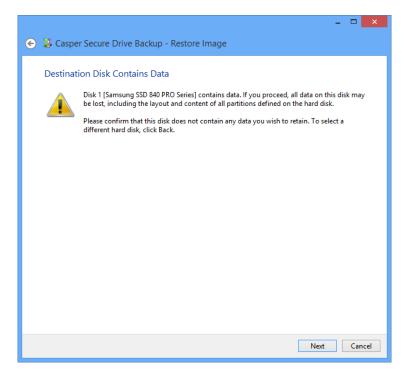
5. Once the selected image has loaded, click Next.

			- • ×
📀 🕈 Casper S	ecure Drive Backup -	Restore Image	
You can restor C:\Casper Bac Choose the dis	:kups\JETSON System Disk	dual partition or volume from the selecter Backup\JETSON System Disk Backup - ( layout and content of all partitions. Choc	Select image file
Name		Description	Size
II 📊 JET	SON System Disk Backup	Before installing Windows Updates [2013-07-17 13:58]	119.24 GB
- 👝 Pa	rtition 1 [System Reserved]	Primary Partition (Encrypted)	350.00 MB
L 👝 Pa	rtition 2	Primary Partition (Encrypted)	118.90 GB
I			
			Next Cancel

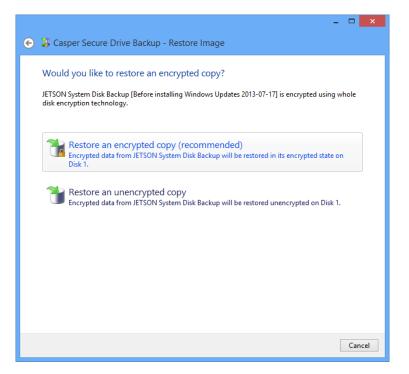
6. Select the hard disk that will become the restored Windows system disk as the destination and then click **Next**.

		- 🗆 🗙
📀 🍒 Casper Secure D	Drive Backup - Restore Image	
2013-07-17] to the hard	t <mark>ion hard disk</mark> lisk image from JETSON System Disk Backup (Before installi disk. Any existing data on the destination hard disk will be I ny partitions defined on the hard disk.	
Name	Description	Size
🗉 📊 Disk 1	Samsung SSD 840 PRO Series	119.24 GB
<ul> <li>Other destination</li> </ul>	ns have been omitted because they are not selectable. <u>Show</u>	: <u>all</u> .
		Next Cancel

7. 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 restored image and click **Next** to proceed.



8. If the source disk image is encrypted using drive encryption technology, Casper will offer the option of restoring an unencrypted copy unless prohibited by administrative policy settings. Click **Restore an encrypted copy** 



9. When prompted to specify how the space on the destination 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 original, Casper will ask you to manually configure how the space is to be used.

Specify how you wou	e Backup - Restore Image Id like to use the space on D or each partition on Disk 1 [Samsung		
Partition		Original size	Size of copy
JETSON System Disk Ba	ckup, Partition 1 [System Reserved]	350.00 MB	350.00 MB
−Partition 1 [System Reserv Minimum size: Maximum size:	ed] 350.00 MB 350.00 MB	Disk 1:	119.24 GB
New size:	350 🔹 MB 🗸	Unallocated space	e: 0.00 bytes
		Ν	lext Cance

If restoring the image to a hard disk that is larger than the original, 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 in the image.

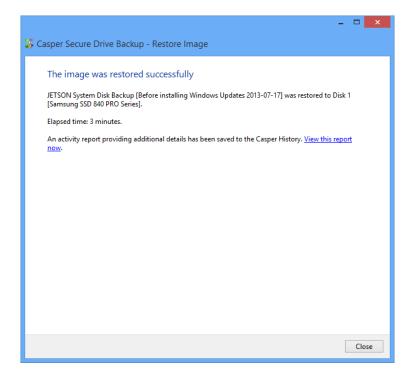
			- 🗆 🗙
🕘 凝 Casper Secure Drive Backup	- Restore Image		
How would you like to use the	e additional spac	e on Disk 1?	
	· · · · · · · · · · · · · · · · · · ·		
When restoring the partitions from JET: the partitions. This will increase the am folders.			
Proportionally distribute the space t	o all partitions (recom	nmended)	
O Leave the additional space unalloca	ted		
Let me specify how the additional s	pace is to be allocated	I	
Partition	Disk 1 usage	Disk 1	476.94 GB
Partition 1 [System Reserved]	350.00 MB		
Partition 2	476.60 GB		
		_	
		Unallocated space:	0.00 bytes
		Ne	t Cancel
		Ne	Cancel

Simply clicking **Next** to accept the default selection or value is generally best.

