



Acronis[®] **True Image OEM** **Quick Backup**

User's Guide

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Chapter 1. Introduction

1.1 What is Acronis® True Image OEM Quick Backup?

Acronis True Image OEM Quick Backup is an integrated software suite that ensures security of all information on your PC. It can back up the operating system, applications, settings and all of your data, while also securely destroying any confidential data you no longer need. Should your disk drive become damaged or your system attacked by a virus or malware, you can restore the back-up data quickly and easily, eliminating hours or days of work trying to rebuild your disk drive's data and applications from scratch.

Acronis True Image OEM Quick Backup provides you with all the essential tools you need to recover your computer system should a disaster occur, such as losing data, accidentally deleting critical files or folders, or a complete hard disk crash. If failures occur that block access to information or affect system operation, you will be able to restore the system and the lost data easily.

The unique technology developed by Acronis and implemented in Acronis True Image OEM Quick Backup allows you to perform exact, sector-by-sector disk backups, including all operating systems, applications and configuration files, software updates, personal settings, and data.

You can store backups on almost any PC storage device: internal or external hard drives, network drives or a variety of IDE, SCSI, FireWire (IEEE-1394), USB (1.0, 1.1 and 2.0) and PC Card (formerly called PCMCIA) removable media drives, as well as CD-R/RW, DVD-R/RW, DVD+R/RW, magneto-optical, Iomega Zip and Jaz drives.

Wizards and a Windows Vista-style interface will make your work easier. Just perform a few simple steps and let Acronis True Image OEM Quick Backup take care of everything else! When a system problem occurs, the software will get you up and running in no time.

1.2 New in Acronis True Image OEM Quick Backup

- **File search using Google Desktop and Windows Search** – If you use one of these search engines, you will be able to search for files through multiple archives by name or by a part of the name and then restore individual files easily and quickly. In addition, they provide Acronis True Image OEM Quick Backup with the ability to perform full-text indexing of the files in tib archives, so you will be able to perform searches of the files content.
- **Automatic computer shutdown after backup or restoration finishes** – you can now perform a backup at night and go to sleep without bothering about turning off the computer – the program will do this on its own.
- **Archive to various places** – you can save full and incremental backups of the same data entity (for example, a partition, disk) almost anywhere you like. In the earlier versions of Acronis True Image OEM Quick Backup all backups belonging to the same data entity could be stored only in the same place. Now you have ultimate flexibility in choosing a place for backups of the same data entity – a network share, CD/DVD, USB stick, any local internal or external hard drive, etc. Furthermore, you can now give meaningful names to incremental backups, for example, something like "SystemDiskbeforeRepartitioning".
- **More user-friendly** – Completely redesigned user interface and usability enhancements make Acronis True Image OEM Quick Backup easier to use than ever before.

1.3 System requirements and supported media

1.3.1 Minimum system requirements

Acronis True Image OEM Quick Backup requires the following hardware:

- Pentium processor or higher
- 128 MB RAM
- CD-RW/DVD-RW drive for bootable media creation
- Mouse or other pointing device (recommended).

1.3.2 Supported operating systems

Acronis True Image OEM Quick Backup has been tested on the following operating systems:

- Windows XP SP 3
- Windows XP Professional x64 Edition SP2
- Windows Vista SP 1 (all editions)
- Windows 7

Acronis True Image OEM Quick Backup also enables the creation of a bootable CD-R/DVD-R that can back up and restore a disk/partition on a computer running any Intel- or AMD-based PC operating system, including Linux®. The only exception is the Intel-based Apple Macintosh, which is not supported in native mode at this time.

1.3.3 Supported file systems

- FAT16/32
- NTFS
- Ext2/Ext3
- ReiserFS

If a file system is not supported or is corrupted, Acronis True Image OEM Quick Backup can copy data using a sector-by-sector approach.



The Ext2/Ext3 and ReiserFS file systems are supported only for disk or partition backup/restore operations.

1.3.4 Supported storage media

- Hard disk drives *
- Networked storage devices
- CD-R/RW, DVD-R/RW, DVD+R (including double-layer DVD+R), DVD+RW, DVD-RAM, BD-R, BD-RE**
- USB 1.0 / 2.0, FireWire (IEEE-1394) and PC card storage devices
- ZIP®, Jaz® and other removable media

* Acronis True Image OEM Quick Backup does not support dynamic and GPT disks.

** Burned rewritable discs cannot be read in Linux without a kernel patch.

1.4 Customer service

After upgrading Acronis True Image OEM provides software updates for your product for free.

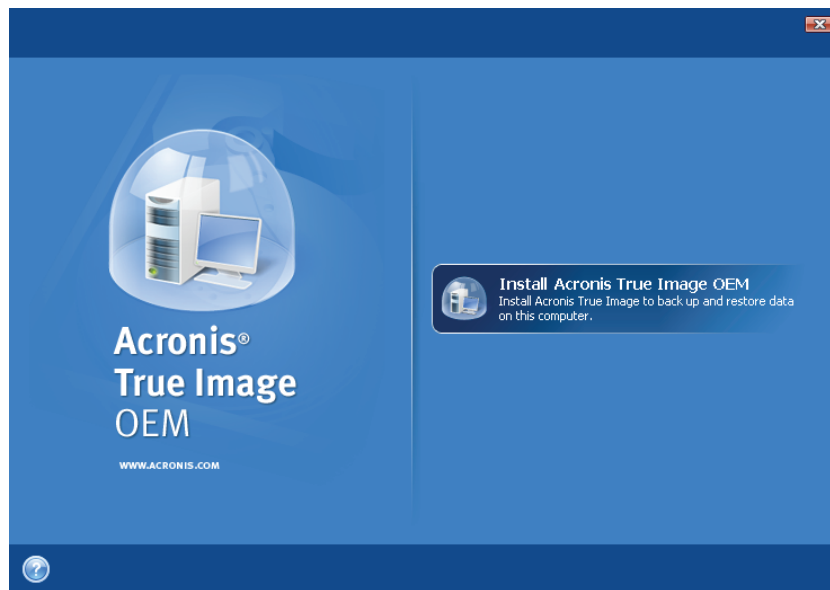
After upgrading Acronis provides the access to the phone-based support. You will need to purchase a special support package PPI - Pay Per Incident support. Also the access to email-based and chat technical support is provided for free for the first 30 days after upgrading.

Chapter 2. Acronis True Image OEM Quick Backup installation and startup

2.1 Installing Acronis True Image OEM Quick Backup

To install Acronis True Image OEM Quick Backup:

- Run the Acronis True Image OEM Quick Backup setup file.
- In the Install Menu, select the program to install: Acronis True Image OEM.
- Follow the install wizard instructions on the screen.



Typical, **Custom** and **Complete** installation is available. Having pressed **Custom**, you can choose not to install **Rescue Media Builder**.

With **Rescue Media Builder** you can create bootable rescue disks (see details in *Chapter 7. Creating bootable media*). Installing the **Bootable Rescue Media Builder** will allow you to create bootable media or its ISO image at any time from the main program window or running **Bootable Rescue Media Builder** on its own.



When installed, Acronis True Image OEM Quick Backup creates a new device in the Device Manager list (**Control Panel -> System -> Hardware -> Device Manager -> Acronis Devices -> Acronis True Image Backup Archive Explorer**). Do not disable or uninstall this device, as it is necessary for connecting image archives as virtual disks (see *Chapter 9. Searching, exploring archives and mounting images*).

2.2 Extracting Acronis True Image OEM Quick Backup

When installing Acronis True Image OEM Quick Backup, you can save the setup (.msi) file on a local or network drive. This will help when modifying or recovering the existing component installation.

To save the setup file:

- Run the Acronis True Image OEM Quick Backup setup file.
- In the Install Menu, right-click on the program name and select **Extract**.

-
- Select a location for the setup file and click **Save**.

Recovering or updating the existing Acronis True Image OEM Quick Backup installation with use of the .msi file must be done from the command line as follows:

1. Choose **Start -> Run**
2. Type *cmd*.
3. When the command-line interpreter window opens, type the following command:
*msiexec /i path_to_msi_file\msi_file_name.msi REINSTALL=ALL
REINSTALLMODE=vomus*
4. After the install wizard window opens, choose **Typical, Custom** or **Complete** installation for repairing or changing the program's components.

2.3 Running Acronis True Image OEM Quick Backup

You can run Acronis True Image OEM Quick Backup in Windows by selecting **Start -> Programs -> Acronis -> Acronis True Image OEM Quick Backup -> Acronis True Image OEM Quick Backup** or by clicking on the appropriate shortcut on the desktop.

If your operating system does not load for some reason, you can run Acronis Startup Recovery Manager. However, this must be activated by manufacturer prior to use; see *3.4 Acronis Startup Recovery Manager* to learn more about this procedure. To run the program, press F11 during bootup when you see a corresponding message that tells you to press that key. Acronis True Image OEM Quick Backup will be run in the standalone mode, allowing you to recover the damaged partitions.

If your disk data is totally corrupted and the operating system cannot boot, load the standalone Acronis True Image OEM Quick Backup version from the bootable media, created by you using Rescue Media Builder. This boot disk will allow you to restore your disk from a previously created image.

2.4 Activating Acronis True Image OEM Drive Protection

On the first launch of Acronis True Image OEM Quick Backup you will have to enter an **Activation Key** to be able to run the product. Click **Get Key!** button to get to the Acronis website, where you can register and enter your Acronis True Image OEM Quick Backup serial number. Enter the received activation key in the respective field in the Acronis True Image OEM Quick Backup product activation window and click **Activate!**. Note, this button will be unavailable until you enter the correct activation key.

2.5 Upgrading Acronis True Image OEM Quick Backup

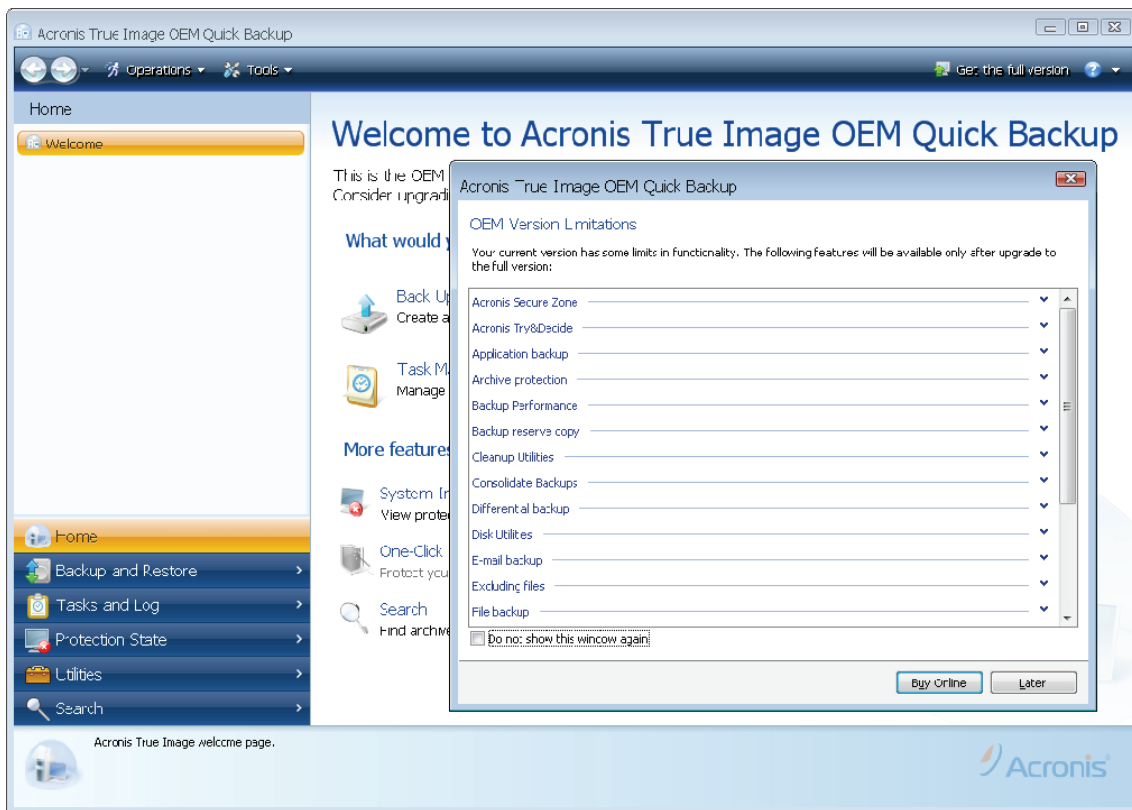
You can upgrade Acronis True Image OEM Quick Backup to Acronis True Image Home 2009 from the Acronis web site.

The following features will be available only after upgrading to Acronis True Image Home 2009:

- Acronis Try&Decide
- System state backup
- Application backup
- Data backup (selected files/folders)
- Scheduling
- Archive protection

- Cleanup utilities
- Disk utilities
- Consolidating backups
- Differential backups
- Notifications.

Please keep in mind that the backups created by the later program version may be incompatible with the previous program versions, so if you roll back True Image OEM Quick Backup to an older version, you likely will have to re-create the archives using the older version. We strongly recommend that you create new bootable media after each True Image OEM Quick Backup upgrade.



2.6 Removing Acronis True Image OEM Quick Backup

Select **Start -> Settings -> Control panel -> Add or remove programs -> <Acronis True Image OEM Quick Backup> -> Remove**. Then follow the instructions on the screen. You may have to reboot your computer afterwards to complete the task.

If you use Windows Vista, select **Start -> Control panel -> Programs and Features -> <Acronis True Image OEM Quick Backup> -> Remove**. Then follow the instructions on the screen. You may have to reboot your computer afterwards to complete the task.

Chapter 3. General information and proprietary Acronis technologies

3.1 What is a disk/partition image

Backing up disks and partitions is performed in the following way: Acronis True Image OEM Quick Backup stores a sector-by-sector snapshot of the disk, which includes the operating system, registry, drivers, software applications and data files, as well as system areas hidden from the user. This procedure is called “creating a disk image,” and the resulting backup archive is often called a disk/partition image.



By default, Acronis True Image OEM Quick Backup stores only those hard disk parts that contain data (for supported file systems). Further, it does not back up swap file information (pagefile.sys under Windows XP/Vista) and hiberfil.sys (a file that keeps RAM contents when the computer goes into hibernation). This reduces image size and speeds up image creation and restoration. However, you might use the **Create an image using the sector-by-sector approach** option that lets you include all of the sectors of a hard disk in an image.



A partition image includes all files and folders. This includes all attributes (including hidden and system files), boot record, and FAT (file allocation table); as well as files in the root directory and the zero track of the hard disk with master boot record (MBR).



A disk image includes images of all disk partitions as well as the zero track with master boot record (MBR).

By default, files in all Acronis True Image OEM Quick Backup archives have a “.tib” extension. Do not change this file extension.

It is important to note that you can restore files and folders not only from file archives, but from disk/partition images too. To do so, mount the image as a virtual disk (see *Chapter 9. Searching, exploring archives and mounting images*) or start the image restoration and select **Restore specified files or folders**.

3.2 Full and incremental backups

Acronis True Image OEM Quick Backup can create full and incremental backups.

A **full backup** contains all data at the moment of backup creation. It forms a base for further incremental backup or is used as a standalone archive. A full backup has the shortest restore time compared to incremental ones.

An **incremental backup** file only contains data changed since the last backup of any type (full or incremental one). Therefore, it is smaller and takes less time to create, but as it doesn't contain all data; all the previous backups and the initial full backup are required for restoration.

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 files. If you are interested in saving only the last data state to be able to restore it in case of system failure, consider the incremental backup. It is particularly effective if your data changes tend to be few compared to the full data volume.

These are most useful when you need frequent backups and the ability to roll back to a specific point in time. Having created a full backup once, if you then create an incremental

backup each day of a month, you will get the same result as if you created full backups every day. Incremental images are considerably smaller than full images.



An incremental backup created after a disk is defragmented might be considerably larger than usual. This is because the defragmentation program changes file locations on the disk and the backups reflect these changes. Therefore, it is recommended that you re-create a full backup after disk defragmentation.

3.3 OEM Zone™

OEM Zone is a secure partition that enables keeping backup archives on a managed machine disk space and therefore recovery of a disk to the same disk where the backup resides. Certain Windows applications, such as Acronis disk management tools, can access the zone.

A manufacturer installs an operating system on a PC, configures it and installs all necessary applications. After that an unattended installation of Acronis True Image OEM is performed. So OEM Zone will be created during the installation, and an image of the system disk/partition will be placed in OEM Zone.

You can mount OEM Zone in read mode and explore it (see *Chapter 9. Searching, exploring archives and mounting images*), also you can validate an archive and restore the system disk/partition from it.

With OEM Zone on the hard disk, an icon appears under **My Computer** in the **Other** section. Double-clicking on the OEM Zone icon opens the zone and you can view a backup archive it contains. You can also open the zone by right-clicking on its icon and choosing **Open** in a shortcut menu. Right-clicking on a specific backup opens a shortcut menu allowing to choose a desired operation – mount, restore, validate, update, remove the backup, and view backup's details.

The shortcut menu appearing after right-clicking on the OEM Zone icon has two more items – **Create Shortcut** (for placing it on the Desktop) and **Explore** for exploring the zone contents. Choosing **Explore** opens Windows Explorer with OEM Zone selected on the directory tree and you will be able to explore zone contents.

The OEM Zone is available as a location to store backup files as long as there is free space in the zone. If there is not enough space, older backups will be deleted to create free space.

3.4 Acronis Startup Recovery Manager

3.4.1 How it works

The Acronis Startup Recovery Manager lets you start Acronis True Image OEM Quick Backup without loading the operating system.



Note, Acronis Startup Recovery Manager is available only in case a manufacturer has activated it during the installation and creating OEM Zone.

With this feature, you can use Acronis True Image OEM Quick Backup by itself to restore damaged partitions, even if the operating system won't start up for some reason. As opposed to booting from Acronis removable media, you will not need a separate media or network connection to start Acronis True Image OEM Quick Backup.

When Acronis Startup Recovery Manager is activated, it overwrites the master boot record (MBR) with its own boot code.

3.4.2 How to use

To be able to use Acronis Startup Recovery Manager at boot time, prepare as follows:

if a failure occurs, turn on the computer and press F11 when you see the "Press F11 for Acronis Startup Recovery Manager" message. This will start a standalone version of Acronis True Image OEM Quick Backup that differs only slightly from the complete version. For information on restoring damaged partitions, see *Chapter 6. Restoring backup data*.



Be careful! Drive letters in standalone Acronis True Image OEM Quick Backup might sometimes differ from the way Windows identifies drives. For example, the D: drive identified in the standalone Acronis True Image OEM Quick Backup might correspond to the E: drive in Windows.

3.5 Viewing disk and partition information

You can change the way data is represented in all schemes you see in various wizards.

To the right are three icons: **Arrange Icons by**, **Choose Details** and **i (Display the properties of the selected item)**, the latter duplicated in the context menu opened by right-clicking objects.

To sort messages by a particular column, click the header (another click will switch the messages to the opposite order) or the **Arrange Icons by** button and select the column.

To select columns to view, right-click the headers line or left-click the **Choose Columns** button. Then flag the columns you want to display. When left-clicking the **Choose Columns** button, you can also change the display order of columns using the **Move Up** and **Move Down** buttons.

If you click the **i (Display the properties of the selected item)** button, you will see the selected partition or disk properties window.

