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Laplink DiskImage



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About Laplink DiskImage

Thank you for choosing Laplink DiskImage!

This is something you probably know all too well: how suddenly important data can be lost as a result of a system crash or viral attack. Laplink DiskImage is the ideal tool for quickly and easily taking the trouble out of such inconveniences! Laplink DiskImage enables the convenient duplication or archiving of entire operating systems and individual disks. It even supports dynamic drives and RAID systems.

Create image files of your drives on a regular basis and you'll be fully protected against data loss!

You can customize the imaging methods to suit your own individual needs. Even a 1:1 image of your system or user-defined images are possible. Laplink DiskImage features many other options for creating and restoring images exactly the way you'd like. As a result of the special Laplink DiskImage program settings, a substantial amount of computer performance is saved, allowing you to continue working on your PC parallel to the imaging!

The following chapters will explain how you can get started and obtain the optimum usage from Laplink DiskImage.

We hope you enjoy our product and that it saves you valuable time, both at work and at home!

Yours Laplink

<http://www.laplink.com>

Quick Start

[One-click imaging - Create an image of the entire computer](#)

[Image individual drives](#)

[Backup individual files and folders](#)

[Restore drives](#)

[Restore individual files and folders](#)

Note: The bootable medium for starting Laplink DiskImage without an operating system and restoring system partitions is not included in the Special Edition.

Differences between the three Editions

Laplink DiskImage is available for both desktop PCs and servers. In addition, there are specially-priced volume license packages (Combi Packs) available.

The Professional Edition is intended for imaging a desktop computer or individual drives. It cannot be used on a server operating system and has no network capabilities.

The Workstation Edition contains interfaces for running Laplink DiskImage across a network in conjunction with O&O Enterprise Management Console. It can only be used on desktop computers.

The Server Edition contains interfaces for running Laplink DiskImage across a network in conjunction with O&O Enterprise Management Console. It can be used on both servers and desktop computers.

Additional properties of the Workstation and Server Editions

You can run the following network functions when using Laplink DiskImage Workstation and Server Editions in conjunction with O&O Enterprise Management Console:

- Images of the entire business network
- Manage your computers in sites
- Define settings for sites
- Plan a schedule for the automatic imaging of computers or sites across a network, with just a few clicks of the mouse
- Automatic remote installation of Laplink DiskImage on network computers
- Execute Windows commands (batches) before and after the running of a job across a network

The O&O Enterprise Management Console is included in delivery if you have purchased licenses as part of the volume license program. We will happily advise you on applying O&O Enterprise Management Console in your company.

E-Mail: sales@laplink.com

General Terms and Definitions

To simplify working with Laplink DiskImage, certain terms will be explained in the following chapters:

Drive/Partition

A drive is a reserved area of the hard disk. Multiple drives can be found on a hard disk. In the following text, the term "drive" will be used to depict (single) partitions as well as logical drives in extended partitions and volumes.

Drives are used, for example, to separate documents from programs. A division in two partitions has become generally accepted:

- Drive C: for operating systems and programs
- Drive D: for documents, e.g. photos, Office documents, music, etc.

This, for example, makes it easier to separate data and system images with Laplink DiskImage.

Image

An image is a "mirror" of your drive (partitions). This "copy" contains all information taken from the original. A special feature of an image is that the file format is specially compressed and takes up much less disk space than the original. The more often you create images of your drive, the less you need worry about data loss. Should data on the original drive be lost or damaged, you can restore your last image with all its data onto your computer. With just a few mouse clicks, you can recover the original status of your drive before the last imaging.

An image can be made up of multiple [image files](#) (*.omg). For example if one disk is not sufficient to store the image and more are needed, e.g. CD/DVDs.

The term image is also used in a wide sense for file backups.

Difference File backup and Drive image

Files are backed up directly in the form of data. This type of image includes only file information, no drive information is imaged. The file format is OBK (*.obk).

A drive image stores all used or all sectors of a drive. This automatically also creates an image of the file system and all files and folders. The file format is OMG (*.omg).

Image file

An image can be made up of one or more image files (*.omg). If, for example, the disk where you want to save the image isn't large enough, you can split the image onto multiple disks. When you split your image onto several disks, a new image file will be created on each disk and together, these image files will be parts of one entire image. It's important to number the disks (CD/DVD) in case you want to later restore a drive using the image, or use it as a base for an incremental image.

File formats

Laplink DiskImage creates its own file formats when imaging but is also able to process other file formats.

File format OMG

Laplink DiskImage generates the file extension (*.OMG) for the image files it creates when imaging your entire computer or single drives. This file type can be used for further activities by Laplink DiskImage, such as restoration, validation or conversion.

File format OBK

While creating a file backup using Laplink DiskImage, the files and folders are compressed and stored as an OBK file (*.obk). An advantage of the OBK files are that you can also use and extract the data with a decompression program like WinZip. You don't necessarily need Laplink DiskImage to extract these files. Encrypted file backups are the exception. They can only be processed with Laplink DiskImage.

File format VHD

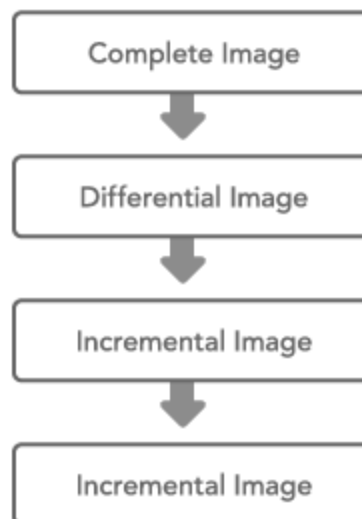
Laplink DiskImage is able to create and edit file formats for virtual computers (VPC/VM-Ware). This allows you to also mount a drive from an image as a virtual drive in the VPC or your VM-Ware.

Complete image

Using the Complete image method, the data selected for imaging will be imaged all over again and stored in a folder on the target disk. Complete images can be created using the "Used sector", "Forensic", or "Direct forensic" methods.

Differentiation: Image of the changes

If you only want to image changes of your hard disk or drives, you will need to have created at least one [complete image](#) previously. Changes made can then be saved as [differential](#) and [incremental](#) images.



Connection between image types

Incremental images

Incremental images only save the changes made since the last [base image](#). As a rule, data is compared using checksums in Laplink DiskImage, so that the incremental image does not require a [complete image](#) as base image. The last incremental or differential image is enough for doing this. To restore an incremental image, you need the last complete image as well as all the following images recording any changes.