10. Click **Begin now** to begin the image restoration process.

		- 🗆 🗙
📀 🐉 Casper Secure Drive Backu	ıp - Restore Im	age
Casper is ready to restore th Casper will restore the disk image fro 2013-07-17] to Disk 1 [Samsung SSD	- om JETSON System	ı Disk Backup (Before installing Windows Updates
✓ Notify me when completed:		Always 🗸
Additional notification options		
Send a SmartAlert		
Email address:		V 🕨 New
Description:	JETSON System	Disk Backup [Before installing Windows Upda <sup>.</sup>
Turn off computer when finis	hed:	Power off v
		Begin now Cancel

11. When Casper has completed the restoration process, click **Close**.



# Example 12: Manually Restoring a Bootable Backup

Assuming the computer is presently booted to the Casper Secure Startup and Recovery Environment and SmartRestore was unable to locate your backup, the following procedure illustrates how to manually restore a bootable backup of the Windows system hard disk to either the original Windows system disk or a replacement disk.

1. Select Copy Drive.



2. Select the hard disk containing the bootable backup to restore as the source and click **Next**.

			×
🕞 🥻 Casper Secure Drive I	Backup - Copy Drive		
Select the source			
	ayout and content of all partitions defined on the disk. Se nly the selected partition or volume.	lect an individual	
Name	Description	Size	
🗉 📊 Disk 1	Samsung SSD 840 PRO Series	119.24 GB	
🗉 📊 Disk 2 [JETSTON Sj	ystem Dis EXT USB 3.0 Samsung SSD 840 PRO Seri	119.24 GB	
		Next Cance	1

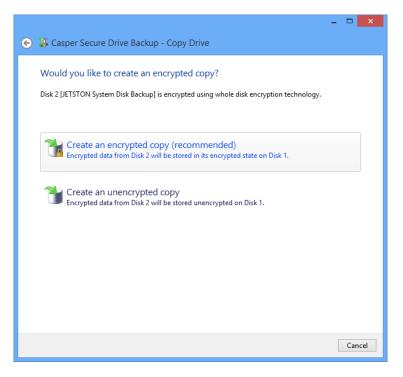
3. Select the hard disk that will become the restored Windows system disk as the destination and then click **Next**.

🕤 🐉 Casper Secure Dr	ive Backup - Copy Drive	
	on hard disk ETSTON System Disk Backup] to the hard disk. Any existin be lost, including the layout and content of any partitions	
Name	Description	Size
🗉 📊 Disk 1	Samsung SSD 840 PRO Series	119.24 GB
		Next Cancel

4. 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 restored backup and click **Next** to proceed.

	×
📀 🐉 Caspe	er Secure Drive Backup - Copy Drive
	tion Disk Contains Data Disk 1 [Samsung SSD 840 PRO Series] contains data. If you proceed, all data on this disk may be lost, including the layout and content of all partitions defined on the hard disk. Please confirm that this disk does not contain any data you wish to retain. To select a different hard disk, click Back.
	Next Cancel

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



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

	d like to use the space or each partition on Disk 1 [Samsu		
Partition		Original size	Size of copy
Disk 2, Partition 1 [Syster	n Reserved]	350.00 MB	350.00 MB
Local Disk (C:)     Disk 2, Partition 1 [System F	eserved1	118.90 GB	118.90 GB
Minimum size:	350.00 MB	Disk 1:	119.24 G
Maximum size: New size:	350.00 MB		
	v v	Unallocated space	e: 0.00 byte

When the destination hard disk is larger than the backup 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 backup source.