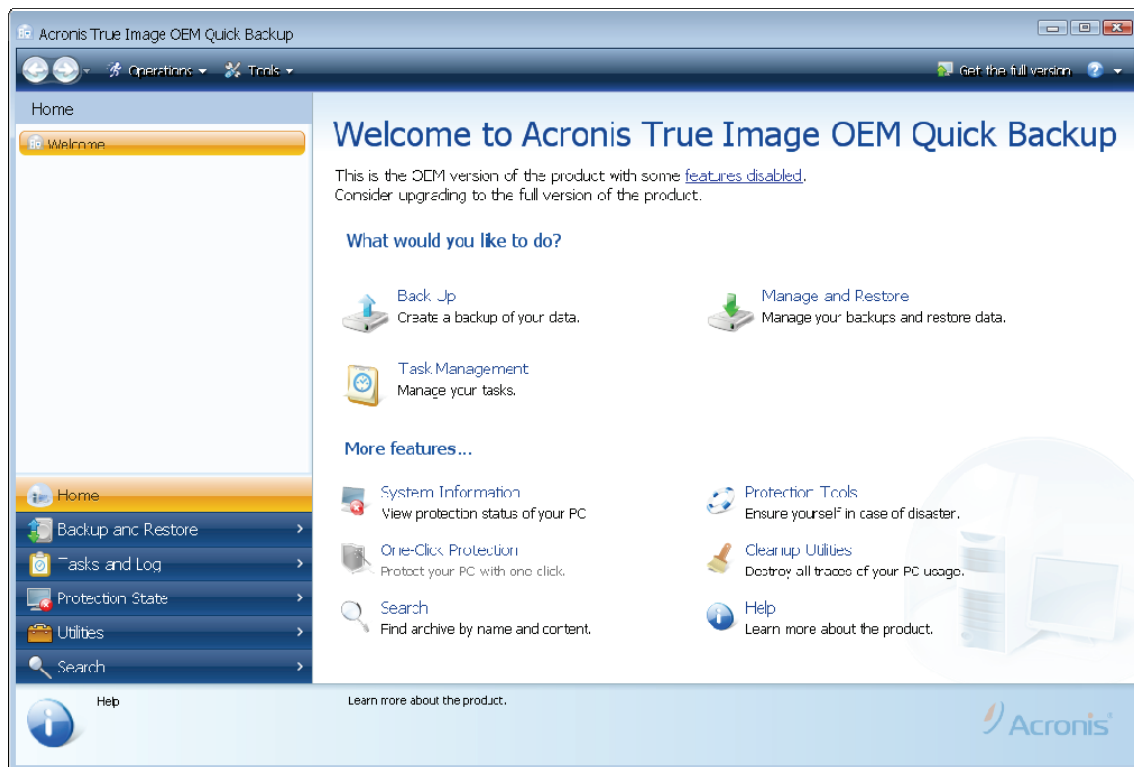
This window contains two panels. The left panel contains the properties tree and the right describes the selected property in detail. The disk information includes its physical parameters (connection type, device type, size, etc.); partition information includes both physical (sectors, location, etc.), and logical (file system, free space, assigned letter, etc.) parameters.

You can change the width of a column by dragging its borders with the mouse.

Chapter 4. Getting to know Acronis True Image OEM Quick Backup

4.1 Program workspace

Starting Acronis True Image OEM Quick Backup takes you to the Welcome screen. This screen provides quick access to practically all the program's functionality.



All the features listed in the right pane are duplicated on the left side of the screen occupied by the so called *sidebar*. The sidebar also provides easy access to all functionality of Acronis True Image OEM Quick Backup. The main functions are listed in the lower part of the sidebar. If you choose an item in the lower part, the upper part of the sidebar displays subitems related to the chosen item (if any) and the right part of the main window shows detailed information for the current subitem or a list of options available for that subitem.

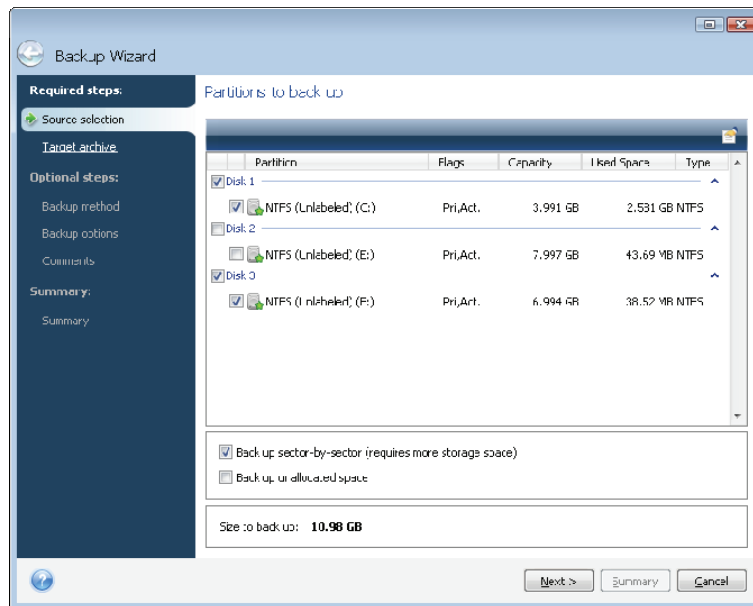
Status bar

At the bottom of the main window, there is a status bar that briefly describes the selected operation or screen. If you select a backup archive, task or log, the status bar will show information on the selected item.

Taskbar notification area icon

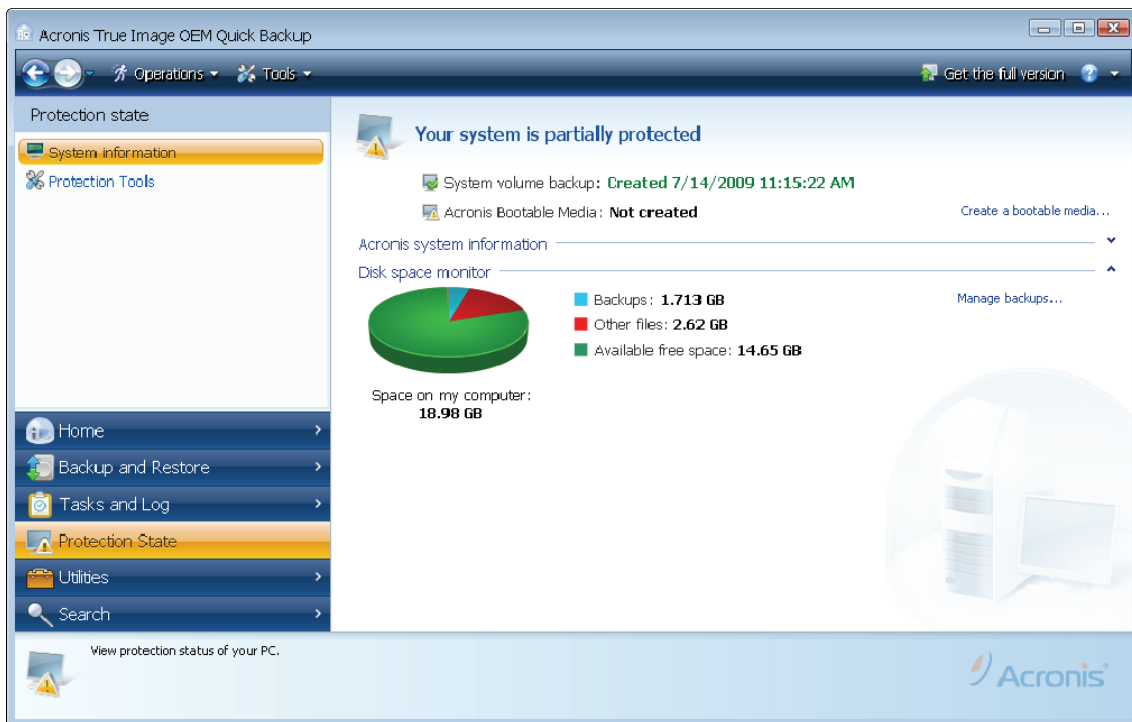
During most of the operations, a special indicator icon appears in the Windows taskbar notification area (the right portion of the status bar with the clock). If you mouse over the icon, you will see a tool tip indicating the operation's progress. Right-clicking on the icon opens a contextual menu where you can change process priority or cancel the operation if necessary. This icon doesn't depend on the main program window being open. It is present for background execution of scheduled tasks as well.

Acronis True Image OEM Quick Backup uses wizards, which guide you through many operations. Like the main program window, wizards also have the sidebar listing all the steps (both required and optional) needed for completing the operation. For example, see the Backup Wizard screenshot below.

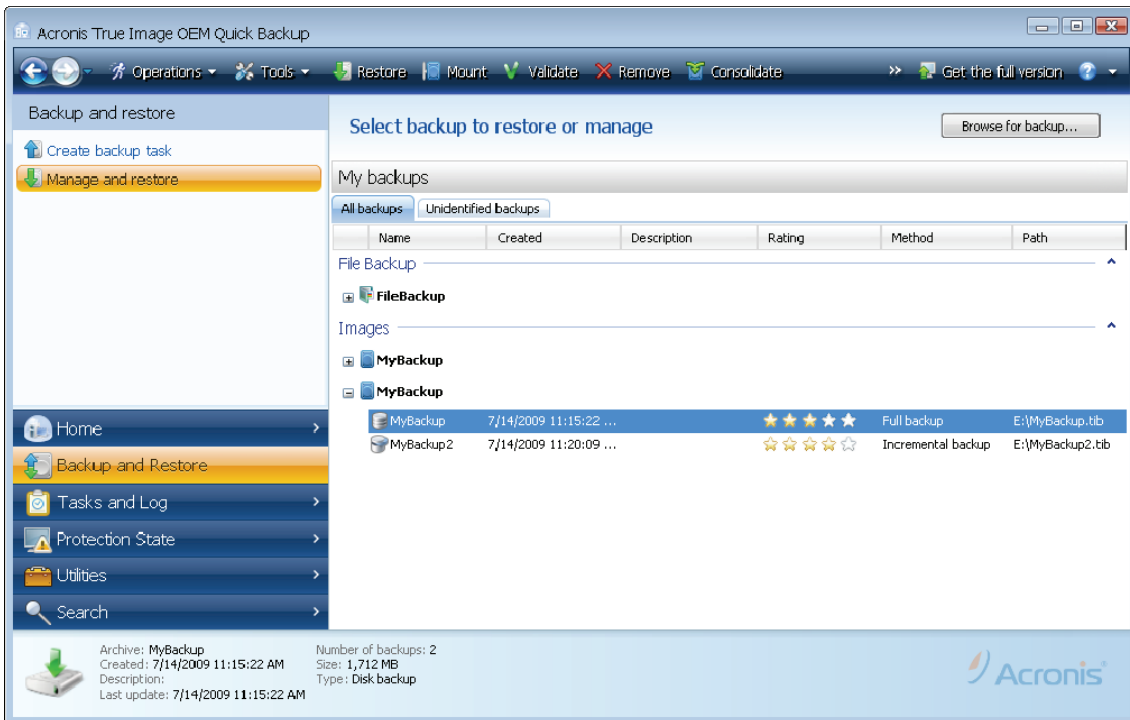


The completed steps are marked with green checkmarks. The green arrow shows the current step. After you complete all the required steps, the **Summary** button becomes available. If you wish to omit the optional steps, click **Summary**, read the summary of the operation to be performed (to make sure that the default settings satisfy you) and then click **Proceed** to start the task. Otherwise proceed to the optional steps where you can change the default settings for the current task.

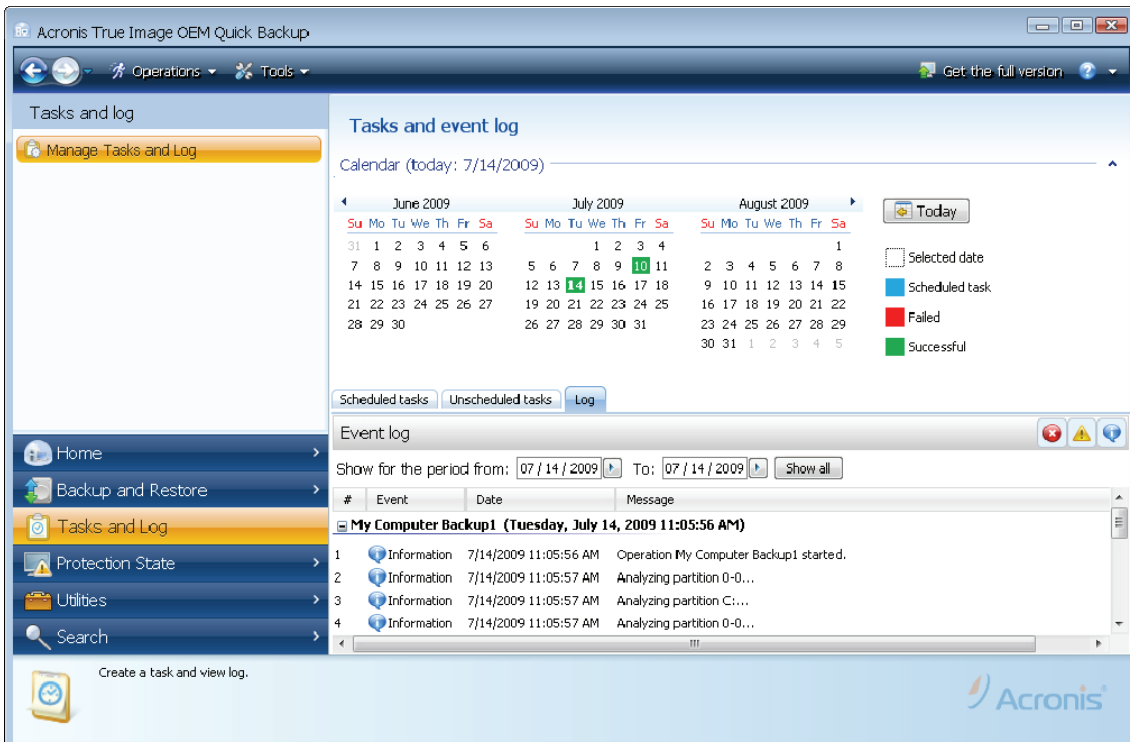
And now let's get acquainted with some other screens you will use while working with Acronis True Image OEM Quick Backup. One of the most important and informative screens is Protection State. It shows a wealth of information on the protection state of your computer and permits taking measures that will enhance protection of your system (or provide it if the system is as of yet unprotected) – the screen has links for creating a system partition backup, and bootable rescue media, for activating Acronis Startup Recovery Manager. In addition, you will get information on the number of backup archives, as well as the date and time of the last backup, and the last task result. The screen also shows information on the state of your hard disks (total capacity, free space, space occupied by backup archives and other files).



To go to one more screen of interest, click **Backup and Restore -> Manage and restore** on the sidebar. This screen gives detailed information on your backup archives and provides for quickly performing operations on these archives – Restore, Validate, Remove, Explore backup archives and Mount image backups by a single click on a button on the toolbar. Clicking the button starts the appropriate wizard or performs the appropriate action. On this screen you can assign ratings to your backups, for instance, you may want to assign a high rating to an important backup. A backup rating is indicated by the number of "stars" in the **Rating** column (more stars means higher rating). The default rating is three stars, but you can raise or lower it by clicking on the stars in the column. In addition, these ratings might save you a lot of time you will otherwise spend on exploring multiple files in your backup archives trying to guess which of the outdated backups can be deleted without losing important data.



Another useful screen shows logs of program operations. A calendar provides quick access to the logs (for past dates). You just click on a desired date. For more information see [8.2 Viewing Logs](#).



We will not bore you with a description of other screens, because many of them are self-explanatory and some are described in the appropriate chapters of this guide. In addition, all screens have brief descriptions of the features they allow to access or use and you can always open contextual help by clicking the corresponding button.

By the way, you can also select all the features through the main program menu, which is always at your disposal on the toolbar.

Chapter 5. Creating backup archives

5.1 Preparing for your first backup

First of all you must decide where you will store your backups. Acronis True Image OEM Quick Backup supports quite a lot of storage devices. For more information see *1.3.4 Supported storage media*. Since hard disk drives are now quite inexpensive, in most cases purchasing an external hard drive will be an optimal storage device for your backups. In addition to enhancing the security of your data – you can keep it off-site (for example, at home if you back up your office computer and vice versa); many models are hot-pluggable, so you can attach and detach the drive as you need. You can choose various interfaces – USB 2.0, FireWire, eSATA depending on the configuration of your computer ports and the required data transfer rate. In many cases the best choice will be an external USB 2.0 hard drive, though it has a pitfall – such a drive may slow down if it works together with slower USB 1.1 devices. If you have a Gigabit Ethernet home network and a dedicated file server or NAS, for example, Buffalo TeraStation 1.0 TB NAS Gigabit Ethernet Home Server, you can store backups on the file server or NAS practically like onto an internal drive. Blank optical discs such as CD-R/RW, DVD-R/RW, DVD+R/RW are very cheap, so they will be the lowest cost solution for backing up your data, though the slowest one.

5.2 Selecting what data to back up

As operating systems and application software become ever larger (for example, Windows Vista x64 requires 15GB of free space on a hard disk), usually it will take you several hours to reinstall your operating system and application software from original CDs or DVDs on a new hard disk. Furthermore, the practice of buying application software by downloading from the Internet is becoming more and more popular. If you lose your registration information, for example, the activation key and/or registration number, which are usually sent by software vendors through e-mail, you may have problems with restoring your right to use the application. So making a backup of your entire system disk (making a disk image) will save you a lot of valuable time in case of a disaster, as well as safeguard you against other possible problems.

Backing up the entire system disk (creating a disk image) takes more disk space, but enables you to restore the system in minutes in case of a system crash or hardware failure. Moreover, the imaging procedure is much faster than copying files and could speed up the backup process significantly when it comes to backing up large volumes of data (see details in *3.1 What is a disk/partition image*).

You might think it would take a while to make a copy of your entire hard disk, but the proprietary technologies used in Acronis True Image OEM Quick Backup ensure that image creation is quite fast. And the program can also back up *incrementally*, so after the first time, updating your image to reflect the current state of your hard disk requires only copying the files that are new or changed and will require much less time. Because images can save you a lot of time when you need to recover the operating system, it is recommended that you make them part of your backup strategy. In our opinion creating your system volume image backup is vital for protecting your computer system from a disaster, so now Acronis True Image OEM Quick Backup offers to back up the system volume and Master Boot Record during the first start of the program after installation.

Images, however, provide no defense against damaged files. If your hard disk contains damaged files when you are making an image, those problems will appear in the image as well.

For that reason, although we strongly recommend you to create images of your hard disk on a regular basis, that is just part of a reliable backup strategy. You should supplement the images with file archives.

5.3 Performing backup

1. Start Acronis True Image OEM Quick Backup
2. Choose **Backup and Restore** in the lower area of the sidebar and the **Create backup task** item will be selected by default.
3. Select what type of data you want to back up.

Acronis True Image OEM Quick Backup offers you the following backup types:

My Computer (image backup of any set of disks/partitions)



We do not recommend backing up any data from drives protected by BitLocker Drive Encryption feature, because in most cases restoring data from such backups will be impossible.

Selecting a backup type starts the Backup Wizard, which will guide you through the steps of creating a backup task. You can also start the Backup Wizard by choosing **Operations -> Backup** in the main menu and then selecting a backup type. Depending on the backup type chosen, the number of steps in the Backup Wizard may change.

5.3.1 Selecting data for backup

When the Backup Wizard screen appears, select the data you wish to back up.

My Computer - select the disks or partitions to back up. You can select a random set of disks and partitions. The wizard's right pane shows the hard drives of your computer. Selecting a hard drive results in selecting all partitions on that drive. If a hard drive has more than one partition, you may want to select individual partitions for backing up. To do so, click on the Down arrow at the right of the drive's line. Select the desired partition(s) in the displayed partition list. By default the program copies only the hard disk sectors that contain data. However, sometimes it might be useful to make a full sector-by-sector backup. For example, perhaps you deleted some files by mistake and want to make a disk image before trying to undelete them because sometimes un-deleting may create havoc in the file system. To make a sector-by-sector backup, select the **Use the sector-by-sector approach** box. Please note that this mode increases processing time and usually results in a larger image file because it copies both used and unused hard disk sectors. In addition, when configuring a sector-by-sector backup of a complete hard disk you can include in the backup unallocated space on the hard disk by selecting **Back up unallocated space**. Thus you will include in the backup all physical sectors on the hard drive.