Differential images

Differential images compare present data with the last complete image and store only the changes. The first "successive" image after the complete image is always a differential image. To restore a differential image, you will need both the complete image and the differential image.

Base image

A base image is an image that serves as a basis for any further image of the changes. Differential images require a complete image as a base image. Incremental images can usually be made using the last image of the changes as their base image. It's possible, for example, to use a differential image as a base image for an incremental image. In this way, an incremental image can also serve as base image for further incremental images. Also see picture in chapter [Image of the changes](#).

System requirements

- The system requirement of each operating system has to be fulfilled
- 30 MB free hard disk space
- Supports 32 and 64-bit operating systems
- Windows® Vista till Windows® 10 (all editions):

	Professional Edition/ Special Edition	Workstation Edition	Server edition
Windows® 10	yes	yes	yes
Windows® 8/8.1	yes	yes	yes
Windows® 7	yes	yes	yes
Windows® Vista®	yes	yes	yes
Windows® Server 2003	no	no	yes
Windows® Server 2008	no	no	yes
Windows® Server 2008 R2	no	no	yes
Windows® Server 2012	no	no	yes
Windows® Server 2012 R2	no	no	yes

Note: A minimum of 1 GB RAM is required for booting with an Laplink DiskImage bootable medium.

Note: When using Laplink DiskImage, please make sure that the disk drivers needed by your operating system are all the most current versions available. If you're unsure about this, refresh the driver(s).

Access permissions

In order to install, register and to use Laplink DiskImage you must be a member of a local administrator group or possess an equivalent level of permissions. Domain administrators normally already possess these permissions.

Features at a glance

Laplink DiskImage is a reliable and affordable solution for protecting your private or professional data. Laplink DiskImage provides you with everything you'll need to protect your data just like an IT specialist: it lets you image and restore entire Server systems as well as individual files.

Functions

In addition to the great care we take in perfecting existing program functions, you'll find several additional new and helpful features in Version .

Create Boot Media

With the new version of Laplink DiskImage it is now possible from Windows 7 on to create a boot disk from within the program itself.

More:

[Create bootable media](#)

Monitoring your drives

In the control center of Laplink DiskImage you get an overview of the security status of your drives.

If you have not created an image before, you will receive a security warning. This is also valid for drives whose last image was created more than 10 days ago. In just a few steps, you can easily create images of your system's drives. Doing so will protect you against data loss at all times.

File backup

Laplink DiskImage makes it possible to backup and restore single files and folders. Laplink DiskImage creates an image file (*.obk) of the selected folders and files during a file backup. If you need the files and folders from the image, you can use or unpack the image file with the help of Laplink DiskImage or a decompression program, such as WinZip. You don't necessarily need Laplink DiskImage to unpack the OBK file.

Compared to a drive image, the file backup does not store the drive information. The advantage of a regular "Backup " of your files is that the backup takes up much less time. In addition, you can create a job to schedule regular backups. Regular backups ensure that your file backups are constantly updated and thus secure.

Better user guidance

Laplink DiskImage is always adapted to meet current user habits. In the latest version, the control center will warn you of potential data loss resulting from a drive's never having been imaged or the image is too old.

The Quick access bar contains frequently used functions. You will easily be able to reach all important functions from there, e.g. drive image and restoration. You can use advanced functions via the menu bar of Laplink DiskImage.

Mount files from ISO file

You have the option of mounting an ISO file as drive. The ISO file will be treated as a separate drive. You can see and use the contents of the ISO file in the Windows Explorer. This is helpful if you are downloading an ISO file for a program installation. Instead of burning the ISO file on CD to run the installation, you can now mount the ISO file as a drive with Laplink DiskImage, and start the setup and installation.

Bootable medium based on Windows Server 2008 R2

The bootable medium is based on the latest Windows technology. All necessary Windows drivers are included so that a manual installation is not required. If additional drivers are needed for certain devices, you can easily download them using the integrated Laplink DriverLoader before the program starts.

Image

With Laplink DiskImage, you'll be able to create reliable images of entire systems, individual drives, and files or folders while you're working on your computer. The Snapshot function with integrated buffer memory ensures that the imaged data remains exactly as it was when the image started to be created: changes to the data caused by usage or the user do not affect the image while it's being created. This ensures consistent images of systems without any interruptions.

Once you have an image, you can use it to quickly restore the data and installed programs from desktops and servers whenever trouble strikes- thanks to the Laplink DiskImage bootable medium (BareMetal Technology) and without any previous installation.

* Imaging and restoring server systems is only possible with the Laplink DiskImage Server Edition.

One-click imaging

The one-click imaging is the fastest and easiest way to create a complete image of your computer including all data and settings. One-click imaging is especially useful if you are using Laplink DiskImage for the first time, or have not yet created an image of your computer.

Imaging complete disks

You can create an image of one or more disks, e.g. hard disks. When this happens, all drives found on these disks will be automatically imaged. The following disk types are supported by Laplink DiskImage:

- Imaging MBR disks
- Imaging GPT disks
- Imaging dynamical disks

Imaging single drives

You are not only able to image entire hard disks, but also individual drives. This incorporates the hard disk layout. You can create images of the following drive types using Laplink DiskImage:

- Imaging individual partitions and volumes.
- Imaging primary, extended and logical partitions.
- Imaging simple, spanned, mirrored volumes.
- Imaging the system areas
- Imaging the Master boot records (MBR)
- Imaging the system partitions (e.g. Microsoft reserved partition)
- Imaging of encrypted partitions, volumes or hard disks (e.g. SafeGuard easy of Ultimaco, TrueCrypt or Microsoft BitLocker)

Features at a glance

- Storing of a combination from the above mentioned objects (various hard disks, partitions, volumes or similar in an image)

Different imaging methods

Different imaging methods allow the image to be adjusted for different purposes. You get a space saving image if you select the setting "Only used sectors". If you want to rescue data from a damaged hard disk, we recommend a forensic image - all sectors are imaged exactly according to their structure. This enables a later data rescue using special software such as O&O DiskRecovery without affecting the original disk.

- Image the used sectors of drives (partitions/volumes) - unencrypted data is included in the image.
- Complete image of all sectors of the object to be imaged (forensic image)
- Direct forensic image - encrypted data is also included in the image.

After a base imaging, you can create subsequent images as incremental or differential for storing only the changes:

- Incremental image - saves changes between previous images and the current disk.
- Differential image - saves changes between the very first image and the current status of the disk.

