Acronis

Seagate DiscWizard

User Guide

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Copyright statement

Acronis patented technologies

Technologies, used in this product, are covered and protected by one or more U.S. Patent Numbers: 7,047,380; 7,246,211; 7,275,139; 7,281,104; 7,318,135; 7,353,355; 7,366,859; 7,383,327; 7,475,282; 7,603,533; 7,636,824; 7,650,473; 7,721,138; 7,779,221; 7,831,789; 7,836,053; 7,886,120; 7,895,403; 7,934,064; 7,937,612; 7,941,510; 7,949,635; 7,953,948; 7,979,690; 8,005,797; 8,051,044; 8,069,320; 8,073,815; 8,074,035; 8,074,276; 8,145,607; 8,180,984; 8,225,133; 8,261,035; 8,296,264; 8,312,259; 8,347,137; 8,484,427; 8,645,748; 8,732,121; 8,850,060; 8,856,927; 8,996,830; 9,213,697; 9,400,886; 9,424,678; 9,436,558; 9,471,441; 9,501,234; and patent pending applications.

Introduction

What is Seagate DiscWizard?

Seagate DiscWizard is a complete cyber protection solution that ensures the security of all your information. It can back up your documents, photos, emails, and selected partitions, and even the entire disk drive, including operating system, applications, settings, and all of your data. One of its main advantages is the data protection and security features.

Backups allow you to recover your computer system should a disaster occur, such as losing data, accidentally deleting critical files or folders, or suffering a complete hard disk crash.

Learn how to protect your computer: "Protecting your system".

System requirements and supported media

Minimum system requirements

Seagate DiscWizard requires the following hardware.

- Seagate, Maxtor, Samsung or LaCie drive
- Intel CORE 2 Duo (2GHz) processor or equivalent
  The CPU must support SSE instructions.
- 2 GB RAM
- 7 GB of free space on the system hard disk
- CD-RW/DVD-RW drive or USB drive for bootable media creation
  - Required free space for Linux is about 660 MB.
  - Required free space for Windows is about 700 MB.
- Screen resolution is 1024 x 768
- Mouse or other pointing device (recommended)

Warning!
Successful backup and recovery are not guaranteed for the installations on virtual machines.

Other requirements

- An internet connection is required for the product activation and for downloading protection updates.
- You need to have administrator privileges to run Seagate DiscWizard.

Supported operating systems

Seagate DiscWizard has been tested on the following operating systems.

- Windows 11
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7 SP1 (all editions)
- Windows Home Server 2011

Note
- Beta builds are not supported. See https://kb.acronis.com/content/60589.
- Windows Embedded, IoT editions, Windows 10 LTSB, Windows 10 LTSC, and Windows 10 in S mode are not supported.
- To use Seagate DiscWizard on Windows 7, Windows 8, and Windows 8.1, you will need the following security updates from Microsoft: KB4474419 and KB4490628. See https://kb.acronis.com/content/69302.

Seagate DiscWizard also lets you create a bootable CD-R/DVD-R or USB drive that can back up and recover a disk/partition on a computer running any Intel- or AMD- based PC operating system, including Linux®.

It is possible for the software to work on other Windows operating systems, but it is not guaranteed.

Warning!
Successful recovery is guaranteed only for the supported operating systems. Other operating systems can be backed up using a sector-by-sector approach, but they may become unbootable after recovery.

Supported file systems

- NTFS
- Ext2/Ext3/Ext4
- ReiserFS(3)[1]
- Linux SWAP[2]
- HFS+/HFSX[3]
- FAT16/32/exFAT[4]

If a file system is not supported or is corrupted, Seagate DiscWizard can copy data using a sector-by-sector approach.

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[1]File systems are supported only for disk or partition backup/recovery operations.
[2]File systems are supported only for disk or partition backup/recovery operations.
[3]Disk recovery, partition recovery, and cloning operations are supported without resizing.
[4]Disk recovery, partition recovery, and cloning operations are supported without resizing.

Supported storage media

- Hard disk drives (HDD)
- Solid-state drives (SSD)
- Networked storage devices
- FTP servers

> **Note**
> The FTP server must allow passive mode file transfers. Seagate DiscWizard splits a backup into files with a size of 2GB when backing up directly to an FTP server.

- CD-R/RW, DVD-R/RW, DVD+R (including double-layer DVD+R), DVD+RW, DVD-RAM, BD-R, BD-RE
- USB 1.1 / 2.0 / 3.0, USB-C, eSATA, FireWire (IEEE-1394), SCSI, and PC card storage devices

Limitations on operations with dynamic disks

- Recovery of a dynamic volume as a dynamic volume with manual resizing is not supported.
- Disk cloning operation is not supported for dynamic disks.

The firewall settings of the source computer should have Ports 20 and 21 opened for the TCP and UDP protocols to function. The **Routing and Remote Access** Windows service should be disabled.

Installing and uninstalling Seagate DiscWizard

To install Seagate DiscWizard

1. Run the setup file.
2. Select the installation mode:
   - Click **Install** for the default installation.

     Seagate DiscWizard will be installed on your system partition (usually C:).
3. When the installation is complete, click **Start application**.
4. Read and accept the terms of the license agreements for Seagate DiscWizard and Bonjour.

   Bonjour software will be installed on your computer for advanced support of NAS devices. You can uninstall the software at any time.

To recover from an Seagate DiscWizard error

If Seagate DiscWizard ceased running or produced errors, its files might be corrupted. To repair this problem, you first have to recover the program. To do this, run Seagate DiscWizard installer again. It will detect Seagate DiscWizard on your computer and will ask you if you want to modify or remove it.

To uninstall Seagate DiscWizard completely

- If you use Windows 11, click **Start** > **Settings** > **Apps** > **Seagate DiscWizard** > **Uninstall**.
- If you use Windows 10, click **Start** > **Settings** > **Apps** > **Seagate DiscWizard** > **Uninstall**.

- If you use Windows 8, click the **Settings** icon, then select **Control Panel** > **Uninstall a program** > **Seagate DiscWizard** > **Uninstall**.
- If you use Windows 7, click **Start** > **Control Panel** > **Uninstall a program** > **Seagate DiscWizard** > **Uninstall**.

Then follow the instructions on the screen. You may have to restart your computer afterwards to complete the task.

Technical Support

If you need assistance with Seagate DiscWizard, refer to the official support resources of Seagate at https://www.seagate.com/support/.

Basic concepts

This section provides general information about basic concepts which could be useful for understanding how the program works.

Note
Certain features and functionalities may be unavailable in the edition that you use.

Backup and recovery

Backup refers to the making copies of data so that these additional copies may be used to **recover** the original after a data loss event.

Backups are useful primarily for two purposes:

- To recover an operating system when it is corrupted or cannot start (called disaster recovery). Refer to Protecting your system for more details about protecting your computer from a disaster.
- To recover specific files and folders after they have been accidentally deleted or corrupted.

Seagate DiscWizard does both by creating disk (or partition) images and file-level backups respectively.

Backup versions

Backup versions are the file or files created during each backup operation. The number of versions created is equal to the number of times the backup is executed. So, a version represents a point in time to which the system or data can be restored.

Backup versions represent full, incremental and differential backups - see Full, incremental and differential backups.

The backup versions are similar to file versions. The file versions concept is familiar to those who use a Windows feature called "Previous versions of files". This feature allows you to restore a file as it existed on a particular date and time. A backup version allows you to recover your data in a similar way.

This could be useful when trying to find damaged or deleted files. Simply browse through the backup versions until you find the backup version containing the required files. Additionally, you can recover different saved versions of the found files.

Disk cloning

This operation copies the entire contents of one disk drive to another disk drive. This may be necessary, for example, when you want to clone your operating system, applications, and data to a new larger capacity disk. You can do it two ways:

- Use the Clone disk utility.
- Back up your old disk drive, and then recover it to the new one.

Backup validation

The backup validation feature allows you to confirm that your data can be recovered. The program adds checksum values to the data blocks being backed up. During backup validation, Seagate DiscWizard opens the backup file, recalculates the checksum values and compares those values with the stored ones. If all compared values match, the backup file is not corrupted.

Scheduling

For your backups to be really helpful, they must be as up to date as possible. Schedule your backups to run automatically and on a regular basis.

Deleting backups

Seagate DiscWizard stores information on the backups in a metadata information database. Therefore, deleting unneeded backup files in File Explorer will not delete information about these backups from the database. This will result in errors when the program tries to perform operations on the backups that no longer exist.

The difference between file backups and disk/partition images

When you back up files and folders, only the files and folder tree are compressed and stored.

Disk/partition backups are different from file and folder backups. Seagate DiscWizard stores an exact snapshot of the disk or partition. This procedure is called "creating a disk image" or "creating a disk backup" and the resulting backup is often called "a disk/partition image" or "a disk/partition backup".

What does a disk/partition backup contain?

A disk/partition backup contains all the data stored on the disk or partition:

1. Zero track of the hard disk with the master boot record (MBR) (applicable to MBR disk backups only).
2. One or more partitions, including:
   a. Boot code.
   b. File system meta data, including service files, file allocation table (FAT), and partition boot record.
   c. File system data, including operating system (system files, registry, drivers), user data and software applications.
3. System Reserved partition, if any.
4. EFI system partition, if any (applicable to GPT disk backups only).

What is excluded from disk backups?

To reduce image size and speed up image creation, by default Seagate DiscWizard only stores the hard disk sectors that contain data.

Seagate DiscWizard excludes the following files from a disk backup:

- pagefile.sys
- hiberfil.sys (a file that keeps RAM contents when the computer goes into hibernation)

You can change this default method by turning on the sector-by-sector mode. In this case, Seagate DiscWizard copies all hard disk sectors, and not only those that contain data.

Full backup

Note

Incremental and differential backups are not available in this product edition.

The result of a full method backup operation (also known as full backup version) contains all of the data at the moment of the backup creation.

Example: Every day, you write one page of your document and back it up using the full method. Seagate DiscWizard saves the entire document every time you run backup.

1.tibx, 2.tibx, 3.tibx, 4.tibx—files of full backup versions.
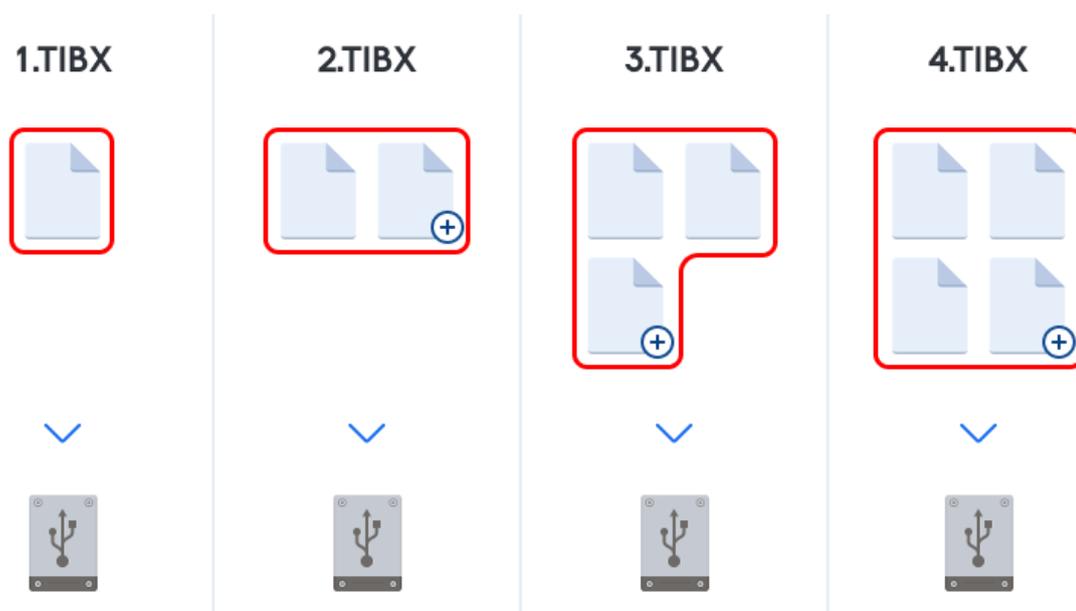
Additional information

A full backup version forms a base for further incremental or differential backups. It can also be used as a standalone backup. A standalone full backup might be an optimal solution if you often roll back the system to its initial state or if you do not like to manage multiple backup versions.

Recovery: In the example above, to recover the entire work from the 4.tibx file, you need to have only one backup version—4.tib.

Deciding where to store your backups

Seagate DiscWizard supports quite a few of storage devices. For more information, refer to "Supported storage media" (p. 8).

Recommended storage media:

1. **External drive**

    If you plan to use an external USB hard drive with your desktop PC, we recommend that you connect the drive to a rear connector by using a short cable.

2. **Home file server, NAS, or NDAS**

    Check whether Seagate DiscWizard detects the selected backup storage, both in Windows and when booted from the bootable media.

    To gain access to an NDAS-enabled storage device, in many cases you will need to specify the NDAS device ID (20 characters) and the write key (five characters). The write key allows you to use an NDAS-enabled device in write mode (for example, for saving your backups). Usually the device ID and write key are printed on a sticker attached to the bottom of the NDAS device or on the inside of its enclosure. If there is no sticker, you need to contact your NDAS device vendor to obtain that information.

3. **Optical discs (CD, DVD, BD)**

    Blank optical discs such as DVD-R, DVD+R are very cheap, so they will be the lowest cost solution for backing up your data, though the slowest one.

    Due to the necessity of swapping discs, we strongly recommend to avoid backing up to DVDs if the number of discs is more than three. When there is no alternative to backing up to DVDs, we recommend to copy all DVDs to a folder on a hard disk, and then to recover from that folder.

Preparing a new disk for backup

A new internal or external hard drive may not be recognized by Seagate DiscWizard. If this is the case, use the operating system tools to change the disk status to **Online** and then to initialize the disk.

To change a disk status to Online

1. Open **Disk Management**. To do this, go to **Control Panel** -> **System and Security** -> **Administrative Tool**, start **Computer Management**, and then click **Disk Management**.
2. Find the disk marked as **Offline**. Right-click the disk and then click **Online**.
3. The disk status will be changed to **Online**. After that, you will be able to initialize the disk.

To initialize a disk

1. Open **Disk Management**. To do this, go to **Control Panel** -> **System and Security** -> **Administrative Tool**, start **Computer Management**, and then click **Disk Management**.
2. Find the disk marked as **Not Initialized**. Right-click the disk and then click **Initialize Disk**.
3. Select a partition table for the disk - MBR or GPT, and then click **OK**.

4. [optional step] To create a volume on the disk, right-click the disk, click **New Simple Volume**, and then follow the wizard's steps to configure the new volume. To create one more volume, repeat this operation.

Authentication settings

If you are connecting to a networked computer, in most cases you will need to provide the necessary credentials for accessing the network share. For example, this is possible when you select a backup storage. The **Authentication Settings** window appears automatically when you select a networked computer name.

If necessary, specify the user name and password, and then click **Test connection**. When the test is successfully passed, click **Connect**.

Troubleshooting

When you create a network share that you plan to use as a backup storage, ensure that at least one of the following conditions is met:

* Windows account has a password on the computer where the shared folder is located.
* Password-protected sharing is turned off in Windows.
   For example, in Windows 7, you can find this setting at **Control Panel** —> **Network and Internet** —> **Network and Sharing Center** —> **Advanced sharing settings** —> Turn off password protected sharing.

Otherwise, you will not be able to connect to the shared folder.

Wizards

When you use the available Seagate DiscWizard tools and utilities, the program will in many cases employ wizards to guide you through the operations.

For example, see the screenshot below.
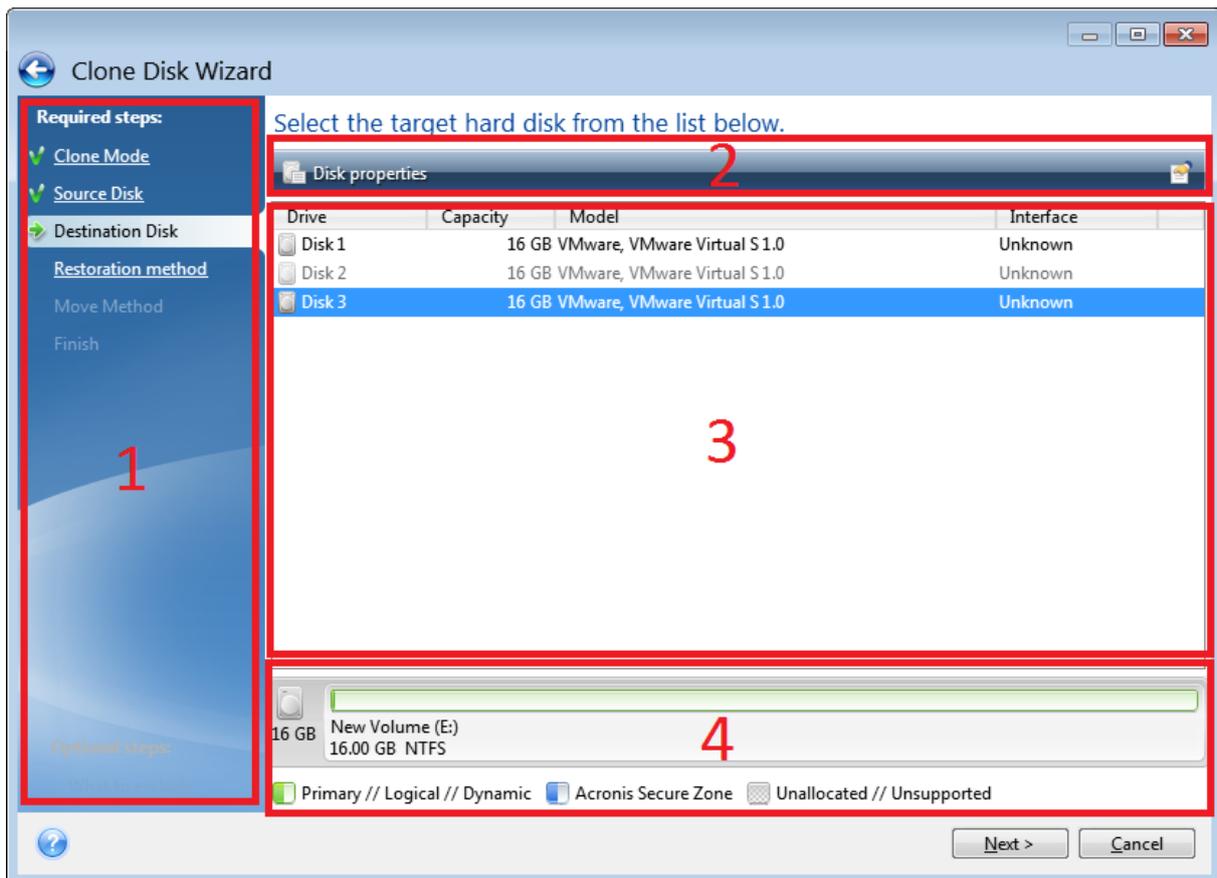
A wizard window usually consists of the following areas:

1. This is the list of steps to complete the operation. A green checkmark appears next to a complete step. The green arrow indicates the current step. When complete all the steps, the program displays the Summary screen in the **Finish** step. Check the summary and click **Proceed** to start the operation.

2. This toolbar contains buttons to manage objects you select in area 3.
   For example:
   - **Details** - displays the window that provides detailed information about the selected backup.
   - **Properties** - displays the selected item properties window.
   - **Create new partition** - displays the window where you can configure a new partition settings.
   - **Columns** - allows you to choose which table columns to display and in which order.

3. This is the main area where you select items and change settings.

4. This area displays additional information about the item you select in area 3.

Backing up data

Backing up disks and partitions

Note

Certain features and functionalities may be unavailable in the edition that you use.

As opposed to file backups, disk and partition backups contain all the data stored on the disk or partition. This backup type is usually used to create an exact copy of a system partition of the whole system disk. Such backup allows you to recover your computer when Windows works incorrectly or cannot start.

To back up partitions or disks

1. Start Seagate DiscWizard.
2. On the sidebar, click **Backup**.
3. Click **Add backup**.
4. [Optional] To rename the backup, click the arrow next to the backup name, click **Rename**, and then enter a new name.
5. Click the **Backup source** area, and then select **Disks and partitions**.
6. In the opened window, select the check boxes next to the partitions and disks that you want to back up, and then click **OK**.

    To view hidden partitions, click **Full partition list**.

    Note

    To back up dynamic disks you can use only the partition mode.

7. Click the **Backup destination** area, and then select a destination for backup:
   - **Your external drive**—When an external drive is plugged into your computer, you can select it from the list.
   - **Browse**—Select a destination from the folder tree.

    Note

    If possible, avoid storing your system partition backups on dynamic disks, because the system partition is recovered in the Linux environment. Linux and Windows work with dynamic disks differently. This may result in problems during recovery.

8. [optional step] Click **Options** to set the options for the backup. For more information see Backup options.
9. [optional step] Click the **Add a comment** icon, and then type a comment to the backup version. Backup comments will help you to find the necessary version later, when recovering your data.
10. Perform one of the following:

- To run the backup immediately, click **Back up now**.
- To run the backup later or on a schedule, click the arrow to the right of the **Back up now** button, and then click **Later**.

Backup options

When you create a backup, you can change additional options and fine-tune the backup process. To open the options window, select a source and destination for a backup, and then click **Options**.

After you have installed the application, all options are set to the initial values. You can change them for your current backup operation only or for all backups that will be created in future. Select the **Save as default** check box to apply the modified settings to all further backup operations by default.

If you want to reset all the modified options to the values that were set after the product installation initially, click the **Reset to initial settings** button. Note that this will reset the settings for the current backup only. To reset the settings for all further backups, click **Reset to initial settings**, select the **Save the settings as default** check box, and then click **OK**.

Scheduling

Note
Certain features and functionalities may be unavailable in the edition that you use.

Location: **Options** > **Schedule**

The **Schedule** tab allows you to specify the backup and validation schedule settings.

You can specify a schedule for backups created or validated regularly:

- **Daily**—The operation will be executed once a day or more frequently.
- **Weekly**—The operation will be executed once a week or several times a week on the selected days.
- **Monthly**—The operation will be executed once a month or several times a month on the selected dates.
- **Do not schedule**—The scheduler will be turned off for the current operation. In this case the backup or validation will run only when you click **Back up now** or **Validate** respectively in the main window.

Advanced settings

Clicking **Advanced settings** allows you to specify the following additional settings for backup and validation:

- **Back up only when the computer is locked or screensaver is running**—Select this check box to postpone a scheduled operation until the next time the computer is not in use (a screen saver is displayed or computer is locked). For the validation schedule, the check box changes to **Run**

the validation only when the computer is idle.

- **Wake up the sleeping/hibernating computer**—Select this check box to wake up the sleeping/hibernating computer to perform the scheduled operation.
- **Prevent the computer from going to sleep/hibernate**—Select this check box to eliminate a situation when a time-consuming backup is interrupted if the computer goes into sleep or hibernation mode.
- **Run missed operations at the system startup with delay (in minutes)**—Select this check box to force the missed operation to run at the next system startup, if the computer was switched off at the scheduled time, and the operation was not performed.

  Additionally, you can set a time delay to start backup after the system startup. For example, to start backup 20 minutes after system startup, enter *20* in the appropriate box.
- **Run missed operations when an external device is connected** [optional, if you schedule a backup to a USB flash drive, or validation of a backup that is located on a USB flash drive]—Select this check box to run a missed operation when the USB flash drive is attached if it was disconnected at the scheduled time.

Weekly backup parameters

You can set up the following parameters for backups created or validated weekly:

- **Days of the week**—Select the days on which to run the operation .
- **At**—Select the operation start time.

Description of the **Advanced settings** see in Scheduling.

Backup schemes

Location: **Options** > **Backup scheme**

Backup schemes along with the scheduler help you set up your backup strategy. The schemes allow you to optimize backup storage space usage, improve data storage reliability, and automatically delete the obsolete backup versions.

The backup scheme defines the following parameters:

- Sequence of the backup versions created using different methods
- Version cleanup rules

Seagate DiscWizard allows you to choose from the following backup schemes:

- **Single version scheme**—Select this scheme if you want to use the smallest backup storage.
- **Custom scheme**—Select to set up a backup scheme manually.

You can easily change the backup scheme for a pre-existing backup. This will not affect the integrity of the backup chains, so you will be able to recover your data from any previous backup version.

Note
You cannot change the backup scheme when backing up to optical media such as a DVD/BD. In this case, Seagate DiscWizard by default uses a custom scheme with only full backups. This is because the program cannot consolidate backups stored on optical media.

Single version scheme

The program creates a full backup version and overwrites it every time when you run the backup manually. In this process, the old version is deleted only after a new version is created.

Note
The very first file will remain for auxiliary purposes, without your data in it. Do not delete it!

Result: you have a single up-to-date full backup version.

Required storage space: minimal.

Custom schemes

With Seagate DiscWizard you also can create your own backup schemes. Schemes can be based on the pre-defined backup schemes. You can make changes in a selected pre-defined scheme to suit your needs and then save the changed scheme as a new one.

Note
You cannot overwrite existing pre-defined backup schemes.