5.3.2 Selecting the target archive location

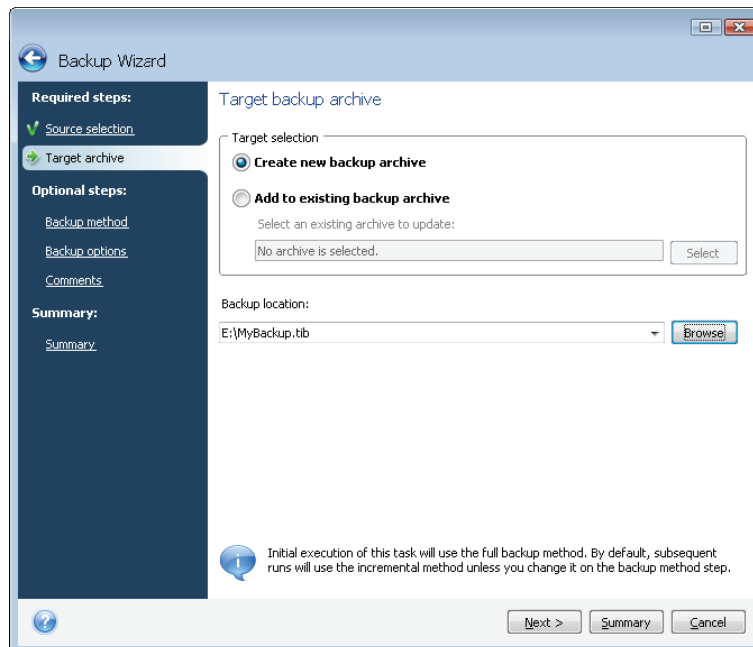
Select the destination location for the backup and specify the archive name.

If you are going to create a new archive (i.e. perform a full backup), select **Create new backup archive** and enter the path to the archive location and new archive file name in the **Backup Location:** field below or click **Browse**, select the archive location on the directory tree and enter the new file name in the **File name** line, or use the file name generator (a button to the right of the line).

If you want to append an incremental backup file to an existing archive, select **Add to existing backup archive** and click the **Select** button to select the existing archive you are

going to update. If the archive already has incremental backups, you can select any of the target archive files. It doesn't matter which one you select, as the program recognizes them as a single archive.

If you want to change the location of added backup files, browse for a new backup location after clicking the **Browse** button, otherwise leave the location the same as that of the existing archive.



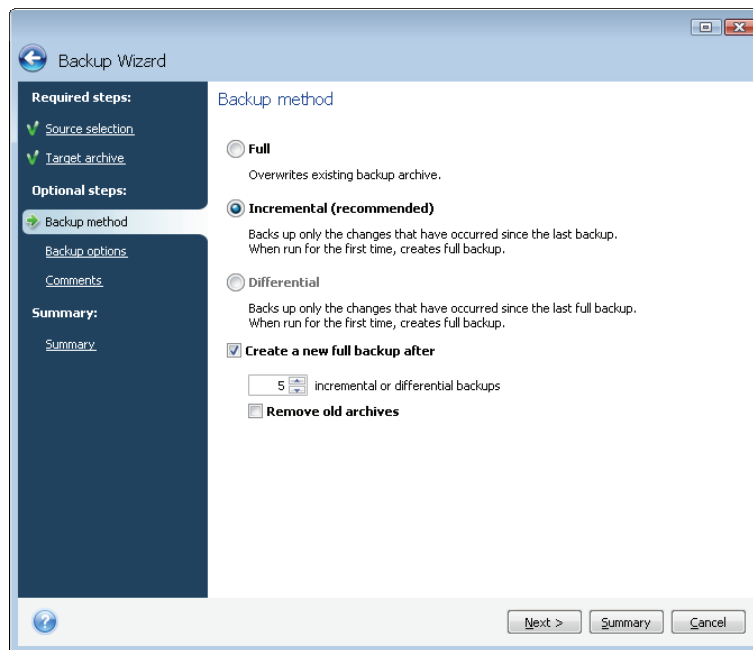
The "farther" you store the archive from the original folders, the safer it will be in case of disaster. For example, saving the archive to another hard disk will protect your data if the primary disk is damaged. Data saved to a network disk or removable media will survive even if all your local hard disks are damaged.

After selecting the archive location and naming the backup archive to be created, you have completed all the required steps for a backup task and this is confirmed by the fact that the **Summary** button becomes selectable. All the remaining steps are optional and in many cases you may omit them and just click **Summary** and then **Proceed** on the Summary page. When you want to use the default backup options, you can omit the **Backup options** step, and so on.

Now let's see what optional steps you can set up while configuring a backup task.

5.3.3 Backup method

Select whether you want to create a full or incremental backup. If you have not backed up the selected data yet, or the full archive is old and you want to create a new master backup file, choose full backup.



You can set a backup policy for the backup task. Acronis True Image OEM Quick Backup offers two types of backup policies:

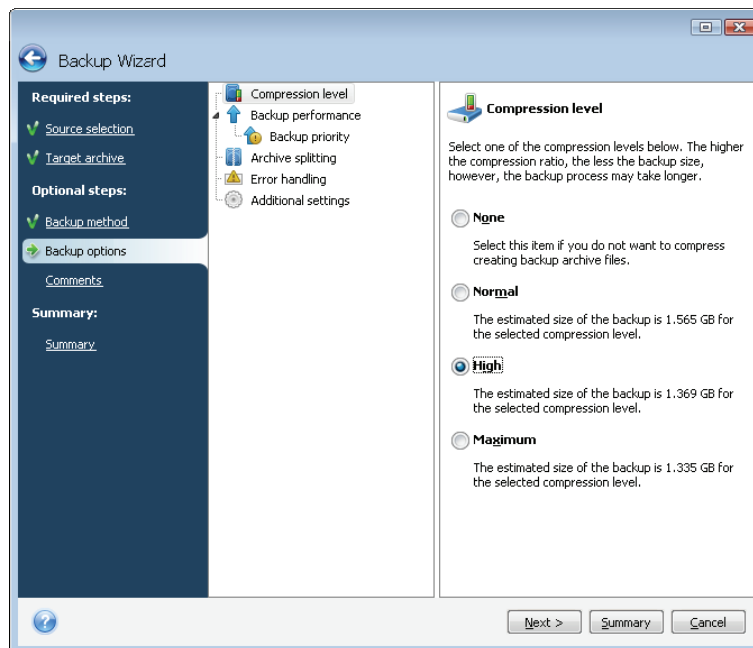
- 1) create full backups only
- 2) create full backups after a specified number of incremental backups

When the first backup on a schedule is executed, a full backup will be created. If you choose (2) by selecting the **Create a new full backup after** box, the next backups will be incremental until the specified number of incremental backups is reached. After the selected number of incremental backups is made, the next time a new full backup and a set of subsequent incremental backups will be created; this process will then continue until you decide to change it.

When the **Remove old archives** box is selected, creation of a new full backup in accordance with the specified backup policy results in deletion of the complete old backup chain – the old full backup and its subsequent incremental backups regardless of the overall limitations you set.

5.3.4 Selecting the backup options

Select the backup options (that is, backup file-splitting, compression level, etc.). The settings of the options will be applied only to the current backup task.



Or, you can edit the default backup options if you want to save the current settings for future tasks. See *5.4 Fine-tuning your backups* for more information.

5.3.5 Providing a comment

Provide a comment for the archive. This can help identify the backup and prevent you from restoring the wrong data. However, you can choose not to make any notes. The backup file size and creation date are automatically appended to the description, so you do not need to enter this information.

5.3.6 The operation summary and the backup process

At the final step, the backup task summary is displayed. Up to this point, you can make changes in the created task by clicking on the desired step and changing the settings. Clicking **Proceed** will start the task execution.

The task progress will be shown in a special window. You can stop the procedure by clicking **Cancel**.

You can also close the progress window by clicking **Hide**. The backup creation will continue, but you will be able to start another operation or close the main program window. In the latter case, the program will continue working in the background and will automatically close once the backup archive is ready. If you prepare some more backup operations, they will be queued after the current one.

5.4 Fine-tuning your backups

You can fine-tune your backups to specific tasks. Such fine-tuning is made by configuring backup options before starting a backup task.

You can set temporary backup options by editing the default backup options while creating a backup task.

5.4.1 Compression level

The preset is **Normal**.

Let's consider such an example - you need to backup to a USB stick some files with a total size comparable or exceeding the USB stick's capacity and want to make sure that the stick accommodates all the files. In this case use the **Maximum** compression for the files to be backed up. However, you should take into account that the data compression ratio depends on the type of files stored in the archive, for example, even the **Maximum** compression will not significantly reduce the backup size if it contains files with already compressed data like .jpg, .pdf or .mp3. It does not make any sense to select the **Maximum** compression for such files because in this case the backup operation will take significantly longer and you will not get an appreciable reduction of backup size. If you are not sure about the compression ratio of a file type, try to back up a couple of files and compare the sizes of the original files and backup archive file. A couple of additional tips: generally, you can use the **Normal** compression level, because in most cases it provides an optimal balance between backup file size and backup duration. If you select **None**, the data will be copied without any compression, which may significantly increase the backup file size, while making the fastest backup.

5.4.2 Backup performance

Backup priority

The preset is **Low**.

The priority of any process running in a system determines the amount of CPU usage and system resources allocated to that process. Decreasing the backup priority will free more resources for other CPU tasks. Increasing the backup priority might speed up the backup process due to taking resources from the other currently running processes. The effect will depend on total CPU usage and other factors.

5.4.3 Archive splitting

Sizeable backups can be split into several files that together form the original backup. A backup file can be split for burning to removable media. A backup destined for the OEM Zone cannot be split.

Suppose you have a full backup of your PC on an external hard disk, but want to make one more backup copy of the system to keep it in a different location from the first one for added security. However, you do not have one more external hard disk, and a USB stick would not accommodate such a large backup. The program can split large backups into several files that together form the original backup. If you have enough space on your PC's hard disk, you can first create a backup archive consisting of multiple files with a specified size on the hard disk and burn the archive to DVD±R discs later on. To specify the split file size, select **Fixed size** mode for **Archive splitting** and enter the desired file size or select it from the drop-down list.

If you do not have enough space to store the backup on your hard disk, select **Automatic** and create the backup directly on DVD-R discs. Acronis True Image OEM Quick Backup will split the backup archive automatically and will ask you to insert a new disc when the previous one is full.



Creating backups directly on CD-R/RW or DVD±R/RW might take considerably more time than it would on a hard disk.

5.4.4 Media components

The preset is **disabled**.

When backing up to removable media, you can make this media bootable and will not need a separate rescue disk.

The **Acronis One-Click Restore** is a minimal addition to your rescue media, allowing one-click data recovery from an image archive stored on this media. This means that when booting from the media and clicking “restore,” all data will be restored to its original place automatically. No options or selections such as resizing partitions will be available.

If you want more functionality during restoration, write a full standalone version of **Acronis True Image OEM Quick Backup** to the rescue media. As a result, you will be able to configure the restore task using Restore Data Wizard.

By clicking the **Advanced** tab you can select Acronis True Image OEM Quick Backup (full version). If you have other Acronis products installed on your computer, such as Acronis Disk Director Suite, the bootable versions of these programs’ components will be offered on this tab as well.

5.4.5 Error handling

1. Ignore bad sectors

The preset is **disabled**.

This option lets you run a backup even if there are bad sectors on the hard disk. Although most disks do not have bad sectors, the possibility that they might occur increases during the course of the hard disk’s lifetime. If your hard drive has started making strange noises (for example, it starts making quite loud clicking or grinding noises during operation), such noises may mean that the hard drive is failing. When the hard drive completely fails, you can lose important data, so it is high time to back up the drive as soon as possible. There may be a problem though – the failing hard drive might already have bad sectors. If the **Ignore bad sectors** box is left unselected, a backup task is aborted in case of read and/or write errors that could occur on the bad sectors. Selecting this box lets you run a backup even if there are bad sectors on the hard disk ensuring that you save as much information from the hard drive as possible.

2. Do not show messages and dialogs while processing (silent mode)

The preset is **disabled**.

You can enable this setting to ignore errors during backup operations. This feature was mainly designed for unattended backups when you cannot control the backup process. In this mode no notifications will be displayed to you if errors occur during backup. Instead you can view the detailed log of all operations after the task finishes by selecting **Tools -> Show Log**. You may use this option when configuring a backup task to be run during the night.

5.4.6 Additional settings

1. Validate backup archive when it is created

The preset is **disabled**.

When enabled, the program will check the integrity of the just created or supplemented archive immediately after backup. When setting up a backup of critical data or a disk/partition backup, we strongly recommend you to enable the option to ensure that the backup can be used to recover lost data.



To check archive data integrity you must have all incremental backups belonging to the archive and the initial full backup. If any of the successive backups are missing, validation is not possible.

2. Ask for first media while creating backup archives on removable media

The preset is **enabled**.

You can choose whether to display the **Insert First Media** prompt when backing up to removable media. With the default setting, backing up to removable media may not be possible if the user is away, because the program will wait for someone to press **OK** in the prompt box. Therefore, you should disable the prompt when scheduling a backup to removable media. Then, if the removable media is available (for example, CD-R/RW inserted) the task can run unattended.

5.5 Archive to various places

You can save full and incremental backups of the same data entity (for example, a partition or disk) to various places – almost anywhere you like.

5.5.1 Why you need this feature

The previous versions of Acronis True Image OEM Quick Backup could save backups only in the same place (a folder, disk, backup location, etc.) as the initial full backup. Usually this is not a problem but sometimes this could be difficult or simply impossible to achieve, for example, due to using up all the available disk space. Of course, Acronis True Image OEM Quick Backup provided means for alleviating this problem – it could manage backups in the OEM Zone and in backup locations and was able to automatically delete the oldest backups freeing the space it needed for new ones. Such an approach worked just fine in most cases, however, there could be exceptions.

For example, you saved a full backup of your system disk to an external USB hard disk drive and it occupied almost all the disk. If later you would like to make an incremental backup of that disk while keeping the initial full one, this was simply impossible.

Also, you could assign a meaningful name only to a full backup. You could add a comment with a description of the backup while configuring a backup task in the wizard, but in order to read this description you needed to launch Acronis True Image OEM Quick Backup and select the appropriate tib archive in the Restore wizard.

There was one more drawback. Suppose you were making a large backup to a hard disk and after an hour you got a message warning you that the disk is full. You could try to free some disk space but if this was impossible, you were forced to find some other location for the backup and start it anew wasting a lot of time as a result.

5.5.2 What makes it work

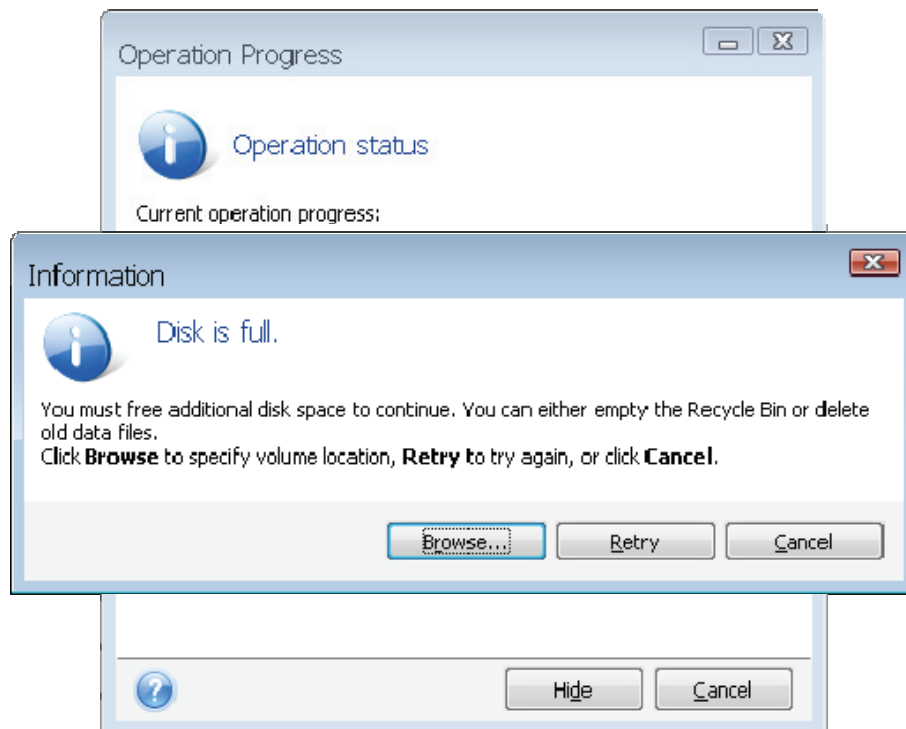
For this feature to operate, Acronis True Image OEM Quick Backup maintains an internal database containing all the metadata information on the operations performed with tib files (such as creation, consolidation, verification, and so on), as well as on their names, sizes, time stamps, physical paths, archive types, slice and volume IDs, and some "housekeeping" information required for program operation. The database is updated after each operation with tib files. Acronis True Image OEM Quick Backup also adds to tib files metadata uniquely identifying the file. The last volume of a slice related to a certain backup entity contains additional information on the IDs of all the preceding volumes and backups (tib files).

In other words, thanks to this metadata information, Acronis True Image OEM Quick Backup always knows where, when, and how it backed up your data and where it can find the data you want to restore.

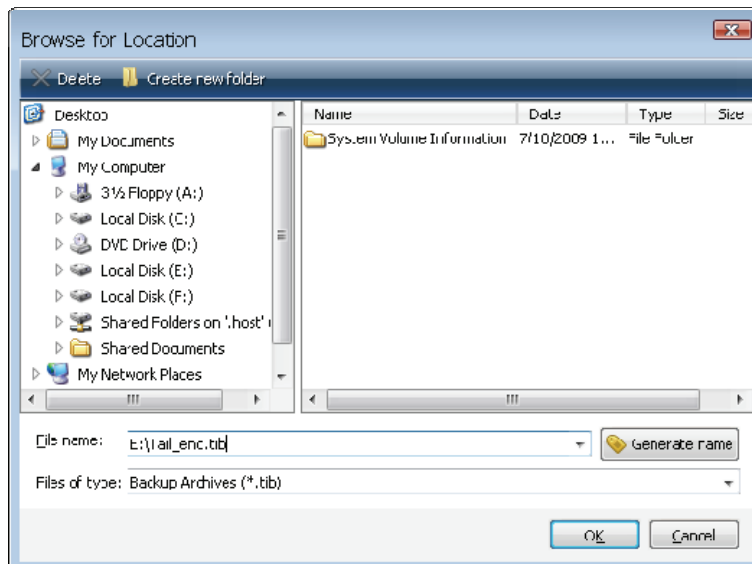
5.5.3 Using backup to various places

Now Acronis True Image OEM Quick Backup offers much greater flexibility.

One more useful aspect of this feature is its ability to split backups "on-the-fly". Suppose you perform a backup to a hard disk and in the middle of the backup process Acronis True Image OEM Quick Backup finds out that the disk, to which you are backing up, does not have enough free space for completing the backup. The program displays a message warning you that the disk is full.



To complete the backup, you may either try to free some space on the disk and click **Retry** or select another storage device. To choose the latter option, click **Browse** in the information window. The Browse for Location window appears.



The left pane shows the storage locations available on your computer. After you select a disk in the left pane, the program shows the free space on that disk in the right pane. If the free space is enough for completing the backup, assign a name for the file that will contain the remaining data being backed up. You can either enter the name manually (for example, "Tail_end.tib") or use the file name generator (a button to the right of the line). Then click **OK** and Acronis True Image OEM Quick Backup will complete the backup.

Chapter 6. Restoring backup data

6.1 Restore under Windows or boot from CD?

As mentioned above (see 2.3 *Running Acronis True Image OEM Quick Backup*), Acronis True Image OEM Quick Backup can be used in several ways. We recommend that you first try to restore data using Acronis True Image OEM Quick Backup under Windows, because this provides more functionality. Boot from the bootable media or use the Startup Recovery Manager (see 3.4 *Acronis Startup Recovery Manager*) only if Windows does not start up.