Save image

After creating the image, you can save it on all Windows recognized disks. You only need to enter the network path before starting the imaging process. The following destinations can be used to store the images:

- Local drives
- External USB or firewire hard disks
- Drive/Folder in the network
- Storing images as ISO files to burn them later

Integrated burn function

Besides the burn function, Laplink DiskImage supports CD/DVDs, Blu-ray Disks and HD/DVDs. You also create ISO files from your images.

Note: Before being able to burn an image (*.omg) onto an optical disk, you'll need to buffer it. It is not possible to burn a drive while an image of it is being created.

Edit image file

The following editing options are available:

- Combine complete images of different disks onto one image file
- Combine incremental/differential images
- Manual and automatic splitting of images
- Extract objects from images
- Change the encryption and/or compression method of an image
- Change the size of the image by splitting or combining individual images

Compress image

You can compress an image to save even more disk space. Besides LZNT1- you can also compress an image in BZIP2.

Encryption

You can encrypt the image using the AES algorithm (128, 192, 256 Bit) so that only those authorized may access it.

Exclude files

If you want to exclude certain files from the imaging process, you can specify Laplink DiskImage, to exclude them during the imaging process (Wildcards possible for the exclusion).

Process virtual hard disks (VHD)

To simplify working with Microsoft Virtual PCs (VPC), you can now convert images into virtual drives (VHD). The converted image can be included as a virtual drive in the VPC, without having to install Laplink DiskImage there. Images (OMG) can also be created or restored directly from virtual drives (VHD) of VPCs.

Mount image as virtual drive

- Mount image as virtual drive/hard disk.
- Unmount virtual drive/hard disk

Check image

To make sure that your image was created correctly or can be restored without errors, you can validate your image file. You can also check the disk to be image before the process is run with the Check disk function.

Email notification on the progress of the activity

The notification feature is an option that will keep you informed about the status of a task such as the running of a job. You'll also be notified immediately about errors so that you can identify and resolve them faster.

Restoration

Restoring your data is as easy as creating an image. If you want to restore data drives, you only need to start Laplink DiskImage under Windows.

You will, however, need the Laplink DiskImage bootable medium for restoring an entire computer or system partition. If you buy the product online, an ISO file for creating a bootable medium CD/DVD/USB Stick, etc.) will be sent to you along with additional information. Laplink DiskImage starts directly from the bootable medium without any previous installation. Additional integrated system recovery tools also give you the chance to restore the original system and identify mistakes.

Restoring entire disks

Laplink DiskImage can also assist you when installing/configuring new acquired computers. After configuring your computer, create an image of your entire system and do this for as many computers as you have Windows licenses:

- Restoration of an entire storage volume
- Restoration to or as MBR disks
- Restoration to or as GPT disks
- Restoration to or as dynamic disks

Restoring individual drives

Laplink DiskImage enables you to restore individual drives from existing images. It doesn't matter how many drives were included in one image. The following drive types can be restored from an image:

Features at a glance

- Single drives (Partitions/volumes)
- Primary, extended and logical partitions
- Simple, spanned, mirrored volumes
- System areas
- Master boot record (MBR)
- Create system partitions (e.g. Microsoft reserved partition)
- Exclusive restoration of the Master boot records (MBR)
- Restore a combination of the above mentioned objects (various hard disks, partitions, volumes or similar) in one image

Mount drives from images

You can also quickly and easily restore single files from an image. Mount drives from images as virtual drives. Doing this will allow you to copy files and folders from the image onto existing drives. Making changes to the image, however, such as deleting or adding files, is not possible.

Modifications for restoration

Several settings can be configured for restoration. You can adapt the restoration to meet your requirements according to your intended purpose.

- Bare Metal restoration, including bootable disk for Windows PE.
- Restoration of multi boot systems
- Restoration of encrypted partitions, hard disks from a direct forensic image
- Image restoration with damaged or missing parts, e.g. due to disk loss or disk errors
- Restoration of damaged images if the structural integrity of the image is ok, e.g. due to purposeful destruction or disk errors.
- Direct restoration of a Microsoft Virtual PC Disk (VHD)
- [M.I.R.](#) (Machine Independent Restoring) Adapting to different hardware

Bootable disks with BuildPE

The bootable disk contains Windows PE with all the default drivers necessary for running Laplink DiskImage without installation and without a Windows operating system. This enables you to, for instance, perform a system restoration that would otherwise not be possible.

- Bootable disk for using Laplink DiskImage without prior installation includes effective system recovery programs from Laplink BlueCon
- Interface - Laplink Tasktray, Start menu, and program shortcuts are based on Windows
- Load drivers for hardware that is not immediately recognized, e.g. hard disk controllers or network card drivers
- Laplink FileExplorer for file and folder management (create, delete, copy, move folders and/or files)
- Laplink SRP-Manager to manage existing system restore points (Only for Windows XP)
- Laplink RegEditor to display and change the Windows system registry
- Laplink DiskManager for the management of your hard disk(s)

Machine Independent Restoration (M.I.R.)

Machine Independent Restoration technology (M.I.R.) provides the option of restoring an image that contains a system partition onto a computer with a different hardware. This means that a restoration of a system image or clone can be carried out not only on devices with identical hardware, but on those where, for example, the motherboard or processor has been replaced.

Adapt size of the target drive for restoration and cloning

If the target for restoration or cloning is an empty area, the user can adapt the size of the target drive to the actual data volume of the source drive. When, for example, the drive being imaged has 5 GB but the data on it is only taking up half its space, a smaller drive of maybe 3 GB can be entered as a target during restoration.

Cloning

Cloning allows you to make 1:1 copies of entire disks or individual drives that can be used instead of the originals. This function provides you with clones of disks or individual drives, including information about the hard disk layout with all the data saved on it. Clones do, however, require a lot more storage space than an image.

Unlike images, there are **no** incremental or differential clones possible for reducing the data volume of successive clones. In addition, a clone **cannot** be compressed or encrypted like an image.

Cloning entire disks

You can create a clone from one or more drives, e.g. hard disk. This will clone all drives located on a hard disks. The following hard disk layouts are supported by Laplink DiskImage:

- Cloning a hard disk
- Cloning to or as MBR hard disk
- Cloning to or as GPT hard disk
- Cloning to or as dynamic hard disk

Cloning single drives

You are also able to clone single drives and not only complete hard disks. This incorporates the hard disk layout. The following cloning options are supported by Laplink DiskImage:

- Cloning single partitions/volumes
- Cloning of primary, extended, and logical partitions
- Cloning simple, spanned, mirrored volumes
- Cloning the system areas
- Cloning the Master boot records (MBR)
- Exclusive cloning of the Master boot records (MBR)
- Storing of a combination from the above mentioned objects (various hard disks, partitions, volumes or similar in an image)

Modifications for cloning

You can make various adaptations for cloning . Some of these are configured automatically or you can set them yourself. The following adaptations can be set:

- Buffer the original data before a change (Snapshot)
- Automatic conversion of the free areas to an extended partition if the areas are larger than the partition being cloned and no extended partition exists.
- MIR (Machine Independent Restoration), adjust to the different hardware of the clone.