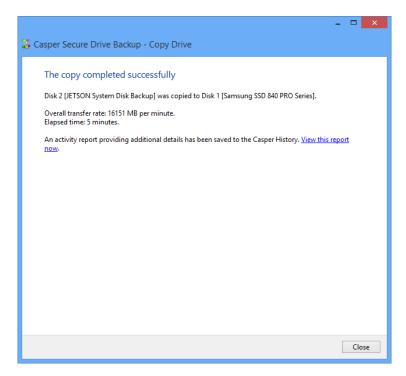
			- 🗆 🗙
📀 🐉 Casper Secure Drive Bac	kup - Copy Drive		
How would you like to use	e the additional spac	e on Disk 1?	
When copying the partitions from space to the partitions. This will in files and folders.			
Proportionally distribute the sp	ace to all partitions (recom	nmended)	
C Leave the additional space una	llocated		
C Let me specify how the additio	nal space is to be allocated	I	
Partition	Disk 1 usage	Disk 1	476.94 GB
System Reserved	350.00 MB		
🖃 Local Disk (C:)	476.60 GB		
		Unallocated sp	ace: 0.00 bytes
			· ·
			Next Cancel

Simply clicking **Next** to accept the default selection or value is generally best.

7. Click **Begin now** to begin the cloning process.

Casper is ready to copy the hard dis Casper will copy Disk 2 [JETSTON System Disk	sk Backup] to Disk 1 [Samsung SSD 840 PRO Series].
✓ Notify me when completed:	Always V
Additional notification options	
Send a SmartAlert	V 🕨 New
	N System Disk Backup
Turn off computer when finished:	Power off $\lor$

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



# **Retrieving Specific Files and Folders from a Backup**

You can retrieve a specific file or folder from a backup without booting to the backup or performing a restore. Because a bootable backup is a clone of your Windows system disk, it can be accessed in the same manner as the Windows system disk whenever it is connected to the computer. Similarly, the contents of a restore-point backup can be accessed in the same manner as the Windows system disk whenever it has been mounted.

The following examples illustrate how to access the contents of a backup to retrieve specific files and folders without booting or restoring the entire backup.

**Example 13: Accessing the Contents of a Bootable Backup.** This example shows how to browse a bootable backup using Windows Explorer to retrieve a file located in the [*My*] *Documents* folder.

**Example 14: Accessing the Contents of a Restore-Point Backup.** This example demonstrates how to use Windows Explorer to mount a specific restore-point within a restore-point backup and retrieve a file from the *Documents* folder of the backup.

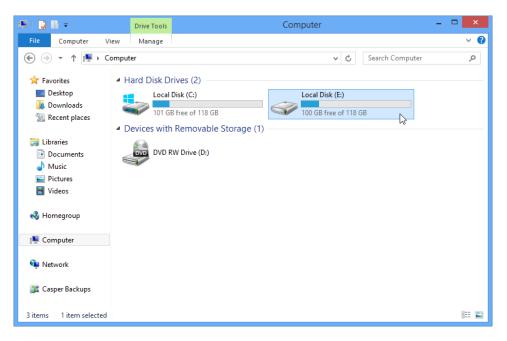
### Example 13: Accessing the Contents of a Bootable Backup

Assuming the hard disk containing the bootable backup is currently installed or attached to the computer, the following procedure illustrates how to browse the contents of the backup to retrieve a specific file from the [*My*] *Documents* folder.

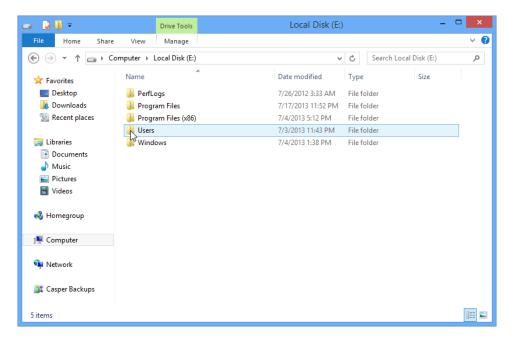
 Open [My] Computer / This PC. On Windows 8.1 or later, start Windows File Explorer and then click This PC. On Windows 8, start Windows File Explorer and then click Computer. On Windows 7 and earlier, simply click [My] Computer on the *Start* menu.

😂 I 🕞 👔 = I		Libraries	- 🗆 🗙
File Home Share	View		✓ Ø
🔄 🏵 🕆 🎁 Li	braries	v C	Search Libraries 🔎
<ul> <li>✓ Favorites</li> <li>■ Desktop</li> <li>↓ Downloads</li> <li>↓ Recent places</li> </ul>	Documents Library Pictures Library	Music Library Videos Library	
<ul> <li>✓ Libraries</li> <li>▷ Documents</li> <li>▷ ♪ Music</li> <li>▷ Pictures</li> <li>▷ ♥ Videos</li> </ul>			
Þ 🔣 Homegroup			
De 🕎 Computer			
🖻 🖣 Network			
Casper Backups			
4 items			8== 📼

2. Double-click the drive containing your bootable backup. In this example, **Local Disk (E:)** represents the drive letter assigned by Windows to the backup drive.