The boot CD, from which you started the program, does not keep you from using other CDs or DVDs with backup archives. Acronis True Image OEM Quick Backup is loaded entirely into RAM so you can remove the bootable CD to insert the archive disc.



Be careful! When you use the Acronis True Image OEM Quick Backup rescue disc, the product creates disk drive letters that might differ from the way Windows identifies drives. For example, the D: drive identified in the standalone Acronis True Image OEM Quick Backup might correspond to the E: drive in Windows. This is not an error with the software.



If a backup image is located on bootable media, you might have the choice of using Acronis One-Click Restore. This operation always restores the entire physical disk. Therefore, if your disk consists of several partitions, all of them must be included in the image. Any partitions missing from the image will be lost. Please make sure that the image contains *all* the disk data you plan to restore. For more information on Acronis One-Click Restore, see 5.4.4 *Media components*.

6.1.1 Network settings in rescue mode

When booted from removable media or by Startup Recovery Manager, Acronis True Image OEM Quick Backup might not detect the network. That can happen if there is no DHCP server in your network or your computer address was not identified automatically.

To enable network connection, specify network settings manually in the window, available at **Tools -> Options -> Network adapters**.

6.2 Restoring disks/partitions or files from images

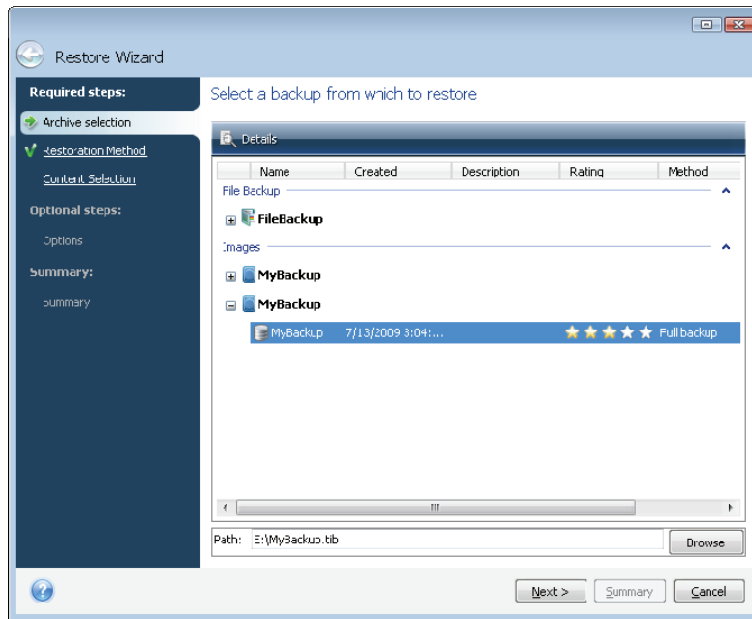
To restore a partition (disk) from an image, Acronis True Image OEM Quick Backup must obtain **exclusive access** to the target partition (disk). This means no other applications can access it at that time. If you receive a message stating that the partition (disk) cannot be locked, close applications that use this partition (disk) and start recovery once more. If you cannot determine which applications use the partition (disk), close them all.

6.2.1 Starting the Restore Wizard

Start the **Restore Wizard** by selecting **Operations -> Restore** in the main program menu.

6.2.2 Archive selection

1. Select the archive. Acronis True Image OEM Quick Backup will show the list of backup archives whose locations it knows from the information stored in its database. If the program has not found the backup you need (for example, when the backup was made some time ago by a previous Acronis True Image OEM Quick Backup version), you can find it manually by clicking **Browse** and then selecting the backup location on the directory tree and choosing the backup in the right pane.



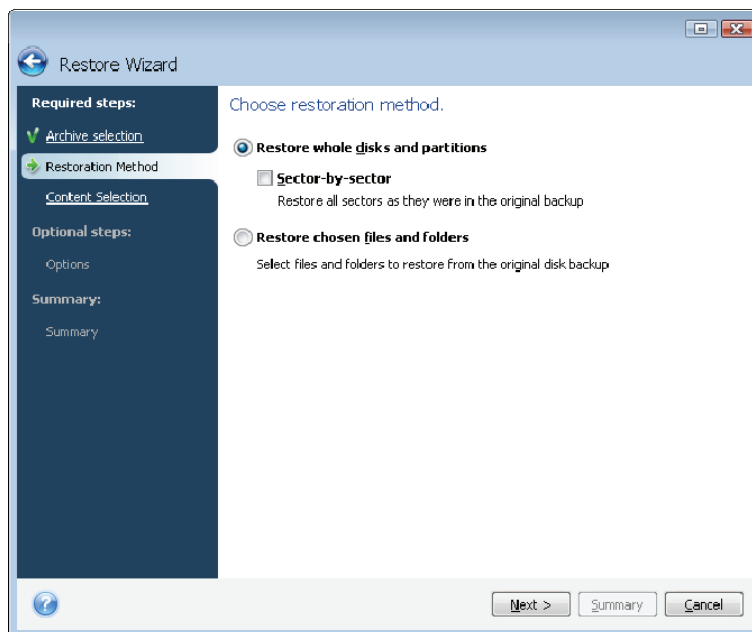
If the archive is located on removable media, e.g. CD, first insert the last CD and then insert disks in reverse order when the Restore Data Wizard prompts you.



To restore data from an incremental backup, you must have all previous backup files and the initial full backup. If any of the successive backups are missing, restoration is not possible.

6.2.3 Restoration method selection

Select what you want to restore:



Restore whole disks and partitions

Having chosen a disk and partition recovery type, you may need to select the following option.

Sector-by-sector

The program will restore both used and unused sectors of disks or partitions. This option will appear only when you choose to restore a sector-by-sector backup.

Restore chosen files or folders

If you are not going to recover the system, but only want to repair damaged files, select **Restore chosen files or folders**. With this selection, you will be further asked to select where to restore selected folders/files (original or new location), choose files/folders to be restored, and so on. These steps look like those in file archive restore. However, watch your selection: if you are going to restore files instead of a disk/partition, unselect the unnecessary folders. Otherwise you will restore a lot of excess files. Then you will be able to go directly to the Restoration Summary screen (*6.2.10 Restoration summary and executing restoration*).

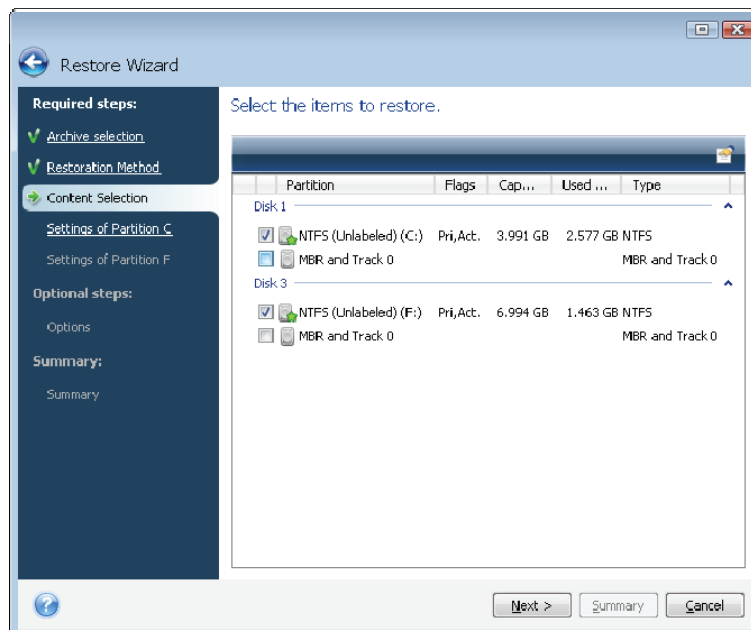


You can restore files from disk/partition images only if they have the FAT or NTFS file systems.

6.2.4 Selecting a disk/partition to restore

The selected archive file can contain images of several partitions or even disks. Select which disk/partition to restore.

During a single session, you can restore several partitions or disks, one by one, by selecting one disk and setting its parameters first and then repeating these actions for every partition or disk to be restored.



Disk and partition images contain a copy of track 0 along with the MBR (master boot record). It appears in this window in a separate line. You can choose whether to restore MBR and track 0 by selecting the corresponding box. Restore the MBR if it is critical to your system booting.

When MBR restoration is chosen, there will be the "Restore disk signature" box in the bottom left corner at the next step. Restoring disk signature may be desirable due to the following reasons:

1) Acronis True Image OEM Quick Backup creates scheduled tasks using the signature of the source hard disk. If you restore the same disk signature, you don't need to re-create or edit the tasks created previously.

2) Some installed applications use disk signature for licensing and other purposes.

3) If you use Windows Restore Points, they will be lost when the disk signature is not restored.

If the box is unselected, Acronis True Image OEM Quick Backup generates a new disk signature for the restored drive. This may be needed when you use an image backup not for disaster recovery but for cloning your Windows Vista hard drive to another one. Trying to boot Windows after cloning with both drives connected will result in a problem. During Windows booting its loader checks the disk signatures of all of the connected drives, and if it finds two identical disk signatures, the loader changes the signature of the second disk, which would be the clone disk. Once this happens, the clone disk would not be able to boot up independently of the original disk, because the MountedDevices fields in the clone's registry reference the disk signature of the original disk, which will not be available if the original disk is disconnected.

Acronis True Image OEM Quick Backup generates a new disk signature for the restored drive even if you restore a backup to the original drive that was backed up.

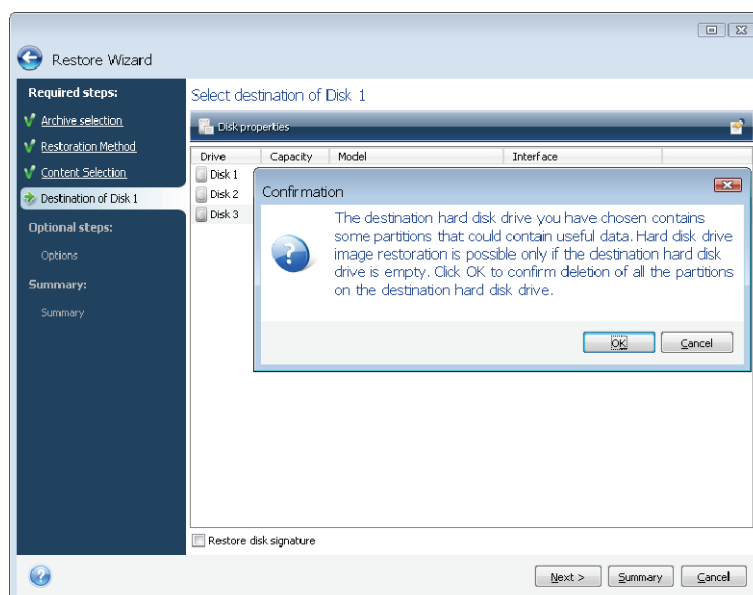
6.2.5 Selecting a target disk/partition

1. Select a target disk or partition where you want to restore the selected image. You can restore data to its initial location, to another disk/partition or to an unallocated space. The target partition should be at least the same size as the uncompressed image data.



All the data stored on the target partition will be replaced by the image data, so be careful and watch for non-backed-up data that you might need.

2. When restoring an entire disk, the program will analyze the target disk structure to see whether the disk is free.



If there are partitions on the target disk, you will be prompted by the confirmation window stating that the destination disk contains partitions, perhaps with useful data.

You will have to select between:

- **OK** – all existing partitions will be deleted and all their data will be lost.
- **Cancel** – no existing partition will be deleted, discontinuing the recovery operation. You will then have to cancel the operation or select another disk.



Note that no real changes or data destruction will be performed at this time! For now, the program will just map out the procedure. All changes will be implemented only when you click **Proceed** in the wizard's **Summary** window.

6.2.6 Changing the restored partition type

When restoring a partition, you can change its type, though it is not required in most cases.

To illustrate why you might need to do this, let's imagine that both the operating system and data were stored on the same primary partition on a damaged disk.

If you are restoring a system partition to the new (or the same) disk and want to load the operating system from it, you will select **Active**.

Acronis True Image OEM Quick Backup automatically corrects boot information during restore of the system partition to make it bootable even if it was not restored to the original partition (or disk).

If you restore a system partition to another hard disk with its own partitions and OS, most likely you will need only the data. In this case, you can restore the partition as **Logical** to access the data only.

By default, the original partition type is selected.

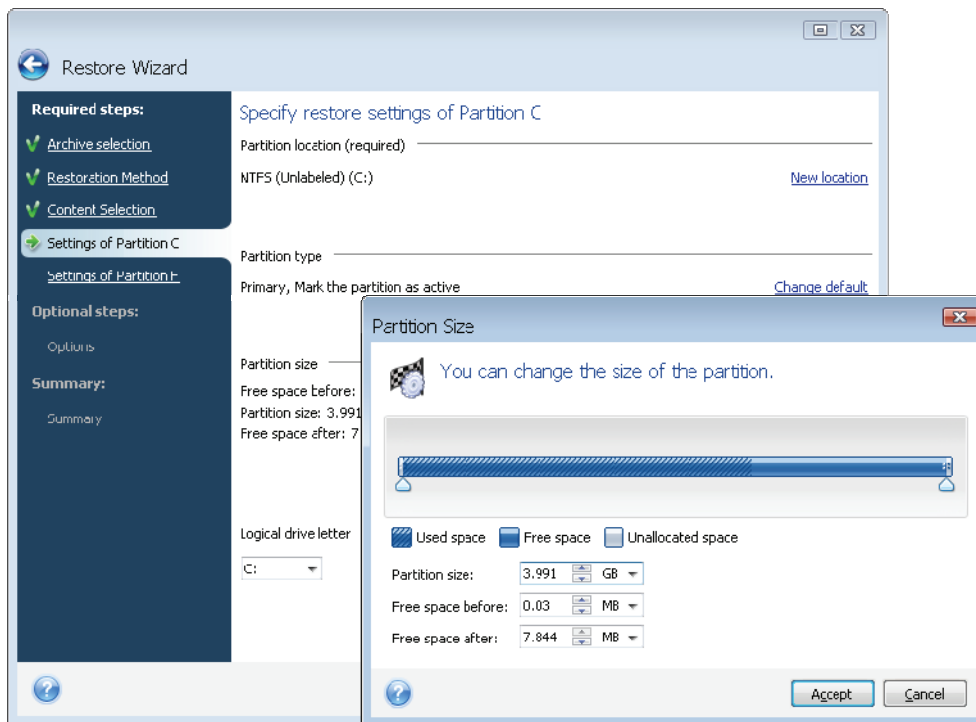


Selecting **Active** for a partition without an installed operating system could prevent your computer from booting.

6.2.7 Changing the restored partition size and location

You can resize and relocate a partition by dragging it or its borders with a mouse on the horizontal bar on the screen or by entering corresponding values into the appropriate fields.

Using this feature, you can redistribute the disk space among partitions being restored. In this case, you will have to restore the partition to be reduced first.



These changes might be useful if you are going to copy your hard disk to a new high-capacity one by creating its image and restoring it to a new disk with larger partitions.

6.2.8 Assigning a letter to the restored partition

Acronis True Image OEM Quick Backup will assign an unused letter to a restored partition. You can select the desired letter from a drop-down list or let the program assign a letter automatically by selecting the **Auto** setting.

You should not assign letters to partitions inaccessible to Windows, such as to those other than FAT and NTFS.

6.2.9 Setting restore options

Select the options for the restoration process (that is, restoration process priority, etc.). The settings will be applied only to the current restore task. Or, you can edit the default options. See *6.3 Setting restore options* for more information.

6.2.10 Restoration summary and executing restoration

At the final step, the restoration summary is displayed. Up to this point, you can make changes in the created task by choosing the step you want to change and editing its settings. If you click **Cancel**, no changes will be made to disk(s). Clicking **Proceed** will launch the task execution.

The task progress will be shown in a special window. You can stop the procedure by clicking **Cancel**. However, it is critical to note that the target partition will be deleted and its space unallocated – the same result you will get if the restoration is unsuccessful. To recover the “lost” partition, you will have to restore it from the image again.

6.3 Setting restore options

6.3.1 Files to preserve during restoration

This option is not applicable to restoration of disks and partitions from images.

By default, the program will not overwrite any files and folders, thus giving the files on the hard disk unconditional priority over the archived files.

Selecting the **Overwrite existing files** checkbox will give the archived files unconditional priority over the files on the hard disk.

You can set default filters for the specific types of files you wish to preserve during archive restoration. For example, you may want hidden and system files and folders, newer files and folders, as well as files matching selected criteria not to be overwritten by the archive files.

While specifying the criteria, you can use the common Windows wildcard characters. For example, to preserve all files with extension .exe, add ***.exe**. **My????.exe** will preserve all .exe files with names consisting of five symbols and starting with "my".

6.3.2 Restoration priority

The preset is **Low**.

The priority of any process running in a system determines the amount of CPU usage and system resources allocated to that process. Decreasing the restoration priority will free more resources for other CPU tasks. Raising restoration priority may speed up the restore process as it takes resources from other currently running processes. The effect will depend on total CPU usage and other factors.

6.3.3 Additional settings

1. You can choose whether to restore the file date and time from the archive. By default the current date and time will be assigned.

2. Before data is restored from the archive, Acronis True Image OEM Quick Backup can check its integrity. If you suspect that the archive might have been corrupted, select **Validate backup archive before restoration**.



You must have all incremental backups belonging to the archive and the initial full backup to check archive data integrity. If any backups are missing, the validation is not possible.

3. Having restored a disk/partition from an image, Acronis True Image OEM Quick Backup can check the integrity of the file system. To do so, select **Check file system after restoration**.

Limitations on use of this option:

- Check of the file system is available only when restoring disk/partitions using FAT16/32 and NTFS file systems.
- The file system will not be checked if a reboot is required during restoration, for example, when restoring the system partition to its original place.

Chapter 7. Creating bootable media

You can run Acronis True Image OEM Quick Backup from an emergency boot disk on a bare-metal system or a crashed computer that cannot boot. You can even back up disks on a non-Windows computer, copying all its data into the backup archive by imaging the disk one sector at a time. To do so, you will need bootable media that has a copy of the standalone Acronis True Image OEM Quick Backup version installed on it.

You can create bootable media using the Bootable Media Builder. For this, you will need a blank CD-R/RW, a blank DVD±R/RW or any other media from which your computer can boot, such as a Zip drive.

Acronis True Image OEM Quick Backup also provides the ability to create an ISO image of a bootable disc on the hard disk.

If you have other Acronis products, such as Acronis Disk Director Suite, installed on your computer, you can include standalone versions of these programs on the same bootable disk as well.



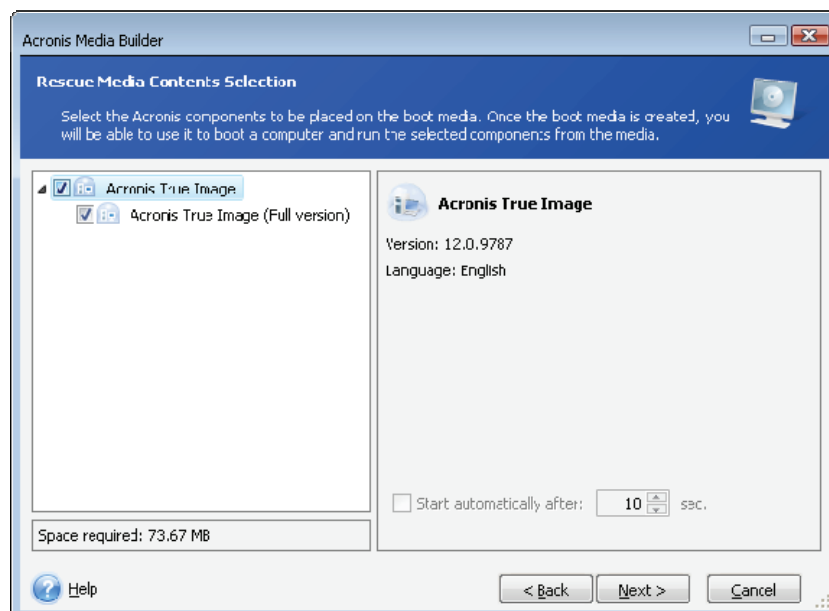
If you have chosen not to install the Bootable Media Builder during Acronis True Image OEM Quick Backup installation, you will not be able to use this feature.