Management functions

The management function provides several options for adapting Laplink DiskImage to meet your individual requirements and automate activities.

Express view

The Express View shows a very compact user interface with the main functions of the programs. You can use the Express view for creating and mounting images as well as for restoring drives. Individual functions of the Express view

can also be manually disabled so that another user won't be able to use a particular feature.

Run scheduled activities

Laplink DiskImage lets you setup a schedule for running activities. Thanks to a helpful Wizard, you can, for example, setup to have your data imaged automatically on a regular basis according to a schedule. Further settings for scheduling:

- Manage, change, manually start saved jobs according to a schedule
- Automatically create images of hard disks, drives (Partitions/Volumes)
- Automatic creation of incremental images
- Automatic checking of images
- Automatic creation of differential images

Report management and notification

- Detailed reports with complete description of processes.
- List of the selected parameter/settings
- Email notification via SMTP (Simple Mail Transfer Protocol, without SSL encryption) following job processing

Work across a network

Laplink DiskImage gives you the option of saving images on network drives. The only thing this requires is Network authentication. A detailed explanation of authentication can be found in the chapter [Network authentication](#).

A special feature of Laplink DiskImage Workstation and Server Editions is their interface with the O&O Enterprise Management Console. You can install and plan your jobs for Laplink DiskImage from one central location within the network.

Scripting ability

The Laplink DiskImage Command Interpreter makes it possible to manage disks, partitions, or volumes and images using command files (XML documents). Laplink DiskImage can thereby reenact all the scenarios it displays either directly or indirectly. . An overview of all commands and their possible uses can be found as a PDF document on the Laplink website or requested from our [Support](#).

Note: This function is only available for the **Workstation and Server Edition**.

Manage computer identity

With Laplink DiskImage, you can change the identity of a computer to avoid authentication problems, e.g. two computers with the same computer identity. This might be helpful when rolling out a system image onto multiple computers across a network.

- Change the computer name of an operating system that has not been started
- Change the SID, Security ID, of an operating system that has not been started
- [M.I.R.](#) (Machine Independent Restoration) Adaption to different hardware (from an operating system that has not been started)

Supports the most current technologies

Laplink Software remains what it has always been; a trailblazer when it comes to information technology. All current Windows systems and 64-bit versions are fully-supported so creating and restoring images can be done as quickly as possible.

User Interface (GUI)

- Function-oriented user guidance requires fewer interactions for reaching your target
- Default and customized option profile for completing various, recurring jobs faster
- Windows Explorer extension for directly loading imaging files or removing loaded drives
- Minimize the user interface onto a TrayIcon in the info area of the start page
- Graphical, interactive drive overview: overview of the hard disk allocation, free and used space, and the size of individual partitions.
- Autark Tray application supplies information about service activities and job status.
- Status display of elapsed time and expected duration of an activity

Installation and registration

Installing Laplink DiskImage is very straightforward. Please follow the steps below:

1. Start the computer on which you would like to install Laplink DiskImage.
2. Login as local administrator or as a user possessing comparable permissions.
3. Start the installation file for Laplink DiskImage, which you have either downloaded from our server or have on your personal CD ROM.
4. After the setup program has been successfully initialized, please follow the installation dialog.
5. When prompted, restart your computer.

Note: Please make sure that no other backup or imaging software is installed on your computer when installing or working with Laplink DiskImage. This can lead to complications with the filter driver, especially when different software is working simultaneously on multiple drives.

Information about licensing

You can test Laplink DiskImage for 30 days free of charge and with no obligation. The remaining trial period will be displayed each time you start the program.

If you would like to implement Laplink DiskImage in your company or as a technician for your customers, then please contact our resellers or distributors.

Enter license

Note: In order to activate the product after installation or to gain access to the Full Version at a later time, you must possess a valid license key. This license key is also called a registration code, serial number, or product ID.

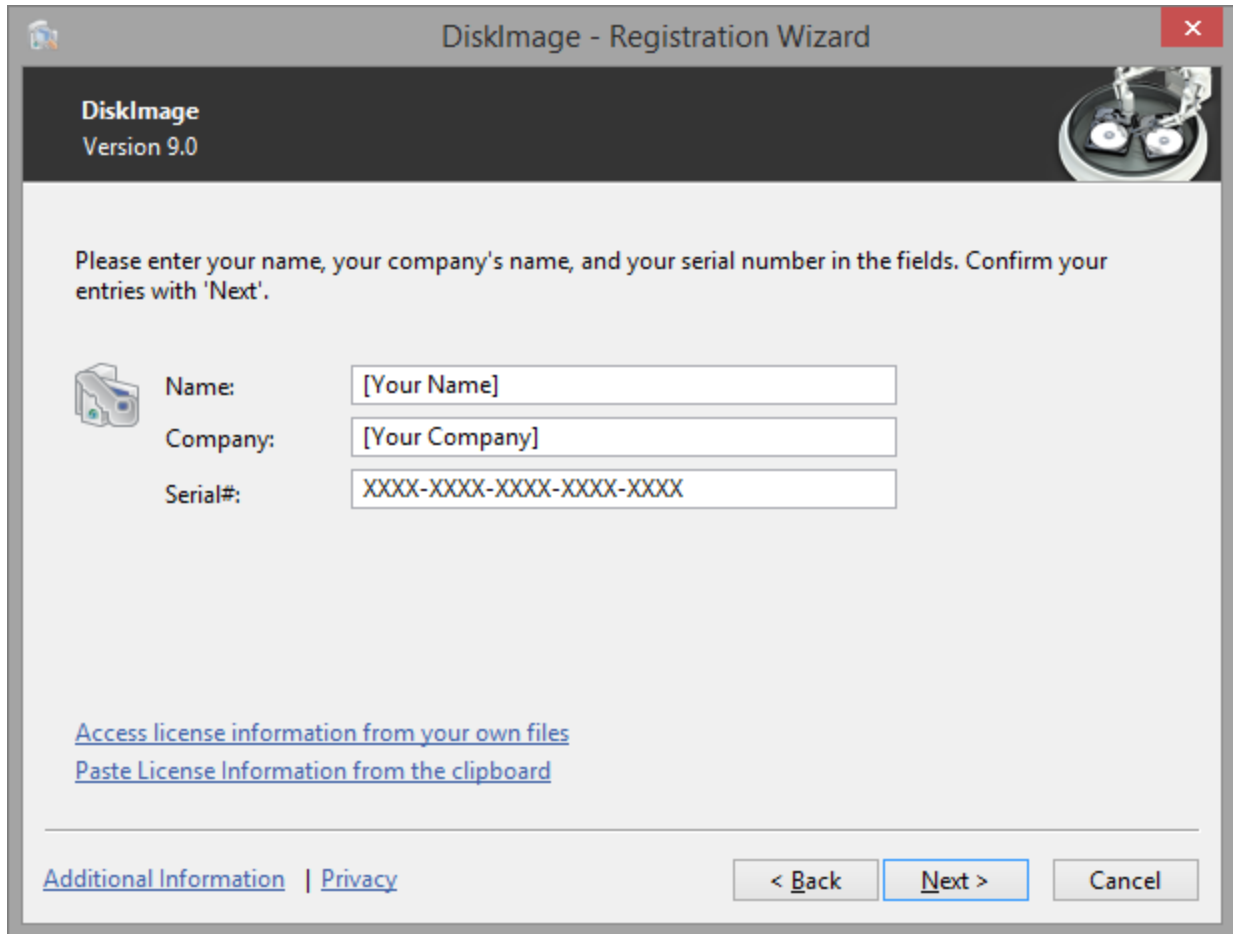
The dialog for registration always appears automatically at the start to guide you if you are using an unregistered version or have entered the registration code incorrectly.