3. Double-click Users to open the Users folder.



4. Double-click the folder that corresponds to the account name with which you normally log onto your computer. In this example, the user logs on as **George Jetson**.

🌆 l 💽 🔝 = l		Users		-	□ ×
File Home Share	View				~ <b>(</b> )
⊛ ∋ - ↑ 퉫 - C	omputer 🔸 Local Disk (E:) 🕨 Users	~	🖒 Search U	sers	Q
🔆 Favorites	Name	Date modified	Туре	Size	
Desktop	🔑 George Jetson	7/16/2013 2:20 PM	File folder		
🚺 Downloads 📃 Recent places	Public	7/26/2012 4:13 AM	File folder		
<ul> <li>□ Libraries</li> <li>□ Documents</li> <li>↓ Music</li> <li>□ Pictures</li> <li>□ Videos</li> </ul>					
🤣 Homegroup					
🖳 Computer					
두 Network					
🧊 Casper Backups					
2 items					==

5. Double-click the [**My**] **Documents** folder to access the contents of your account's *Documents* folder. The contents of this folder will represent the original contents of the *Documents* folder appearing on your system drive when you created your backup.

File Home Shar	re View				$\sim$
€ ∋ - ↑ 퉫 🕨	Computer → Local Disk (E:) → Users →	George Jetson v	🖒 Search Ge	orge Jetson	۶
☆ Favorites	Name	Date modified	Туре	Size	
Desktop	🔓 Contacts	7/3/2013 11:43 PM	File folder		
🐌 Downloads	📜 Desktop	7/18/2013 10:37 AM	File folder		
📃 Recent places	🐌 Downloads	7/3/2013 11:43 PM	File folder		
	🙀 Favorites	7/3/2013 11:43 PM	File folder		
门 Libraries	🍞 Links	7/3/2013 11:43 PM	File folder		
Documents	My Documents	7/4/2013 5:12 PM	File folder		
👌 Music	My Music	7/3/2013 11:43 PM	File folder		
Pictures	🖹 My Pictures	7/3/2013 11:43 PM	File folder		
Videos	🍺 My Videos	7/3/2013 11:43 PM	File folder		
-	Saved Games	7/3/2013 11:43 PM	File folder		
🝓 Homegroup	📝 Searches	7/3/2013 11:43 PM	File folder		
📜 Computer					
辑 Network					
🎉 Casper Backups					

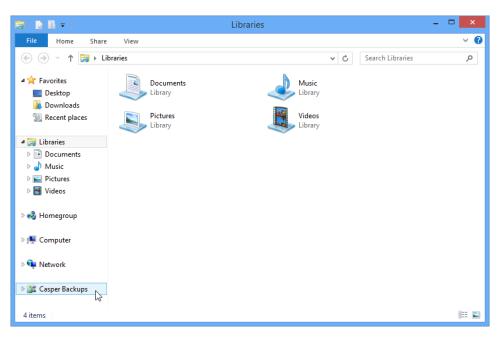
6. Once you have located the desired file or folder, you can access or copy it as you would any other file on your original Windows system drive.

1	My Documents -	×
File Home Share	View	v 🕐
🗲 Э 🔻 🕇 📗 « La	ocal Disk (E:) → Users → George Jetson → My Documents v 🖒 Search My Documents	Q
🔆 Favorites	Name Date modified Type Size	
📰 Desktop	Spacely's Space Sprockets Digital Index Report 7/19/2013 2:15 PM Journal Document	5 KB
<ul> <li>▶ Downloads</li> <li>▶ Recent places</li> <li>&gt; Libraries</li> <li>&gt; Documents</li> <li>→ Music</li> <li>▶ Pictures</li> <li>▼ Videos</li> <li>₩ Homegroup</li> </ul>	Open Print Open with Send to Cut Copy Create shortcut Delete Rename	
👰 Computer	Properties	
Network		
Titem 1 item selected 4	1/3 VD	•==
Filtern Filtern selected 4		