Turn on automatic cleanup

- **Old version cleanup rules**—To delete obsolete backup versions automatically, you can set one of the following cleanup rules:
  - **Delete versions older than [n] days** [available for full method only]—Select this option to limit the age of backup versions. All versions that are older than the specified period will be automatically deleted.
  - **Delete version chains older than [n] days** [available for incremental and differential methods only]—Select this option to limit the age of backup version chains. The oldest version chain will be deleted only when the most recent backup version of this chain is older than the specified period.
  - **Store no more than [n] recent versions** [available for full method only]—Select this option to limit the maximum number of backup versions. When the number of versions exceeds the specified value, the oldest backup version will be automatically deleted.
  - **Store no more than [n] recent version chains** [available for incremental and differential methods only]—Select this option to limit the maximum number of backup version chains. When the number of version chains exceeds the specified value, the oldest backup version chain will be automatically deleted.

- **Keep size of the backup no more than [defined size]** [not available for local backups]— Select this option to limit the maximum size of the backup. After creating a new backup version, the program checks whether the total backup size exceeds the specified value. If it's true, the oldest backup version will be deleted.
- **Do not delete the first version of the backup**—Select this check box to keep the initial data state. The program will create two initial full backup versions. The first version will be excluded from the automatic cleanup, and will be stored until you delete it manually. If you select incremental or differential method, the first backup chain will start from the second full backup version. And only the third version of the backup will be incremental or differential one. Note that when the check box is selected for the full method, the **Store no more than [n] recent versions** check box changes to **Store no more than 1+[n] recent versions**.

Managing custom backup schemes

If you change anything in an existing backup scheme, you can save the changed scheme as a new one. In this case you need to specify a new name for that backup scheme.

- You can overwrite existing custom schemes.
- You cannot overwrite existing pre-defined backup schemes.
- In a scheme name, you can use any symbols allowed by OS for naming files. The maximum length of a backup scheme name is 255 symbols.
- You can create not more than 16 custom backup schemes.

After creating a custom backup scheme, you can use it as any other existing backup scheme while configuring a backup.

You can also use a custom backup scheme without saving it. In this case, it will be available only for the backup where it was created and you will be unable to use it for other backups.

If you do not need a custom backup scheme anymore, you can delete it. To delete the scheme, select it in the backup schemes list, click **Delete**, and then confirm in the **Delete scheme** window.

Note
The pre-defined backup schemes cannot be deleted.

Notifications for backup operation

Location: **Options** > **Notifications**

Sometimes a backup or recovery procedure can last an hour or longer. Seagate DiscWizard can notify you when it is finished via email. The program can also duplicate messages issued during the operation or send you the full operation log after operation completion.

By default, all notifications are disabled.

Free disk space threshold

You may want to be notified when the free space on the backup storage becomes less than the specified threshold value. If after starting a backup Seagate DiscWizard finds out that the free space in the selected backup location is already less than the specified value, the program will not begin the actual backup process and will immediately inform you by displaying an appropriate message. The message offers you three choices - to ignore it and proceed with the backup, to browse for another location for the backup or to cancel the backup.

If the free space becomes less than the specified value while the backup is being run, the program will display the same message and you will have to make the same decisions.

Seagate DiscWizard can monitor free space on the following storage devices: local hard drives, USB cards and drives, and Network shares (SMB). This option cannot be enabled for FTP servers and CD/DVD drives.

To set the free disk space threshold

1. Select the **Show notification message on insufficient free disk space** check box.
2. Enter a threshold value in the **Notify me when free disk space is less than** box.

Note
The message will not be displayed if the **Do not show messages and dialogs while processing (silent mode)** check box is selected in the **Error handling** settings.

Email notification

1. Select the **Send email notifications about the operation state** check box.
2. Configure email settings:
    *   Enter the email address in the **To** field. You can enter several addresses, separated by semicolons.
    *   Enter the outgoing mail server (SMTP) in the **Server settings** field.
    *   Set the port of the outgoing mail server. By default, the port is set to 25.
    *   Select the required encryption for the emails.
    *   If required, select the **SMTP authentication** check box, and then enter the user name and password in the corresponding fields.
3. To check whether your settings are correct, click the **Send test message** button.

If the test message sending fails

1. Click **Show extended settings**.
2. Configure additional email settings:
    *   Enter the sender's email address in the **From** field. If you are not sure what address to specify, then type any address you like in a standard format, for example *aaa@bbb.com*.
    *   Change the message subject in the **Subject** field, if necessary.

To simplify monitoring a backup status, you can add the most important information to the subject of the email messages. You can type the following text labels:

- %BACKUP_NAME%—The backup name
- %COMPUTER_NAME%—The name of the computer where the backup was started
- %OPERATION_STATUS%—The result of the backup or other operation

  For example, you can type: *Status of backup %BACKUP_NAME%: %OPERATION_STATUS% (%COMPUTER_NAME%)*

- Select the **Log on to incoming mail server** check box, and enter the incoming mail server (POP3) under it.
- Set the port of the incoming mail server. By default, the port is set to 110.

3. Click the **Send test message** button again.

Additional notification settings

- **Send notification upon operation's successful completion**—Select this check box to send a notification concerning a process completion.
- **Send notification upon operation failure**—Select this check box to send a notification concerning a process failure.
- **Send notification when user interaction is required**—Select this check box to send a notification with operation messages.
- **Add full log to the notification**—Select this check box to send a notification with a full log of operations.

Note
You will only get email notifications for a particular backup.

Image creation mode

Location: **Options** > **Advanced** > **Image creation mode**

You can use these parameters to create an exact copy of your whole partitions or hard disks, and not only the sectors that contain data. For example, this can be useful when you want to back up a partition or disk containing an operating system that is not supported by Seagate DiscWizard. Keep in mind that this mode increases processing time and usually results in a larger image file.

- To create a sector-by-sector image, select the **Back up sector-by-sector** check box.
- To include all unallocated disk space into the backup, select the **Back up unallocated space** check box.
  This check box is available only when the **Back up sector-by-sector** check box is selected.

Pre/Post commands for backup

Location: **Options** > **Advanced** > **Pre/Post commands**

You can specify commands (or even batch files) that will be automatically executed before and after the backup procedure.

For example, you may want to start/stop certain Windows processes, or check your data before starting backup.

To specify commands (batch files)

- Select the **Use custom commands** check box.
- Select a command to be executed before the backup process starts in the **Pre-command** field. To create a new command or select a new batch file, click the **Edit** button.
- Select a command to be executed after the backup process ends in the **Post-command** field. To create a new command or select a new batch file, click the **Edit** button.

Please do not try to execute interactive commands, i.e. commands that require user input (for example, **pause**). These are not supported.

Edit user command for backup

You can specify user commands to be executed before or after the backup procedure:

- In the **Command** field, type-in a command or select it from the list. Click **...** to select a batch file.
- In the **Working directory** field, type-in a path for command execution or select it from the list of previously entered paths.
- In the **Arguments** field enter or select command execution arguments from the list.

Disabling the **Do not perform operations until the command's execution is complete** parameter (enabled for Pre commands by default), will permit the backup process to run concurrently with your command execution.

The **Abort the operation if the user command fails** (enabled by default) parameter will abort the operation if any errors occur in command execution.

You can test a command you entered by clicking the **Test command** button.

Backup splitting

Location: **Options** > **Advanced** > **Backup splitting**

Note
Seagate DiscWizard cannot split already existing backups. Backups can be split only when being created.

Large backups can be split into several files that together make up the original backup. A backup can also be split for burning to removable media.

The default setting - **Automatic**. With this setting, Seagate DiscWizard will act as follows.

When backing up to a hard disk:

- If the selected disk has enough space and its file system allows the estimated file size, the program will create a single backup file.

- If the storage disk has enough space, but its file system does not allow the estimated file size, the program will automatically split the image into several files.
- If you do not have enough space to store the image on your hard disk, the program will warn you and wait for your decision as to how you plan to fix the problem. You can try to free some additional space and continue or select another disk.

When backing up to a CD-R/RW, DVD-R/RW, DVD+R/RW, BD-R/RE:

- Seagate DiscWizard will ask you to insert a new disk when the previous one is full.

Alternatively, you may select the desired file size from the drop-down list. The backup will then be split into multiple files of the specified size. This is useful when you store a backup to a hard disk in order to burn the backup to CD-R/RW, DVD-R/RW, DVD+R/RW or BD-R/RE later on.

Note
Creating images directly on CD-R/RW, DVD-R/RW, DVD+R/RW, BD-R/RE might take considerably more time than it would on a hard disk.

Backup validation option

Location: **Options** > **Advanced** > **Validation**

You can specify the following settings:

- **Validate backup each time after it is completed**—Select to check the integrity of the backup version immediately after backup. We recommend that you enable this option when you back up your critical data or system disk.
  - **Validate the latest diverse backup version only**—A quick validation of the last backup slice.
  - **Validate entire backup**
- **Validate backup on schedule**—Select to schedule validation of your backups to ensure that they remain "healthy".
  - **The latest diverse backup version when it is completed**
  - **Entire backup when it is completed**

  The default settings are as follows:
  - **Frequency**—Once a month.
  - **Day**—The date when the backup was started.
  - **Time**—The moment of backup start plus 15 minutes.

You can also configure start of the validation manually from the backup context menu.

To do this, right-click the backup and choose:

- **Validate all versions**
- **Validate the latest version**

Backup reserve copy

Location: **Options** > **Advanced** > **Backup reserve copy**

Backup reserve copy is an independent full backup version created immediately after a normal backup. Even when you create an incremental or differential backup version containing only data changes, the reserve copy will contain all the data selected for the normal backup. You can save reserve copies of your backups on the file system, a network drive, or a USB flash drive.

Note
CD/DVDs are not supported as locations for reserve copies.

To make a reserve copy

1. Select the **Create a reserve copy of my backups** check box.
2. Specify a location for the backup copies.
3. Select the reserve copy format. You can create it as an Acronis backup (.tib files) or just copy the source files to the selected location as is, without any modification.
4. [Optional step] Protect the reserve copy with a password.

    All other backup options will be inherited from the source backup.

Error handling

When Seagate DiscWizard encounters an error while performing a backup, it stops the backup process and displays a message, waiting for a response on how to handle the error. You can configure an error handling policy, so Seagate DiscWizard will not stop the backup process, but will handle the error according to the rules that you set, and will continue working.

Note
This topic applies to backups that use local or network backup destinations.

To set up the error handling policy

1. On the Backup dashboard > **Options** > **Advanced** > **Error handling**
2. Set the error handling policy:
    - **Do not show messages and dialogs while processing (silent mode)** - Enable this setting to ignore errors during backup operations. This is useful when you cannot control the backup process.
    - **Ignore bad sectors** - This option is available only for disk and partition backups. It lets you successfully complete a backup even if there are bad sectors on the hard disk.

        We recommend that you select this check box when your hard drive is failing, for example:
        - Hard drive is making clicking or grinding noises during operation.
        - The S.M.A.R.T. system has detected hard drive issues and recommends that you back up the drive as soon as possible.

        When you leave this check box cleared, the backup may fail because of possible bad sectors on the drive.
    - **Repeat attempt if a backup fails** - This option allows you to automatically repeat a backup attempt if the backup fails for some reason. You can specify the number of attempts and the

interval between attempts. Note that if the error interrupting the backup persists, the backup will not be created.

3. Click **OK**.

File-level security settings for backup

Note

Certain features and functionalities may be unavailable in the edition that you use.

Location: **Options** > **Advanced** > **File-level security settings**

Note

This option is only available for file-level backups.

You can specify security settings for backed up files:

- **Preserve file security settings in backups** - selecting this option will preserve all the security properties (permissions assigned to groups or users) of the backup files for further recovery.

  By default, files and folders are saved in the backup with their original Windows security settings (i.e. permissions for read, write, execute and so on for each user or user group, set in file **Properties** -> **Security**). If you recover a secured file/folder on a computer without the user specified in the permissions, you may not be able to read or modify this file.

  To eliminate this kind of problem, you can disable preserving file security settings in backups. Then the recovered files/folders will always inherit the permissions from the folder to which they are recovered (parent folder or disk, if recovered to the root).

  Or, you can disable file security settings during recovery, even if they are available in the backup. The result will be the same.

- **In backups, store encrypted files in a decrypted state** (the preset is disabled) - check the option if there are encrypted files in the backup and you want them to be accessed by any user after recovery. Otherwise, only the user who encrypted the files/folders will be able to read them. Decryption may also be useful if you are going to recover encrypted files on another computer.

  If you do not use the encryption feature available in Windows XP and later operating systems, simply ignore this option. (Files/folders encryption is set in **Properties** -> **General** -> **Advanced Attributes** -> **Encrypt contents to secure data**).

Computer shutdown

Location: **Options** > **Advanced** > **Computer shutdown**

You can configure the following options:

- **Stop all current operations when I shut down the computer**—When you turn off your computer while Seagate DiscWizard is performing a long operation, for example a disk backup, this operation prevents the computer from shutdown. When this check box is selected, Seagate DiscWizard automatically stops all its current operations before shutdown. This may take about

two minutes. The next time you run Seagate DiscWizard, it will restart the stopped backups.

- **Shut down the computer after the backup is complete**—Select this option if the backup process you are configuring may take a long time. In this case, you will not have to wait until the operation completion. The program will perform the backup and turn off your computer automatically.

  This option is also useful when you schedule your backups. For example, you may want to perform backups every weekday in the evening to save all your work. Schedule the backup and select the check box. After that you may leave your computer when you finish your work knowing that the critical data will be backed up and the computer will be turned off.

Performance of backup operation

Location for backups to local destinations: **Options** > **Advanced** > **Performance**

Compression level

You can choose the compression level for a backup:

- **None**—The data will be copied without any compression, which may significantly increase the backup file size.
- **Normal**—The recommended data compression level (set by default).
- **High**—Higher backup file compression level, takes more time to create a backup.
- **Max**—Maximum backup compression, but takes a long time to create a backup.

Note
The optimal data compression level depends on the type of files stored in the backup. For example, even maximum compression will not significantly reduce the backup size, if the backup contains essentially compressed files, like .jpg, .pdf or .mp3.

Note
You cannot set or change the compression level for a pre-existing backup.

Operation priority

Changing the priority of a backup or recovery process can make it run faster or slower (depending on whether you raise or lower the priority), but it can also adversely affect the performance of other running programs. The priority of any process running in a system, determines the amount of CPU usage and system resources allocated to that process. Decreasing the operation priority will free more resources for other CPU tasks. Increasing backup or recovery priority may speed up the process by taking resources from the other currently running processes. The effect will depend on total CPU usage and other factors.

You can set up the operation priority:

- **Low** (enabled by default)—The backup or recovery process will run slower, but the performance of other programs will be increased.

- **Normal**—The backup or recovery process will have the equal priority with other processes.
- **High**—The backup or recovery process will run faster, but the performance of other programs will be reduced. Be aware that selecting this option may result in 100% CPU usage by Seagate DiscWizard.

Network connection transfer rate

When you back up data to network drives, or FTP, you can change the connection speed used by Seagate DiscWizard. Set the connection speed that will allow you to use Internet and network resources without annoying slowdowns.

To set up the connection speed, select one of the following options:

- **Maximum**

  The data transfer rate is maximum within a system configuration.
- **Limit upload speed to**

  You can specify a maximum value for data upload speed.

Operations with backups

Backup operations menu

The backup operations menu provides quick access to additional operations that can be performed with the selected backup.

The backup operations menu can contain the following items:

- **Rename**—Set a new name for a backup in the list. The backup files will not be renamed.
- **Reconfigure** (for backups manually added to the backup list)—Configure the settings of a backup created by a previous version. This item may also appear for backups created on another computer and added to the backup list without importing their settings.
  Without backup settings, you cannot refresh the backup by clicking **Back up now**. Also, you cannot edit and clone the backup settings.
- **Validate the latest version**—Start quick validation of the last backup slice.
- **Validate all versions**—Start validation of all backup slices.
- **Clean up versions**—Delete backup versions you no longer need.
- **Clone settings**—Create a new empty backup box with the settings of the initial backup and named **(1) [the initial backup name]**. Change the settings, save them, and then click **Back up now** on the cloned backup box.
- **Move**—Move all of the backup files to another location. The subsequent backup versions will be saved to the new location.
  If you change the backup destination by editing the backup settings, only new backup versions will be saved to the new location. The earlier backup versions will remain in the old location.

- **Delete**—Depending on a backup type, you can completely delete the backup from its location or choose whether you want to delete the backup box only. When you delete a backup box, the backup files remain in the location and you will be able to add the backup to the list later. Note that when you delete a backup completely, the deletion cannot be undone.
- **Open location**—Open the folder containing the backup files.
- **Search files**—Find a specific file or folder in a backup by entering its name into the search field.

Validating backups

The validation procedure checks whether you will be able to recover data from a backup.

For example, backup validation is important before you recover your system. If you start recovery from a corrupted backup, the process will fail and your computer may become unbootable. We recommend that you validate system partition backups under bootable media. Other backups may be validated in Windows. See also Preparing for recovery and Basic concepts.

To validate an entire backup in Windows

1. Start Seagate DiscWizard, and then click **Backup** on the sidebar.
2. In the backup list, click the down arrow icon next to the backup to validate, and then click **Validate**.

To validate a specific backup version or an entire backup in a standalone version of Seagate DiscWizard (bootable media)

1. On the **Recovery** tab, find the backup that contains the version that you want to validate. If the backup is not listed, click **Browse for backup**, and then specify the path to the backup. Seagate DiscWizard adds this backup to the list.
2. Right-click the backup or a specific version, and then click **Validate Archive**. This opens the **Validate Wizard**.
3. Click **Proceed**.

Adding an existing backup to the list

You may have Seagate DiscWizard backups created by a previous product version or copied from another computer. Every time you start Seagate DiscWizard, it scans your computer for such backups and adds them to the backup list automatically.

If you have backups that are not shown in the list, you can add them manually.

To add backups manually

1. In the **Backup** section, at the bottom of the backup list, click the arrow icon, and then click **Add existing backup**. The program opens a window where you can browse for backups on your computer.
2. Select a backup version (a .tib file), and then click **Add**.
   The entire backup will be added to the list.

Recovering data

Recovering disks and partitions

Recovering your system after a crash

When your computer fails to boot, it is advisable to at first try to find the cause using the suggestions given in Trying to determine the crash cause. If the crash is caused by corruption of the operating system, use a backup to recover your system. Make the preparations described in Preparing for recovery and then proceed with recovering your system.

Trying to determine the crash cause

A system crash can be due to two basic factors:

- **Hardware failure**

  In this scenario, it is better to let your service center handle the repairs. However, you may want to perform some routine tests. Check the cables, connectors, power of external devices, etc. Then, restart the computer. If there is a hardware problem, the Power-On Self Test (POST) will inform you about the failure.

  If the POST does not reveal a hardware failure, enter BIOS and check whether it recognizes your system hard disk drive. To enter BIOS, press the required key combination (**Del**, **F1**, **Ctrl+Alt+Esc**, **Ctrl+Esc**, or some other, depending on your BIOS) during the POST sequence. Usually the message with the required key combination is displayed during the startup test. Pressing this combination takes you to the setup menu. Go to the hard disk autodetection utility which usually comes under "Standard CMOS Setup" or "Advanced CMOS setup". If the utility does not detect the system drive, it has failed and you need to replace the drive.

- **Operating system corruption (Windows cannot start up)**

  If the POST correctly detects your system hard disk drive, then the cause of the crash is probably a virus, malware or corruption of a system file required for booting. In this case, recover the system using a backup of your system disk or system partition. Refer to Recovering your system for details.

Preparing for recovery

We recommend that you perform the following actions before recovery:

- Scan the computer for viruses if you suspect that the crash occurred due to a virus or malware attack.
- Under bootable media, try a test recovery to a spare hard drive, if you have one.
- Validate the image under bootable media. A backup that can be read during validation in Windows, **may not always be readable in a Linux environment**.

  Under bootable media, there are two ways to validate a backup:

- To validate a backup manually, on the **Recovery** tab, right-click a backup and select **Validate Archive**.
- To validate a backup automatically before recovery, on the **Options** step of the **Recovery Wizard**, select the **Validate backup archive before recovery** check box.
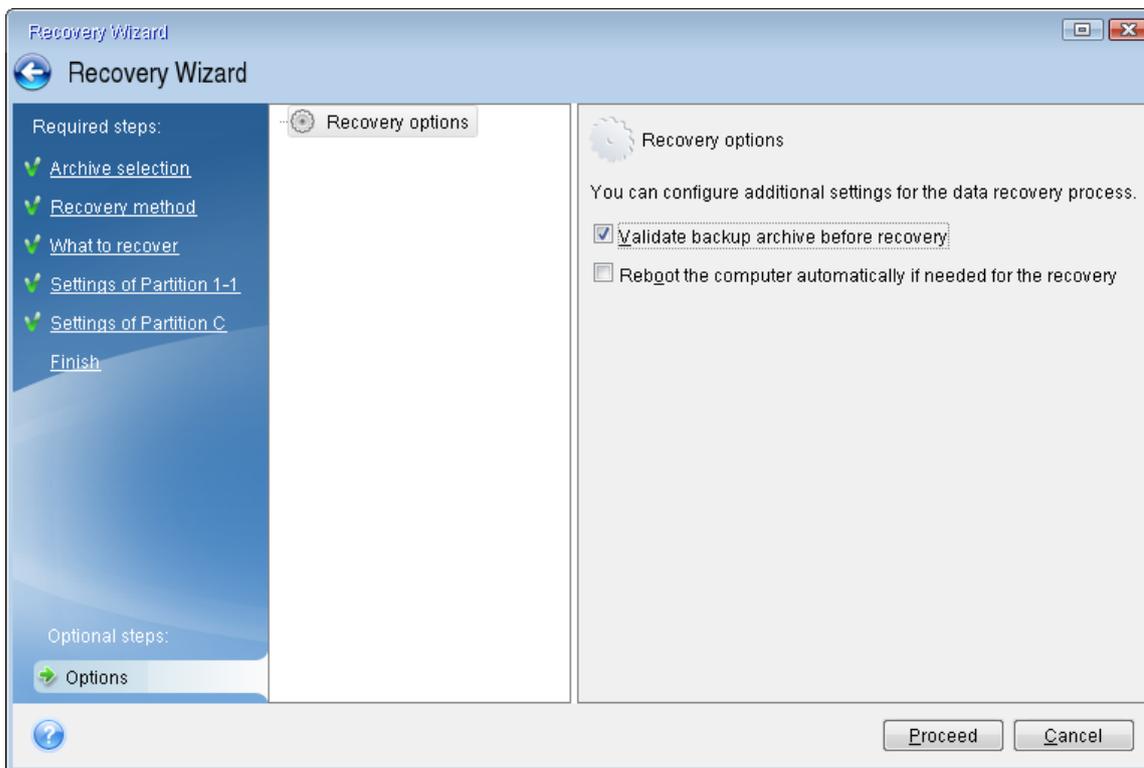
- Assign unique names (labels) to all partitions on your hard drives. This will make finding the disk containing your backups easier.

  When you use the bootable media, it creates disk drive letters that might differ from the way Windows identifies drives. For example, the D: disk identified in the bootable media might correspond to the E: disk in Windows.

Recovering your system to the same disk

Before you start, we recommend that you complete the procedures described in Preparing for recovery.

To recover your system

1. Attach the external drive if it contains the backup to be used for recovery and make sure that the drive is powered on.
2. Arrange the boot order in BIOS so as to make your Seagate bootable media (CD, DVD or USB drive) the first boot device. See Arranging boot order in BIOS or UEFI BIOS.

   If you use a UEFI computer, pay attention to the boot mode of the bootable media in UEFI BIOS. It is recommended that the boot mode matches the type of the system in the backup. If the backup contains a BIOS system, then boot the bootable media in BIOS mode; if the system is UEFI, then ensure that UEFI mode is set.

3. Boot from Seagate bootable media and select **Seagate DiscWizard**.
4. On the **Home** screen, select **My disks** below **Recover**.
5. Select the system disk or partition backup to be used for recovery.
   When the backup is not displayed, click **Browse** and specify path to the backup manually.

   Note
   If the backup is located on a USB drive, and the drive is not recognized correctly, check the USB port version. If it is a USB 3.0 or USB 3.1, try connecting the drive to a USB 2.0 port.