The registration wizard allows for a simple registration process.

When you select the option **I want to enter my license**, a dialog box will appear where you can enter the registration code you received when purchasing the software.

- If you have purchased the **download version** of the software, please enter the license information ("Name", "Company" and License key), just as they are written in the confirmation E-Mail you received.
 - If you have purchased the **box version** of the software, please enter the license key as it is written on the license card included. In addition, please enter your name and if needed your company.
1. Please make sure that you do not confuse the digit "1" with "l" or enter any empty spaces where they don't belong.
 2. Press **Next** to save the registration data or **Cancel** to leave the dialog window without saving the data.
 3. When you have correctly entered the license code you will receive a confirmation in the dialog window.

Should you run into any problems when entering your registration code, please contact our Support Team.

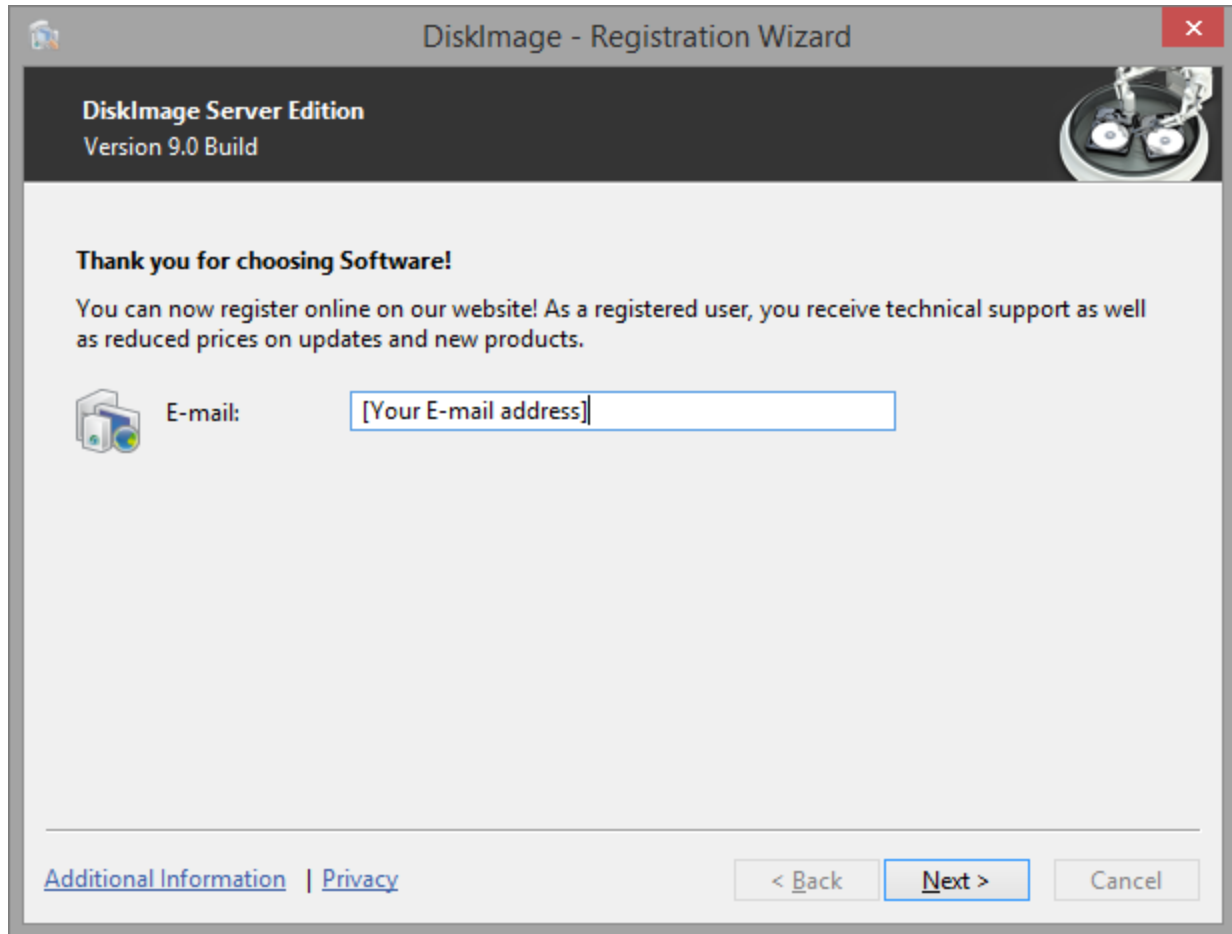


Registration wizard: Enter the license key

Online registration

To register Laplink DiskImage online, you'll need the license key you received when you purchased the program.

To register online, start Laplink DiskImage. The questions related to online registration always appear at the start, provided you haven't registered online.



Online registration

What are the advantages of online registration?