When booting from the Rescue Media, you cannot perform backups to disks or partitions with Ext2/Ext3, ReiserFS, and Linux SWAP file systems.

1. Choose **Create Bootable Rescue Media** in the **Tools** menu. You can also run the Bootable Rescue Media Builder without loading Acronis True Image OEM Quick Backup by choosing **Programs -> Acronis -> Acronis True Image OEM Quick Backup -> Bootable Rescue Media Builder** from the **Start** menu.

2. Select which components of Acronis programs you want to place on the bootable media.



Acronis True Image OEM Quick Backup offers the following component:

- **Acronis True Image OEM Quick Backup full version**

Includes support of USB, PC Card (formerly PCMCIA) and SCSI interfaces along with the storage devices connected via them, and therefore is strongly recommended.

In the next window you can set Bootable Media Startup Parameters in order to configure rescue media boot options for better compatibility with different hardware. Several options are available (*nousb*, *nomouse*, *noapic*, etc.). All the available startup parameters are listed in *Appendix C. Startup Parameters*. These parameters are provided for advanced users. If you encounter any hardware compatibility problems while testing boot from the rescue media, it may be best to contact Acronis Technical Support.

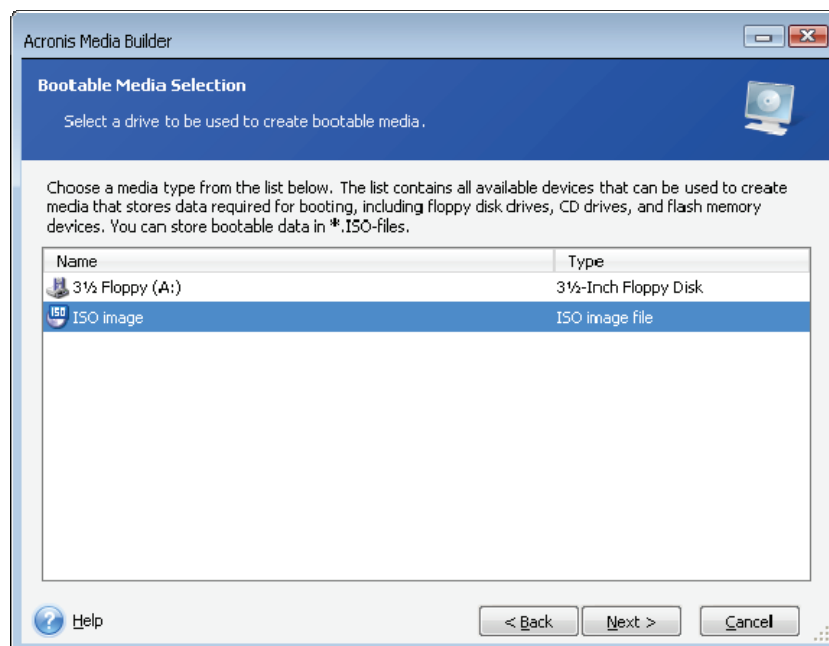
The **Start automatically after** parameter specifies the timeout interval for the boot menu. If this parameter is not specified, at booting a computer the program will display the boot menu and wait for you to select whether to boot the OS or the Acronis component. If you set, for example, **10 sec** for Acronis rescue media, the standalone Acronis True Image OEM Quick Backup will launch in 10 seconds after the menu is displayed.

To find out more about components of other Acronis products, see their respective user guides.

3. Select the type of bootable media (CD-R/RW, DVD±R/RW or 3.5" diskettes) to create. If your BIOS has this feature, you can create other bootable media such as removable USB flash drives. You can also choose to create a bootable disk ISO image.



When using 3.5" diskettes, you will only be able to write one component at a time (for example, the full version of Acronis True Image OEM Quick Backup) on a set of diskettes. To write another component, start Bootable Media Builder again.



4. If you are creating a CD, DVD or any removable media, insert a blank disc so the program can determine its capacity. If you choose to create a bootable disc ISO image, specify the ISO file name and the folder in which to place it.

5. Next, the program will estimate how many blank diskettes are required (in case you have not chosen ISO or CD/DVD) and give you time to prepare them. When you are finished, click **Proceed**.

After you create a boot disc, mark it and keep it in a safe place.

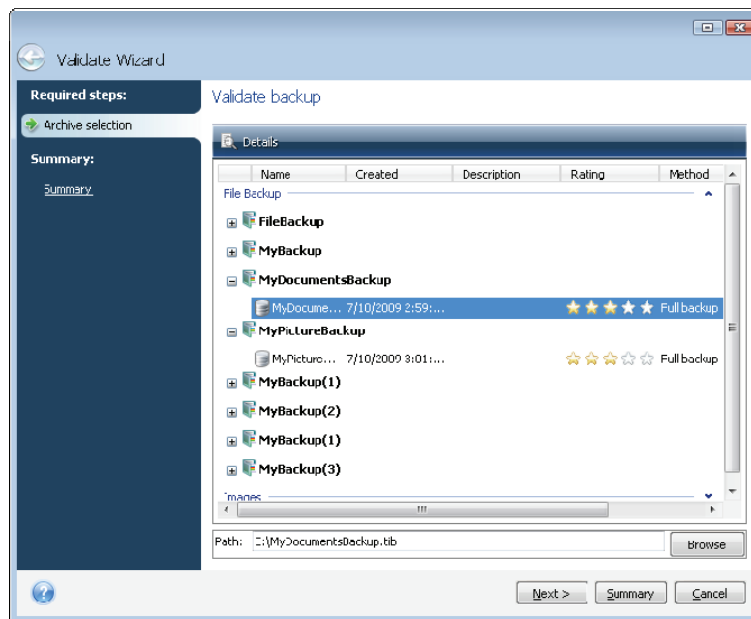
Please keep in mind that the backups created by the later program version may be incompatible with the previous program versions. Due to this reason, we strongly recommend that you create a new bootable media after each Acronis True Image OEM Quick Backup upgrade. One more thing you should remember – when booting from the rescue media and using a standalone version of Acronis True Image OEM Quick Backup, you cannot recover files and folders encrypted with use of the encryption feature available in Windows XP and Windows Vista operating systems.

Chapter 8. Other operations

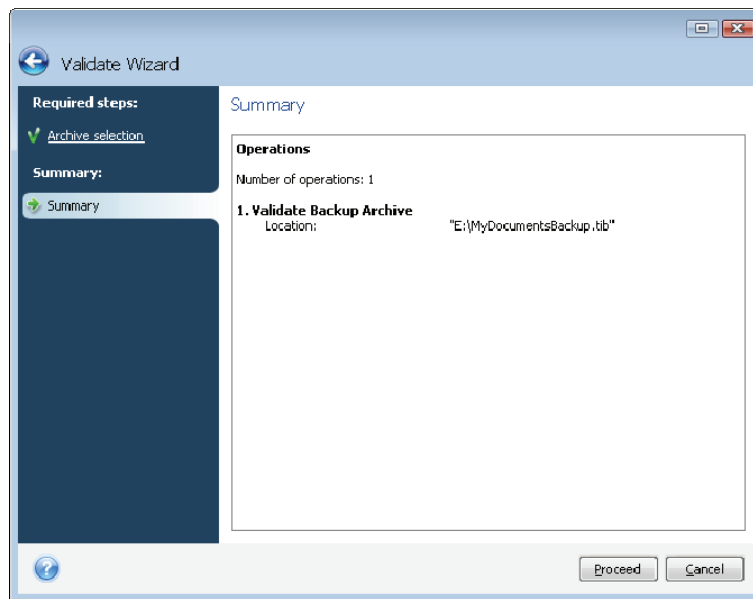
8.1 Validating backup archives

You can check the integrity of your backups to be certain that your archives are not damaged. You may perform such validations using the **Validate Wizard**.

1. To start the **Validate Wizard**, choose **Operations -> Validate Backup Archive** from the main program menu.
2. Select the archive to validate. Click **Next** to continue.



3. Clicking **Proceed** in the summary window will launch the validation procedure if you leave the **Run task now** box selected. If you have decided to validate the backup archive on schedule, the **Run task now** box will be unselected by default and the validation will proceed according to the schedule you set, though you can also validate the backup right away by selecting this box. After the validation is complete, you will see the results window. You can cancel validation by clicking **Cancel**.



To check archive data integrity you must have all incremental backups belonging to the archive and the initial full backup. If any of the successive backups are missing, validation is not possible.

8.2 Viewing Logs

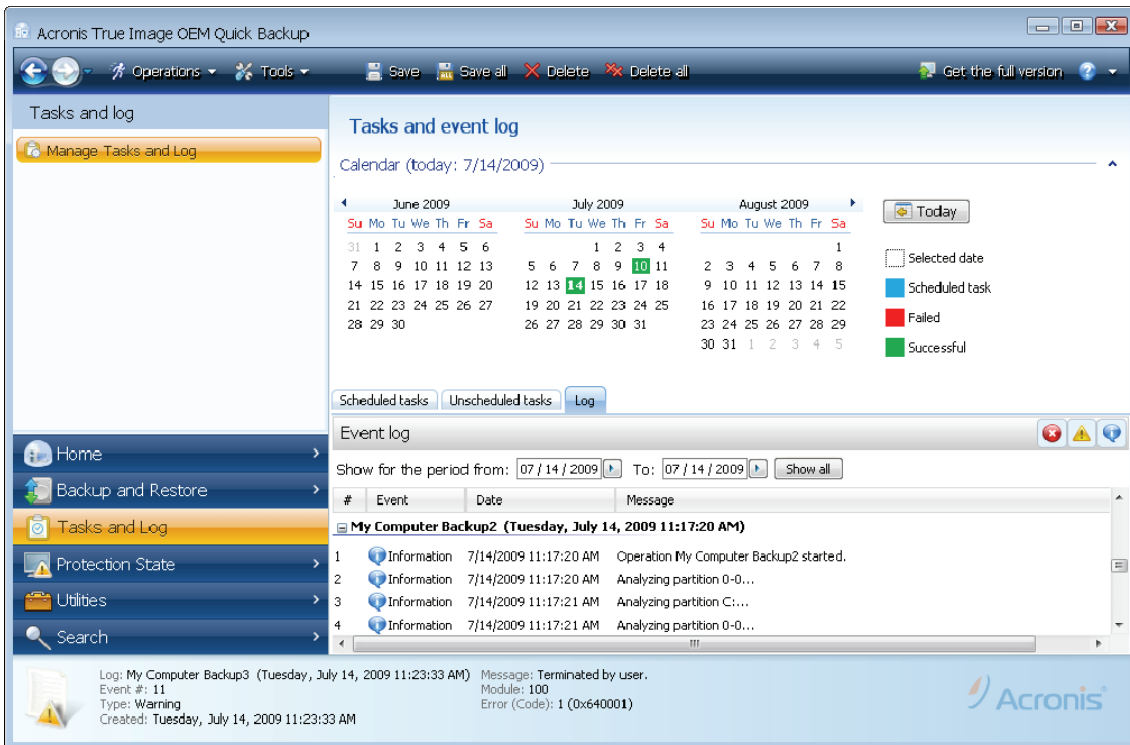
Acronis True Image OEM Quick Backup has a Tasks and Log screen that allows you to view its working logs. The logs can provide information about backup or validation task results, including reasons for failure, if any.

To open the Tasks and Log screen, click **Tasks and Log** on the sidebar.

Clicking any day in the past takes you to the **Log** tab and shows logs for the selected date. If there are no logs for that date, an appropriate message appears.

To view logs, you can just click on the **Log** tab.

When the **Log** tab is selected, the upper pane shows the calendar, while the lower one shows logs' contents.



To view the logs for a specific period, select the period by clicking the right arrow buttons in the **From:** and **To:** fields of the **Show for the period** area. Clicking the arrow in the **From:** field opens a pop-up calendar where you can set the start day of the period by double-clicking the appropriate day number. Then set the end day using the same procedure for the **To:** field. You can change months and years in the pop-up calendars using the left and right arrows in the month name area. In addition, you can enter the desired period start and end dates directly in the fields. If you would like to see all the logs, click the **Show all** button.

To delete a log entry, select it and click the **Delete** button on the toolbar. To delete all log entries, click the **Delete all** button. You can also save a log entry to file by clicking the **Save** button. To save all logs to file, click **Save all**.

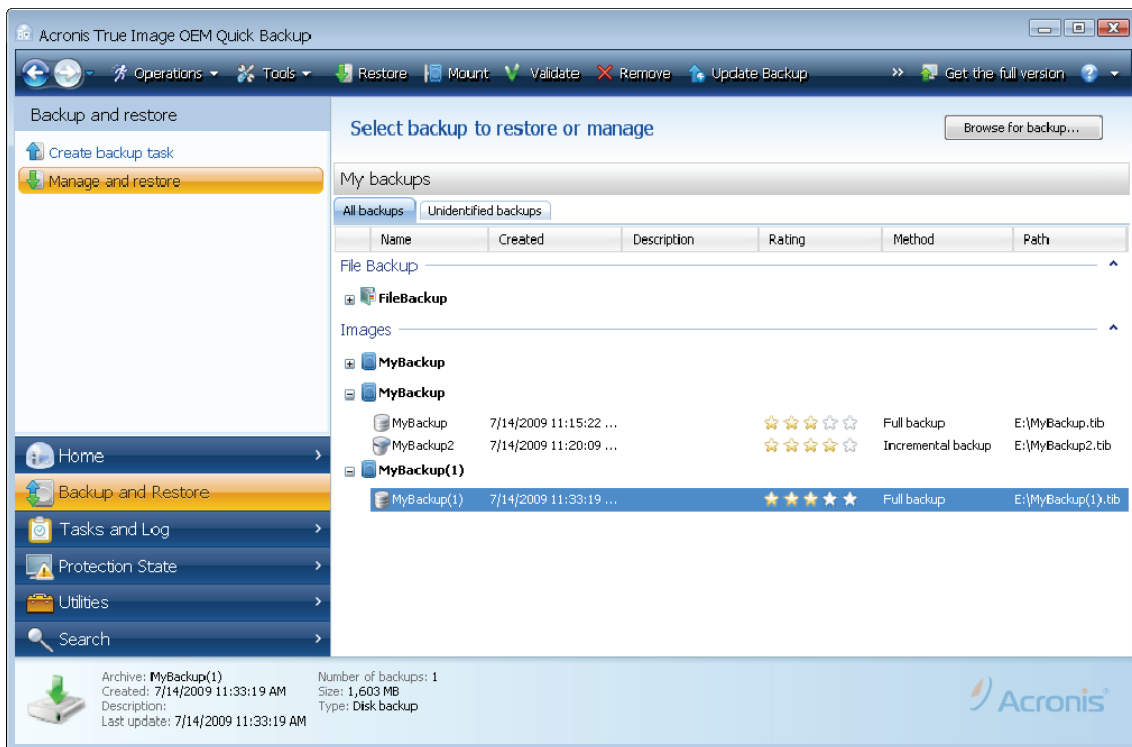
If any step shown in logs was terminated by an error, the corresponding log will be marked with a red circle with a white cross inside.

The three buttons to the right control message filters: the white cross in the red circle filters error messages, the exclamation mark in a yellow triangle filters warnings, and the "i" in the blue circle filters information messages.

To view the details of the current step better, you can hide the calendar by clicking the **Up** arrow at the top right of the calendar pane. This will enlarge the logs area. To view the calendar again, click the **Down** arrow at the top right of the calendar pane.

8.3 Managing backup archives

After a while you may wish (or be forced) to manage your backup archives, for example, in order to free some space for new backups by removing the oldest backups or those you no longer need. Since now Acronis True Image OEM Quick Backup stores information about the backup archives in a metadata information database, you must manage backup archives (e.g. delete some of them) by using the program's tools and not Windows Explorer. To manage your backup archives, go to the **Manage and restore** screen by clicking **Manage and Restore** on the Welcome screen or selecting **Backup and Restore -> Manage and Restore** on the sidebar.



The toolbar on the screen provides for the following operations with backups (these operations can also be selected through a shortcut menu opened by right-clicking on a desired backup):

- **Restore** - see *Chapter 6. Restoring backup data*;
- **Mount** (only for the images) - see *9.3 Mounting an image*;
- **Validate** - see *8.1 Validating backup archives*;
- **Remove** – see *8.4 Removing backup archives*;
- **Explore backup** - see *Chapter 9. Searching, exploring archives and mounting images*.

Selecting the **All backups** tab allows you to manage backup archives stored on all local storage media and network resources except the OEM Zone, which has its own tab.



You cannot explore backups stored in the OEM Zone.

There is one more tab - **Unidentified backups**, which is usually empty. During the first start the current version of the program scans all your local hard disks and if it finds any previous Acronis True Image OEM Quick Backup backups, they are added to the database storing the metadata information about backups and to the list on the **All backups** tab. You will be able to manage those backups as well as restore the data they contain.

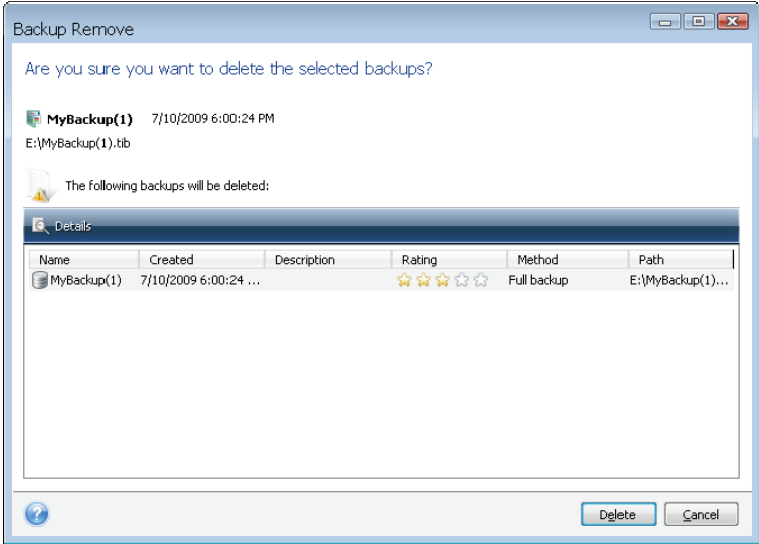
Click **OK** the program will move the backup archive to the **All backups** tab.

8.4 Removing backup archives

You may want to remove backups and backup archives you no longer need. Because Acronis True Image OEM Quick Backup stores information on the backup archives in a metadata information database, deleting unneeded archive files using Windows Explorer will not delete information about these archives from the database and Acronis True Image OEM Quick Backup will consider that they still exist. This will result in errors when the program tries to

perform operations on the backups that no longer exist. So you must only remove obsolete backups and backup archives using the tool provided by Acronis True Image OEM Quick Backup. To remove the entire backup archive, select it and click **Remove** on the toolbar or right-click on the full backup of the backup archive and choose **Remove** in the shortcut menu. To remove an incremental backup, select it and click **Remove** on the toolbar or right-click on the selected backup and choose **Remove** in the shortcut menu. In this case all other successive incremental backups created later than the selected incremental backup will be also deleted.

If you click **Delete**, the program will remove the backup archive from its metadata information database as well as from the hard disk.



Chapter 9. Searching, exploring archives and mounting images

Acronis True Image OEM Quick Backup offers two kinds of archive contents management: mounting for images and exploring for images.

Exploring images lets you view their contents and copy the selected files to a hard disk. To explore a backup archive, double-click on the corresponding tib file. You can also right-click on the file and choose **Explore** in the shortcut menu.