6. Select **Recover whole disks and partitions** at the **Recovery method** step.
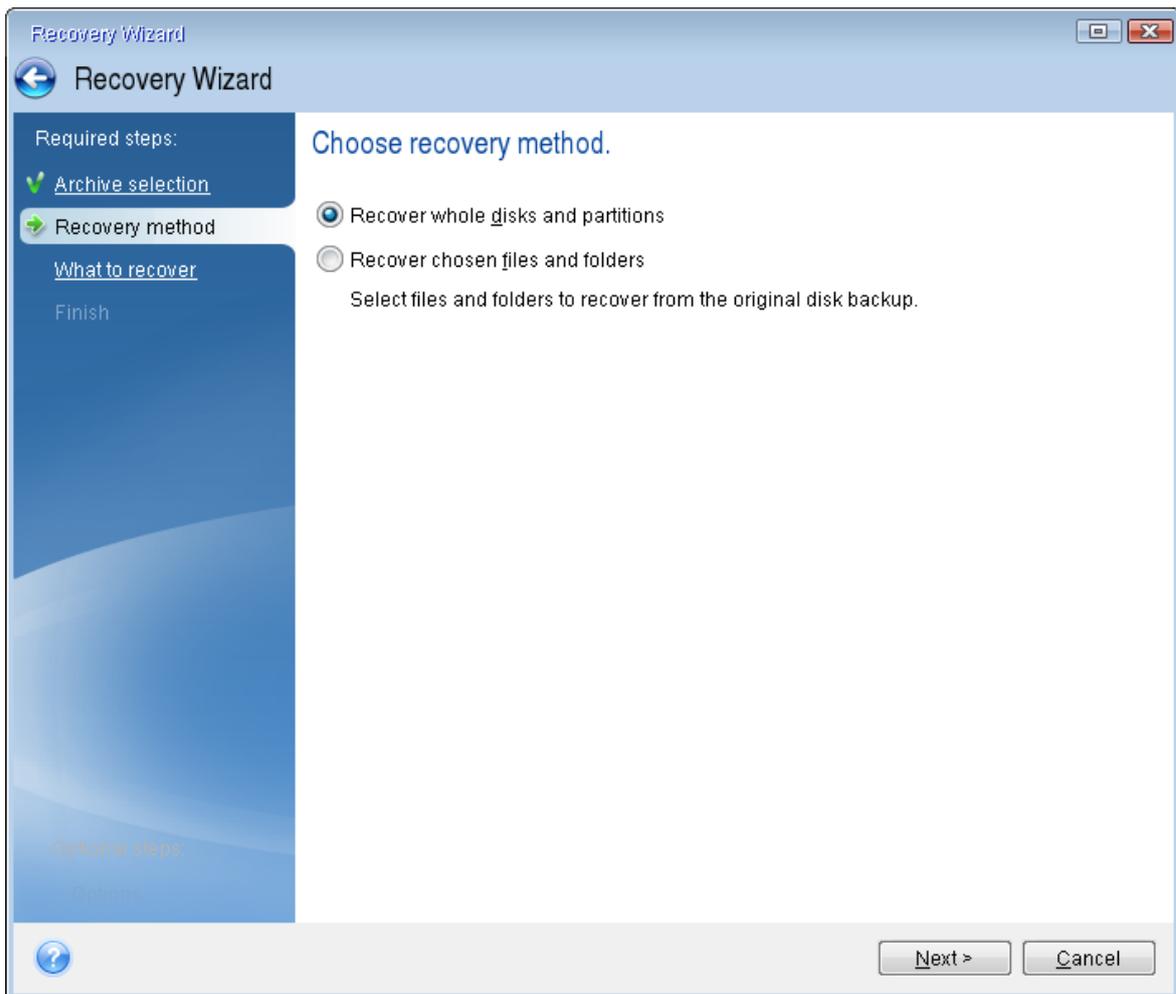
7. [Optional] At the **Recovery point** step, select the date and time to recover your system to.
8. Select the system partition (usually C) on the **What to recover** screen. If the system partition has a different letter, select the partition using the **Flags** column. It must have the **Pri**, **Act** flags. If you have the System Reserved partition, select it, too.
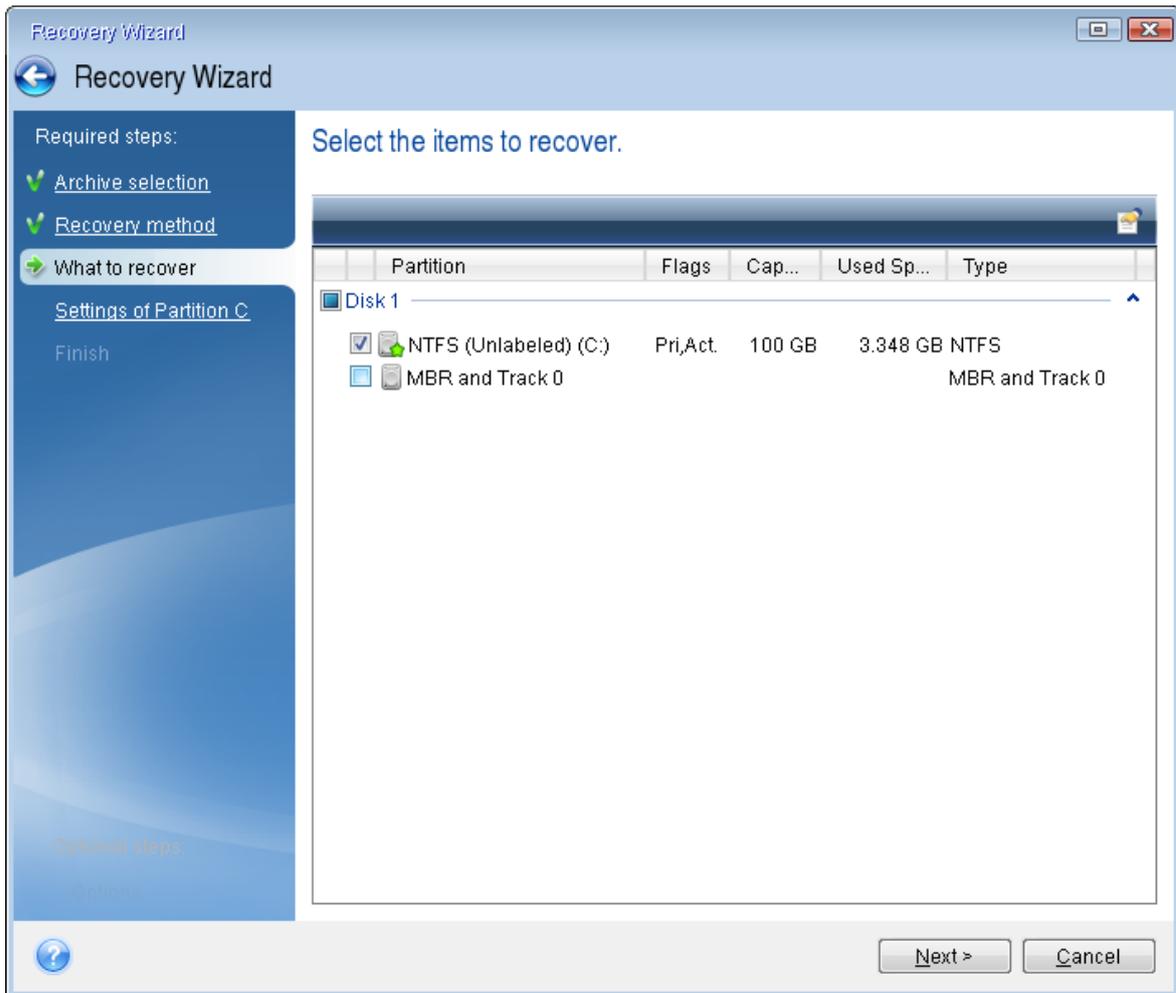
9. At the **Settings of partition C** (or the letter of the system partition, if it is different) step check the default settings and click **Next** if they are correct. Otherwise, change the settings as required before clicking **Next**. Changing the settings will be needed when recovering to the new hard disk of a different capacity.

10. Carefully read the summary of operations at the **Finish** step. If you have not resized the partition, the sizes in the **Deleting partition** and **Recovering partition** items must match. Having checked the summary click **Proceed**.
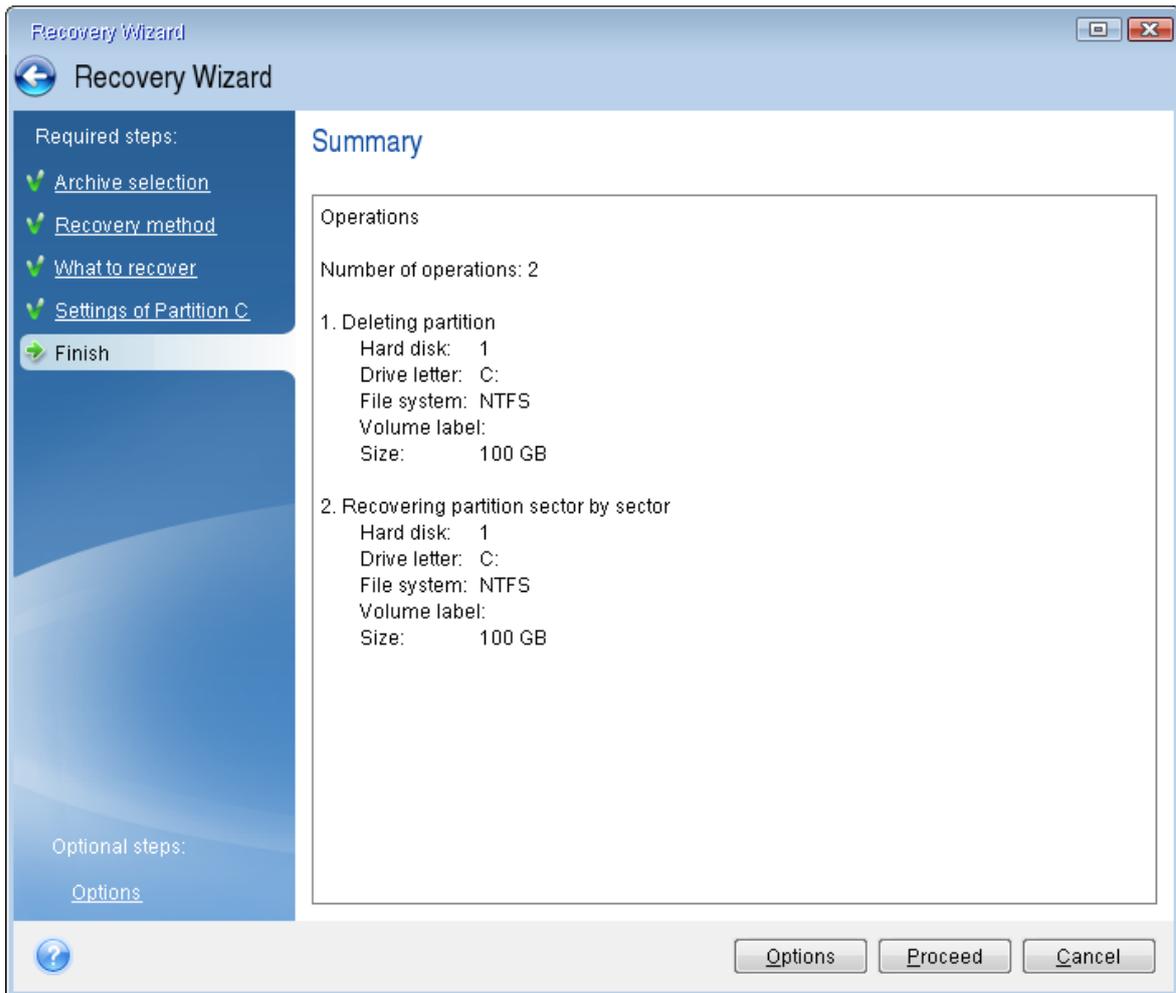
11. When the operation finishes, exit the standalone version of Seagate DiscWizard, remove Seagate bootable media and boot from the recovered system partition. After making sure that you have recovered Windows to the state you need, restore the original boot order.

Recovering your system to a new disk under bootable media

Before you start, we recommend that you complete the preparations described in Preparing for recovery. You do not need to format the new disk, as this will be done in the process of recovery.

Note
It is recommended that your old and new hard drives work in the same controller mode (for example, IDE or AHCI). Otherwise, your computer might not start from the new hard drive.

To recover your system to a new disk

1. Install the new hard drive to the same position in the computer and use the same cable and connector that was used for the original drive. If this is not possible, install the new drive to where it will be used.

2. Attach the external drive if it contains the backup to be used for recovery and make sure that the drive is powered on.

3. Arrange the boot order in BIOS so as to make your bootable media (CD, DVD or USB stick) the first boot device. See Arranging boot order in BIOS or UEFI BIOS.

   If you use an UEFI computer, pay attention to the boot mode of the bootable media in UEFI BIOS. It is recommended that the boot mode matches the type of the system in the backup. If the backup contains a BIOS system, then boot the bootable media in BIOS mode; if the system is UEFI, then ensure that UEFI mode is set.

4. Boot from the bootable media and select **Seagate DiscWizard**.

5. On the **Home** screen, select **My disks** below **Recover**.

6. Select the system disk or partition backup to be used for recovery. When the backup is not displayed, click **Browse** and specify path to the backup manually.


Note

If the backup is located on a USB drive, and the drive is not recognized correctly, check the USB port version. If it is a USB 3.0 or USB 3.1, try connecting the drive to a USB 2.0 port.

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7. If you have a hidden partition (for example, the System Reserved partition or a partition created by the PC manufacturer), click **Details** on the wizard's toolbar. Remember the location and size of the hidden partition, because these parameters need to be the same on your new disk.
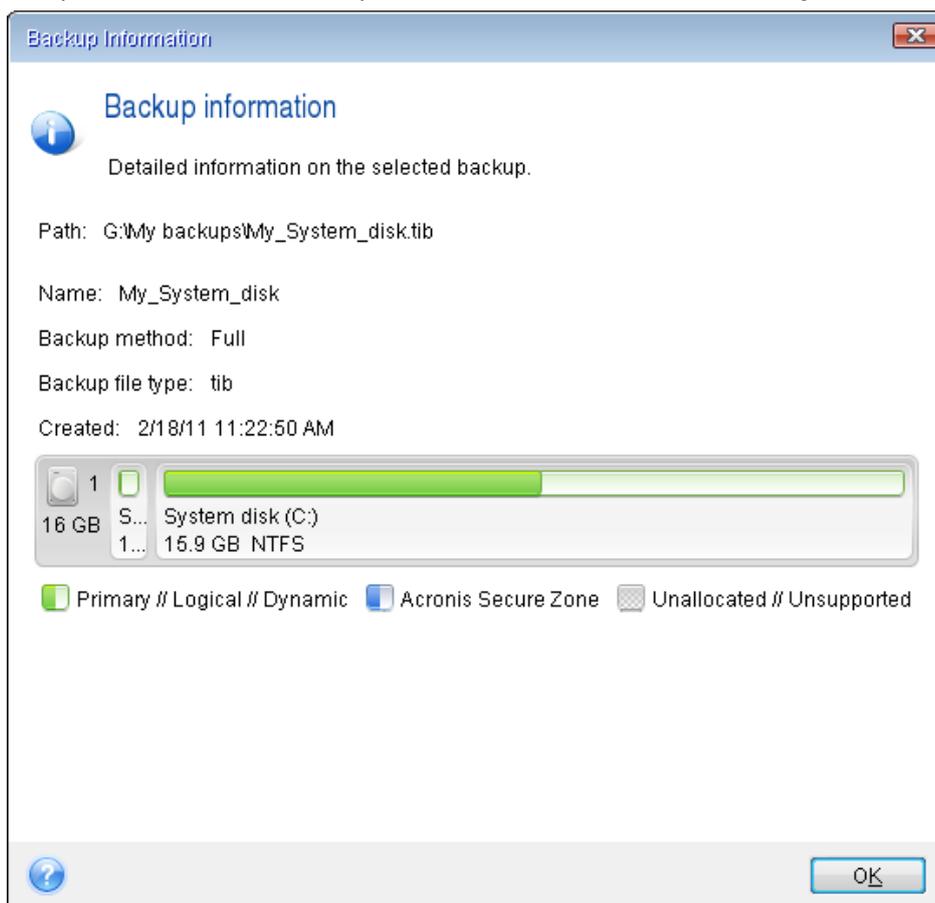

8. Select **Recover whole disks and partitions** at the **Recovery method** step.

9. On the **What to recover** step, select the boxes of the partitions to be recovered.

   If you select an entire disk, MBR and Track 0 of the disk will also be recovered.
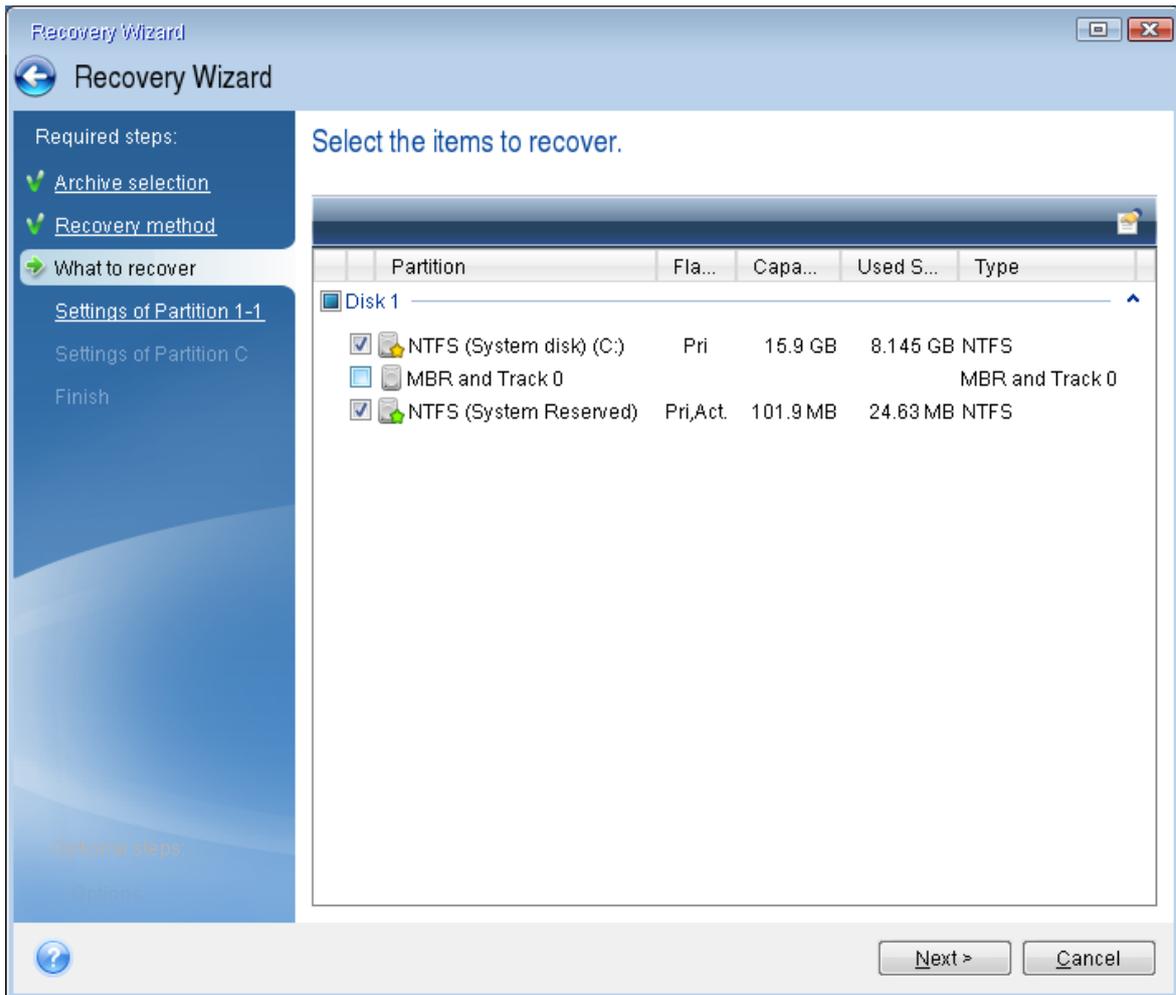
Selecting partitions leads to appearance of the relevant steps **Settings of partition**. Note that these steps start with partitions which do not have an assigned disk letter (as usually is the case with hidden partitions). The partitions then take an ascending order of partition disk letters. This order cannot be changed. The order may differ from the physical order of the partitions on the hard disk.

10. On the Settings of the hidden partition step (usually named Settings of Partition 1-1), specify the following settings:

    • **Location**—Click **New location**, select your new disk by either its assigned name or capacity, and then click **Accept**.
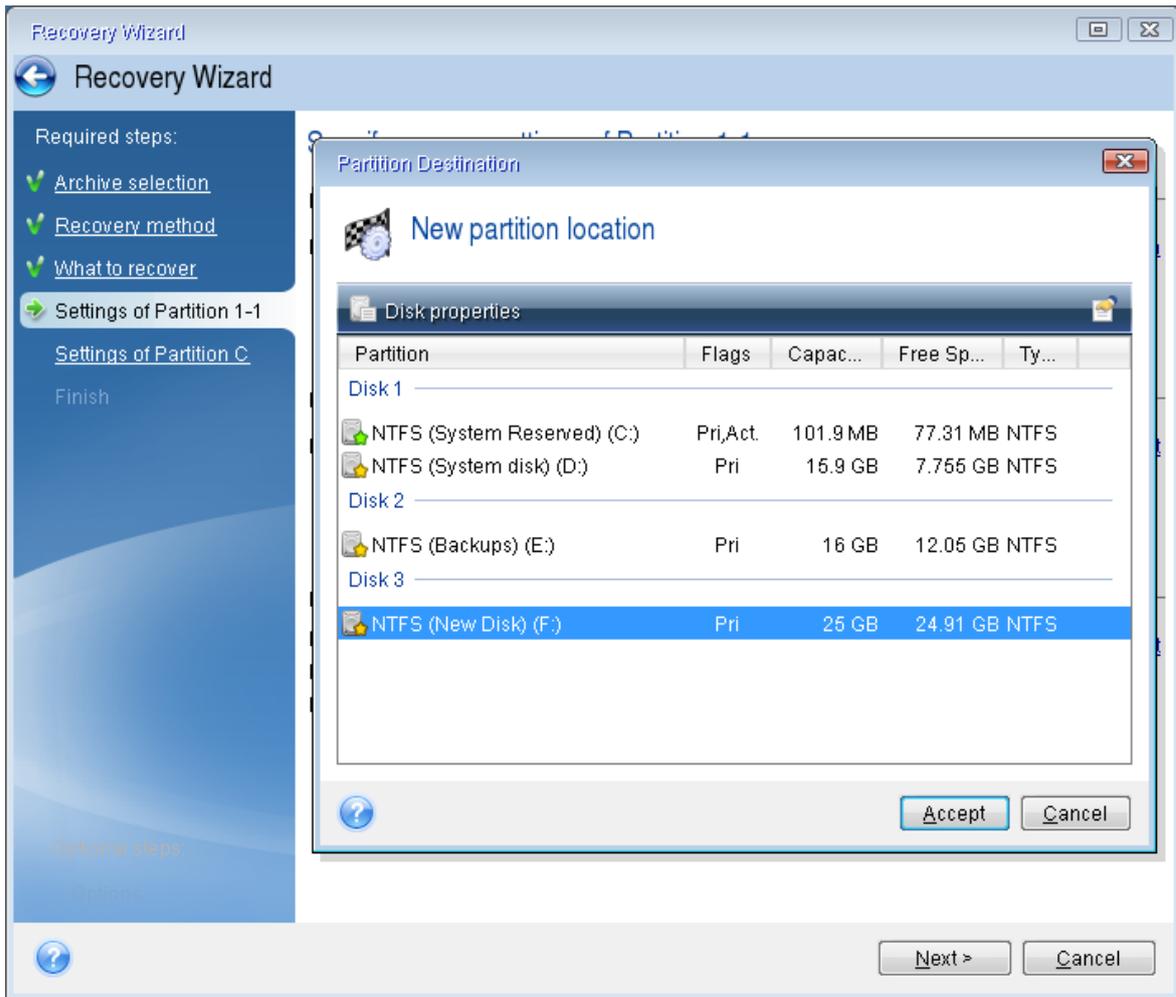
- **Type**—Check the partition type and change it, if necessary. Ensure that the System Reserved partition (if any) is primary and marked as active.
- **Size**—Click **Change default** in the Partition size area. By default the partition occupies the entire new disk. Enter the correct size in the Partition size field (you can see this value on the **What to recover** step). Then drag this partition to the same location that you saw in the Backup Information window, if necessary. Click **Accept**.
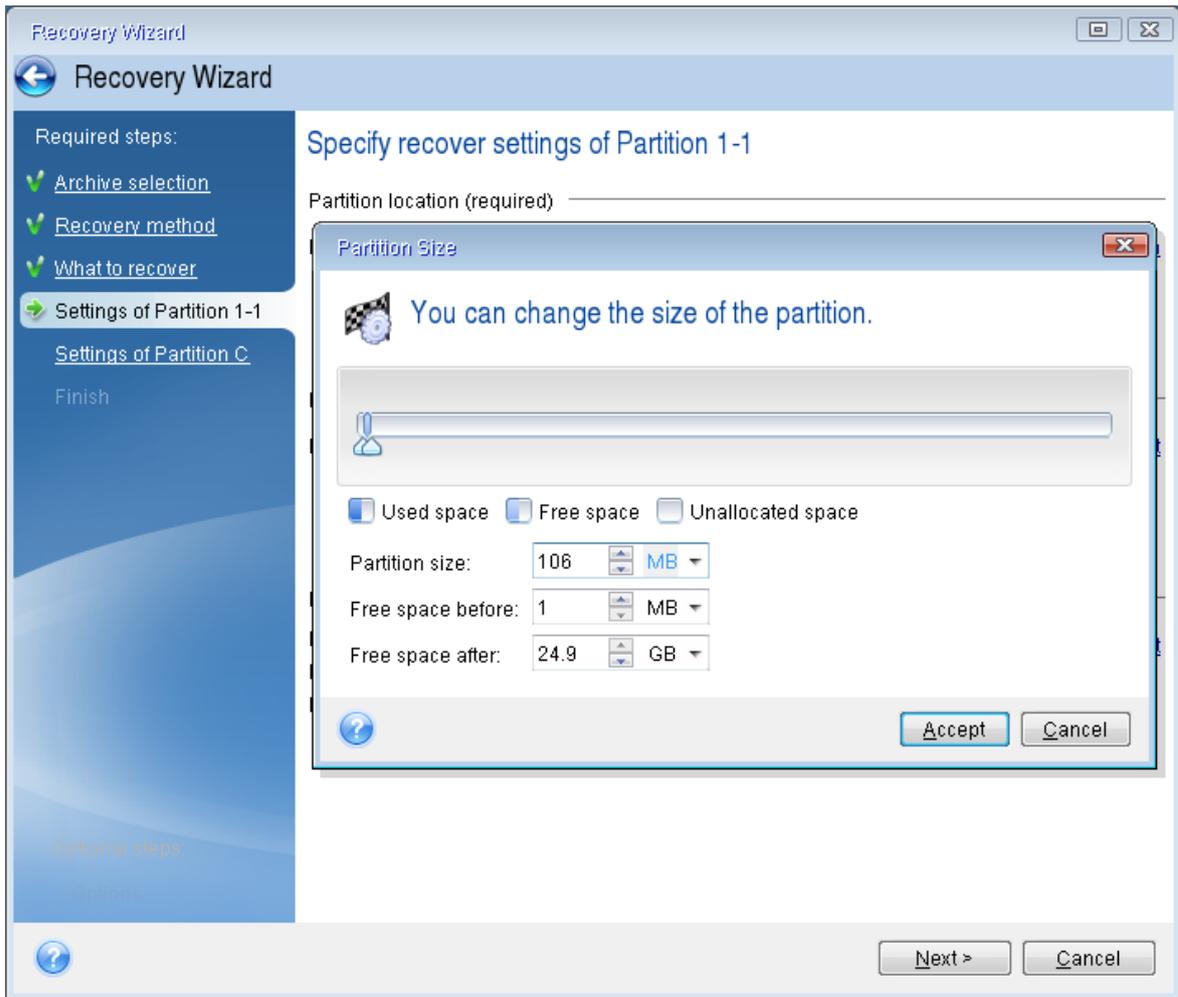
11. On the **Settings of Partition C** step, specify the settings for the second partition, which in this
    case is your system partition.