Online registration gives you the benefit of having your customer data kept safely in our files, which means we can provide you with even better service. If, for example, you accidentally lose your license key, we can quickly resend it to you without any problem. The license key is needed for using the full version of a program, getting updates, and for reinstalling the program when you make a new setup of your computer.

Further advantages will let you:

- Be supplied with the latest information about our products
- Make free updates on new versions of purchased items (minor updates)
- Upgrade to a new version at a special discount price (major update)
- Obtain support from our customer service

How do I register online?

If Laplink DiskImage was purchased on our Online Shop, you've automatically registered with us. If Laplink DiskImage purchased at a retailer, you will be asked if you want to register while entering the license information. You then have the option of either registering immediately or at another time. All you'll need is a functioning Internet connection and a valid license key.

You may also complete the registration form right here:

<http://www.laplink.com/>

Just return the completed online form by clicking "Send" and you'll be eligible to take full advantage of our Laplink Customer Service.

Uninstall

To remove Laplink DiskImage from your computer, please follow the instructions below:

1. Open the **Control Panel** from the **Start menu** and select **Software**.
2. Select **Laplink DiskImage** from the list of installed software programs and then click **Change**.
3. In the InstallShield Wizard click **Next**.
4. In the next dialog select the option **Remove program**.
5. Select **Remove the Laplink DiskImage user data**, if you want to remove this together with the uninstallation.
6. Confirm the uninstallation of Laplink DiskImage with **Remove**. You'll receive a confirmation notice when uninstallation is completed.
7. After a successful uninstallation, you'll need to restart the computer when prompted in order to apply all settings.

Updates

Laplink DiskImage automatically checks if your program version is a current one or if a newer version is available.

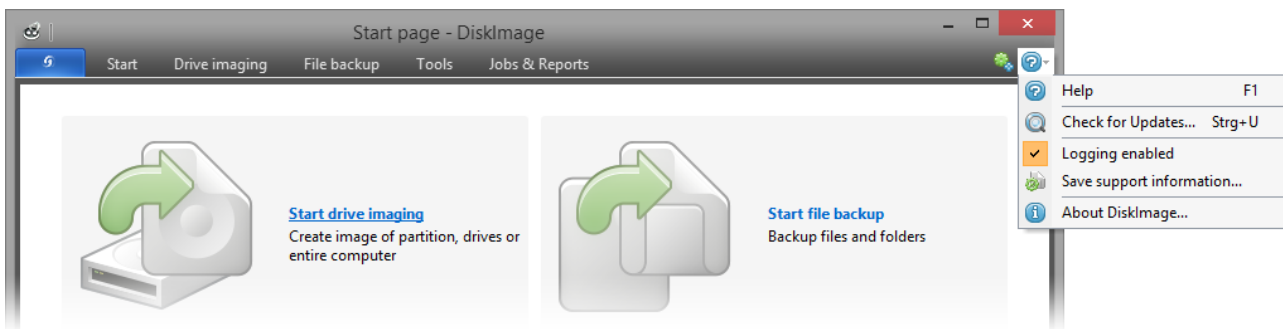
Tip: Under **Help/About Laplink DiskImage** you can see your license data and the number of your program version.

So-called "Minor Updates" (Version 5.0 to 5.1, 5.2, etc.), where smaller changes in the program have been made, are free. "Major-Updates", such as from version 5 to 6, must generally be purchased.

Important! If you are using Laplink DiskImage from a network and performing a major update, you will need to copy the password file if you want to use the automatic authentication. After a full installation and the restart, you will need to place the password file in the DiskImage default folder. After restarting, the password management has to be started and the password has to be entered for the password file. As a result, the required initializations will be run and automatic authentication can continue to be possible.

Program Help

You can either access the program help via the Menu bar/**Help** or by pushing F1.