Mounting images as virtual drives lets you access them as though they were physical drives. Such an ability means that:

- a new disk with its own letter will appear in the drives list
- using Windows Explorer and other file managers, you can view the image contents as if they were located on a physical disk or partition
- you will be able to use the virtual disk in the same way as the real one: open, save, copy, move, create, delete files or folders. If necessary, the image can be mounted in read-only mode.



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

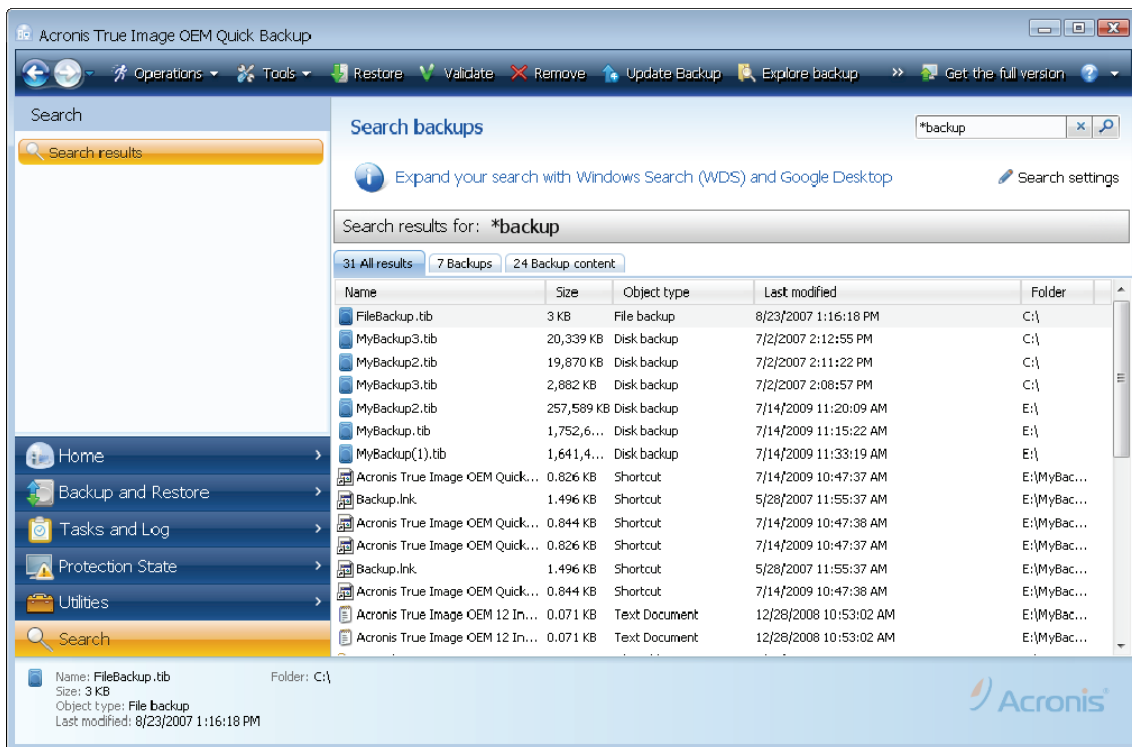
Please keep in mind that, though both file archives and disk/partition images have a default “.tib” extension, only **images** can be mounted. If you want to view file archive contents, use the Explore operation. The following is a brief summary of the Explore vs Mount operation:

	Explore	Mount
Archive type	Disk or partition image	Partition image
Assigning a letter	No	Yes
Archive modification	No	Yes
Files extraction	Yes	Yes

9.1 Searching

In addition to the ability to explore backup archives, Acronis True Image OEM Quick Backup now provides search for tib archives themselves, for files in tib archives only, as well as offering full-text search in help topics and in the comments to archives made during the archive's creation. This facilitates searching of the information you need for using Acronis True Image OEM Quick Backup and for restoring files from your backup archives. Here's how you can search the data you need.

1. Enter a search string into the Search field at the top right of the Acronis True Image OEM Quick Backup window and then click the magnifying glass icon. You will be taken to the **Search Results** window. The search results are output in the corresponding tabs of the window and all search results are shown on the **All results** tab.



2. By default the search is performed in all the sources where Acronis True Image OEM Quick Backup can search information. You can select an information source of interest by choosing the appropriate tab among **Backups** and **Backup content**.

- The **Backups** tab shows the results of the search for tib archives by archive filename. Double-clicking on a filename opens the corresponding archive in Windows Explorer where you can explore the archive contents. You can validate or restore the archive by right-clicking on its filename and choosing the appropriate item in the shortcut menu. In addition, you can use the **Restore**, **Mount** (for image backups), **Validate**, and **Remove** buttons for tib archives, and **Restore**, **Validate**, and **Remove** buttons for zip archives, that appear on the toolbar after selecting an archive on the **Backups** tab.
- The **Backup content** tab shows results of searches for files and folders in tib archives. Double-clicking on a filename opens the file. You can restore the file by right-clicking on its filename and choosing Restore in the shortcut menu. This shortcut menu also enables you to open the file or the parent folder that contains that file.

To help you better understand the search results, here is some information on the algorithms used by the Search feature.

1. When searching files in tib archives you can type all or part of the filename and use the common Windows wildcard characters. For example, to find all batch files in the archives, type "*.bat". Typing my???.exe will allow you to find all .exe files with names consisting of five symbols and starting with "my". By the way, search is case-insensitive, i.e. "Backup" and "backup" is the same search string. Furthermore, the search stops after the program finds 100 files corresponding to a search criterion you have typed. If the search results do not contain the file you need, you will have to refine the search criterion.



Please note that Acronis True Image OEM Quick Backup does not search files in encrypted tib archives as well as in the password protected OEM Zone.



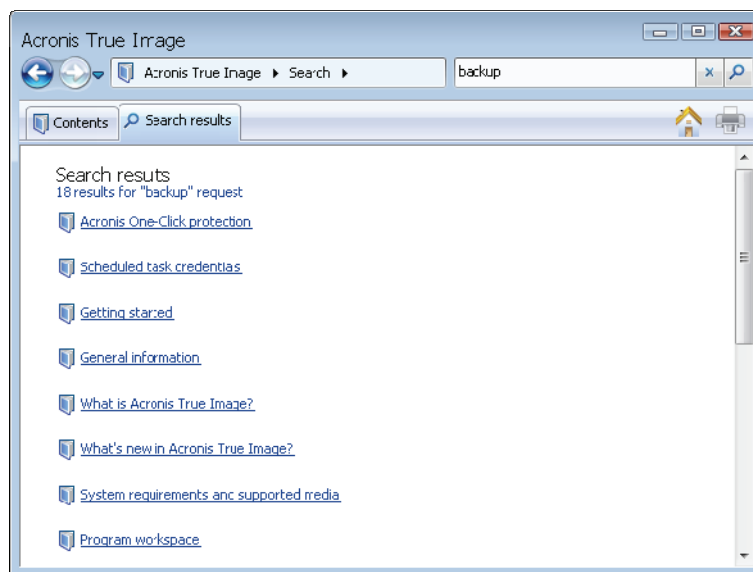
When a file is included in several backups and it has not been modified, the search results will show it only once in the oldest backup file. If such a file has been changed, the search results will show all backup files containing *differing* versions of the file.

2. Search in the Help topics and comments to backup archives is carried out differently. First of all, you cannot use "*" and "?" as Windows wildcard characters. As in this case the program uses full text search, it will just find all occurrences of these characters in the Help topics (if any). The full text search uses the following rules:

- Search criteria consist of words separated by space character(s) or by a logical operator: "AND", "OR", "NOT" (please, take note of the upper case).
- Only one logical operator is allowed (the first one that occurs in a search string), otherwise they are ignored and interpreted as search words.
- All space-separated words must be in a topic for successful match.

The **Backups** tab (as well as the **All results** tab) shows the archive files whose comments satisfy the search criterion. Double-clicking on an archive opens it for exploring.

Search in the Help topics is performed after opening the **Help** by pressing the **F1** key or clicking the help icon in any Acronis True Image OEM Quick Backup window and entering a search string in the Search field. Clicking on a found help topic title opens the corresponding Help topic.



9.2 Google Desktop and Windows Search integration

Acronis True Image OEM Quick Backup has plug-ins for Google Desktop and Windows Search (WDS). If you use any of these search engines on your computer, then during the first start after installation Acronis True Image OEM Quick Backup will detect the search engine you use and will install an appropriate plug-in for indexing your tib backup archives. Indexing of backups will speed up searches in the backup archives. After such indexing you will be able to search archives content by entering a file name into the Google Desktop or Windows Search deskbar query field without opening Acronis True Image OEM Quick Backup. The search results will be shown in a browser window. Using the search results you can:

- Select any file and open it for viewing and/or save that file back to the file system anywhere (not in the archive) or where it was before

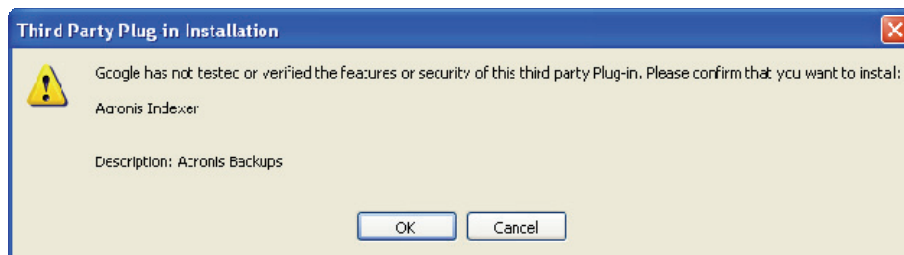
- See in which archive a given file is stored and restore that archive

Google Desktop has a "Quick Find" window. This window is filled with the most relevant results from your computer. The results change as you type, so you can quickly get to what you want on your computer. Windows Search provides similar functionality.

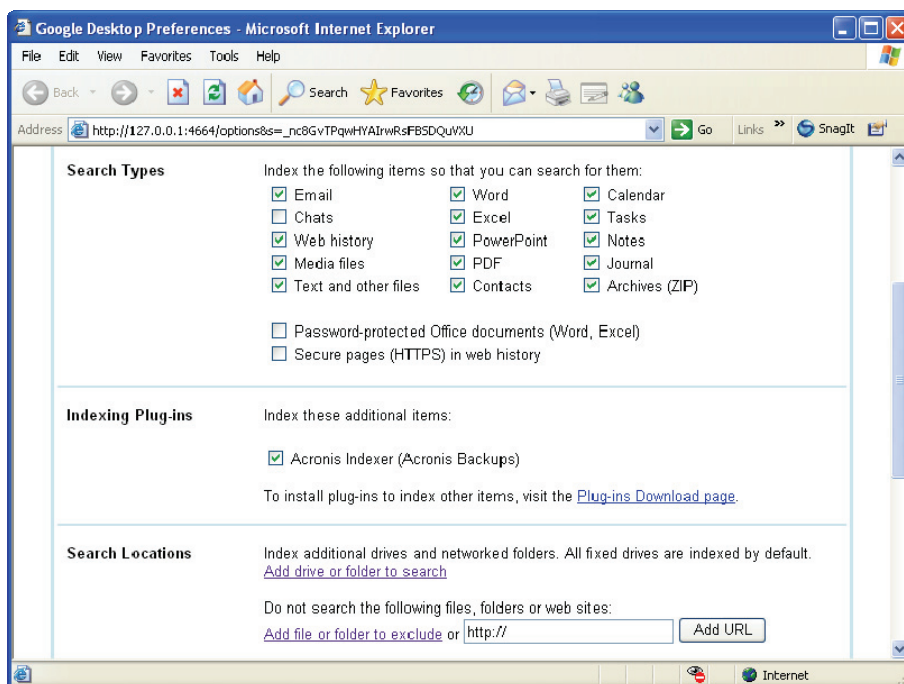
In addition to indexing the files in backup archives by their names, the Google Desktop and Windows Search provide Acronis True Image OEM Quick Backup with the ability to perform full-text indexing of many files in tib archives, so you will be able to use this feature and perform searches of the files' content.

Suppose you have Google Desktop installed and want to use it for searching files in tib archives. To get such an ability:

1. During the first start of Acronis True Image OEM Quick Backup, Google Desktop will display a confirmation window. Click **OK** to install the plug-in.



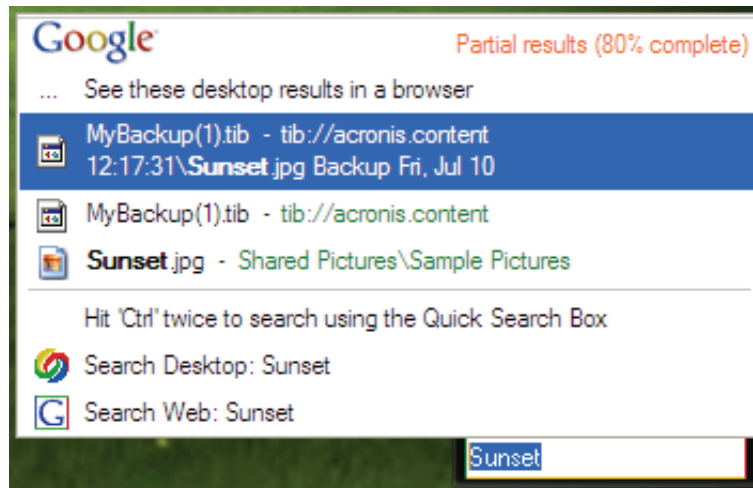
2. Verify that the plug-in is installed. Right-click on the Google Desktop icon in your system tray and select **Options** in the context menu. Google Desktop opens the **Preferences** window in your browser. Make sure that **Acronis Indexer (Acronis Backups)** is selected in the **Indexing Plug-ins** area.



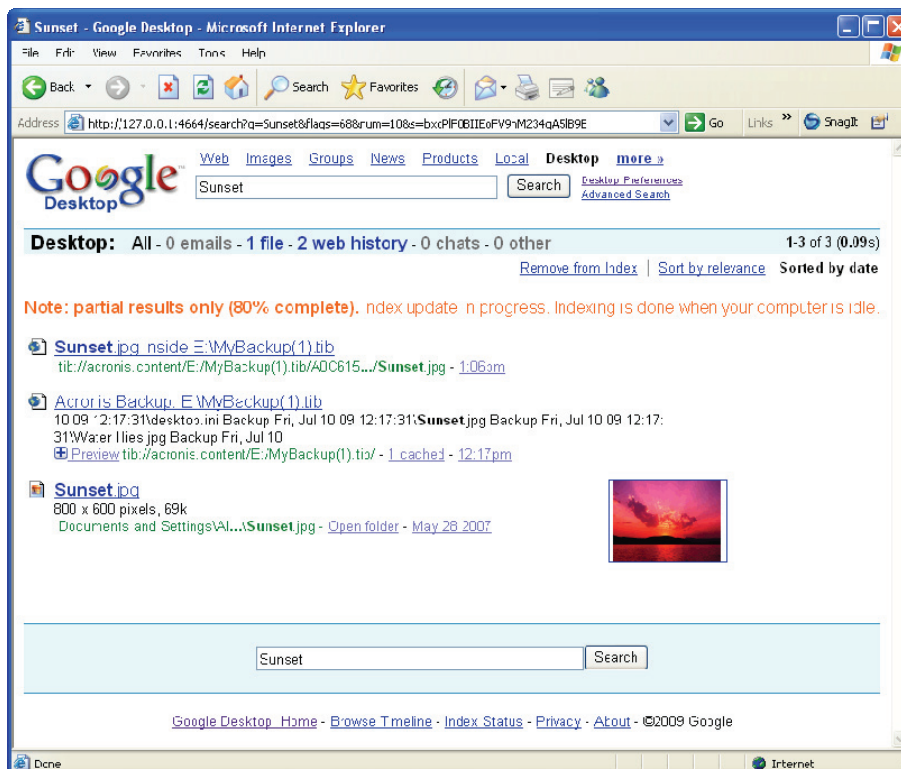
3. Right-click on the Google Desktop icon in your system tray once more and select **Indexing -> Re-Index**. Click **Yes** in the confirmation window that appears. Google Desktop will add all the new content to the existing index.

Give Google Desktop some time for indexing all tib files on your computer's hard disks and adding the indexing information to its index database. The required time depends on the number of tib archives and the number of files they contain.

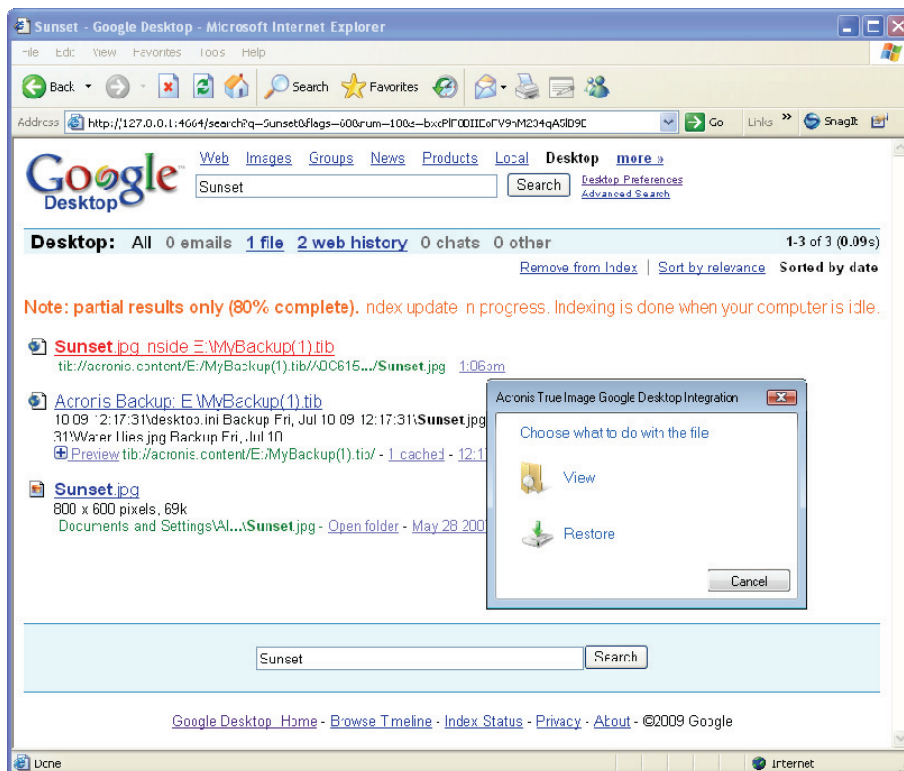
After, for example an hour, check whether Google Desktop has indexed the tib archives by entering in its query field the name of a file which you know for sure that you backed up. If Google Desktop has completed indexing, it will show you the tib archives where it has found the file.



If you want to see all the search results, click the "See all N results in a browser" and you will see something like the screen shot below.



Clicking in the browser window on a line related to the desired file version opens a small dialog with just two options: **View** and **Restore**.



Choosing **View** starts the application associated with this file type and opens the file. Choosing **Restore** starts Acronis True Image OEM Quick Backup and you can then restore the file to a desired location.