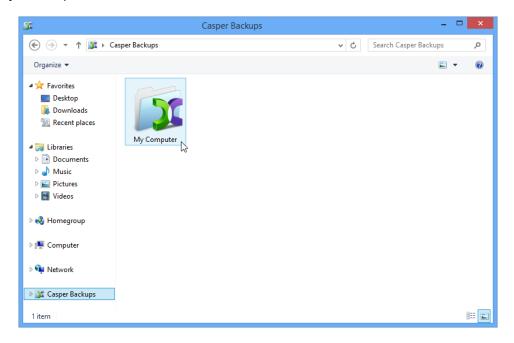
## Example 14: Accessing the Contents of a Restore-Point Backup

Assuming the hard disk containing the restore-point backup is currently installed or attached to the computer, the following procedure illustrates how to mount a restore-point backup and retrieve a specific file from the *Documents* folder.

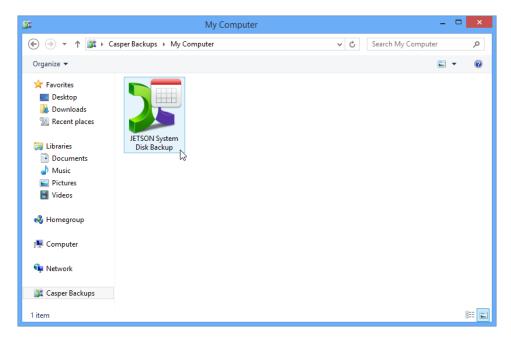
1. Open the **Casper Backups** folder. On Windows 8 or later, start **Windows File Explorer** and then click **Casper Backups**. On Windows 7, open **Windows Explorer** and click **Casper Backups**.



2. Double-click the **My Computer** folder to browse all of the restore-point backups discovered for your computer.



3. Double-click the backup containing the restore-point you want to access.



4. <u>Right</u>-click on the desired restore-point, and then click Mount.

3 <b>F</b>	JETSON System Disk Bac	kup			- 🗆 🗙
🔄 🏵 🝷 🕇 🎾 « M	ly Computer 🔸 JETSON System Disk Backup	v	🖒 Searc	h JETSON Syster	m Disk B 🔎
Organize 🔻					≡ ▼ @
🔆 Favorites	Name	Date created	Туре	Size	Status
E Desktop	JP Before installing the latest Updates	7/14/2013 6:24 PM	Differential	4,758,904 KB	Complete
<ul> <li>Downloads</li> <li>Recent places</li> <li>Libraries</li> <li>Documents</li> <li>Music</li> <li>Pictures</li> <li>Videos</li> <li>Homegroup</li> <li>Computer</li> <li>Network</li> <li>Casper Backups</li> </ul>	Control Contro	7/5/2013 2:45 PM	Full	11,401,156 KB	Complete
Cosper Duckups					
2 items 1 item selected					:==

5. After the restore-point has been mounted and a drive letter has been assigned, a new Explorer window will open to reveal its contents. In this example, **Local Disk (H:)** was assigned to the restore-point when it was mounted. Double-click **Users** to open the Users folder.

👝 I ⊋ 🚹 = I	Lo	cal Disk (H:)		-	□ ×
File Home Share	View				v 🕐
( ) → ↑ ( → C)	omputer 🔸 Local Disk (H:)	¥	🖒 Sea	rch Local Disk (H:)	Q
🔆 Favorites	Name	Date modified	Туре	Size	
E Desktop	퉬 PerfLogs	7/26/2012 3:33 AM	File folder		
🐌 Downloads	퉬 Program Files	7/14/2013 12:25 PM	File folder		
🖳 Recent places	퉬 Program Files (x86)	7/4/2013 5:12 PM	File folder		_
	ڸ Users	7/3/2013 11:43 PM	File folder		
Libraries Documents	Windows	7/14/2013 6:27 PM	File folder		
Music					
Pictures					
Videos					
🤣 Homegroup					
🖳 Computer					
🗣 Network					
🧊 Casper Backups					
5 items 1 item selected	1				:==

6. Double-click the folder that corresponds to the account name with which you normally log onto your computer. In this example, the user logs on as **George Jetson**.