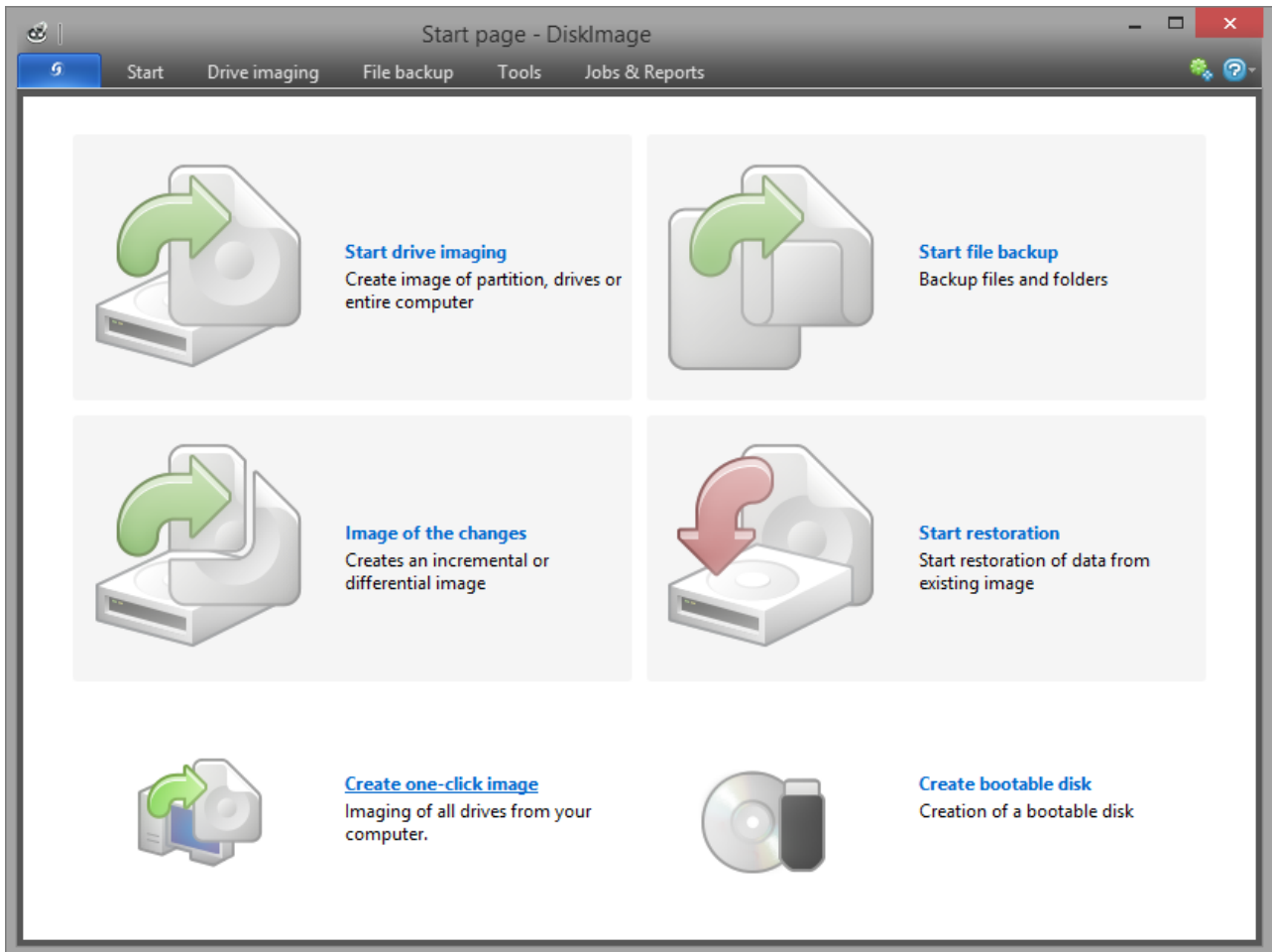


Help

Quick Start

In this section we will explain how, after successfully installing Laplink DiskImage, you can take images of drives or your entire computer and restore them back to your computer.

Start page of Laplink DiskImage



Start Laplink DiskImage

- Start Laplink DiskImage via the Desktop shortcut or via the Windows menu **Start/All Programs/Laplink Software/Laplink DiskImage/Laplink DiskImage**.
- For the simplified view select **Laplink DiskImage Express**(Express View).
- **Laplink DiskImage Tray** starts the Traylcon, which is shown in the info area in the task bar and informs you on the activity status of Laplink DiskImage.

You can access the program help by clicking on **Help** in the menu bar in the tab Help or by pushing **F1**.

[One-click imaging - Create an image of the entire computer](#)

[Create images of all non-imaged drives](#)

[Image individual drives](#)

[Restore entire computer or system partition](#)

[Restore drives](#)

[Backup individual files and folders](#)

[Restore individual files and folders](#)

[Create image of the changes only](#)

Create images of all non-imaged drives

Creating images on a regular basis is your only protection against data loss. Working daily on your computer causes it to collect ever larger amounts of data. If your last image was created some time ago, it does not include your most current files.

In the Laplink DiskImage control center (start page), you get an overview of drives that have either not been imaged or whose image is considerably old. The color on display reflects the lapse of time since the last image was created.

0 - 10 Days = Green

10 - 20 Days = GreenYellow

20 - 30 Days = Yellow

Over 30 Days = Orange

Never been imaged = Red

We strongly advise you to prevent data loss and protect yourself with just a few clicks:

1. Click **Image now**.
2. Then check the target path entered for the image. We recommend saving the image on an external drive, e.g. USB hard drive.
3. Click **Start** to continue with the imaging process. The process might take some time depending on the size of the drive.

Note: An image of all the listed drives will be created using default settings (Image of used sectors).

Tip: You can create a job for automatically imaging your drives on a regular basis. See chapter [Scheduling functions](#).

Tip: If you want to create an image of your entire computer, you can also use [One-click imaging](#).

One-click imaging - Create an image of the entire computer

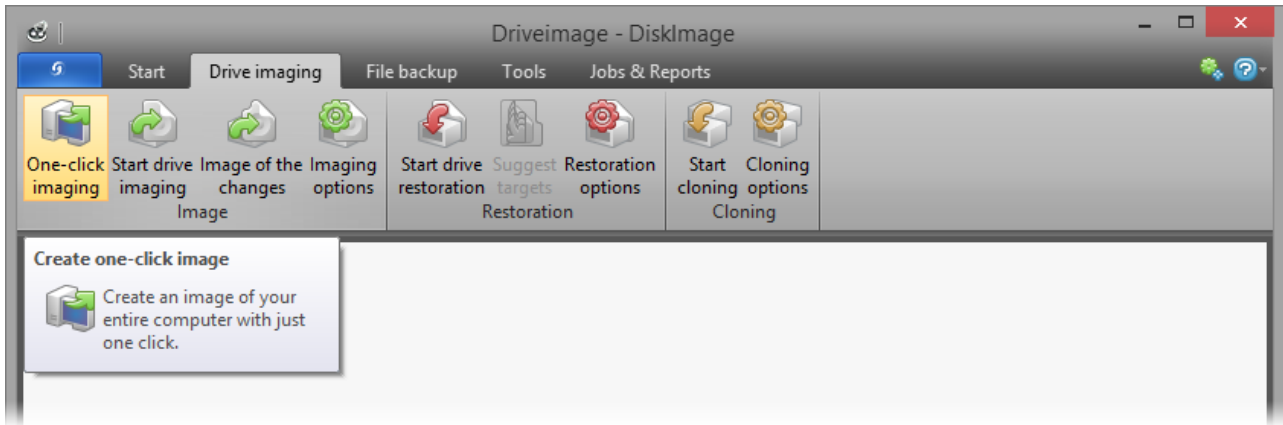
One-click imaging is the fastest and easiest way to create a complete image of all your data and settings. One-click imaging is especially useful if you are using Laplink DiskImage for the first time, or have not yet created an image of your computer. Your entire computer including the system partition can be imaged with just one click. The compression method (LZNT1) and the imaging method (imaging used sectors) are set as default.

Note: We recommend using an external storage medium, e.g. a USB hard disk or a network drive, as target folder for One-click imaging.

1. Start Laplink DiskImage and select **Drive imaging** on the Start page.
2. Now click the symbol **Create one-click image** in the activity bar.

Quick Start

3. Check to make sure the target path is set to your desired storage location. The [...] button allows you to navigate to any folder.
4. The image is automatically named after the creation date. You can however enter a name manually.
5. Click **Start** to begin the imaging process. The imaging process can take some time depending on the size of the hard disk(s).