    - Click **New location**, and then select unallocated space on the destination disk that will receive
      the partition.
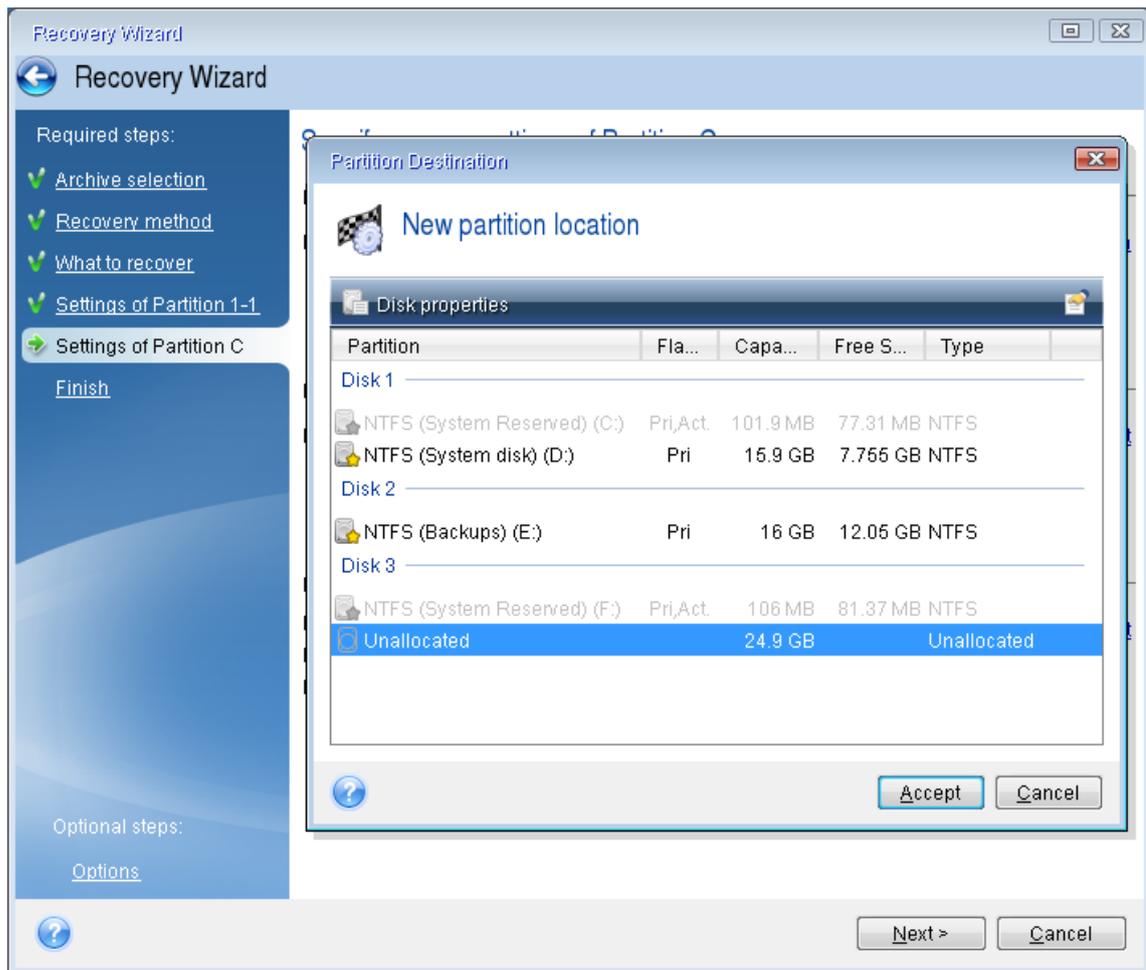
- Change the partition type, if necessary. The system partition must be primary.
- Specify the partition size, which by default equals the original size. Usually there is no free space after the partition, so allocate all the unallocated space on the new disk to the second partition. Click **Accept**, and then click **Next**.
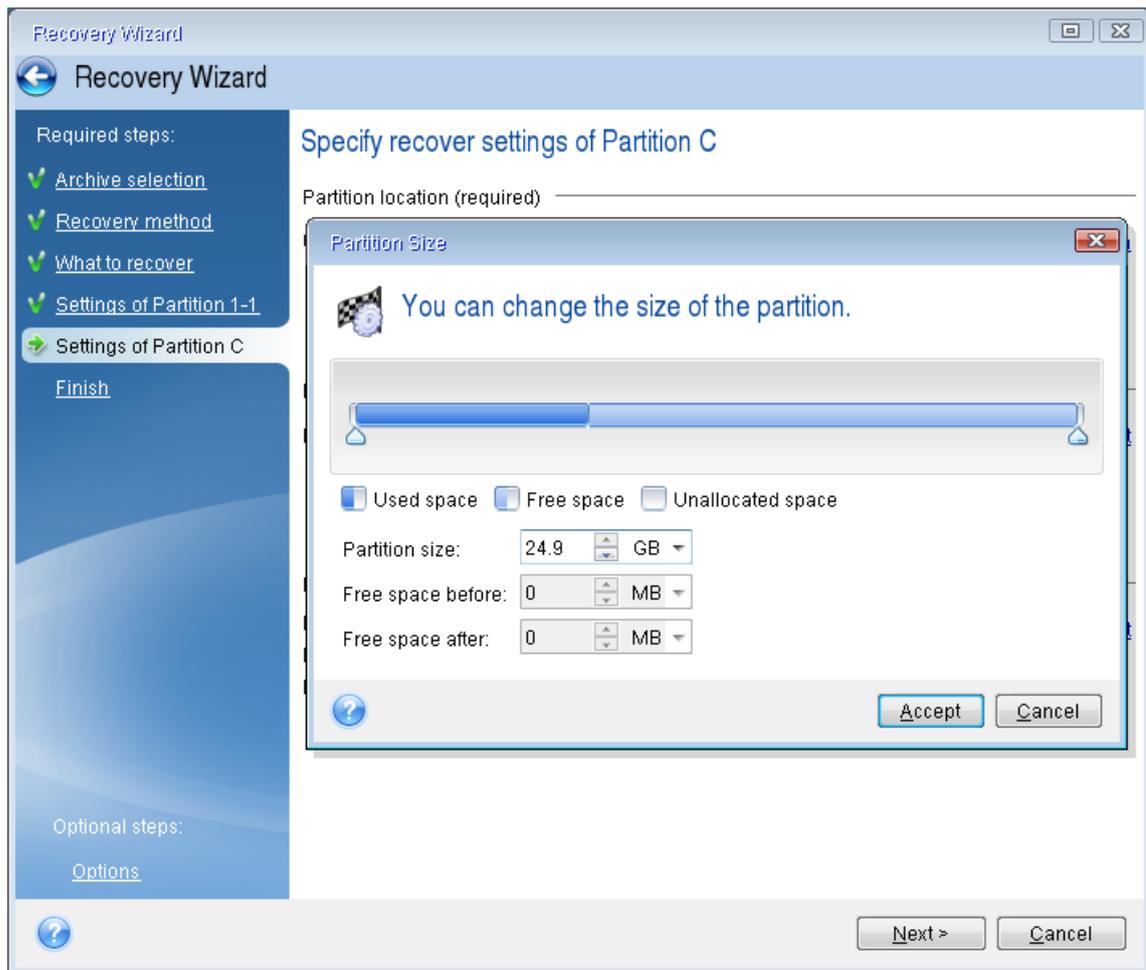
12. Carefully read the summary of operations to be performed and then click **Proceed**.

If your original disk contains a hidden partition created by the PC manufacturer, proceed to MBR recovery. You need to recover the MBR because the PC manufacturer could change the generic Windows MBR or a sector on track 0 to provide access to the hidden partition.

1. Select the same backup again. Right-click and select **Recover** in the shortcut menu. Choose **Recover whole disks and partitions** at the **Recovery method** step and then select the **MBR and Track 0** box.

2. At the next step, select the destination disk as the target for MBR recovery. You can also recover the disk signature.

3. Click **Next** and then **Proceed**. After MBR recovery is complete, exit the standalone version of Seagate DiscWizard.

When the recovery is complete

Before you boot the computer, disconnect the old drive (if any). If Windows "sees" both the new and old drive during the boot, this will result in problems booting Windows. If you upgrade the old drive to a larger capacity new one, disconnect the old drive before the first boot.

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Remove the bootable media and boot the computer to Windows. It may report that new hardware (hard drive) is found and Windows needs to reboot. After making sure that the system operates normally, restore the original boot order.

Recovering partitions and disks

To recover partitions or disks

1. Start Seagate DiscWizard.
2. In the **Backup** section, select the backup which contains the partitions or disks you want to recover, then open the **Recovery** tab, and then click **Recover disks**.
3. In the **Backup version** list, select the backup version you want to recover by its backup date and time.
4. Select the **Disks** tab to recover disks or **Partitions** tab to recover specific partitions. Select the objects you need to recover.
5. In the recovery destination field below the partition name, select the destination partition. Unsuitable partitions are marked by a red border. Note that all data on the destination partition will be lost because it is replaced by the recovered data and file system.

   Note
   To recover to the original partition, at least 5 % of the partition space must be free. Otherwise, the **Recover now** button will be unavailable.

6. [Optional] To set up additional parameters for the disk recovery process, click **Recovery options**.
7. After you finish with your selections, click **Recover now** to start recovery.

We recommend that you recover the Master Boot Record (MBR) when Windows does not boot after recovery. To recover the MBR, click Show MBR and then select the MBR check box.

Partition properties

When you recover partitions to a basic disk, you can change properties of these partitions. To open the **Partition Properties** window, click **Properties** next to the selected target partition.

You can change the following partition properties:

- **Letter**
- **Label**
- **Type**

  You can make the partition primary, primary active, or logical.
- **Size**

  You can resize the partition by dragging the right-side border with your mouse, on the horizontal bar on the screen. To assign the partition a specific size, enter the appropriate number into the **Partition size** field. You can also select the position of unallocated space—before or after the partition.

About recovery of dynamic/GPT disks and volumes

Recovery of dynamic volumes

You can recover dynamic volumes to the following locations on the local hard drives:

- **Dynamic volume.**

Note

Manual resizing of dynamic volumes during recovery to dynamic disks is not supported. If you need to resize a dynamic volume during recovery, it should be recovered to a basic disk.

- ○ **Original location (to the same dynamic volume).**

  The target volume type does not change.

- ○ **Another dynamic disk or volume.**

  The target volume type does not change. For example, when recovering a dynamic striped volume over a dynamic spanned volume the target volume remains spanned.

- ○ **Unallocated space of the dynamic group.**

  The recovered volume type will be the same as it was in the backup.

- **Basic volume or disk.**

  The target volume remains basic.

- **Bare-metal recovery.**

  When performing a so called "bare-metal recovery" of dynamic volumes to a new unformatted disk, the recovered volumes become basic. If you want the recovered volumes to remain dynamic, the target disks should be prepared as dynamic (partitioned and formatted). This can be done using third-party tools, for example, Windows Disk Management snap-in.

Recovery of basic volumes and disks

- When recovering a basic volume to an unallocated space of the dynamic group, the recovered volume becomes dynamic.
- When recovering a basic disk to a dynamic disk of a dynamic group consisting of two disks, the recovered disk remains basic. The dynamic disk to which the recovery is performed becomes "missing" and a spanned/striped dynamic volume on the second disk becomes "failed".

Partition style after recovery

The target disk's partition style depends on whether your computer supports UEFI and on whether your system is BIOS-booted or UEFI-booted. See the following table:

	My system is BIOS-booted (Windows or Seagate bootable media)	**My system is UEFI-booted (Windows or Seagate bootable media)**
My source	The operation will not affect neither	After operation completion, the partition

	My system is BIOS-booted (Windows or Seagate bootable media)	My system is UEFI-booted (Windows or Seagate bootable media)
disk is MBR and my OS does not support UEFI	partition layout nor bootability of the disk: partition style will remain MBR, the destination disk will be bootable in BIOS.	style will be converted to GPT style, but the operating system will fail booting from UEFI, since your operating system does not support it.
My source disk is MBR and my OS supports UEFI	The operation will not affect neither partition layout nor bootability of the disk: partition style will remain MBR, the destination disk will be bootable in BIOS.	The destination partition will be converted to GPT style that will make the destination disk bootable in UEFI. See Example of recovery to UEFI system.
My source disk is GPT and my OS supports UEFI	After operation completion, the partition style will remain GPT, the system will fail booting on BIOS, because your operating system cannot support booting from GPT on BIOS.	After operation completion, the partition style will remain GPT, the operating system will be bootable on UEFI.

Example of recovery to a UEFI system

Here is an example for transferring a system with the following conditions:

- The source disk is MBR and the OS supports UEFI.
- The target system is UEFI-booted.
- Your old and new hard drives work in the same controller mode (for example, IDE or AHCI).

Before you start the procedure, ensure that you have:

- **Seagate bootable media.**

  Refer to Creating Seagate bootable media for details.
- **Backup of your system disk created in disk mode.**

  To create this backup, switch to disk mode, and then select the hard drive that contains your system partition. Refer to Backing up disks and partitions for details.
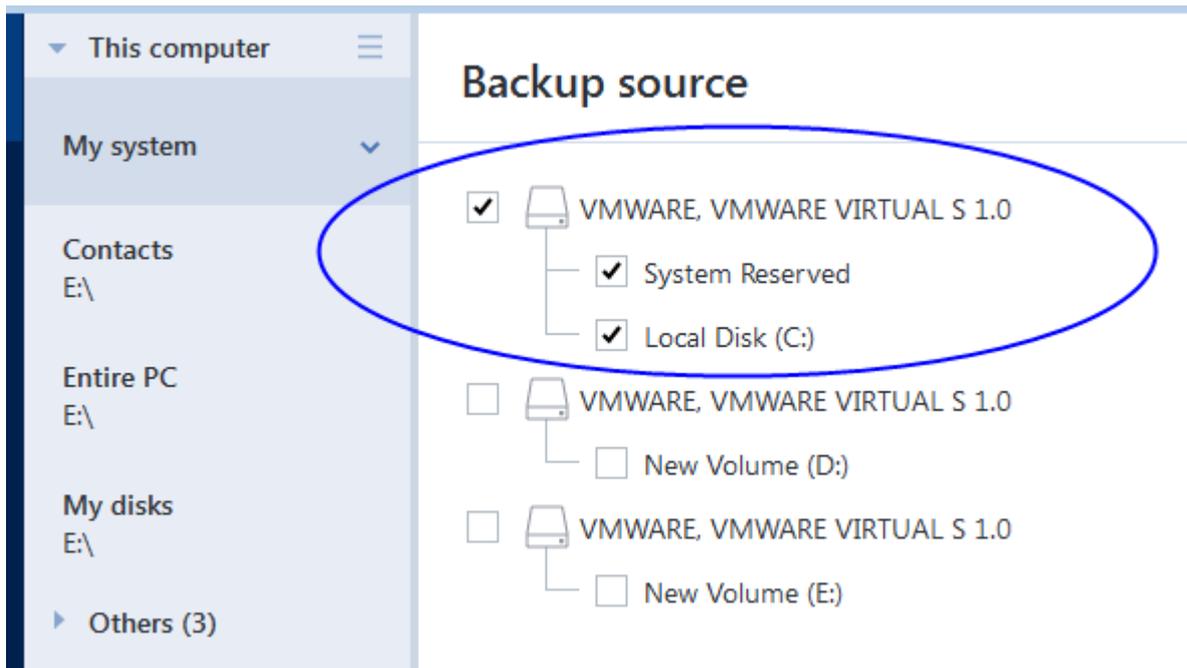
To transfer your system from an MBR disk to a UEFI-booted computer

1. Boot from the Seagate bootable media in UEFI mode and select Seagate DiscWizard.
2. Run the **Recovery wizard** and follow the instructions described in Recovering your system.
3. On the **What to recover** step, select the check box next to the disk name to select the entire system disk.

   In the example below, you need to select the **Disk 1** check box:
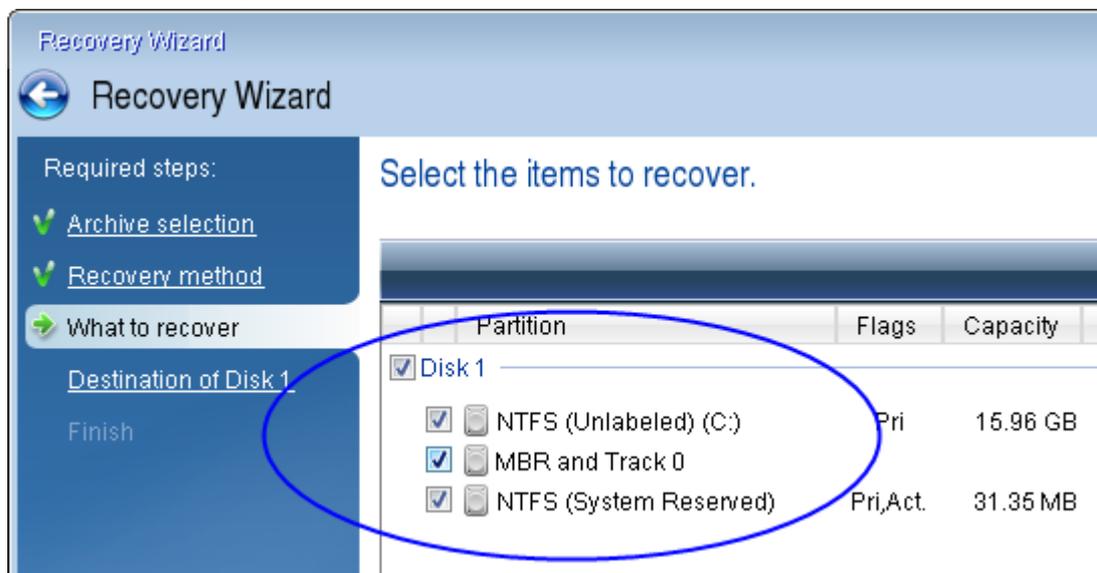
4. On the **Finish** step, click **Proceed**.

When the operation finishes, the destination disk is converted to GPT style so that it is bootable in UEFI.

After the recovery, ensure that you boot your computer in UEFI mode. You may need to change the boot mode of your system disk in the user interface of the UEFI boot manager.

Arranging boot order in BIOS or UEFI BIOS

To boot your computer from Seagate bootable media, you need to arrange boot order so the media is the first booting device. The boot order is changed in BIOS or UEFI BIOS, depending on your computer firmware interface. The procedure in both cases is very similar.

***To boot from Seagate bootable media***

1. If you use a USB flash drive or external drive as a bootable media, plug it into the USB port.
2. Turn your computer on. During the Power-On Self Test (POST), you will see the key combination that you need to press in order to enter BIOS or UEFI BIOS.
3. Press the key combination (such as, **Del, F1, Ctrl+Alt+Esc, Ctrl+Esc**). The BIOS or UEFI BIOS setup utility will open. Note that utilities may differ in appearance, sets of items, names, etc.

   Note
   Some motherboards have a so-called boot menu opened by pressing a certain key or key combination, for instance, **F12**. The boot menu allows selecting the boot device from a list of bootable devices without changing the BIOS or UEFI BIOS setup.

4. If you use a CD or DVD as a bootable media, insert it in the CD or DVD drive.
5. Make your bootable media (CD, DVD or USB drive) device the first booting device:
   a. Navigate to the Boot order setting by using the arrow keys on your keyboard.
   b. Place the pointer on the device of your bootable media and make it the first item in the list.

You can usually use the Plus Sign and the Minus Sign keys to change the order.

```
                    PhoenixBIOS Setup Utility
    Main      Advanced      Security      Boot      Exit

                                                 ┌─────────────────────────┐
                                                 │   Item Specific Help    │
       CD-ROM Drive                              │                         │
      +Removable Devices                         │                         │
      +Hard Drive                                │ Keys used to view or    │
       Network boot from Intel E1000             │ configure devices:      │
                                                 │ <Enter> expands or      │
                                                 │ collapses devices with  │
                                                 │ a + or -                │
                                                 │ <Ctrl+Enter> expands    │
                                                 │ all                     │
                                                 │ <+> and <-> moves the   │
                                                 │ device up or down.      │
                                                 │ <n> May move removable  │
                                                 │ device between Hard     │
                                                 │ Disk or Removable Disk  │
                                                 │ <d> Remove a device     │
                                                 │ that is not installed.  │
                                                 │                         │

    F1    Help    ↑↓  Select Item    -/+   Change Values    F9   Setup Defaults
    Esc   Exit    ↔   Select Menu    Enter Select ▶ Sub-Menu  F10  Save and Exit
```

6. Exit BIOS or UEFI BIOS and save the changes that you made. The computer will boot from Seagate bootable media.

Note

If the computer fails to boot from the first device, it tries to boot from the second device in the list, and so on.

Recovering files and folders

You can recover files and folders both from file-level and disk-level backups.

To recover data in Seagate DiscWizard

1. On the sidebar, click **Backup**.

2. From the backup list, select the backup which contains the files or folders that you want to recover, and then open the **Recovery** tab.

3. [Optional] On the toolbar, in the **Version** drop-down list, select the required date and time of the backup. By default, the latest backup is recovered.

4. Select the check box for the corresponding files or folders that you want to recover, and click **Next**.

5. [Optional] By default, the data is restored in the original location. To change it, click **Browse** on the toolbar, and then select the required destination folder.

6. [Optional] Set the options for the recovery process (recovery process priority, file-level security settings, etc.). To set the options, click **Recovery options**. The options you set here will be applied only to the current recovery operation.

7. To start the recovery process, click the **Recover now** button.

   The selected file version is downloaded to the specified destination.

   You can stop the recovery by clicking **Cancel**. Keep in mind that the aborted recovery may still cause changes in the destination folder.

To recover data in File Explorer

1. Double-click the corresponding .tib file, and then browse to the file or folder that you want to recover.

2. Copy the file or folder to a hard disk.

Note

The copied files lose the "Compressed" and "Encrypted" attribute. If you need to keep these attributes, it is recommended to recover the backup.

Note

If you selected several files and folders, they will be placed into a zip archive.

Searching backup content

While recovering data from local backups, you can search for specific files and folders stored in the selected backup.

To search for files and folders

1. Start recovering data as described in Recovering partitions and disks or Recovering files and folders.

2. When selecting files and folders to recover, enter the file or folder name into the **Search** field. The program shows search results.

   You can also use the common Windows wildcard characters: * and ?. For example, to find all files with extension **.exe**, enter ***.exe**. To find all .exe files with names consisting of five symbols and starting with "my", enter **My???.exe**.

3. By default, Seagate DiscWizard searches the folder selected on the previous step. To include the entire backup in the search, click the down arrow, and then click **in entire backup**.

   To return to the previous step, delete the search text, and then click the cross icon.

4. After the search is complete, select the files that you want to recover, and then click **Next**.

Note

Pay attention to the Version column. The files and folders that belong to different backup versions cannot be recovered at the same time.