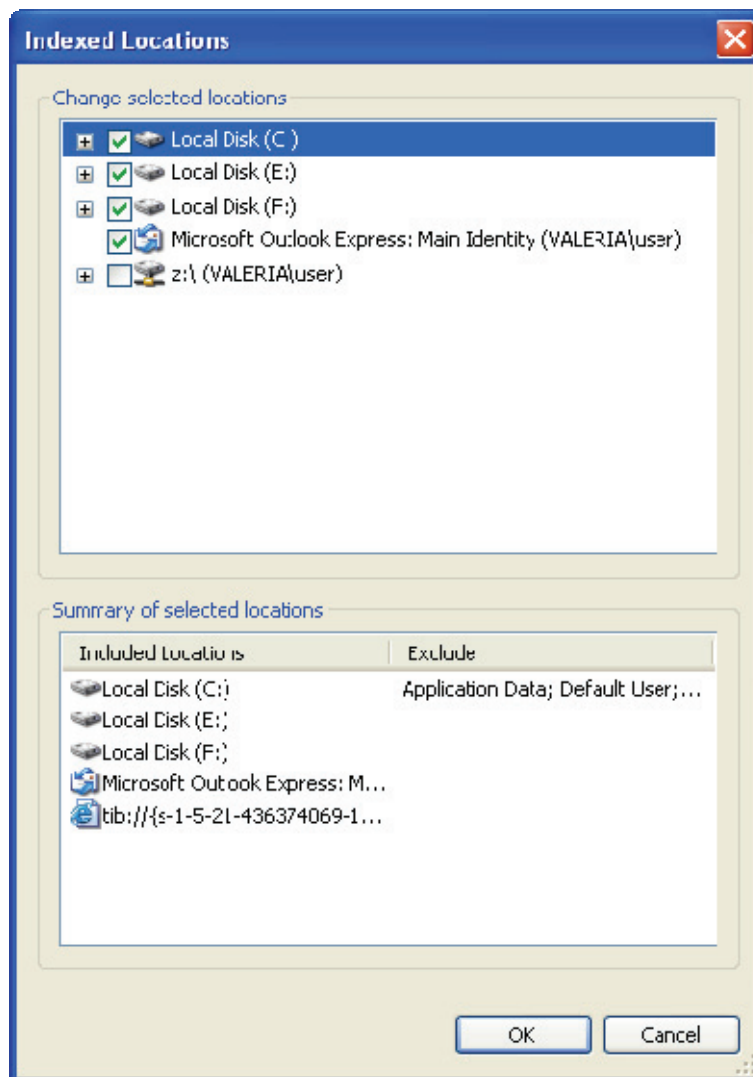
The following information may be of interest to you if you use any edition of Windows Vista that has built-in Desktop Search functionality or Windows Desktop Search 3.0 or later and wish to enable Windows Search support for tib files.

To use Windows Search support:

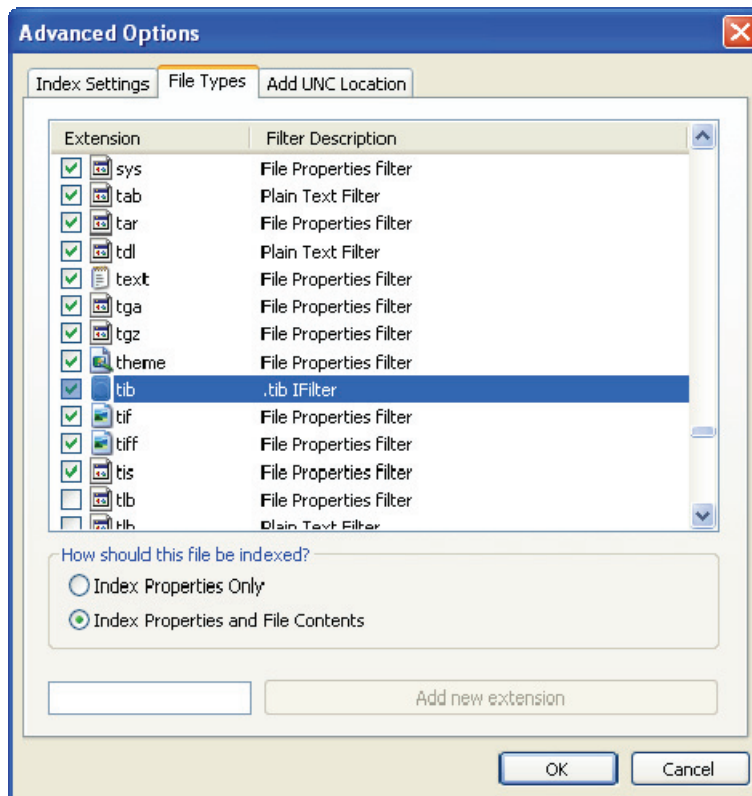
1. Verify that the tib support is enabled. Right-click on the Windows Search icon in your system tray and select **Windows Search Options...** in the context menu. The following window appears. Make sure that the "tib:///" item is present in the Included Locations list.



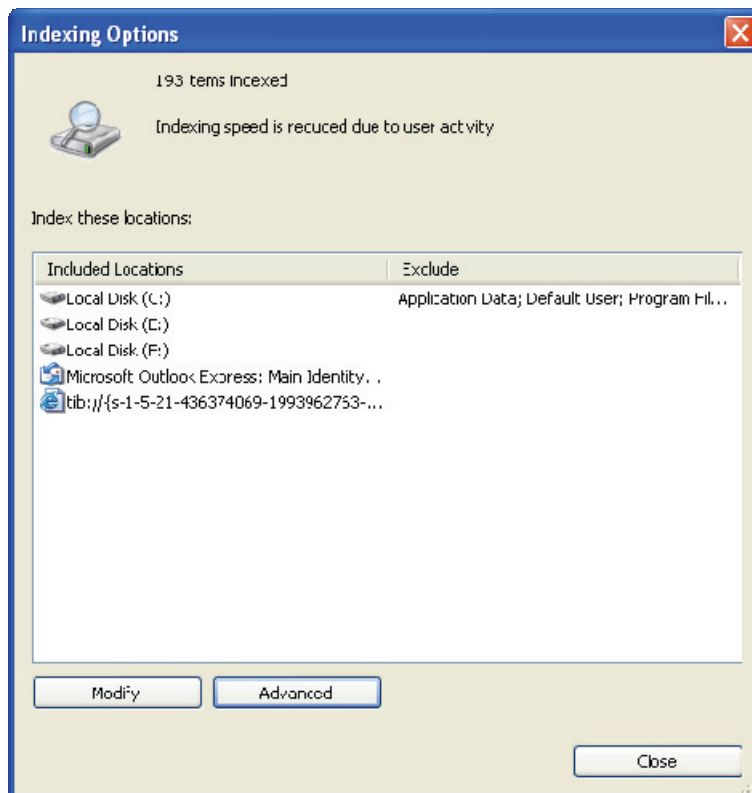
To open the Indexing Options window in Windows Vista, open the Control Panel and then double-click the **Indexing Options** icon. The Windows Vista indexing options have some differences in content and appearance, though most of the following information is applicable to Windows Vista as well.



2. Click **Advanced**, select the **File Types** tab and then make sure that the **tib** extension is selected and ".tib IFilter" is shown in the Filter Description field. **Select Index Properties and File Contents.**



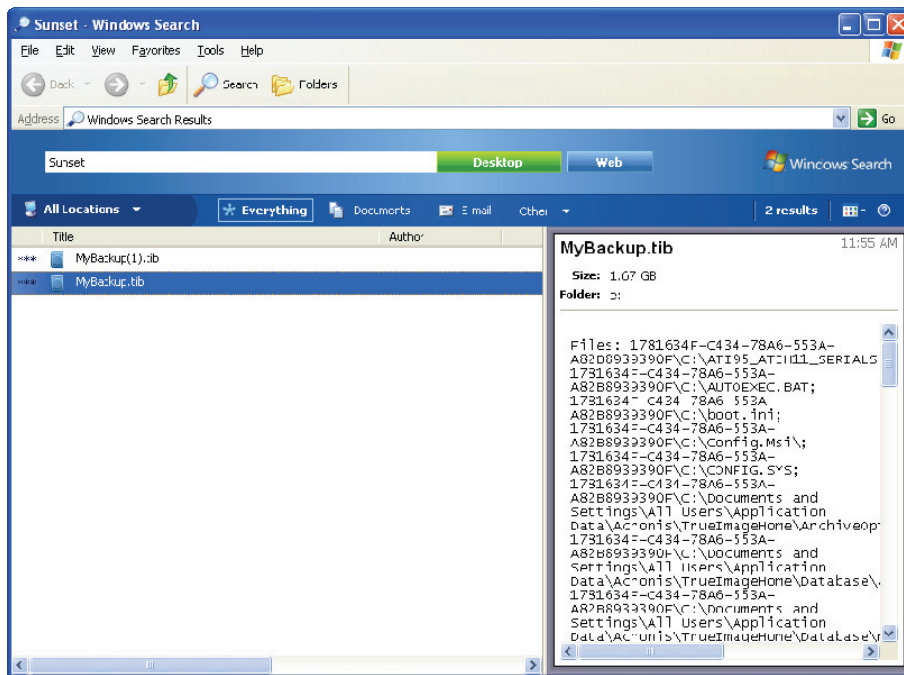
3. Click **OK** and while the **Indexing Options** window is open, check that the disks where you store your tib backup archives are shown in the "Included Locations" list. If the list does not contain those disks, the tib files will not be indexed. To include the disks, click **Modify** and select them in the window that appears.



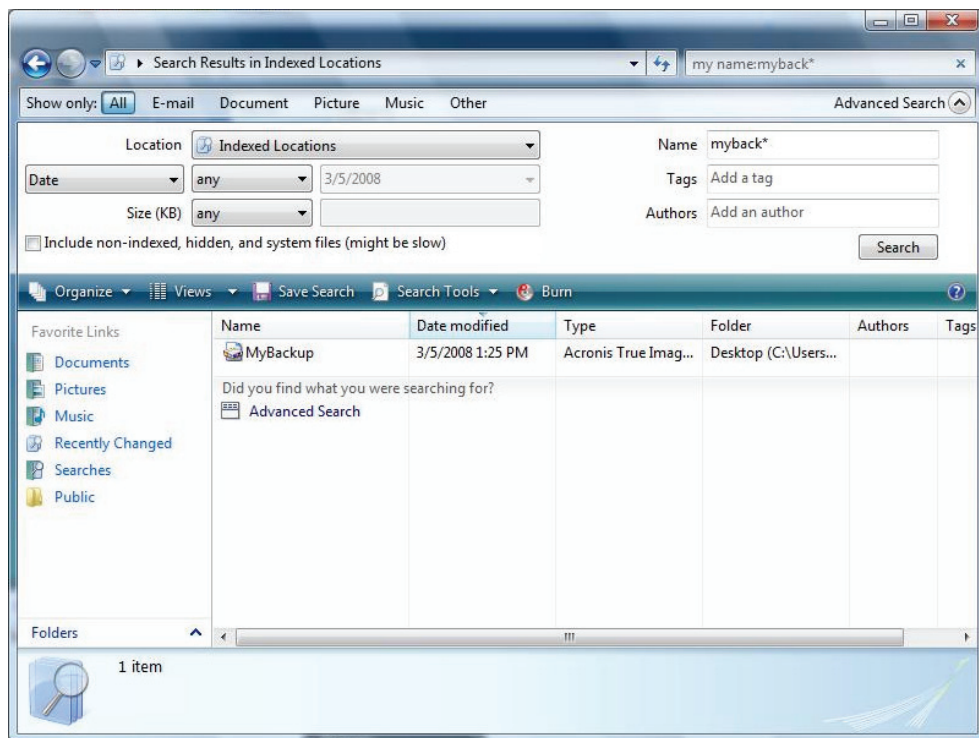


If you store backups on a network share, Windows Search can index them too. You just have to add the share to the Indexed Locations list by typing the appropriate UNC path after selecting the **Add UNC Location** tab of **Advanced Options**.

Give Windows Search some time for indexing all tib files on your computer's hard disks and adding the indexing information to its index database. The required time depends on the number of tib archives and the number of files they contain. After completing the indexing, the Desktop Search will be able to search files in tib backup archives. The search engines in WDS and Windows Vista have similar functionalities, though search results are presented somewhat differently:



Windows Search results



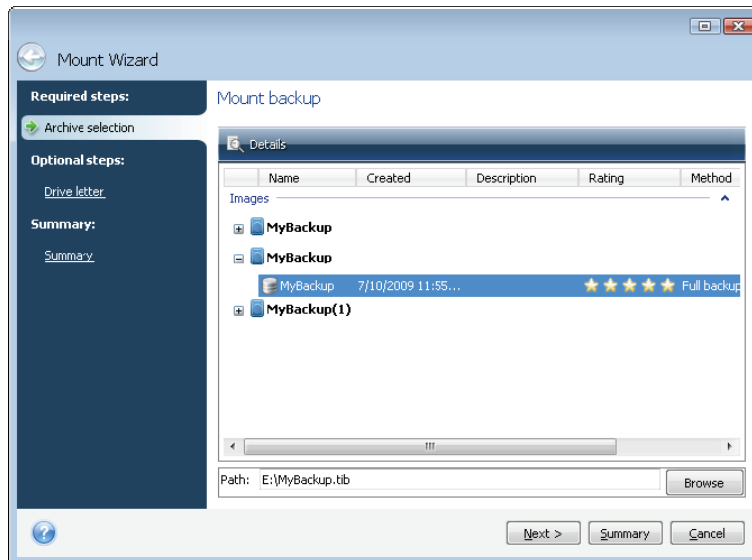
Windows Vista search results

9.3 Mounting an image

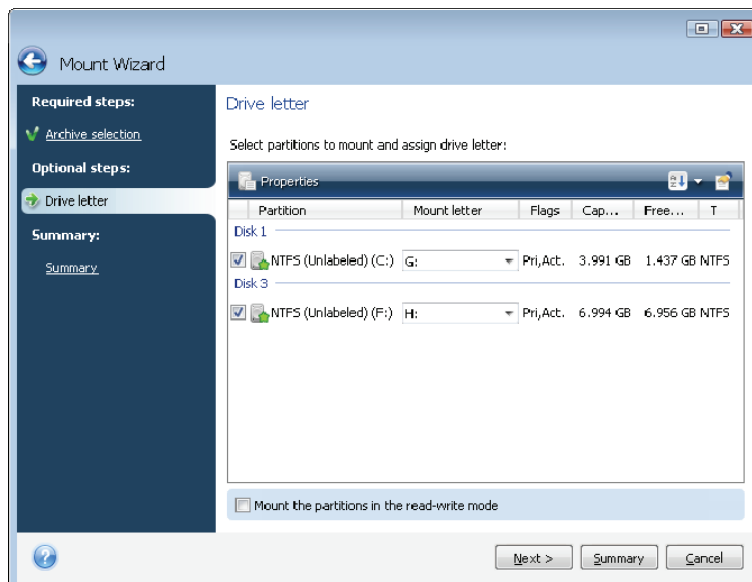
1. Start the **Mount Wizard** by selecting **Operations -> Mount Image** in the main program menu or by right-clicking on an image archive and selecting **Mount** in the Windows Explorer shortcut menu.

2. Select the archive for mounting.

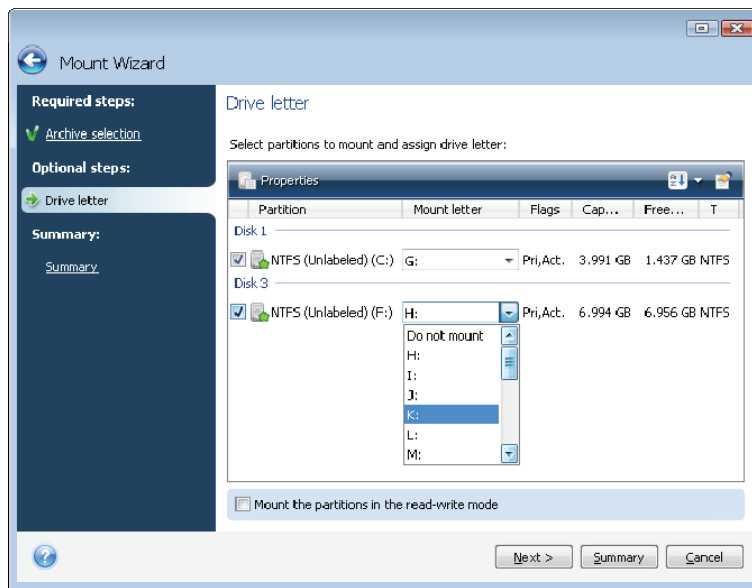
To mount an incremental image, you must have the initial full image as well.



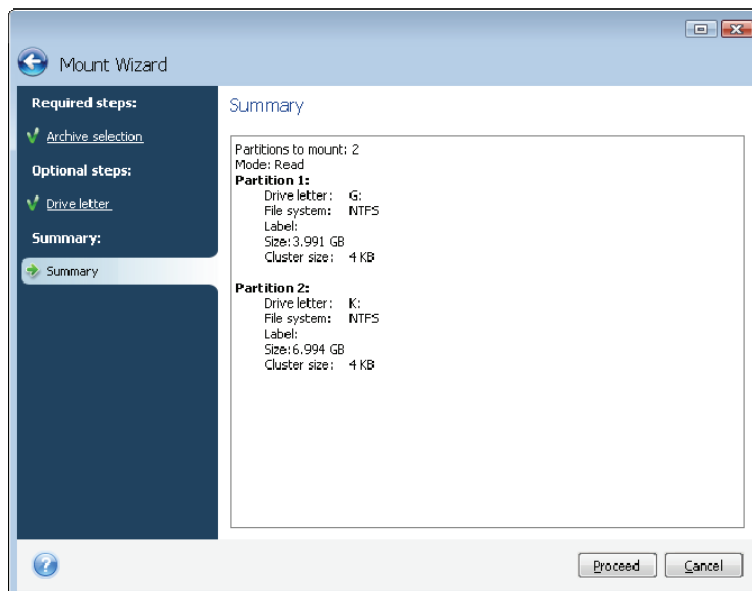
3. Select a partition to mount as a virtual disk. (Note that you cannot mount an image of the entire disk except in the case when the disk consists of one partition.) If the image contains several partitions, by default all of them will be selected for mounting.



You can also 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 unselect the partition's checkbox.



4. The program displays a summary containing a single operation. Click **Proceed** to connect the selected partition image as a virtual disk.

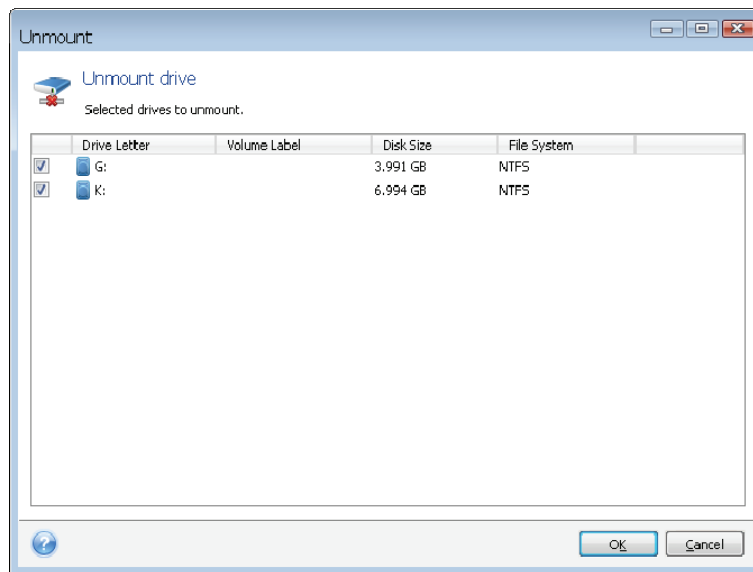


6. After the image is connected, the program will run Windows Explorer, showing its contents. Now you can work with files or folders as if they were located on a real disk.

9.4 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. If you do not unmount the disk, it will disappear after your computer is turned off.

To disconnect the virtual disk, choose **Operations -> Unmount Image**, select the disk to unmount and click **OK**.



You can also do this in Windows Explorer by right-clicking on the disk icon and choosing **Unmount**.

Appendix A. Partitions and file systems

A.1 Hard disk partitions

The mechanism that allows you to install several operating systems on a single PC or to carve up a single physical disk drive into multiple “logical” disk drives is called **partitioning**.

Partitioning is performed by special applications. In MS-DOS and Windows, these are FDISK and Disk Management.

Partitioning programs perform the following:

- create a primary partition
- create an extended partition that can be split into several logical disks
- set an active partition (applied to a single primary partition only)



Information about partitions on a hard disk is stored in a special disk area – in the 1st sector of cylinder 0, head 0, which is called the partition table. This sector is called the master boot record, or MBR.



A physical hard disk might contain up to four partitions. This limit is forced by the partition table that is suitable for four strings only. However, this does not mean you can have only four operating systems on your PC! Applications called disk managers support far more operating systems on disks. For example, Acronis OS Selector, a component of Acronis Disk Director Suite, enables you to install up to 100 operating systems!