🗿 l ⊋ 🗿 = l		Users		-	
File Home Share	View				v 🕐
	omputer → Local Disk (H:) → Users	V	C Search U	sers	Q
🔆 Favorites	Name	Date modified	Туре	Size	
E Desktop	🔑 George Jetson	7/4/2013 5:12 PM	File folder		
🐌 Downloads Recent places	Public	7/26/2012 4:13 AM	File folder		
<ul> <li>☐ Libraries</li> <li>☐ Documents</li> <li>J Music</li> <li>☐ Pictures</li> <li>☐ Videos</li> </ul>					
輚 Homegroup					
🖳 Computer					
두 Network					
🧊 Casper Backups					
2 items 1 item selected					:==

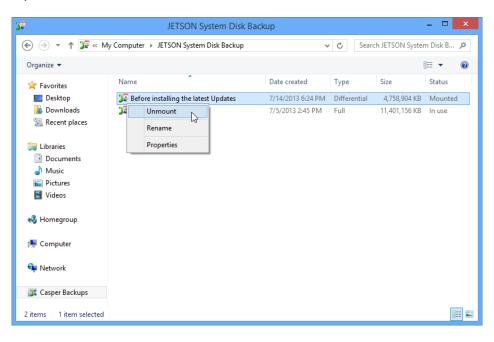
7. Double-click the [**My**] **Documents** folder to access the contents of your account's *Documents* folder. The contents of this folder will represent the original contents of the *Documents* folder appearing on your system drive when you created your backup.

🚺   ⊋ 🕕 = I	Geo	orge Jetson		-	
File Home Share	View				× (
	mputer → Local Disk (H:) → Users →	George Jetson v	🖒 Search Geo	orge Jetson	,P
🔆 Favorites	Name	Date modified	Туре	Size	
Desktop	🔓 Contacts	7/3/2013 11:43 PM	File folder		
\rm Downloads	📔 Desktop	7/14/2013 12:38 PM	File folder		
📃 Recent places	Downloads	7/3/2013 11:43 PM	File folder		
	👔 Favorites	7/3/2013 11:43 PM	File folder		
门 Libraries	👔 Links	7/3/2013 11:43 PM	File folder		
Documents	My Documents	7/19/2013 7:59 PM	File folder		
🁌 Music	Wy Music	7/3/2013 11:43 PM	File folder		
Pictures	╞ My Pictures	7/3/2013 11:43 PM	File folder		
😸 Videos	📔 My Videos	7/3/2013 11:43 PM	File folder		
	D Saved Games	7/3/2013 11:43 PM	File folder		
🝓 Homegroup	👔 Searches	7/3/2013 11:43 PM	File folder		
👰 Computer					
📬 Network					
🇊 Casper Backups					
11 items 1 item selected					

8. Once you have located the desired file or folder, you can access or copy it as you would any other file on your original Windows system drive.

📗 l 🕞 🚹 = l	My Documents	- 🗆 🗙
File Home Share	View	~ <b>(</b> )
📀 🌛 🔻 🛉 📗 « Local i	Disk (H:) → Users → George Jetson → My Documents v 🖒 Search My D	Documents 🔎
☆ Favorites	Name Date modified Type	Size
Desktop	Spacely's Space Sprockets Digital Indexer Report 7/7/2013 8:46 PM Journal Docum	ment 5 KB
🐌 Downloads	Open	
Recent places	Print	
	Open with	
📜 Libraries	Send to	
Documents	Cut	
Music		
Videos	Сору	
Videos	Create shortcut	
🌏 Homegroup	Delete	
( nonegroup	Rename	
🖳 Computer	Properties	
👽 Network		
🧊 Casper Backups		
1 item 1 item selected 4.43 k	KB	

9. When you have finished accessing the contents of the restore-point, <u>right</u>-click on the restore-point and select **Dismount**.

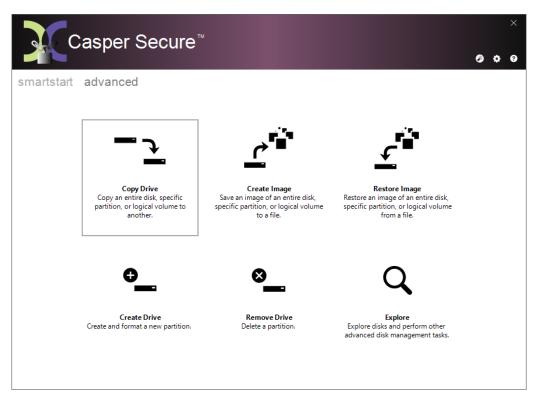


The procedure for upgrading a hard disk is basically the same whether you are upgrading a hard disk in a desktop or a notebook. For a desktop system, the new hard disk is temporarily installed as a secondary hard disk in the computer or attached as an external hard disk using an external USB, Firewire,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