Recovery options

You can configure options for the disk/partition and file recovery processes. After you installed the application, all options are set to the initial values. You can change them for your current recovery operation only or for all further recovery operations as well. Select the **Save the settings as default** check box to apply the modified settings to all further recovery operations by default.

Note, that disk recovery options and file recovery options are fully independent, and you should configure them separately.

If you want to reset all the modified options to their initial values that were set after the product installation, click the **Reset to initial settings** button.

Disk recovery mode

Location: **Recovery options** > **Advanced** > **Disk recovery mode**

With this option you can select the disk recovery mode for image backups.

- **Recover sector-by-sector** - select this check box if you want to recover both used and unused sectors of disks or partitions. This option will be effective only when you choose to recover a sector-by-sector backup.

Pre/Post commands for recovery

Location: **Recovery options** > **Advanced** > **Pre/Post commands**

You can specify commands (or even batch files) that will be automatically executed before and after the recovery procedure.

For example, you may want to start/stop certain Windows processes, or check your data for viruses before recovery.

To specify commands (batch files):

- Select a command to be executed before the recovery process starts in the **Pre-command** field. To create a new command or select a new batch file, click the **Edit** button.
- Select a command to be executed after the recovery process ends in the **Post-command** field. To create a new command or select a new batch file, click the **Edit** button.

Please do not try to execute interactive commands, i.e. commands that require user input (for example, "pause"). These are not supported.

Edit user command for recovery

You can specify user commands to be executed before or after recovery:

- In the **Command** field type-in a command or select it from the list. Click **...** to select a batch file.
- In the **Working directory** field type-in a path for command execution or select it from the list of previously entered paths.
- In the **Arguments** field enter or select command execution arguments from the list.

Disabling the **Do not perform operations until the command execution is complete** parameter (enabled by default), will permit the recovery process to run concurrently with your command execution.

The **Abort the operation if the user command fails** (enabled by default) parameter will abort the operation if any errors occur in command execution.

You can test the command you entered by clicking the **Test command** button.

Validation option

Location: **Recovery options** > **Advanced** > **Validation**

- **Validate backup before recovery**—Enable this option to check the backup integrity before recovery.
- **Check the file system after recovery**—Enable this option to check the file system integrity on the recovered partition.

> **Note**
> Only FAT16/32 and NTFS file systems can be checked.

> **Note**
> The file system will not be checked if a reboot is required during recovery, for example, when recovering the system partition to its original place.

Computer restart

Location: **Recovery options** > **Advanced** > **Computer restart**

If you want the computer to reboot automatically when it is required for recovery, select the **Restart the computer automatically if needed for the recovery** check box. This may be used when a partition locked by the operating system has to be recovered.

File recovery options

Location: **Recovery options** > **Advanced** > **File recovery options**

You can select the following file recovery options:

- **Recover files with their original security settings** - if the file security settings were preserved during backup, you can choose whether to recover them or let the files inherit the security settings of the folder where they will be recovered to. This option is effective only when recovering files from file/folder backups.

- **Set current date and time for recovered files** - you can choose whether to recover the file date and time from the backup or assign the files the current date and time. By default the file date and time from the backup will be assigned.

Overwrite file options

Location: **Recovery options** > **Advanced** > **Overwrite file options**

Choose what to do if the program finds a file in the target folder with the same name as in the backup.

Note
This option is available only while restoring files and folders (not disks and partitions).

Select the **Overwrite existing files** check box if you want to overwrite the files on the hard disk with the files from the backup. If the check box is cleared, the more recent files and folders will be kept on the disk.

If you do not need to overwrite some files:

- Select the **Hidden files and folders** check box to turn off overwriting of all hidden files and folders. This option is available for file-level backups to local destinations and network shares.
- Select the **System files and folders** check box to turn off overwriting of all system files and folders. This option is available for file-level backups to local destinations and network shares.
- Select the **More recent files and folders** check box to turn off overwriting of new files and folders.
- Click **Add specific files and folders** to manage the list of custom files and folders that you do not want to overwrite. This option is available for file-level backups to local destinations and network shares.
  - To turn off overwriting of specific files, click the plus sign to create an exclusion criterion.
  - While specifying the criteria, you can use the common Windows wildcard characters. For example, to preserve all files with extension **.exe**, you can add ***.exe**. Adding **My???.exe** will preserve all .exe files with names consisting of five symbols and starting with "my".

To delete a criterion, select it in the list, and then click the minus sign.

Performance of recovery operation

Location: **Recovery options** > **Advanced** > **Performance**

You can configure the following settings:

Operation priority

Changing the priority of a backup or recovery process can make it run faster or slower (depending on whether you raise or lower the priority), but it can also adversely affect the performance of other running programs. The priority of any process running in a system, determines the amount of CPU

usage and system resources allocated to that process. Decreasing the operation priority will free more resources for other CPU tasks. Increasing backup or recovery priority may speed up the process by taking resources from the other currently running processes. The effect will depend on total CPU usage and other factors.

You can set up the operation priority:

- **Low** (enabled by default)—The backup or recovery process will run slower, but the performance of other programs will be increased.
- **Normal**—The backup or recovery process will have the equal priority with other processes.
- **High**—The backup or recovery process will run faster, but the performance of other programs will be reduced. Be aware that selecting this option may result in 100% CPU usage by Seagate DiscWizard.

Notifications for recovery operation

Location: **Recovery options** > **Notifications**

Sometimes a backup or recovery procedure can last an hour or longer. Seagate DiscWizard can notify you when it is finished via e-mail. The program can also duplicate messages issued during the operation or send you the full operation log after operation completion.

By default all notifications are disabled.

Free disk space threshold

You may want to be notified when the free space on the recovery storage becomes less than the specified threshold value. If after starting a backup Seagate DiscWizard finds out that the free space in the selected backup location is already less than the specified value, the program will not begin the actual recovery process and will immediately inform you by displaying an appropriate message. The message offers you three choices - to ignore it and proceed with the recovery, to browse for another location for the recovery or to cancel the recovery.

If the free space becomes less than the specified value while the recovery is being run, the program will display the same message and you will have to make the same decisions.

To set the free disk space threshold

- Select the **Show notification message on insufficient free disk space** check box.
- In the **Size** box, type or select a threshold value and select a unit of measure.

Seagate DiscWizard can monitor free space on the following storage devices:

- Local hard drives
- USB cards and drives
- Network shares (SMB)

Note

The message will not be displayed if the **Do not show messages and dialogs while processing (silent mode)** check box is selected in the **Error handling** settings.

Note

This option cannot be enabled for CD/DVD drives.

Email notification

1. Select the **Send e-mail notifications about the operation state** check box.
2. Configure email settings:
   - Enter the email address in the **To** field. You can enter several email addresses in a semicolon-delimited format.
   - Enter the outgoing mail server (SMTP) in the **Server settings** field.
   - Set the port of the outgoing mail server. By default the port is set to 25.
   - If required, select the **SMTP authentication** check box, and then enter the user name and password in the corresponding fields.
3. To check whether your settings are correct, click the **Send test message** button.

If the test message sending fails

1. Click **Show extended settings**.
2. Configure additional email settings:
   - Enter the e-mail sender address in the **From** field. If you are not sure what address to specify, then type any address you like in a standard format, for example *aaa@bbb.com*.
   - Change the message subject in the **Subject** field, if necessary.
   - Select the **Log on to incoming mail server** check box.
   - Enter the incoming mail server (POP3) in the **POP3 server** field.
   - Set the port of the incoming mail server. By default the port is set to 110.
3. Click the **Send test message** button again.

Additional notification settings

- To send a notification concerning process completion, select the **Send notification upon operation's successful completion** check box.
- To send a notification concerning process failure, select the **Send notification upon operation failure** check box.
- To send a notification with operation messages, select the **Send notification when user interaction is required** check box.
- To send a notification with full log of operations, select the **Add full log to the notification** check box.

Disk cloning and migration

Note

Certain features and functionalities may be unavailable in the edition that you use.

This operation copies the entire contents of one disk drive to another disk drive. This may be necessary, for example, when you want to clone your operating system, applications, and data to a new, larger capacity disk. You can do it two ways:

- Use the Clone disk utility.
- Back up your old disk drive, and then recover it to the new one.

See Also: Difference between Backup and Disk Clone

Disk cloning utility

The Clone disk utility allows you to clone your hard disk drive by copying the partitions to another hard disk.

Before you start:

- When you want to clone your system to a higher-capacity hard disk, we recommend that you install the target (new) drive where you plan to use it and the source drive in another location, e.g. in an external USB enclosure. This is especially important for laptops.

  Note

  It is recommended that your old and new hard drives work in the same controller mode (for example, IDE or AHCI). Otherwise, your computer might not start from the new hard drive.

  Note

  If you clone a disk with Windows to an external USB hard drive, you might not be able to boot from it. We recommend cloning to an internal SSD or HDD instead.

- The Clone disk utility does not support multiboot systems.
- On program screens, damaged partitions are marked with a red circle and a white cross inside in the upper left corner. Before you start cloning, you should check such disks for errors and correct the errors by using the appropriate operating system tools.
- We strongly recommend that you create a backup of the entire original disk as a safety precaution. It could be your data saver if something goes wrong with your original hard disk during cloning. For information on how to create such a backup, see Backing up partitions and disks. After creating the backup, make sure that you validate it.

Clone Disk wizard

Before you start, we recommend that you read general information about Disk cloning utility.If you use an UEFI computer and you decided to start the cloning procedure under bootable media, pay

attention to the boot mode of the bootable media in UEFI BIOS. It is recommended that the boot mode matches the type of the system in the backup. If the backup contains a BIOS system, then boot the bootable media in BIOS mode; if the system is UEFI, then ensure that UEFI mode is set.

To clone a disk

1. Start Seagate DiscWizard.
2. On the sidebar, click **Tools**, and then click **Clone disk**.
3. On the **Clone Mode** step, choose a transfer mode.
   - **Automatic**—Recommended in most cases.
   - **Manual**—Manual mode will provide more data transfer flexibility. Manual mode can be useful if you need to change the disk partition layout.

   Note
   If the program finds two disks, one partitioned and another unpartitioned, it will automatically recognize the partitioned disk as the source disk and the unpartitioned disk as the destination disk. In such case, the next steps will be bypassed and you will be taken to the **Summary** screen.

4. On the **Source Disk** step, select the disk that you want to clone.

   Note
   Seagate DiscWizard does not support cloning of dynamic disks.

5. On the **Destination Disk** step, select the destination disk for the cloned data.
   If the selected destination disk contains partitions, you will need to confirm deletion of the partitions. Note that the real data destruction will be performed only when you click **Proceed** on the last step of the wizard.

   Note
   If any disk is unpartitioned, the program will automatically recognize it as the destination and bypass this step.

6. [This step is only available if the source disk has an OS installed]. On the **Disk Usage** step, select how you are going to use the clone.
   - **To replace a disk on this machine**—the system disk data will be copied, and the clone will be bootable. Use this clone for replacing the system disk with a new one on this PC.
   - **To use on another machine**—the system disk data will be copied, and the clone will be bootable. Use this clone to transfer all the data to another PC on a bootable disk.
   - **To use as a data disk**—the disk data will be copied. Use this clone as a non-bootable data drive.
7. [This step is only available in the manual cloning mode]. On the **Move method** step, choose a data move method.
   - **As is**—a new partition will be created for every old one with the same size and type, file system and label. The unused space will become unallocated.

- **Proportional**—the new disk space will be proportionally distributed between cloned partitions.
- **Manual**—you will specify a new size and other parameters yourself.

8. [This step is only available in the manual cloning mode]. On the **Change disk layout** step, you can edit settings of the partitions that will be created on the destination disk. Refer to Manual partitioning for details.

9. [Optional step] On the **What to exclude** step, you can specify files and folders that you do not want to clone. Refer to Excluding items from cloning for details.

10. On the **Finish** step, ensure that the configured settings suit your needs, and then click **Proceed**.

If the cloning operation is stopped for some reason, you will have to configure and start the procedure again. You will not lose your data, because Seagate DiscWizard does not alter the original disk and data stored on it during cloning.

Manual partitioning

The manual transfer method enables you to resize partitions on the new disk. By default, the program resizes them proportionally.

To edit a partition

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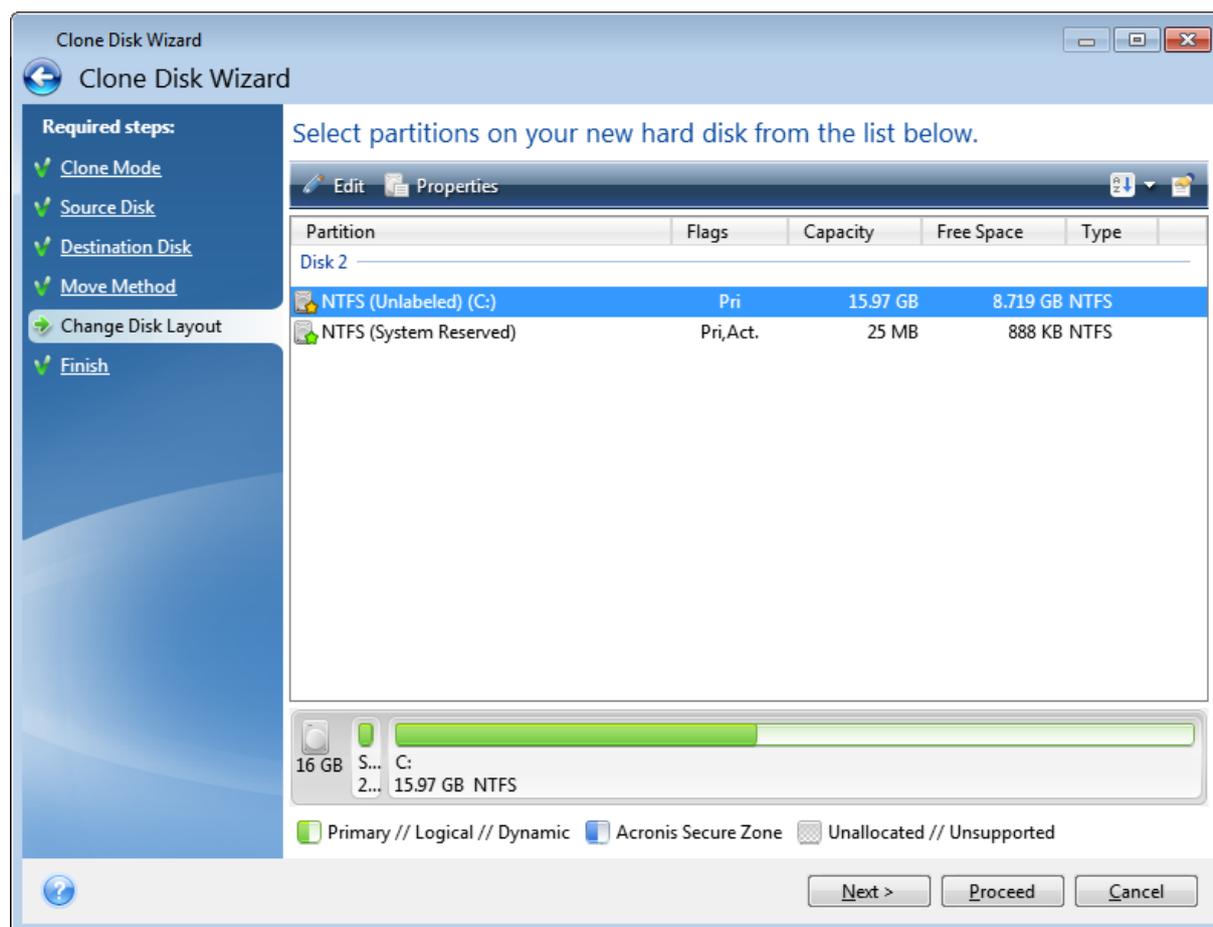
1. Select the partition, and then click **Edit**. This will open the Partition Settings window.
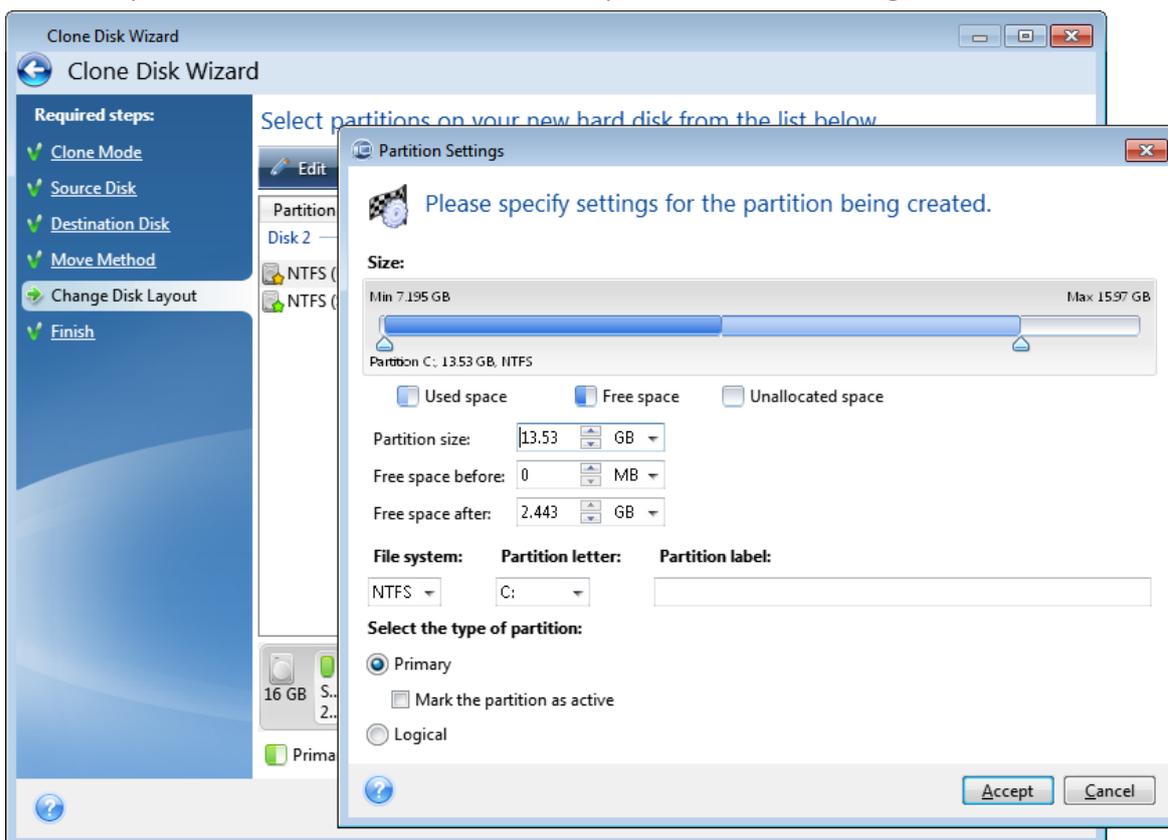
2. Specify the following settings for the partition:
   - Size and position
   - File system
   - Partition type (available only for MBR disks)
   - Partition letter and label

   Refer to Partition settings for details.

3. Click **Accept**.

Warning!

Clicking any previous wizard step on the sidebar in this window will reset all size and location changes that you've selected, so you will have to specify them again.

Excluding items from cloning

If you do not want to clone specific files from a source disk (for example, when your target disk is smaller than the source one), you can opt to exclude them in the **What to exclude** step.

Note

We do not recommend excluding hidden and system files when cloning your system partition.
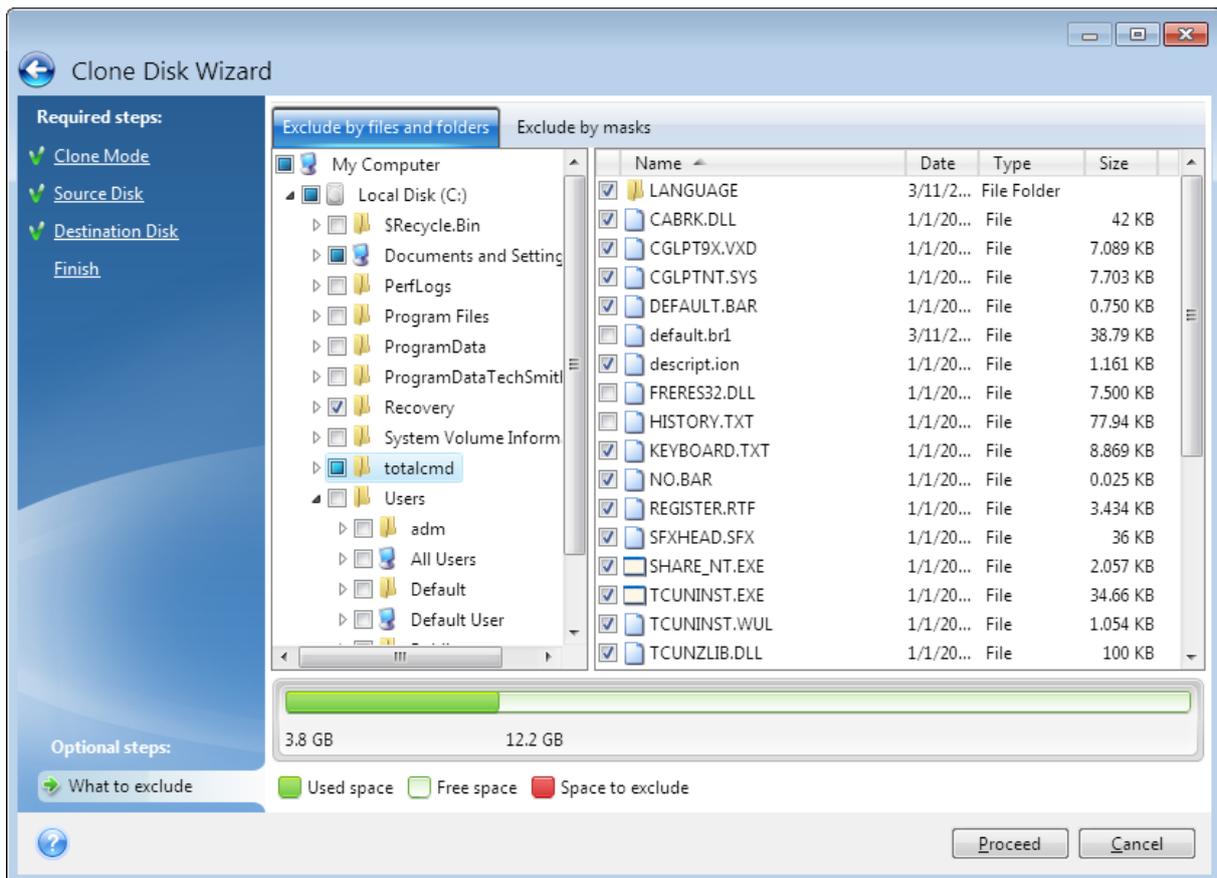
You have two ways to exclude files and folders:

- **Exclude by files and folders** - this tab allows you to select specific files and folders from the folder tree.
- **Exclude by masks** - this tab allows you to exclude a group of files by mask or an individual file by name or path.

  To add an exclusion criterion, click **Add**, type a file name, a path or a mask, and then click **OK**. You can add as many files and masks as you like.

Examples of exclusion criteria:

- You can enter explicit file names:
  - *file.ext* - all such files will be excluded from cloning.
  - *C:\file.ext* - the file.ext file on the C: disk will be excluded.
- You can use wildcard characters (* and ?):
  - **.ext* - all files with a .ext extension will be excluded.
  - *??name.ext* - all files with a .ext extension, having six letters in their names (starting with any two symbols (??) and ending with *name*), will be excluded.
- You can enter path to a folder:
  - *C:\my pictures* - *my pictures* folder on the C: disk will be excluded.

You can edit and remove exclusion criteria using the corresponding buttons on the right pane.

Migrating your system from an HDD to an SSD

First of all, make sure that Seagate DiscWizard detects your new SSD both in Windows and under the Seagate bootable media. If there is a problem, see What to do if Seagate DiscWizard does not recognize your SSD.

SSD size

As SSDs usually have less capacity than HDDs, the occupied space on your old hard disk may exceed the size of your SSD. If this is the case, migration is not possible.

To reduce amount of data on your system disk, try the following:

- Move your data files from the old hard disk to another location, such as another hard disk drive, internal or external.
- Create .zip archives of data files (for example, your documents, pictures, audio files, etc.), and then delete the original files.
- Clean up the hard disk using the Windows Disk Cleanup utility.

Note that for stable operation, Windows needs to have several GB of free space on the system partition.

Which migration method to choose

If your system disk consists of a single partition (not counting the hidden System Reserved partition), you can try to migrate to the SSD using the Clone tool. For more information see Cloning a hard disk.

However, we recommend to use the backup and recovery method in most cases. This method provides more flexibility and control over migration. See Migrating to an SSD using the backup and recovery method.

What to do if Seagate DiscWizard does not recognize your SSD

Sometimes Seagate DiscWizard may not recognize an SSD.

In such a case, check whether the SSD is recognized in BIOS.

If the BIOS of your computer does not show the SSD, verify that the power and data cables are properly connected. You may also try to update the BIOS and SATA drivers. If these suggestions do not help, contact the Support team of your SSD manufacturer.