A.2 File systems

An operating system gives the user the ability to work with data by supporting a certain type of **file system** on a partition.

All file systems are made of structures that are necessary to store and manage data. These structures are usually composed of operating system boot sectors, folders and files. File systems perform the following basic functions:

- track occupied and free disk space (and bad sectors, if any)
- support folders and file names
- track physical location of files on disks

Different operating systems use different file systems. Some operating systems are able to work with only one file system, while others can use several of them. Here are some of the most widely used file systems:

A.2.1 FAT16

The FAT16 file system is widely used by DOS (DR-DOS, MS-DOS, PC-DOS, PTS-DOS, etc.), Windows 98/Me, and Windows NT/2000/XP/Vista operating systems and is supported by most other systems.

The main features of FAT16 are the file allocation table (FAT) and clusters. FAT is the core of the file system. To increase data safety, it is possible to have several copies of the FAT (there are usually two of them) on a single disk. A cluster is a minimum data storage unit in the FAT16 file system. One cluster contains a fixed number of sectors. FAT stores information about what clusters are free, what clusters are bad, and also defines in which clusters files are stored.

The FAT16 file system has a 2GB limit that permits a maximum 65,507 clusters that are 32KB in size. (Windows NT/2000/XP/Vista support partitions up to 4GB with up to 64KB clusters). Usually the smallest cluster size is used to make the total cluster amount within the 65,507 range. The larger a partition, the larger its clusters.



Usually the larger the cluster size, the more disk space is wasted. A single byte of data could use up one cluster, whether the cluster size is 32KB or 64KB.

Like many other file systems, the FAT16 file system has a root folder. Unlike others, however, its root folder is stored in a special place and is limited in size (standard formatting produces a 512-item root folder).

Initially, FAT16 had limitations on file names. They could only be eight characters long, plus a dot, plus three characters of the name extension. However, long-name support in Windows 95 and Windows NT bypassed this limitation. The OS/2 operating system also supports long names, but does so in a different way.

A.2.2 FAT32

The FAT32 file system was introduced in Windows 95 OSR2. It is also supported by Windows 98/Me/2000/XP/Vista. FAT32 is an evolved version of FAT16. Its main differences from FAT16 are 28-bit cluster numbers and a more flexible root, whose size is unlimited. The reasons FAT32 appeared are the support of large hard disks (over 8GB in capacity) and the impossibility of implementing any more complex file system into MS-DOS, which is still the basis for Windows 98/Me.

The maximum FAT32 disk size is 2 terabytes (1 terabyte, or TB, is equal to 1024 gigabytes, or GB).

A.2.3 NTFS

NTFS is the main file system for Windows NT/2000/XP/Vista. Its structure is closed, so no other operating system is fully supported. The main structure of NTFS is the MFT (master file table). NTFS stores a copy of the critical part of the MFT to reduce the possibility of data damage and loss. All other NTFS data structures are special files. NTFS stands for NT File System.

Like FAT, NTFS uses clusters to store files, but cluster size does not depend on partition size. NTFS is a 64-bit file system. It uses unicode to store file names. It is also a journaling (failure-protected) file system, and supports compression and encryption.

Files in folders are indexed to speed up file search.

A.2.4 Linux Ext2

Ext2 is one of the main file systems for the Linux operating system. Ext2 is a 32-bit system. Its maximum size is 16TB. The main data structure that describes a file is an i-node. A place to store the table of all i-nodes has to be allocated in advance (during formatting).

A.2.5 Linux Ext3

Officially introduced with its version 7.2 of the Linux operating system, Ext3 is the Red Hat Linux journaling file system. It is forward and backward compatible with Linux ext2. It has multiple journaling modes and broad cross-platform compatibility in both 32- and 64-bit architectures.

A.2.6 Linux ReiserFS

ReiserFS was officially introduced to Linux in 2001. ReiserFS overcomes many Ext2 disadvantages. It is a 64-bit journaling file system that dynamically allocates space for data substructures.

Appendix B. Hard disks and BIOS setup

The appendices below provide you with extra information on how the hard disk is organized, how information is stored on disks, how disks should be installed in the computer and plugged into the motherboard, configuring disks with BIOS, partitions and file systems, and how operating systems interact with disks.

B.1 Installing hard disks in computers

B.1.1 Installing a hard disk, general scheme

To install a new IDE hard disk, you should do the following (**we will assume you have powered OFF your PC before you start!**):

1. Configure the new hard disk as **slave** by properly installing jumpers on its controller board. Disk drives generally have a picture on the drive that shows the correct jumper settings.
2. Open your computer and insert the new hard disk into a 3.5" or 5.25" slot with special holders. Fasten down the disk with screws.
3. Plug the power cable into the hard disk (four-threaded: two black, yellow and red; there is only one way you can plug in this cable).
4. Plug the 40- or 80-thread flat data cable into sockets on the hard disk and on the motherboard (plugging rules are described below). The disk drive will have a designation on the connector or next to it that identifies Pin 1. The cable will have one red wire on the end that is designated for Pin 1. Make sure that you place the cable in the connector correctly. Many cables also are "keyed" so that they can only go in one way.
5. Turn your computer on and enter BIOS setup by pressing the keys that are displayed on the screen while the computer is booting.
6. Configure the installed hard disk by setting the parameters **type, cylinder, heads, sectors** and **mode** (or **translation mode**; these parameters are written on the hard disk case) or by using the IDE autodetection BIOS utility to configure the disk automatically.
7. Set the boot sequence to A:, C:, CD-ROM or some other, depending on where your copy of Acronis True Image OEM Quick Backup is located. If you have a boot diskette, set the diskette to be the first; if it is on a CD, make the boot sequence start with CD-ROM.
8. Quit BIOS setup and save changes. Acronis True Image OEM Quick Backup will automatically start after reboot.
9. Use Acronis True Image OEM Quick Backup to configure hard disks by answering the wizard's questions.
10. After finishing the work, turn off the computer, set the jumper on the disk to the **master** position if you want to make the disk bootable (or leave it in **slave** position if the disk is installed as additional data storage).

B.1.2 Motherboard sockets, IDE cable, power cable

There are two slots on the motherboard to which the hard disks can be connected: **primary IDE** and **secondary IDE**.

Hard disks with an IDE (Integrated Drive Electronics) interface are connected to the motherboard via a 40- or 80-thread flat marked cable: one of the threads of the cable is red.

Two IDE hard disks can be connected to each of the sockets, i.e. there can be up to four hard disks of this type installed in the PC. (There are three plugs on each IDE cable: two for hard disks and one for the motherboard socket.)

As noted, IDE cable plugs are usually designed so that there is only one way to connect them to the sockets. Usually, one of the pinholes is filled on the cable plug, and one of the pins facing the filled hole is removed from the motherboard socket, so it becomes impossible to plug the cable in the wrong way.

In other cases, there is a jut on the plug on the cable, and an indentation in the socket of the hard disk and of the motherboard. This also ensures that there is only one way to connect the hard disk and the motherboard.

In the past, this design of plug did not exist, so there was an empirical rule: **the IDE cable is connected to the hard disk socket so that the marked thread is the closest to the power cable**, i.e. the marked thread connected to pin #1 of the socket. A similar rule was used for connecting cables with the motherboard.

Incorrect connection of the cable with either the hard disk or the motherboard does not necessarily damage the electronics of the disk or the motherboard. The hard disk is simply not detected or initialized by BIOS.



There are some models of hard disks, especially the older ones, for which incorrect connection damaged the electronics of the drive.



We will not describe all the types of hard disks. Currently the most widespread are those with IDE or SCSI interfaces. Unlike IDE hard disks, there can be from six to 14 SCSI hard disks installed in your PC. However, you need a special SCSI controller (called a host adapter) to connect them. SCSI hard disks are not usually used in personal computers (workstations), but are found mostly in servers.

Aside from an IDE cable, a four-thread power cable must be connected to the hard disks. There is only one way to plug in this cable.

B.1.3 Configuring hard disk drives, jumpers

A hard disk drive can be configured in a computer as **master** or as **slave**. The configuring is done using special connectors (called jumpers) on the hard disk drive.

The jumpers are either located on the electronic board of the hard disk or a special socket that provides for the connection of the hard disk and the motherboard.

There is usually a sticker on the drive that explains the markings. Typical markings are **DS**, **SP**, **CS** and **PK**.

Each jumper position corresponds to one hard disk(s) installation mode:

- **DS – master/factory default**
- **SP – slave (or no jumper required)**
- **CS – cable select for master/slave:** the purpose of the hard disk is determined by its physical position with respect to the motherboard
- **PK – jumper parking position:** the position where one can put the jumper if it is not necessary in the existing configuration

The hard disk with the jumper in **master** position is treated by the basic input/output system (BIOS) as bootable.

The jumpers on hard disks that are connected to the same cable can be in the **select for master/slave** position. In this case, BIOS will deem as "master", the disk that is connected to the IDE cable, which is closer to the motherboard than the other one.



Unfortunately, hard disk markings were never standardized. You might well find that markings on your hard disk differ from the ones described above. Moreover, for the old types of hard disks, their purpose could be defined by two jumpers instead of one. You should study the markings carefully before installing your hard disk in the computer.

It is not enough to physically connect the hard disk to the motherboard and set the jumpers properly for the hard disk to function — hard disks have to be properly configured with the motherboard BIOS.

B.2 BIOS

When you turn on your computer, you often see a number of short text messages before you see the splash screen of your operating system. These messages are from the POST (power-on self test) program that belongs to BIOS and is executed by the processor.

BIOS, or the basic input/output system, is a program that resides in the permanent memory chip (ROM or flash BIOS) on the motherboard of your computer and is its key element. The version of BIOS that you use "knows" all the peculiarities of all the components of the motherboard: processor, memory, integrated devices. BIOS versions are provided by the manufacturers of motherboards.

Main BIOS functions are:

- POST checking of processor, memory and I/O devices
- initial configuring of all software-manageable parts of the motherboard
- initialization of the operating system (OS) booting process

Among numerous components of the computer, initial configuration is necessary for the external memory subsystem that controls hard disk drives, floppy disk drives, CD-ROM drives, DVDs, and other devices.

B.2.1 Setup utility

BIOS has a built-in setup utility for initial computer configuration. To enter it, you have to press a certain key combination (**Del**, **F1**, **Ctrl+Alt+Esc**, **Ctrl+Esc**, or some other, depending on your BIOS) during the POST sequence that starts immediately after you turn your computer on. Usually the message with the required key combination is displayed during the startup testing. Pressing this combination takes you to the menu of the setup utility that is included in your BIOS.

The menu can differ in appearance, sets of items and their names, depending on the BIOS manufacturer. The most widely known BIOS makers for PC motherboards are Award/Phoenix and AMI. Moreover, while items in the standard setup menu are mostly the same for various BIOSes, items of the extended setup heavily depend on the computer and BIOS version.

Below we describe the general principles of initial hard disk configuration.



Large PC manufacturers like Dell and Hewlett-Packard produce motherboards themselves, and develop their own BIOS versions. You should always refer to the documentation that came with your computer for instructions on proper BIOS configuration.

B.2.2 Standard CMOS setup menu

Parameters in the standard CMOS setup menu usually define the geometry of the hard disk. The following parameters (and values) are available for each hard disk installed in your PC:

Parameter	Value	Purpose
Type	1-47, Not Installed, Auto	Type 0 or Not Installed is used when there is no hard disk installed (to uninstall it). Type 47 is reserved for user-defined parameters or for parameters detected by the IDE Auto detection utility. Auto value allows for automatic detection of IDE disk parameters during the boot sequence.
Cylinder (Cyl)	1-65535	The number of cylinders on a hard disk. For IDE disks, a logical number of cylinders are specified.
Heads (Hd)	1-16	The number of heads on a hard disk. For IDE disks, a logical number of heads are specified.
Sectors (Sec)	1-63	The number of sectors per track of a hard disk. For IDE disks, a logical number of sectors are specified.
Size (Capacity)	MBytes	The capacity of the disk in megabytes. It is calculated according to the following formula: $Size = (Cyl \times Hds \times Sec \times 512) / 1024 / 1024$.
Mode (Translation Method)	Normal/LBA/ Large/Auto	Method of translation of sector addresses.

For example, to demonstrate the main features of Acronis True Image OEM Quick Backup, we used a Quantum™ Fireball™ TM1700A hard disk as one of the disks in our examples. Its parameters have the following values:

Parameter	Value
Type	Auto
Cylinder (Cyl)	827
Heads (Hd)	64
Sectors (Sec)	63
Mode	Auto
CHS	1707 MB
Maximum LBA Capacity	1707 MB

In BIOS setup, you can set the Type parameter to User Type HDD (user-defined type). In this case, you also have to specify the value of the translation mode parameter, which can be Auto/Normal/LBA/Large.



Translation mode is how sector addresses are translated. This parameter appeared because in BIOS versions, there were limitations to the maximum address capacity of disks, which is 504 MB (1024 cylinders x 16 heads x 63 sectors x 512 bytes). There are two ways to bypass this limitation: (1) switch from physical to logical sector addresses (LBA), (2) use mathematics to reduce the number of addressed sectors (cylinders) and increase the number of heads; this method is called Large Disk (Large). The simplest decision is to set the value of this parameter to Auto.

If there are several hard disks connected to your motherboard, but you do not want to use some of them at the moment, you have to set the Type of these disks to Not Installed.

Parameters of hard disks can be set manually with the help of information provided by the hard disk manufacturer on its case, but it is easier to use the IDE autodetection utility that is usually included in modern BIOS versions.

The utility is sometimes a separate BIOS menu item and is sometimes included in the standard CMOS setup menu.



Please note that in "Appendix B. Hard disks and BIOS setup", we have described the general details of the **physical** hard disk structure. Built-in IDE hard disk controls mask the physical disk structure. As a result, the BIOS of the motherboard "sees" **logical** cylinders, heads and sectors. We are not going to elaborate on this issue here, but knowing about this can sometimes be useful.

B.2.3 Arranging boot sequence, advanced CMOS setup menu

Aside from standard CMOS setup, the BIOS menu usually has an **advanced CMOS setup** item. Here you can adjust the **boot sequence**: C:; A:; CD-ROM:.



Please note that **boot sequence** management differs for various BIOS versions, e.g. for AMI BIOS, AWARDBIOS, and brand-name hardware manufacturers.

Several years ago, the operating system boot sequence was hard-coded into the BIOS. An operating system could be booted either from a diskette (drive A:), or from the hard disk C:. That was the sequence in which the BIOS queried external drives: if drive A: was ready, BIOS attempted to boot an operating system from a diskette. If the drive was not ready or there was no system area on the diskette, BIOS tried to boot an operating system from hard disk C:.

At present, BIOS allows booting operating systems not only from diskettes or hard disks, but also from CD-ROMs, DVDs, and other devices. If there are several hard disks installed in your computer labeled as C:, D:, E:, and F:, you can adjust the boot sequence so that an operating system is booted from, for example, disk E:. In this case, you have to set the boot sequence to look like E:, CD-ROM:, A:, C:, D:.



This does not mean that booting is done from the first disk in this list; it only means that the **first attempt** to boot an operating system is to boot it from this disk. There may be no operating system on disk E:, or it may be inactive. In this case, BIOS queries the next drive in the list. Errors can happen during booting, see B.2.4 "*Hard disk initialization errors*".

The BIOS numbers disks according to the order in which they are connected to IDE controllers (primary master, primary slave, secondary master, secondary slave); next go the SCSI hard disks.

This order is broken if you change the boot sequence in BIOS setup. If, for example, you specify that booting has to be done from hard disk E:, numbering starts with the hard disk that would be the third in usual circumstances (it is usually the secondary master).

After you have installed the hard disk in your computer and have configured it in BIOS, one can say that the PC (or the motherboard) "knows" about its existence and its main parameters. However, it is still not enough for an operating system to work with the hard disk. In addition, you have to create partitions on the new disk and format the partitions using Acronis True Image Home.

B.2.4 Hard disk initialization errors

Devices are usually initialized successfully, but sometimes errors can happen. Typical errors related to hard disks are reported by the following messages:

```
PRESS A KEY TO REBOOT
```

This error message is not directly related to errors during hard disk initialization. However, it appears, for example, when the boot program finds no operating system on the hard disk, or when the primary partition of the hard disk is not set as active.

```
DISK BOOT FAILURE,  
INSERT SYSTEM DISK AND  
PRESS ENTER
```

This message appears when the boot program finds no available boot device, be it a floppy or a hard disk, or a CD-ROM.

```
C: DRIVE ERROR  
C: DRIVE FAILURE  
ERROR ENCOUNTERED INITIALIZING HARD DRIVE
```

This message appears when it is not possible to access the C: disk. If the disk is known to be functional, the reason for this error message is probably incorrect settings/connections of:

- hard disk parameters in BIOS setup
- jumpers on the controller (master/slave)
- interface cables

It is also possible that the device is out of order, or the hard disk is not formatted.

B.3 Installing a SATA hard drive

Most recently manufactured PCs use the SATA interface for hard drives. In general, installing a SATA hard drive is easier than an IDE drive, as it is not necessary to configure master-slave jumpers. SATA drives use a thin interface cable with seven-pin keyed connectors. This improves airflow through the PC case. Power is supplied to SATA drives through 15-pin connectors. Some SATA drives also support legacy four-pin power connectors (Molex) — you can use a Molex or SATA connector but do not use both at the same time, because this could damage the hard drive. You'll also need a free power lead fitted with a SATA power connector. Most systems that

come with SATA ports have at least one SATA power connector. If this is not the case, you will need a Molex-to-SATA adapter. In case your system has the SATA power connector but it is already occupied, use a Y-adapter that splits a lead in two.

B.3.1 Steps for installing a new internal SATA drive.

1. Find an unused SATA port using the documentation provided with your PC. If you are going to connect your new SATA drive to a SATA controller card, install the card. If you are going to connect the SATA drive to the motherboard, enable applicable motherboard jumpers, if any. Most hard drive kits include a SATA interface cable and mounting screws. Attach one end of the SATA interface cable to a SATA port on the motherboard or interface card, and the other to the drive.
2. Then plug the power-supply lead or use a Molex-to-SATA adapter.
3. Prepare your drive. If you're installing a SATA 300 hard drive, check your PC's (or SATA host adapter's) documentation to make sure it supports SATA 300 drives. If it doesn't, you might need to change a jumper setting on the drive (see the drive's manual for instructions). If you have a SATA 150 hard drive, you don't need to change any settings.
4. Turn on the PC and look for the new drive in the boot-up messages. If you don't see it, enter the PC's CMOS setup program and search the BIOS configuration menu for an option that will let you enable SATA for the ports you are using (or maybe you will just need to enable SATA). See your motherboard documentation for instructions specific to your BIOS.
5. If the operating system does not recognize the SATA drive, you need the appropriate drivers for your SATA controller. If the drive is recognized, go to step 8.
 - Usually, it is best to obtain the latest driver version from the motherboard or SATA controller manufacturer's website.
 - If you download a copy of the SATA controller drivers, place the driver files to a known location on your hard drive.
6. Boot from the old hard drive.
 - The operating system should detect the SATA controller and install the appropriate software. You might need to provide the path to the driver files.
7. Ensure that the SATA controller and the connected SATA hard drive are correctly detected by the operating system. To do this, go to the Device Manager.
 - SATA controllers usually appear under the SCSI and RAID controllers section of Device Manager, while hard drives are listed under the Disk drives section.
 - The SATA controller and SATA hard drive must not be displayed in the Device Manager with a yellow exclamation mark or any other error indication.
8. After you have installed the hard disk in your computer and have configured it in BIOS, one can say that the PC "knows" about its existence and its main parameters. However, it is still not enough for the operating system to work with the hard disk. In addition, you have to create partitions on the new disk and format the partitions using Acronis True Image Home. Then configure your BIOS to boot from the SATA controller and boot from the SATA hard drive to ensure it works.

Appendix C. Startup Parameters

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 Acronis 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 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.