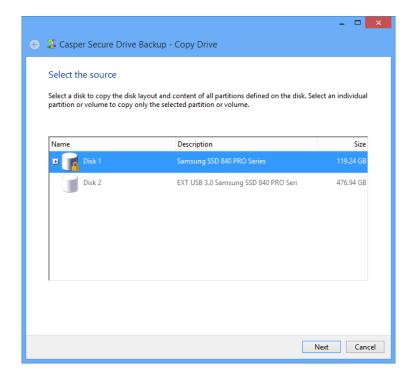
# Example 15: Upgrading a Hard Disk

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

1. Select Copy Drive.



2. 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**.



3. Select the new hard disk as the destination and click Next.

			- • ×
📀 🐉 Caspe	r Secure Drive Backup	- Copy Drive	
Casper will		k 40 PRO Series] to the hard disk. Any existing ing the layout and content of any partitions	
Name		Description	Size
	Disk 2	EXT USB 3.0 Samsung SSD 840 PRO Seri	476.94 GB
			Next Cancel

4. When the new disk is attached as an external hard disk, Casper will prompt you to assign a name to the disk. A name is unnecessary because the new disk will soon become the new Windows system disk. Uncheck Yes, use the following name when referring to Disk 2, and then click Next to proceed.

Would vo	u like to assign a name to Disk 2?	
Disk 2 [EXT U change depe	USB 3.0 Samsung SSD 840 PRO Seri] is a removable disk who ending on the order in which disks are identified by the Wini asper can refer to this disk using a name of your choosing.	dows operating system. To
Ves, use t	he following name when referring to Disk 2	
Name:	My Portable Backup	

5. 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 new hard disk is larger than the original disk, 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.

			- • ×
📀 🥻 Casper Secure Drive Back	up - Copy Drive		
How would you like to use When copying the partitions from I space to the partitions. This will inc files and folders. Proportionally distribute the spa Leave the additional space unall Let me specify how the addition	Disk 1 [Samsung SSD 840 I rease the amount of free ce to all partitions (recom ocated	PRO Series], Casper can gi space available on the par imended)	
Partition System Reserved Local Disk (C:)	Disk 2 usage 350.00 MB 476.60 GB	Disk 2	476.94 GB
		Unallocated spa	ace: 0.00 bytes
			Next Cancel

If the new hard disk is the same size or smaller than the original hard disk, Casper will ask you to manually configure how the space is to be used.

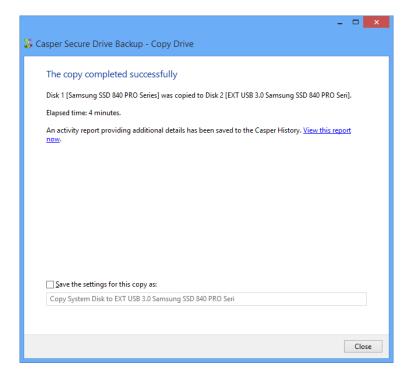
🛛 🍒 Casper Secure Driv	e Backup - Copy Drive		
Specify how you wo	uld like to use the space of	n Disk 2	
Select and specify the size	for each partition on Disk 2 [JETST	ON System Disk Backup].	
Partition		Original size	Size of copy
Disk 1, Partition 1 [System Content of Co	tem Reserved]	350.00 MB 476.60 GB	350.00 MB 118.90 GB
Disk 1, Partition 1 [System	n Reserved]	Disk 2:	119.24 GB
Minimum size:	350.00 MB		
Maximum size:	350.00 MB		
New size:	350 🔺 MB 🗸	Unallocated space	e: 0.00 bytes
			e
		1	Vext Cancel

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

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

×
📀 🐉 Casper Secure Drive Backup - Copy Drive
When would you like the copy performed? Casper can copy Disk 1 [Samsung SSD 840 PRO Series] to Disk 2 [EXT USB 3.0 Samsung SSD 840 PRO Seri] at a later time or automatically on a routine basis.
Perform the copy now
Schedule it for later or as a routine backup
Perform it as a backup whenever I connect my portable drive
Create a desktop shortcut to perform it on demand
More information
Cancel

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



- 8. Shutdown and power-off the computer.
- 9. 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, or eSATA 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, remove the original hard disk and replace it with the new hard disk.