If the BIOS of your computer does show the SSD

1. Depending on your operating system, type `cmd` in the Search field or in the Run field, and then press **Enter**.
2. At the command line prompt type, enter:

```
diskpart
list disk
```

The screen will show the disks connected to your computer. Find out the disk number for your SSD. Use its size as the reference.

3. To select the disk, run the following command:

```
select disk N
```

Here N is the disk number of your SSD.

4. To remove all information from the SSD and overwrite the MBR with the default one, run the command:

```
clean
exit
exit
```

Start Seagate DiscWizard and check whether it detects the SSD. If it detects the SSD, use the Add new disk tool to create a single partition on the disk occupying the entire disk space. When creating a partition, check that the free space before partition is 1 MB. For more information, see Adding a new hard disk.

To check whether your Seagate bootable media recognizes the SSD

1. Boot from the Seagate bootable media.
2. Select **Tools & Utilities -> Add New Disk** in the main menu and the **Disk selection** screen will show the information about all hard disks in your system. Use this for checking whether the SSD is detected in the recovery environment.
3. If the screen shows your SSD, just click **Cancel**.

If the bootable media does not recognize the SSD and the SSD controller mode is AHCI, you can try to change the mode to IDE (or ATA in some BIOS brands) and see whether this solves the problem.

Warning!
Attention! Do not start Windows after changing the mode; it may result in serious system problems. You must return the mode to AHCI before starting Windows.

If after changing the mode the bootable media detects the SSD, you may use the following procedure for recovery or cloning under bootable media:

1. Shut down the computer.
2. Boot to BIOS, change the mode from AHCI to IDE (or ATA in some BIOS brands).
3. Boot from Seagate bootable media.
4. Recover or clone the disk.
5. Boot to BIOS and change IDE back to AHCI.
6. Start Windows.

What to do if the above suggestions do not help

You can try to create a WinPE-based media. This may provide the necessary drivers. For more information, see Creating Seagate bootable media.

Migrating to SSD using the backup and recovery method

You can use the following procedure for all supported operating systems. First, let's consider a simple case: your system disk consists of a single partition. Note that for Windows 7 and later, the system disk may have a hidden System Reserved partition.

We recommend that you migrate your system to an empty SSD that does not contain partitions (the disk space is unallocated). Note that if your SSD is new and has never been used before, it does not contain partitions.

To migrate your system to an SSD

1. Start Seagate DiscWizard.
2. Create Seagate bootable media, if you do not have it yet. To do this, in the **Tools** section, click **Create bootable media** and follow the instructions on the screen.
3. Back up your entire system drive (in the disk backup mode) to a hard disk other than your system hard disk and the SSD.
4. Switch off the computer and remove your system hard disk.
5. Mount the SSD into the slot where the hard disk was.

   > **Note**
   > For some SSD brands you may need to insert the SSD into a PCI Express slot.

6. Boot from your Seagate bootable media.
7. Validate the backup to make sure that it can be used for recovery. To do this, click **Recovery** on the left pane and select the backup. Right-click, select **Validate Archive** in the shortcut menu and then click **Proceed**.
8. After the validation finishes, right-click the backup and select **Recover** in the shortcut menu.
9. Choose **Recover whole disks and partitions** at the Recovery method step and then click **Next**.
10. Select the system disk at the What to recover step.
11. Click **New location** and then select the SSD as the new location for your system disk, then click **Accept**.
12. At the next step click **Proceed** to start recovery.
13. After the recovery is complete, exit the standalone version of Seagate DiscWizard.
14. Try to boot from the SSD and then make sure that Windows and applications work correctly.

If your system hard disk also contains a hidden recovery or diagnostic partition, as is quite often the case with notebooks, the procedure will differ. You will usually need to resize the partitions manually during recovery to the SSD. For instructions see Recovering a disk with a hidden partition.

Tools

> **Note**
> Certain features and functionalities may be unavailable in the edition that you use.

Protection tools

- "Seagate Media Builder" (p. 61)

Disk cloning

- "Disk cloning utility" (p. 53)

Image mounting

- "Mounting a backup image" (p. 82)
- "Unmounting an image" (p. 84)

Seagate Media Builder

Seagate Media Builder allows you to make a USB flash drive, external drive, or a blank CD/DVD bootable. In case Windows cannot start, use the bootable media to run a standalone version of Seagate DiscWizard and recover your computer.

You can create several types of bootable media:

- **Seagate bootable media**

  This type is recommended for most users.
- **WinPE-based media with the Seagate plug-in**

  Running Seagate DiscWizard in the preinstallation environment may provide better compatibility with your computer's hardware because the preinstallation environment uses Windows drivers.

  We recommend that you create this type of media, when Seagate bootable media did not help you boot your computer.

  To use this option, you need one of the following components to be installed:

  - Windows Automated Installation Kit (AIK).

    This component is required for creating WinPE 3.0.
  - Windows Assessment and Deployment Kit (ADK).

    This component is required for creating WinPE 4.0, WinPE 5.0, and WinPE 10.0.
- **WinRE-based media with the Seagate plug-in**

  This type of bootable media is similar to WinPE-based media, but it has an important advantage—you do not need to download WADK or WAIK from the Microsoft website. Windows Recovery Environment is already included in Windows Vista and later versions of Windows. Seagate DiscWizard uses these files from your system to create WinRE-based media. Similar to WinPE-based media, you can add your drivers for better compatibility with your hardware. However, WinRE-based media can be used only on the computer where it was created or on a computer with the same operating system.

Notes

- We recommend that you create a new bootable media after each Seagate DiscWizard update.
- If you use non-optical media, the media must have a FAT16 or FAT32 file system.
- Seagate Media Builder supports only x64 WinPE 3.0, WinPE 4.0, WinPE 5.0, and WinPE 10.0.
- Your computer must have:
  - For WinPE 3.0—at least 256 MB RAM
  - For WinPE 4.0—at least 512 MB RAM
  - For WinPE 5.0—at least 1 GB RAM
  - For WinPE 10.0—at least 512 MB RAM
- If Seagate Media Builder does not recognize your USB flash drive, you can try using the procedure described in the Acronis Knowledge Base article at https://kb.acronis.com/content/1526.
- When booting from the bootable media, you cannot perform backups to disks or partitions with Ext2/Ext3/Ext4, ReiserFS, and Linux SWAP file systems.
- When booting from the bootable media and using a standalone version of Seagate DiscWizard, you cannot recover files and folders encrypted with the encryption available in Windows XP and later operating systems. However, backups encrypted using the Seagate DiscWizard encryption feature can be recovered.

Creating Seagate bootable media

1. Plug in a USB flash drive, or an external drive (HDD/SSD), or insert a blank CD or DVD.
2. Start Seagate DiscWizard.
3. In the **Tools** section, click **Bootable Rescue Media Builder**.
4. Choose a creation method.
   - **Simple**—This is the easiest option. Seagate DiscWizard will choose the optimal media type for your computer. If you use Windows 7 or a later version, WinRE-based media will be created.
   - **Advanced**—This option allows you to choose a media type. This means you can create the bootable media not only for your computer, but for a computer running a different Windows version. Refer to Seagate Media Builder for details.

     If you select a Linux-based media, choose Seagate DiscWizard components to be placed on the media. Ensure that the components that you select are compatible with the target computer architecture.

     If you select a WinRE-based or WinPE-based media, then:
     - Select an architecture type of the media—32-bit or 64-bit. Note that 32-bit bootable media can work only on 32-bit computers, and 64-bit media is compatible with both 32-bit and 64-bit computers.
     - Select a toolkit that you want to be used for creating the bootable media. If you choose WAIK or WADK and you do not have the selected kit installed on your computer, then you first need to download it from the Microsoft website, and then install the required components—Deployment Tools and Windows Preinstallation Environment (Windows PE).

If you already have WinPE files on your computer and they are stored in a non-default folder, then just specify their location and the Seagate plug-in will be added to the existing WinPE image.

- For better compatibility with your hardware, you can select drivers to be added to the media.

5. Select a destination for the media:

- **CD**
- **DVD**
- **External drive**
- **USB flash drive**

  If your drive has an unsupported file system, Seagate DiscWizard will suggest formatting it to FAT file system.

  Warning!
  Formatting permanently erases all data on a disk.

- **ISO image file**

  You will need to specify the .iso file name and the destination folder.

  When the .iso file is created, you can burn it onto a CD or DVD. For example, in Windows 7 and later, you can do this by using a built-in burning tool. In File Explorer, double-click the created ISO image file, and then click **Burn**.

- **WIM image file** (available only for WinPE-based media)

  Seagate DiscWizard adds the Seagate plug-in to the .wim file from Windows AIK or Windows ADK. You will need to specify a name for the new .wim file and the destination folder.

  To create a bootable media by using a .wim file, you first need to convert it to an .iso file. Refer to Creating an .iso file from a .wim file for details.

  Note
  If Seagate Media Builder detects a previously created Survival Kit on this drive, it will attempt to overwrite and update only the hidden partition with the bootable media without formatting the whole drive.

  ---

6. Click **Proceed**.

Seagate bootable media startup parameters

Here, you can set Seagate bootable media startup parameters in order to configure the media boot options for better compatibility with different hardware. Several options are available (nousb, nomouse, noapic, etc.). These parameters are provided for advanced users. If you encounter any hardware compatibility problems while testing boot from the media, it may be best to contact the Support team.

To add startup parameters

1. Enter a command into the **Parameters** field. You can type several commands, separated by spaces.
2. Click **Next** to continue.

Additional parameters that can be applied prior to booting Linux kernel

Description

The following parameters can be used to load Linux kernel in a special mode:

- **acpi=off**

Disables ACPI and may help with a particular hardware configuration.

- **noapic**

Disables APIC (Advanced Programmable Interrupt Controller) and may help with a particular hardware configuration.

- **nousb**

Disables loading of USB modules.

- **nousb2**

Disables USB 2.0 support. USB 1.1 devices still work with this option. This option allows using some USB drives in USB 1.1 mode, if they do not work in USB 2.0 mode.

- **quiet**

This parameter is enabled by default and the startup messages are not displayed. Deleting it will result in the startup messages being displayed as the Linux kernel is loaded and the command shell being offered prior to running the Seagate DiscWizard program.

- **nodma**

Disables DMA for all IDE disk drives. Prevents kernel from freezing on some hardware.

- **nofw**

Disables FireWire (IEEE1394) support.

- **nopcmcia**

Disables PCMCIA hardware detection.

- **nomouse**

Disables mouse support.

- **[module name]=off**

Disables the module (e.g. **sata_sis=off**).

- **pci=bios**

Forces to use PCI BIOS, and not to access the hardware device directly. For instance, this parameter may be used if the machine has a non-standard PCI host bridge.

- **pci=nobios**

Disallows use of PCI BIOS; only direct hardware access methods are allowed. For instance, this parameter may be used if you experience crashes upon boot-up, probably caused by the BIOS.

- **pci=biosirq**

Uses PCI BIOS calls to get the interrupt routing table. These calls are known to be buggy on several machines and they hang the machine when used, but on other computers it is the only way to get the interrupt routing table. Try this option, if the kernel is unable to allocate IRQs or discover secondary PCI buses on your motherboard.

- **vga=ask**

Gets the list of the video modes available for your video card and allows selecting a video mode most suitable for the video card and monitor. Try this option, if the automatically selected video mode is unsuitable for your hardware.

Adding drivers to an existing .wim image

Sometimes a basic WinPE disk with Seagate plug-in does not have drivers for your specific hardware, for example, for storage device controllers. The easiest way to add them is to select the Advanced mode in Seagate Media Builder and specify the drivers to add. You can add the drivers manually to an existing .wim file before creating an ISO file with Seagate plug-in.

Warning!
Attention! You can only add drivers which have the .inf filename extension.

The following procedure is based on an MSDN article that can be found at https://technet.microsoft.com/.

To create a custom Windows PE image

1. If you don't have the .wim file with the Seagate plug-in, start Seagate Media Builder and create it by choosing **WIM file** as a destination for the WinPE-based media. Refer to Creating Seagate bootable media for details.
2. Depending on your version of Windows AIK or Windows ADK, do one of the following:
   - In the **Start** menu, click **Microsoft Windows AIK**, right-click **Windows PE Tools Command Prompt**, and then select **Run as administrator**.
   - In the **Start** menu, click **Microsoft Windows AIK**, right-click **Deployment Tools Command Prompt**, and then select **Run as administrator**.
   - In the **Start** menu, click **Windows Kits**, click **Windows ADK**, right-click **Deployment and Imaging Tools Environment**, and then select **Run as administrator**.
3. Run the Copype.cmd script to create a folder with Windows PE files. For example, from a command prompt, type:

```
copype amd64 C:\winpe_x64
```

4. Copy your .wim file, for example, to folder C:\winpe_x64\. By default, this file is named SeagateBootablePEMedia.wim.

5. Mount the base image to a local directory by using the DISM tool. To do this, type:

```
Dism /Mount-Wim /WimFile:C:\winpe_x64\AcronisBootablePEMedia.wim /index:1
/MountDir:C:\winpe_x64\mount
```

```
Dism /Mount-Wim /WimFile:C:\winpe_x64\SeagateBootablePEMedia.wim /index:1
/MountDir:C:\winpe_x64\mount
```

6. Add your hardware driver, by using the DISM command with the Add-Driver option. For example, to add the Mydriver.inf driver located in folder C:\drivers\, type:

```
Dism /image:C:\winpe_x64\mount /Add-Driver /driver:C:\drivers\mydriver.inf
```

7. Repeat the previous step for each driver that you need to add.

8. Commit the changes by using the DISM command:

```
Dism /Unmount-Wim /MountDir:C:\winpe_x64\mount /Commit
```

9. Create a PE image (.iso file) from the resulting .wim file. Refer to Creating an .iso file from a .wim file for details.

Creating an .iso file from a .wim file

To create a bootable media by using a .wim file, you need to convert it to an .iso file first.

To create a PE image (.iso file) from the resulting .wim file

1. Depending on your version of Windows AIK or Windows ADK, do one of the following:
   - In the **Start** menu, click **Microsoft Windows AIK**, right-click **Windows PE Tools Command Prompt**, and then select **Run as administrator**.
   - In the **Start** menu, click **Microsoft Windows AIK**, right-click **Deployment Tools Command Prompt**, and then select **Run as administrator**.
   - In the **Start** menu, click **Windows Kits**, click **Windows ADK**, right-click **Deployment and Imaging Tools Environment**, and then select **Run as administrator**.

2. Run the Copype.cmd script to create a folder with Windows PE files. For example, from a command prompt, type:

```
copype amd64 C:\winpe_x64
```

3. Replace the default boot.wim file in your Windows PE folder with the newly created .wim file (for example, SeagateBootablePEMedia.wim). If the SeagateBootablePEMedia.wim file is located on c:\, then:

For WinPE 3.0, type:

```
copy c:\SeagateBootablePEMedia.wim c:\winpe_x64\ISO\sources\boot.wim
```

For WinPE 4.0, WinPE 5.0 or WinPE 10.0, type:

```
copy "c:\SeagateBootablePEMedia.wim" c:\winpe_x64\media\sources\boot.wim
```

4. Use the **Oscdimg** tool. To create an .iso file, type:

```
oscdimg -n –bc:\winpe_x64\etfsboot.com c:\winpe_x64\ISO c:\winpe_x64\winpe_x64.iso
```

Alternatively, to make the media bootable on both BIOS and UEFI computers, type:

```
oscdimg -m -o -u2 -udfver102 -bootdata:2#p0,e,bc:\winpe_
x64\fwfiles\etfsboot.com#pEF,e,bc:\winpe_x64\fwfiles\efisys.bin c:\winpe_x64\media
c:\winpe_x64\winpe_x64.iso
```

5. Burn the .iso file to a CD by using a third-party tool, and you will have a bootable Windows PE disc with Seagate DiscWizard.

Making sure that your bootable media can be used when needed

To maximize the chances of your computer's recovery, you must test that your computer can boot from the bootable media. In addition, you must check that the bootable media recognizes all of your computer's devices, such as the hard drives, mouse, keyboard, and network adapter.

To test the bootable media

Note
If you use external drives for storing your backups, you must attach the drives before booting from the bootable CD. Otherwise, the program might not detect them.

---

1. Configure your computer to enable booting from the bootable media. Then, make your bootable media device (CD-ROM/DVD-ROM or USB drive) the first boot device. Refer to Arranging boot order in BIOS for details.
2. If you have a bootable CD, press any key to start booting from the CD, when you see the "Press any key to boot from CD" prompt. If you do not press a key within five seconds, you will need to restart the computer.
3. After the boot menu appears, choose **Seagate DiscWizard**.

Note
If your wireless mouse does not work, try replacing it with a wired one. The same recommendation applies to the keyboard.

Note

If you do not have a spare mouse or keyboard, contact the Seagate Support team. They will build a custom bootable CD that will have drivers for the models of your mouse and keyboard. Be aware that finding the appropriate drivers and making the custom bootable CD may take some time. Furthermore, this may be impossible for some models.

4. When the program starts, we recommend that you try recovering some files from your backup. A test recovery allows you to make sure that your bootable CD can be used for recovery. In addition, you can make sure that the program detects all of the hard drives you have in your system.

Note

If you have a spare hard drive, we strongly recommend that you try a test recovery of your system partition to this hard drive.

To test recovery, as well as check the drives and network adapter

1. If you have file backups, start Recovery Wizard by clicking **Recovery** -> **File Recovery** on the toolbar.

Note

If you have only disk and partition backup, Recovery Wizard also starts and the recovery procedure is similar. In such a case, you need to select **Recover chosen files and folders** at the **Recovery Method** step.

2. Select a backup at the **Archive location** step, and then click **Next**.
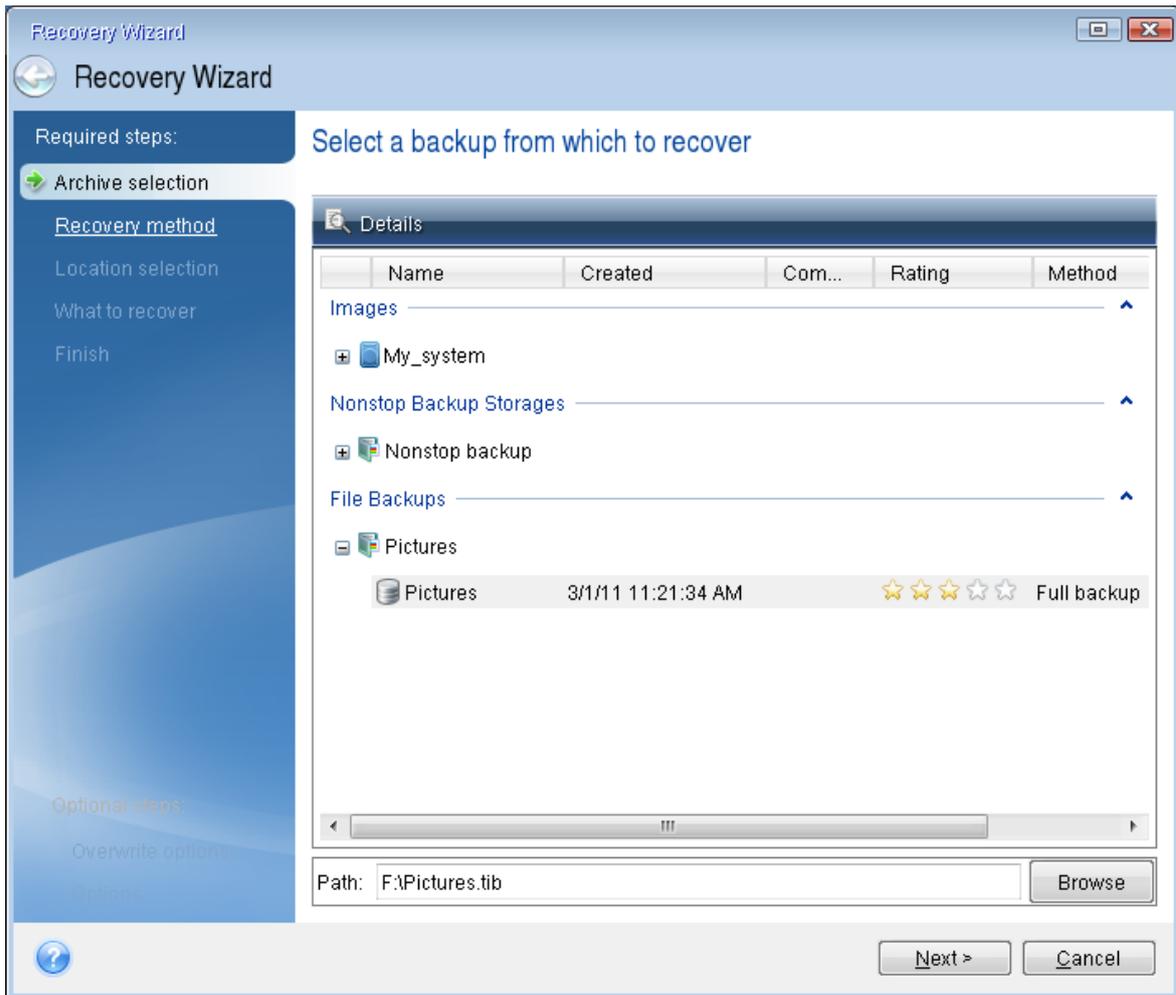
3. When recovering files with the bootable CD, you are able to select only a new location for the files to be recovered. Therefore, just click **Next** at the **Location selection** step.

4. After the **Destination** window opens, check that all of your drives are shown under **My Computer**.

Note
If you store your backups on the network, verify that you can access the network.

Note
If no computers are visible on the network, but the **Computers Near Me** icon is found under **My Computer**, specify the network settings manually. To do this, open the window available at **Tools & Utilities** > **Options** > **Network adapters**.

Note
If the **Computers Near Me** icon is not available under **My Computer**, there may be problems either with your network card or with the card driver provided with Seagate DiscWizard.

---
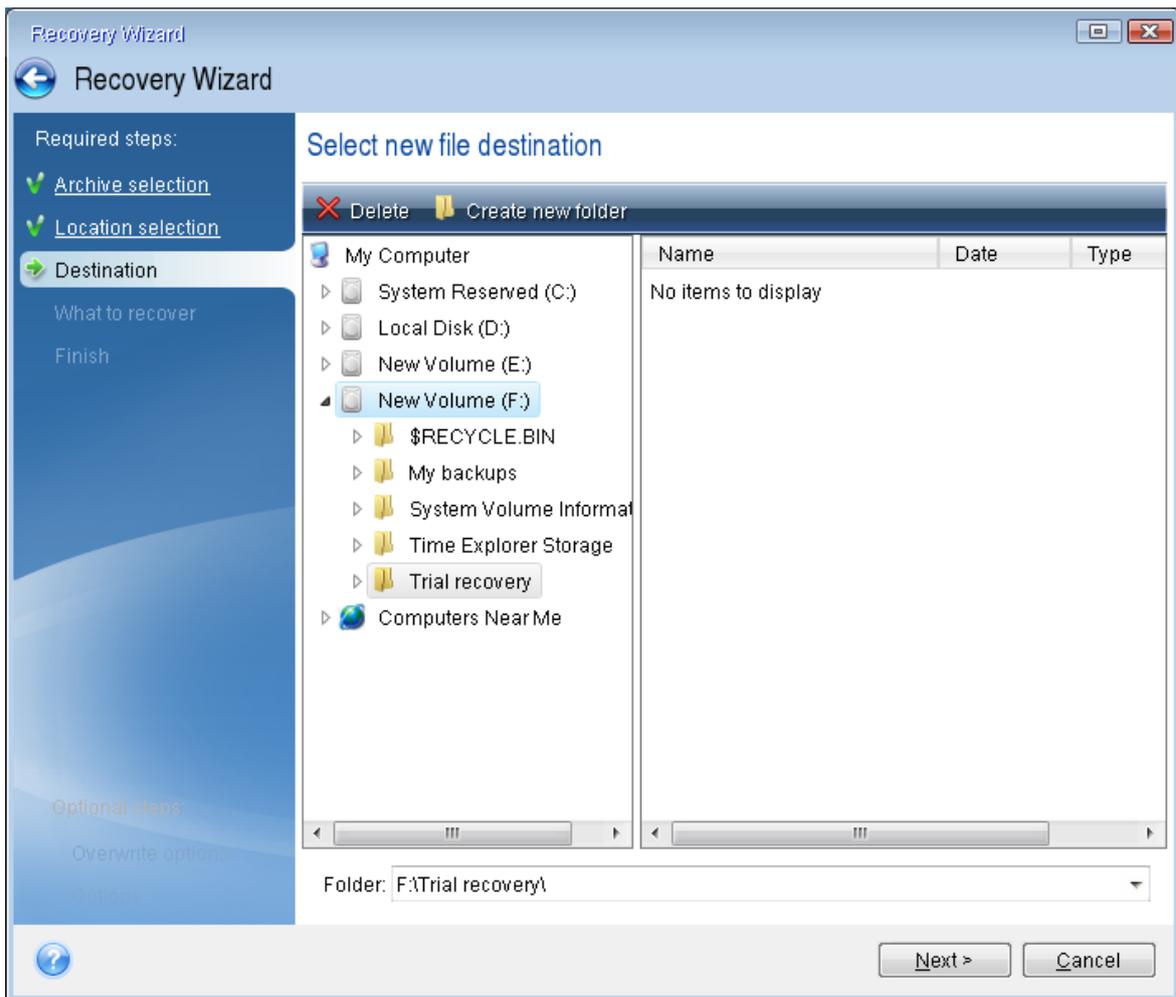
5. Select the destination for the files, and then click **Next**.
6. Select several files for recovery by selecting their check boxes and then click **Next**.
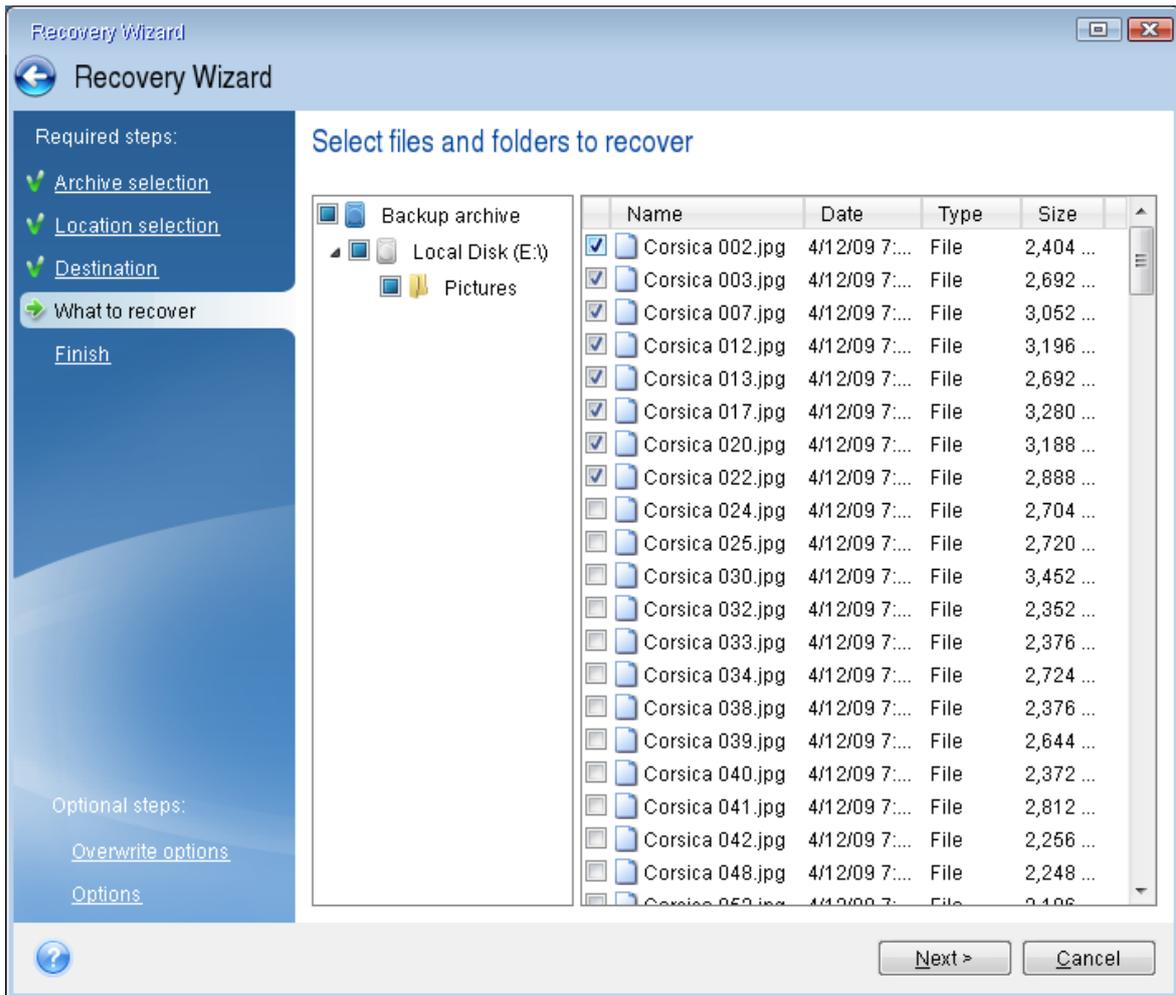
7. Click **Proceed** on the Summary window to start recovery.

8. After the recovery finishes, exit the standalone Seagate DiscWizard.

Now, you can be reasonably sure that your bootable CD will help you when you need it.

Selecting video mode when booting from the bootable media

When booting from the bootable media the optimal video mode is selected automatically depending on the specifications of your video card and monitor. However, sometimes the program can select the wrong video mode, which is unsuitable for your hardware. In such case you can select a suitable video mode as follows:

1. Start booting from the bootable media. When the boot menu appears, hover the mouse over **Seagate DiscWizard** item and press the F11 key.

2. When the command line appears, type **vga=ask** and click **OK**.

3. Select **Seagate DiscWizard** in the boot menu to continue booting from the bootable media. To see the available video modes, press the Enter key when the appropriate message appears.

4. Choose a video mode you think best suitable for your monitor and type its number in the command line. For instance, typing 338 selects video mode 1600x1200x16 (see the below figure).

```
333 1024x768x16  VESA    334 1152x864x16  VESA    335 1280x960x16  VESA
336 1280x1024x16 VESA    337 1400x1050x16 VESA    338 1600x1200x16 VESA
339 1792x1344x16 VESA    33A 1856x1392x16 VESA    33B 1920x1440x16 VESA
33C  320x200x32  VESA    33D  320x400x32  VESA    33E  640x400x32  VESA
33F  640x480x32  VESA    340  800x600x32  VESA    341 1024x768x32  VESA
342 1152x864x32  VESA    343 1280x960x32  VESA    344 1280x1024x32 VESA
345 1400x1050x32 VESA    346 1600x1200x32 VESA    347 1792x1344x32 VESA
348 1856x1392x32 VESA    349 1920x1440x32 VESA    34A 1366x768x8   VESA
34B 1366x768x16  VESA    34C 1366x768x32  VESA    34D 1680x1050x8  VESA
34E 1680x1050x16 VESA    34F 1680x1050x32 VESA    350 1920x1200x8  VESA
351 1920x1200x16 VESA    352 1920x1200x32 VESA    353 2048x1536x8  VESA
354 2048x1536x16 VESA    355 2048x1536x32 VESA    356  320x240x8   VESA
357  320x240x16  VESA    358  320x240x32  VESA    359  400x300x8   VESA
35A  400x300x16  VESA    35B  400x300x32  VESA    35C  512x384x8   VESA
35D  512x384x16  VESA    35E  512x384x32  VESA    35F  854x480x8   VESA
360  854x480x16  VESA    361  854x480x32  VESA    362 1280x720x8   VESA
363 1280x720x16  VESA    364 1280x720x32  VESA    365 1920x1080x8  VESA
366 1920x1080x16 VESA    367 1920x1080x32 VESA    368 1280x800x8   VESA
369 1280x800x16  VESA    36A 1280x800x32  VESA    36B 1440x900x8   VESA
36C 1440x900x16  VESA    36D 1440x900x32  VESA    36E  720x480x8   VESA
36F  720x480x16  VESA    370  720x480x32  VESA    371  720x576x8   VESA
372  720x576x16  VESA    373  720x576x32  VESA    374  800x480x8   VESA
375  800x480x16  VESA    376  800x480x32  VESA    377 1280x768x8   VESA
378 1280x768x16  VESA    379 1280x768x32  VESA
Enter a video mode or "scan" to scan for additional modes: _
```

5. Wait until Seagate DiscWizard starts and make sure that the quality of the Welcome screen display on your monitor suits you.

To test another video mode, close Seagate DiscWizard and repeat the above procedure.

After you find the optimal video mode for your hardware, you can create a new bootable media that will automatically select that video mode.

To do this, start Seagate Media Builder, select the required media components, and type the mode number with the "0x" prefix (0x338 in our instance) in the command line at the **Bootable media startup parameters** step, then create the media as usual.

Adding a new hard disk

Note
Certain features and functionalities may be unavailable in the edition that you use.

If you do not have enough space for your data, you can either replace the old disk with a new higher-capacity one, or add a new disk only to store data, leaving the system on the old disk.

To add a new hard disk

1. Shut down your computer, and then install the new disk.
2. Turn on your computer.
3. Click the **Start** button > **Acronis** (product folder) > **Add New Disk**.
4. Follow the wizard steps.

5. On the **Finish** step, ensure that the configured disk layout suits your needs, and then click **Proceed**.

Selecting a hard disk

Select the disk that you have added to the computer. If you have added several disks, select one of them and click **Next** to continue. You can add the other disks later by restarting the Add New Disk Wizard.

Note

If there are any partitions on the new disk, Seagate DiscWizard will warn you that these partitions will be deleted.
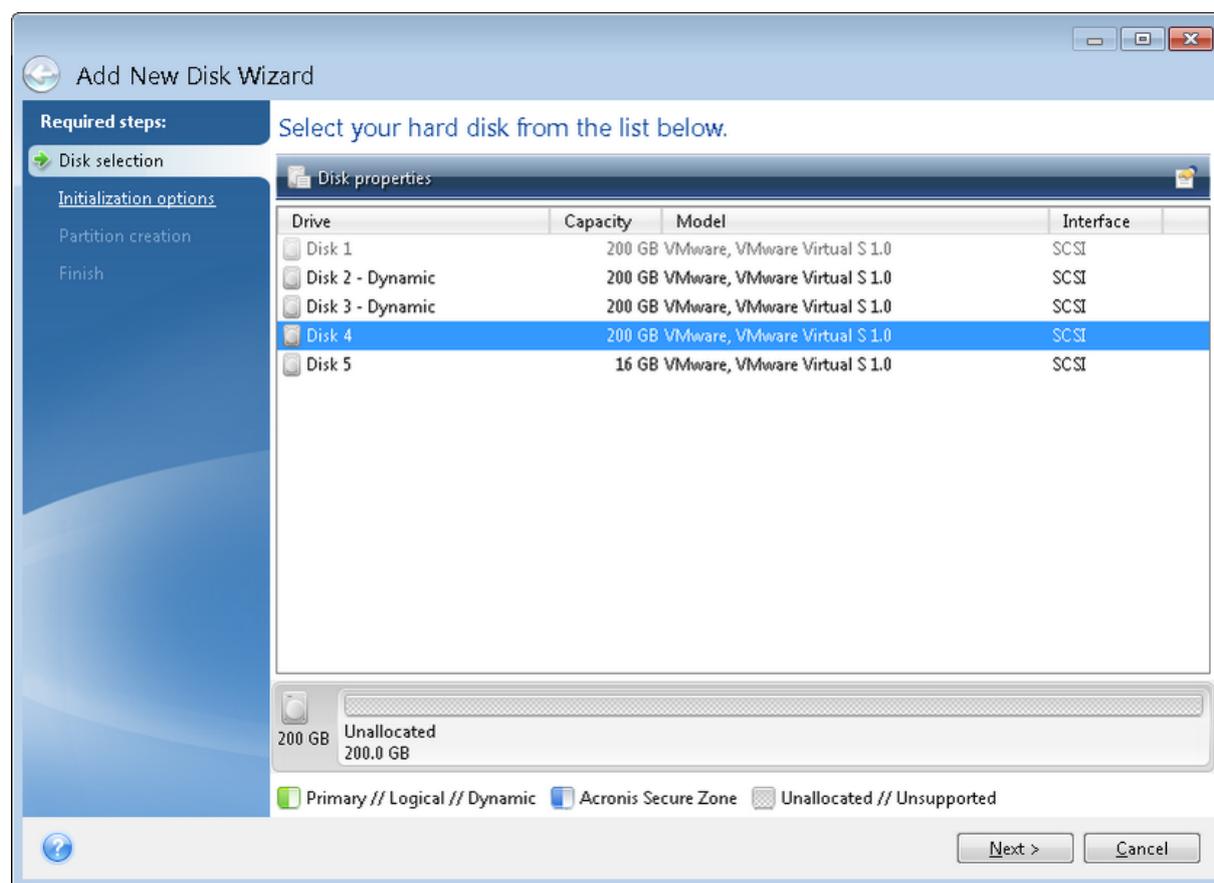
Selecting initialization method

Seagate DiscWizard supports both MBR and GPT partitioning. GUID Partition Table (GPT) is a new hard disk partitioning method providing advantages over the old MBR partitioning method. If your operating system supports GPT disks, you can select the new disk to be initialized as a GPT disk.
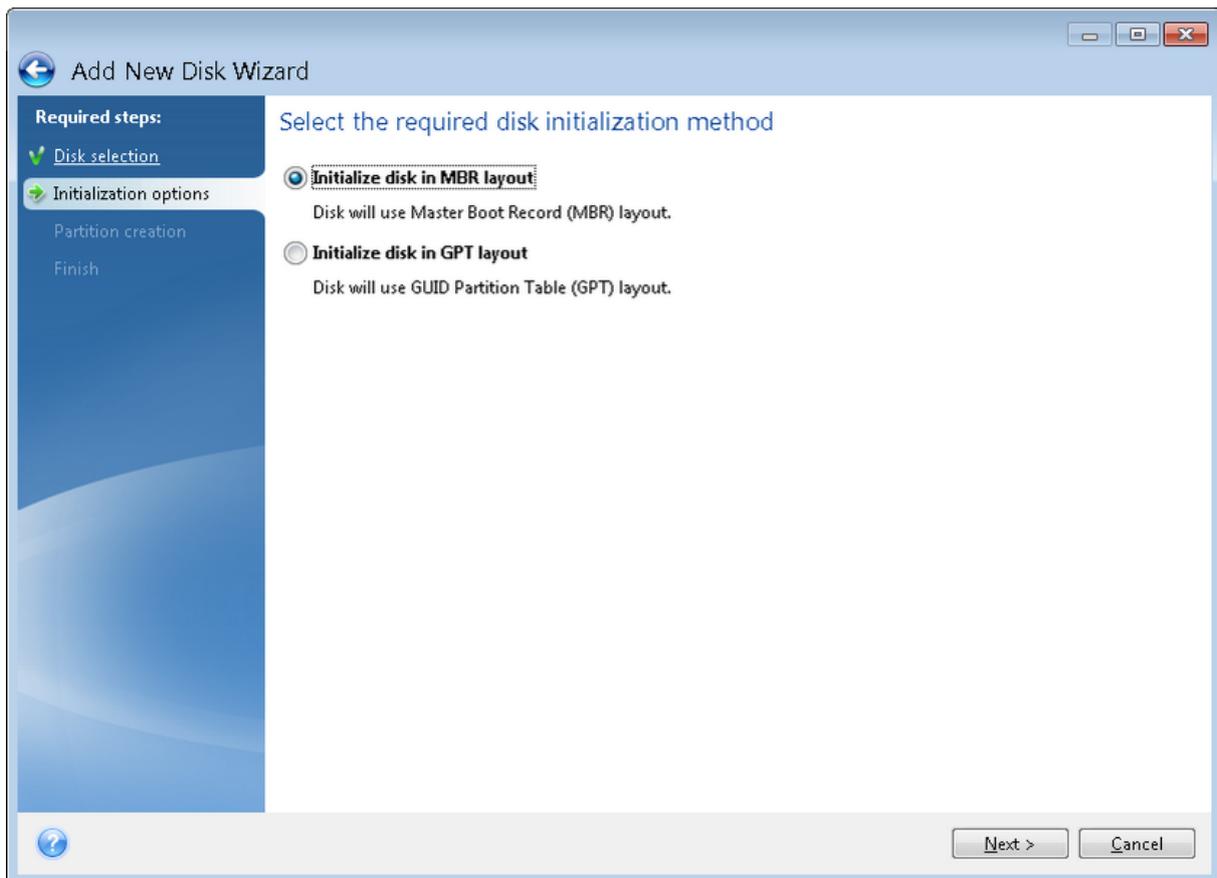
- To add a GPT disk, click **Initialize disk in GPT layout**.
- To add an MBR disk, click **Initialize disk in MBR layout**.

After selecting the required initialization method click **Next**.

Creating new partitions

To use the space on a hard disk, it must be partitioned. Partitioning is the process of dividing the hard disk's space into logical divisions which are called partitions. Each partition may function as a separate disk with an assigned drive letter, its own file system, etc.

To create a new partition

1. On the **Partition creation** step of the wizard, select the unallocated space, and then click **Create new partition**.
2. Specify the following settings for the partition being created:
   - Size and position
   - File system
   - Partition type (available only for MBR disks)
   - Partition letter and label

   Refer to Partition settings for details.
3. Click **Accept**.
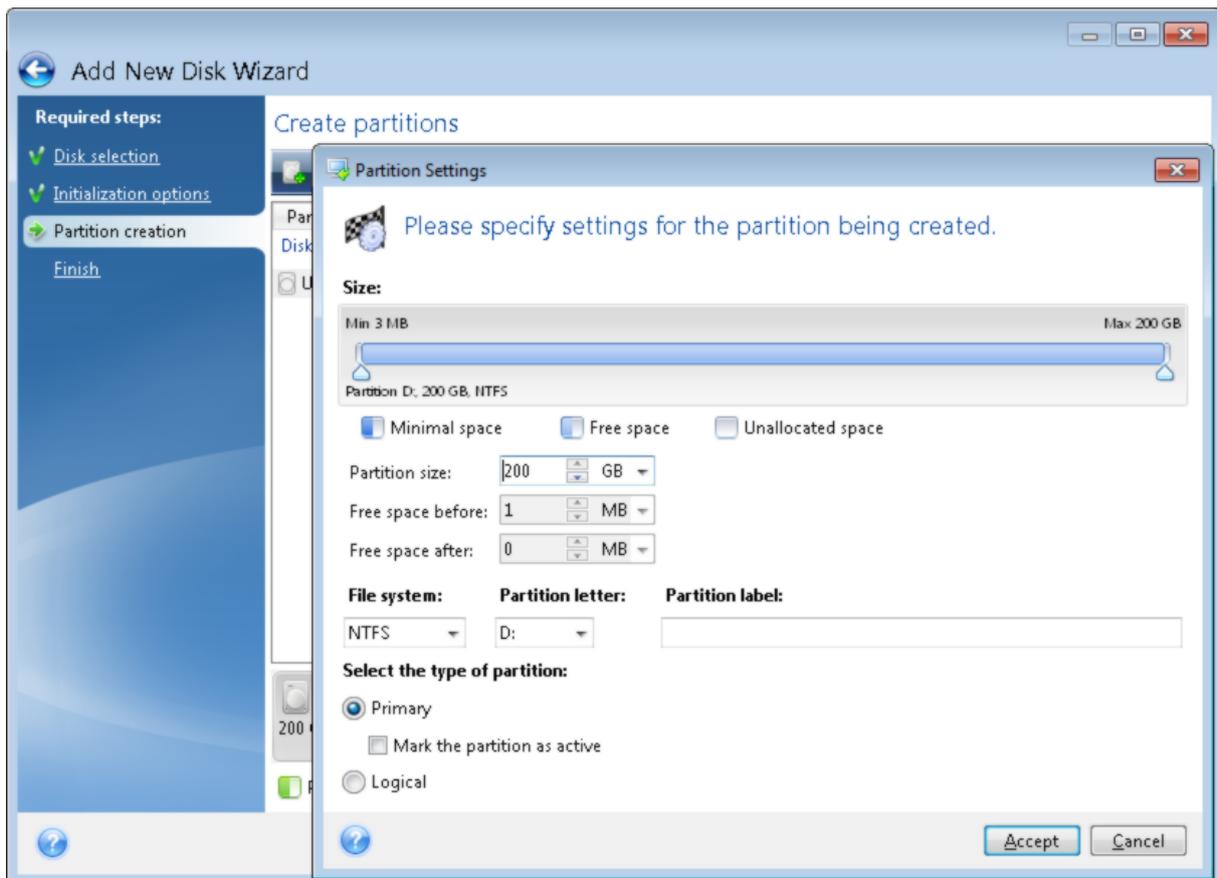
Partition settings

Size

To resize the partition, do one of the following

- Point to the partition border. When the pointer becomes a double-headed arrow, drag the pointer to enlarge or reduce the partition size.
- Type the desired partition size in the **Partition Size** field.

To relocate the partition, perform one of the following

- Drag the partition to a new position.
- Type the desired size in either the **Free space before** or **Free space after** field.

Note

When you create partitions, the program may reserve some unallocated space for system needs in front of the created partitions.

File System

You can either leave the partition unformatted, or choose between the following file system types:

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- **NTFS** is a native file system for Windows NT, Windows 2000, Windows XP, and later operating systems. Choose it if you use these operating systems. Note, that Windows 95/98/Me and DOS cannot access NTFS partitions.
- **FAT 32** is an improved 32-bit version of the FAT file system that supports volumes up to 2 TB.
- **FAT 16** is a DOS native file system. Most operating systems recognize it. However, if your disk drive is more than 4 GB, it is not possible to format it in FAT16.
- **Ext2** is a Linux native file system. It is fast enough, but it is not a journaling file system.
- **Ext3** – officially introduced with Red hat Linux version 7.2, Ext3 is a Linux journaling file system. It is forwards and backwards compatible with Linux Ext2. It has multiple journaling modes, as well as broad, cross platform compatibility in both 32-bit and 64-bit architectures.
- **Ext4** is a new Linux file system. It has improvements in comparison to ext3. It is fully backward compatible with ext2 and ext 3. However, ext3 has only partial forward compatibility with ext4.
- **ReiserFS** is a journaling file system for Linux. Generally it is more reliable and faster than Ext2. Choose it for your Linux data partition.
- **Linux Swap** is a swap partition for Linux. Choose it if you want to add more swap space using Linux.

Partition letter

Select a letter to be assigned to the partition. If you select **Auto**, the program assigns the first unused drive letter in alphabetical order.

Partition label

Partition label is a name, assigned to a partition so that you can easily recognize it. For example, a partition with an operating system could be called System, a data partition — Data, etc. Partition label is an optional attribute.

Partition type (these settings are available only for MBR disks)

You can define the new partition as primary or logical.

- **Primary** - choose this parameter if you are planning to boot from this partition. Otherwise, it is better to create a new partition as a logical drive. You can have only four primary partitions per drive, or three primary partitions and one extended partition.

   Note
   If you have several primary partitions, only one will be active at a time, the other primary partitions will be hidden and won't be seen by the OS.

   ◦ **Mark the partition as active** - select this check box if you are planning to install an operating system on this partition.
- **Logical** - choose this parameter if you don't intend to install and start an operating system from the partition. A logical drive is part of a physical disk drive that has been partitioned and allocated as an independent unit, but functions as a separate drive.

Security and Privacy Tools

Seagate DriveCleanser

Note

Certain features and functionalities may be unavailable in the edition that you use.

Seagate DriveCleanser allows you to permanently destroy all data on selected hard disks and partitions. For the destruction, you can use one of the preset algorithms or create your own. Refer to Algorithm selection for details.

Why do I need it?

When you format your old hard drive before throwing it away, the information is not destroyed permanently and it can still be retrieved. This is a way that your personal information can end up in the wrong hands. To prevent this, we recommend that you use Seagate DriveCleanser when you:

- Replace your old hard drive with a new one and do not plan to use the old drive any more.
- Give your old hard drive to your relative or friend.
- Sell your old hard drive.

How to use Seagate DriveCleanser

To permanently destroy data on your disk

1. Click the **Start** button > **Seagate** (product folder) > **DiscWizard** > **Tools and utilities** > **DriveCleanser**.
   The Seagate DriveCleanser wizard opens.
2. On the **Source selection** step, select the disks and partitions that you want to wipe. Refer to Source selection for details.
3. On the **Algorithm selection** step, select an algorithm that you want to use for the data destruction. Refer to Algorithm selection for details.
4. [optional step] You can create your own algorithm. Refer to Creating custom algorithm for details.
5. [optional step] On the **Post-wiping actions** step, choose what to do with the partitions and disk when the data destruction is complete. Refer to Post-wiping actions for details.
6. On the **Finish** step, ensure that the configured settings are correct. To start the process, select the **Wipe the selected partitions irreversibly** check box, and then click **Proceed**.

Warning!

Be aware that, depending on the total size of selected partitions and the selected data destruction algorithm, the data destruction may take many hours.

Source selection

On the **Source selection** step, select partitions and disks where you want to destroy data:

- To select partitions, click the corresponding rectangles. The red mark () indicates that the partition is selected.

- To select an entire hard disk, click the disk icon ().
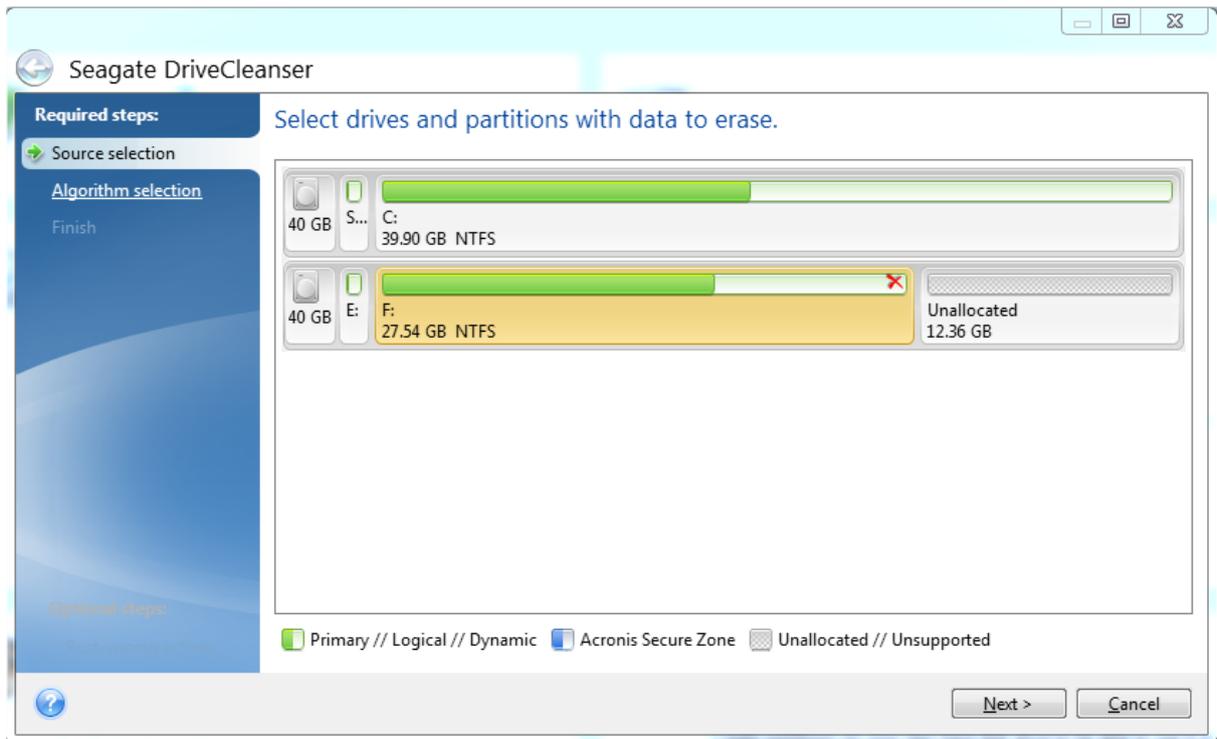
Note
Seagate DriveCleanser cannot wipe partitions on dynamic and GPT disks, so they will not be shown.

Algorithm selection

On the **Algorithm selection** step, perform one of the following:

- To use one of the preset algorithms, select the desired algorithm. Refer to Hard Disk Wiping Methods for details.
- [For advanced users only] To create a custom algorithm, select **Custom**. Then continue creating on the **Algorithm definition** step. Afterwards, you will be able to save the created algorithm to a file with *.alg extension.
- To use a previously saved custom algorithm, select **Load from file** and select the file containing your algorithm.
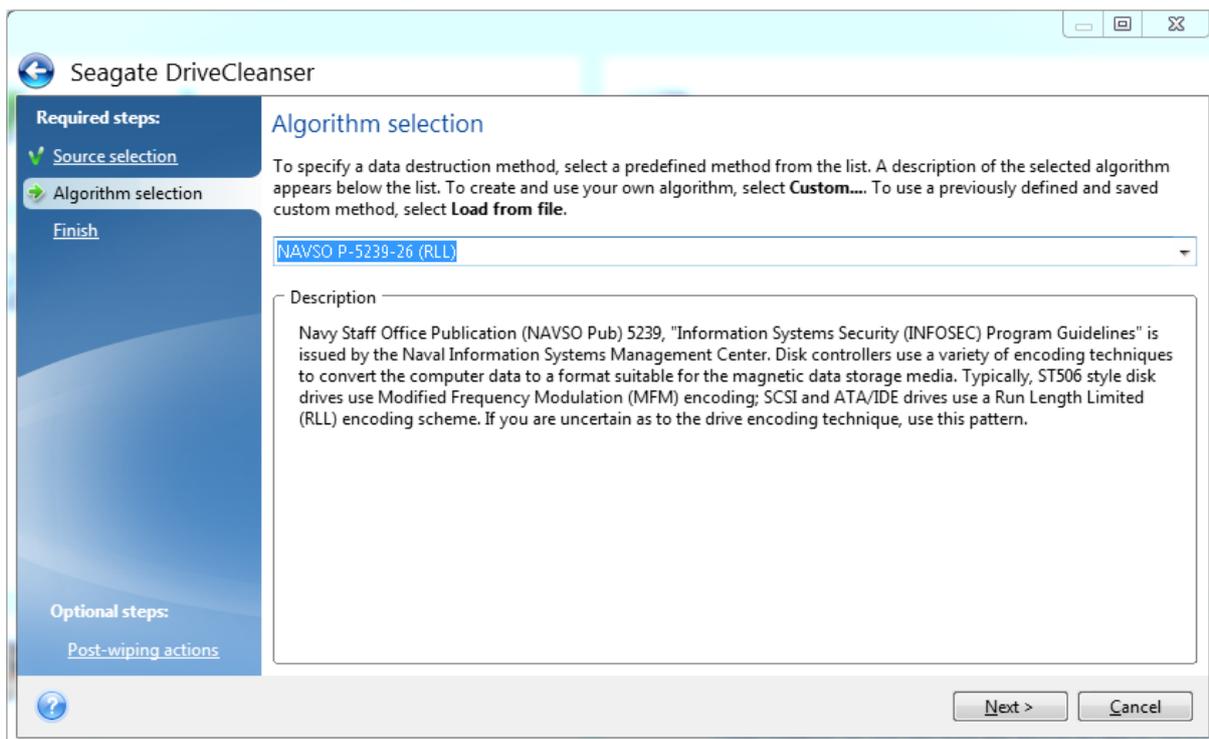
Hard Disk Wiping methods

Information removed from a hard disk drive by non-secure means (for example, by simple Windows delete) can easily be recovered. Utilizing specialized equipment, it is possible to recover even repeatedly overwritten information.

Data is stored on a hard disk as a binary sequence of 1 and 0 (ones and zeros), represented by differently magnetized parts of a disk. Generally speaking, a 1 written to a hard disk is read as 1 by its controller, and 0 is read as 0. However, if you write 1 over 0, the result is conditionally 0.95 and vice versa – if 1 is written over 1 the result is 1.05. These differences are irrelevant for the controller. However, using special equipment, one can easily read the «underlying» sequence of 1's and 0's.

Information wiping methods

The detailed theory of guaranteed information wiping is described in an article by Peter Gutmann. See "Secure Deletion of Data from Magnetic and Solid-State Memory" at
https://www.cs.auckland.ac.nz/~pgut001/pubs/secure_del.html.

No.	Algorithm (writing method)	Passes	Record
1.	United States Department of Defense 5220.22-M	4	1 pass – randomly selected symbols to each byte of each sector, 2 – complementary to written during the first pass; 3 – random symbols again; 4 – writing verification.
2.	United States:	4	1 pass – 0x01 to all sectors, 2 – 0x27FFFFFF, 3 – random symbol

No.	Algorithm (writing method)	Passes	Record
	NAVSO P-5239-26 (RLL)		sequences, 4 – verification.
3.	United States: NAVSO P-5239-26 (MFM)	4	1 pass – 0x01 to all sectors, 2 – 0x7FFFFFFF, 3 – random symbol sequences, 4 – verification.
4.	German: VSITR	7	Passes 1 – 6 – alternate sequences of: 0x00 and 0xFF; pass 7 – 0xAA; i.e. 0x00, 0xFF, 0x00, 0xFF, 0x00, 0xFF, 0xAA.
5.	Russian: GOST P50739-95	1	Logical zeros (0x00 numbers) to each byte of each sector for the sixth to fourth security level systems. Randomly selected symbols (numbers) to each byte of each sector for the third to first security level systems.
6.	Peter Gutmann's method	35	Peter Gutmann's method is very sophisticated. It's based on his theory of hard disk information wiping (see Secure Deletion of Data from Magnetic and Solid-State Memory).
7.	Bruce Schneier's method	7	Bruce Schneier offers a seven-pass overwriting method in his Applied Cryptography book. 1 pass – 0xFF, 2 – 0x00, and then five times with a cryptographically secure pseudo-random sequence.
8.	Fast	1	Logical zeros (0x00 numbers) to all sectors to wipe.

Creating custom algorithms

Algorithm definition

The **Algorithm definition** step shows you a template of the future algorithm.

The table has the following legend:

- The first column contains the type of operation (to write a symbol to disk; and to verify written).
- The second column contains the pattern of data to be written to disk.

Each line defines an operation that will be performed during a pass. To create your algorithm, add as many lines to the table that you think will be enough for secure data destruction.

To add a new pass

1. Click **Add**. The Wiping Pass Adjustment window opens.
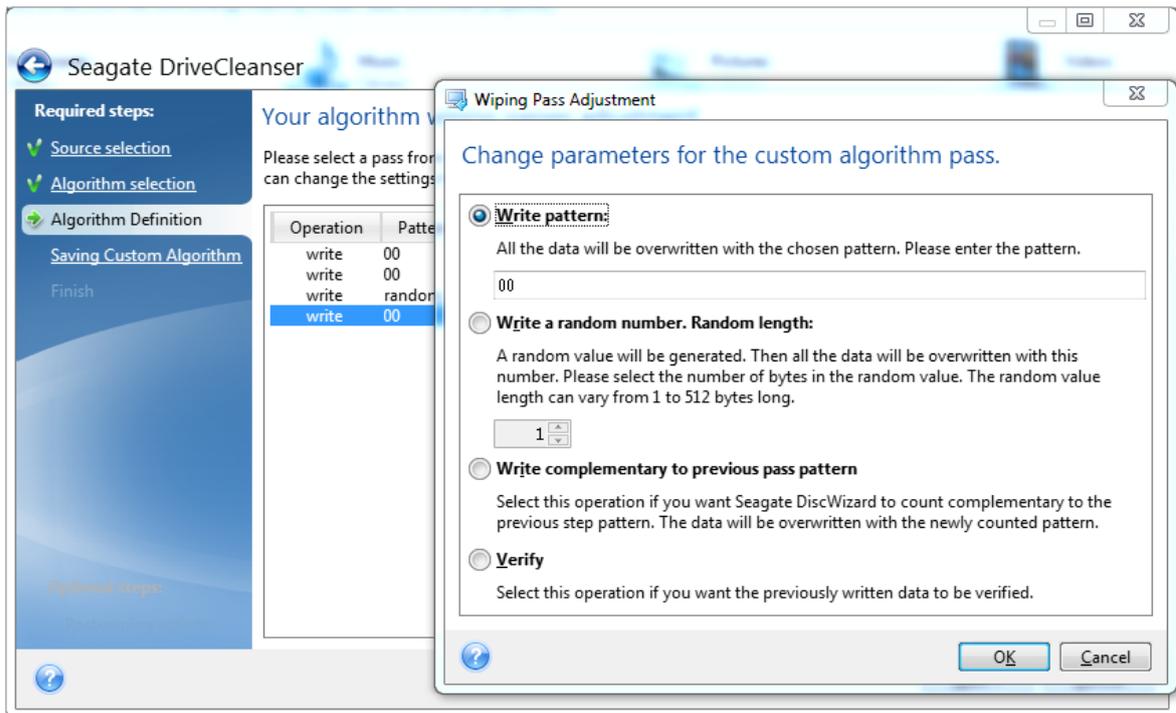
2. Choose an option:

   - **Write pattern**

     Enter a hexadecimal value, for example, a value of this kind: 0x00, 0xAA, or 0xCD, etc. These values are 1 byte long, but they may be up to 512 bytes long. Except for such values, you may enter a random hexadecimal value of any length (up to 512 bytes).

     Note
     If the binary value is represented by the 10001010 (0x8A) sequence, then the complementary binary value will be represented by the 01110101 (0x75) sequence.

   - **Write a random number**

     Specify the length of the random value in bytes.

   - **Write complementary to previous pass pattern**

     Seagate DiscWizard adds a complementary value to the one written to disk during the previous pass.

   - **Verify**

     Seagate DiscWizard verifies the values written to disk during the previous pass.

3. Click **OK**.

To edit an existing pass

1. Select the corresponding line, and then click **Edit**.

   The Wiping Pass Adjustment window opens.

> **Note**
> When you select several lines, the new settings will be applied to all of the selected passes.

2. Change the settings, and then click **OK**.

Saving algorithm to a file

1. On the **Saving custom algorithm** step, select **Save to a file**, and then click **Next**.
2. In the window that opens, specify the file name and location, and then click **OK**.

Post-wiping actions

In the Post-wiping actions window, you can select actions to be performed on the partitions selected for data destruction. Seagate DriveCleanser offers you three options:

- **No action** — just destroy data using the algorithm selected below
- **Delete partition** — destroy data and delete partition
- **Format** — destroy data and format partition (default).
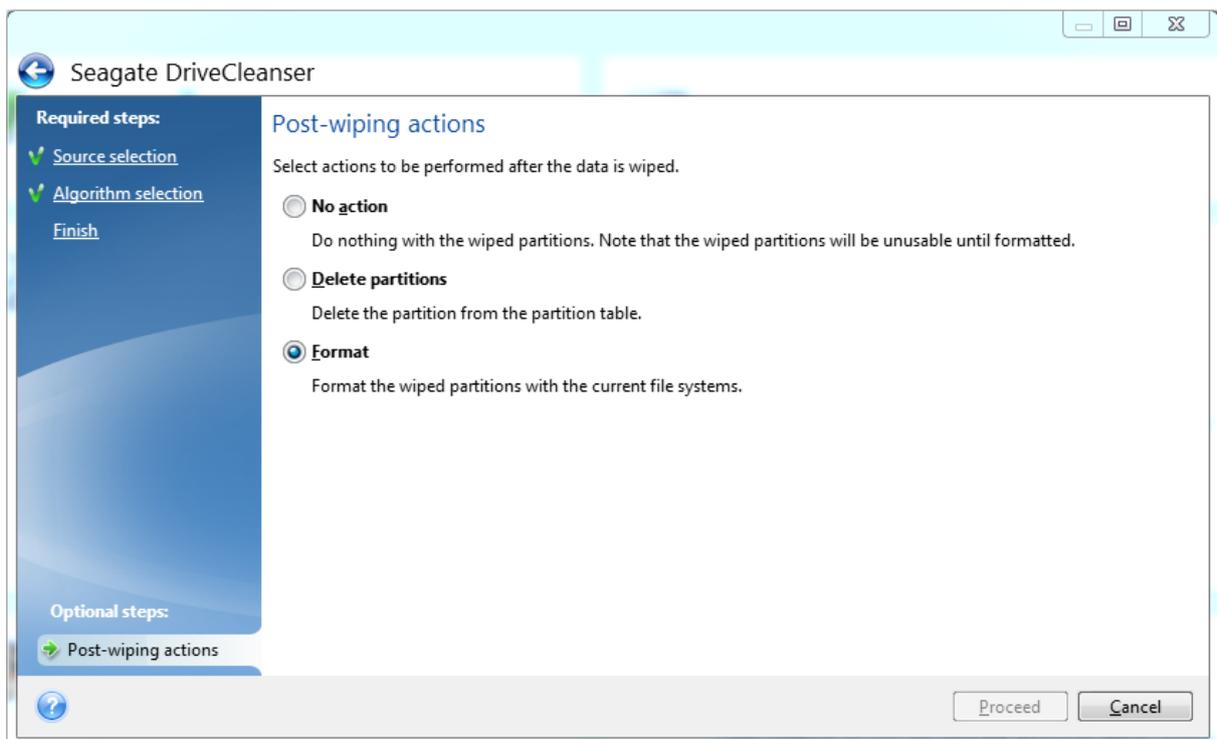
Mounting a backup image

Mounting images as virtual drives lets you access them as though they were physical drives. You can mount local backups that contain partitions or entire disk drives, and then select which partitions to mount. After mounting:

- A new disk appears in your system for every mounted partition.
- You can view the image contents in File Explorer and other file managers in read-only mode.

Note

The operations described in this section are supported only for the FAT and NTFS file systems.

Note

You cannot mount a disk backup, if it is stored on an FTP server.

How to mount an image

1. In File Explorer, right-click the image file that you want to mount, and then click **Mount**.

   The Mount wizard opens.

2. Select the backup for mounting by its creation date/time. Thus, you can explore the data state at a certain moment.
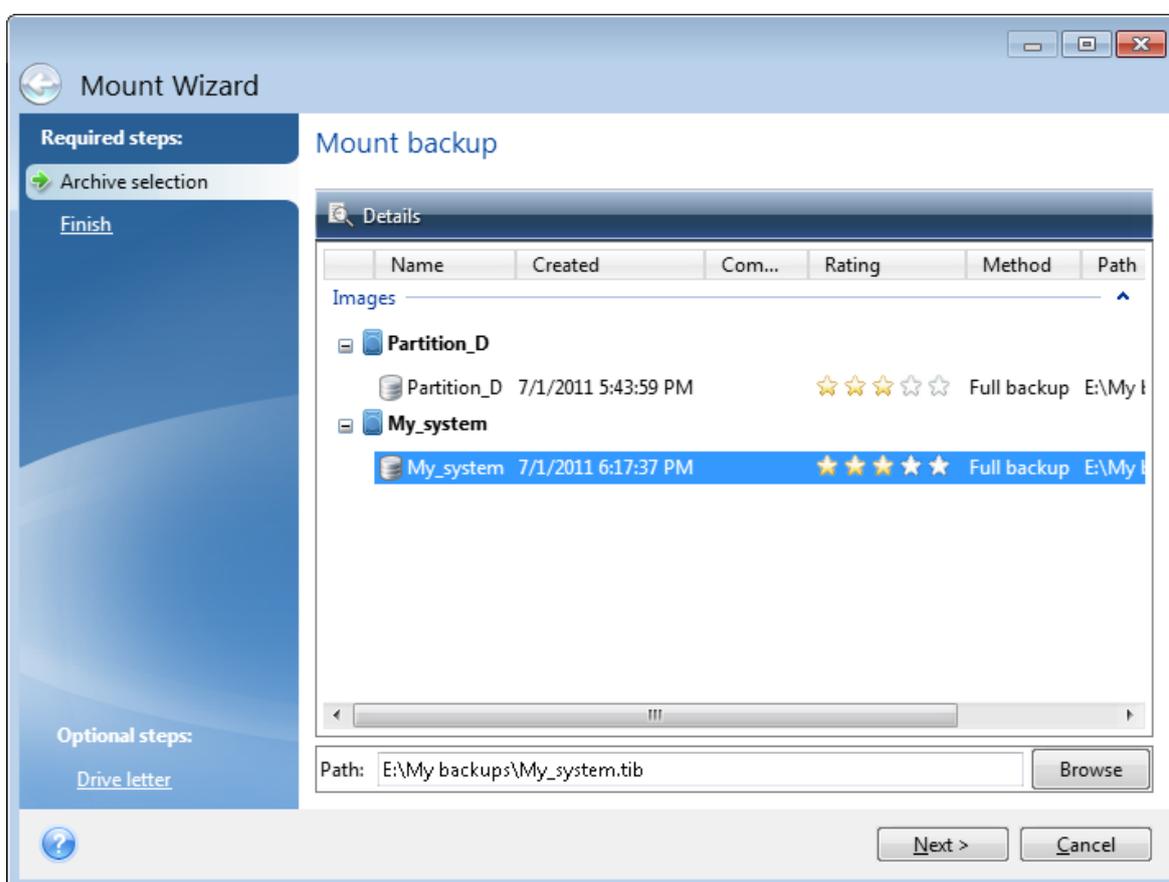
3. [optional step] On the **Drive letter** step, select a letter to be assigned to the virtual disk from the **Mount letter** drop-down list. If you do not want to mount a partition, select **Do not mount** in the list or clear the partition's check box.

4. Click **Proceed**.

5. After the image is connected, the program will run File Explorer, showing its contents.

Unmounting an image

We recommend that you unmount the virtual disk after all necessary operations are finished, as maintaining virtual disks takes considerable system resources.

To unmount an image

1. In File Explorer, right-click the disk icon and click **Unmount**.
2. Restart or shut down your computer.

Troubleshooting

Acronis System Report

The **Generate system report** tool creates a system report that contains all the necessary technical information and allows you to save the information to a file. When it's necessary, you can attach the created file to your problem description and send it to the Support team. This will simplify and speed up the search for a solution.

To generate a system report, perform one of the following

- On the sidebar, click **Help**, and then click **Generate system report**.
- Press **CTRL+F7**. Note that you can use this key combination even when Seagate DiscWizard is performing any other operation.
- If you use Windows 7 or 8, click **Start** > **All Programs** > **Seagate** > **DiscWizard** > **Tools and Utilities** > **Acronis System Report**.

After the report is generated

- To save the generated system report, click **Save** and in the opened window specify a location for the created file.
- To exit to the main program window without saving the report, click **Cancel**.

You can place the tool on your bootable media as a separate component to generate a system report when your computer cannot boot. After you boot from the media, you can generate the report without running Seagate DiscWizard. Simply plug in a USB flash drive and click the **Acronis System Report** icon. The generated report will be saved on the USB flash drive.

To place the Acronis System Report tool on a bootable media

1. Select the **Acronis System Report** check box on the **Rescue Media Content Selection** page of the **Seagate Media Builder** wizard.
2. Click **Next** to continue.

Creating a system report from the command line prompt

1. Run Windows Command Processor (cmd.exe) as an administrator.
2. Change the current directory to the Seagate DiscWizard installation folder. To do so, enter:

```
cd C:\Program Files (x86)\Seagate\DiscWizard
```

3. To create the system report file, enter:

```
SystemReport
```

The file SystemReport.zip will be created in the current folder.

If you want to assign a custom name to the report file, type the new name instead of <file

name>:

```
SystemReport.exe /filename:<file name>
```

To generate a system report under bootable media

1. Create Seagate bootable media, if you do not have it. Refer to Seagate Media Builder for details.
2. Arrange the boot order in BIOS so that your bootable media device (CD, DVDs or USB drive) is the first boot device. Refer to Arranging boot order in BIOS for details.
3. Boot from the Seagate bootable media and select **Seagate DiscWizard**.

    Note

    Instead of clicking **Seagate DiscWizard**, you can plug in a USB flash drive and click **Acronis System Report**. In this case, the program generates a report and automatically saves it to the flash drive.

4. Click the arrow next to the Help icon ( ), and then select **Generate system report**.
5. After the report is generated, click **Save** and in the opened window specify a location for the created file.
    The program will archive the report into a zip file.

Glossary

B

Backup

The same as Backup operation. A set of backup versions created and managed by using backup settings. A backup can contain multiple backup versions created using full and incremental backup methods. Backup versions belonging to the same backup are usually stored in the same location.

Backup operation

An operation that creates a copy of the data that exists on a machine's hard disk for the purpose of recovering or reverting the data to a specified date and time.

Backup settings

A set of rules configured by a user when creating a new backup. The rules control the backup process. Later you can edit the backup settings to change or optimize the backup process.

Backup version

The result of a single backup operation. Physically, it is a file or a set of files that contains a copy of the backed up data as of a specific date and time. Backup version of files created by Seagate DiscWizard have a .tibx extension. The TIBX files resulting from consolidation of backup versions are also called backup versions.

Backup version chain

Sequence of minimum two backup versions that consist of the first full backup version and the subsequent one or more incremental or differential backup versions. Backup version chain continues till the next full backup version (if any).

Bootable media

A physical media (CD, DVD, USB drive, or other media supported by a machine BIOS as a boot device) that contains standalone version of Seagate DiscWizard. Bootable media is most often used to recover an operating system that cannot start, to access and back up the data that has survived in a corrupted system, to deploy an operating system on bare metal, to create basic or dynamic volumes on bare metal, or to back up sector-by-sector a disk that has an unsupported file system.

D

Differential backup

A backup method used for saving data changes that occurred since the last full backup version within a backup. A backup process that creates a differential backup version.

Differential backup version

A differential backup version stores changes to the data against the latest full backup version. You need access to the corresponding full backup version to recover the data from a differential backup version.

Disk backup (Image)

A backup that contains a sector-based copy of a disk or a partition in packaged form. Normally, only sectors that contain data are copied. provides an option to take a raw image, that is,

copy all the disk sectors, which enables imaging of unsupported file systems.

F

Full backup

A backup method that is used to save all the data selected to back up. A backup process that creates a full backup version.

Full backup version

A self-sufficient backup version containing all data chosen for backup. You do not need access to any other backup version to recover the data from a full backup version.

I

Incremental backup

A backup method used for saving data changes that occurred since the last backup version (of any type) within a backup. A backup process that creates an incremental backup version.

Incremental backup version

A backup version that stores changes to the data against the latest backup version. You need access to other backup versions from the same backup to restore data from an incremental backup version.

R

Recovery

Recovery is a process of returning of a corrupted data to a previous normal state from a backup.

V

Validation

An operation that checks whether you will be able to recover data from a particular backup version. For a full backup version, the program validates the full backup version only. For a differential backup version, the program validates the initial full backup version and the selected differential backup version. For an incremental backup version, the program validates the initial full backup version, the selected incremental backup version, and the whole chain (if any) of backup versions to the selected incremental backup version. If the chain contains one or more differential backup versions, the program validates (in addition to the initial full backup version and the selected incremental backup version) only the most recent differential backup version in the chain and all subsequent incremental backup versions (if any) between the differential backup version and the selected incremental backup version.

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