Select One-click imaging

Image individual drives

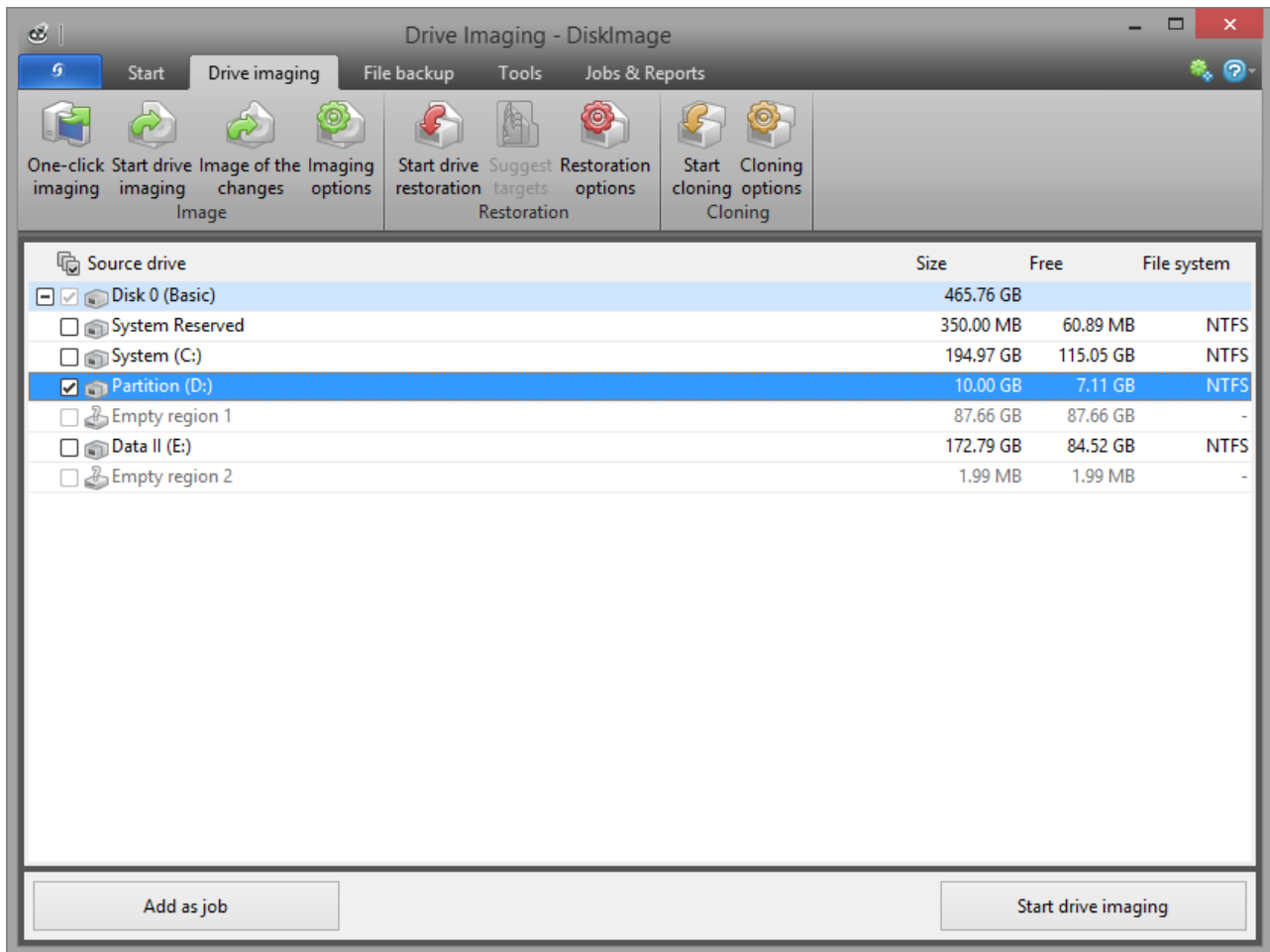
Laplink DiskImage will let you image individual drives (partitions/volumes). This enables you to image system and data drives separately from each other. In case of data loss, it then only becomes necessary to restore the data drive. You don't need to restore your entire computer.

To create an image of one or more drives, please follow the instructions below:

1. In the start page select **Drive imaging**.
2. Select one or more drives from the drive list. Enable the check next to the drive you want to select.
3. Optionally, you can specify further settings under [Imaging options](#) or add the selected activity as **Job**.
4. To start the imaging process click on **Start drive imaging**.
5. Enter the target path of the drive on which you want to save the image. You can either accept the suggested default path or select another location. Under [Program settings](#), you can also select individual default paths.
6. The image is automatically named after the date of creation. You can, however, enter a name manually. All information from the image will be saved and can later be accessed through Image Information.
7. Select **Start**. The image file will now be created.

Note: If there is not enough space to store the entire image, you will be prompted to enter a new target path during the imaging process.

Quick Start

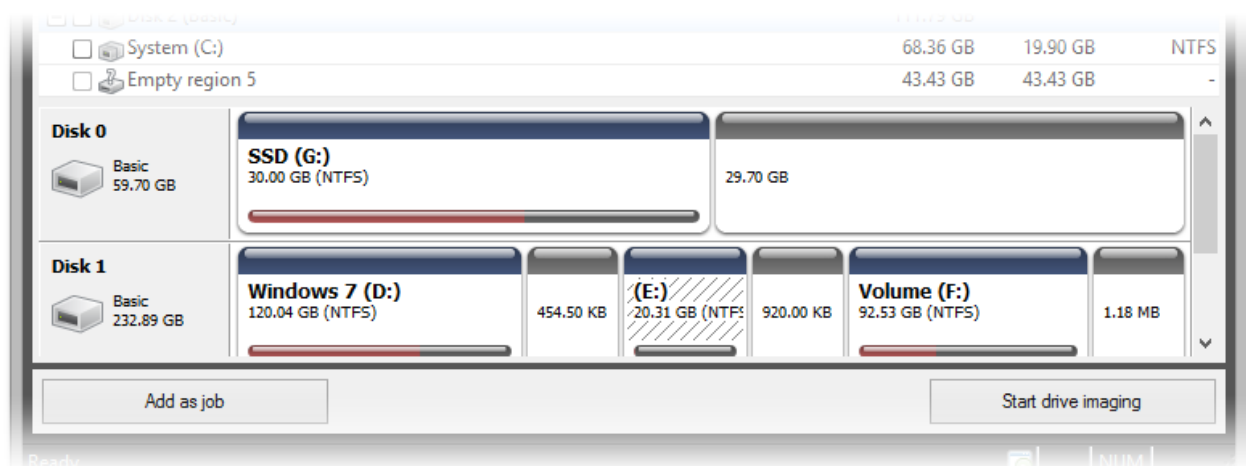


DiskView

The interactive graphical display gives you an overview of all the hard disks. You'll be able to see both free and used space, as well as the size of the partitions.

You can select a drive for imaging by double-clicking it.

Among other things, the DiskView of Laplink DiskImage displays all empty sectors. These empty areas occur due to the alignment of the partitions or volumes.



Backup individual files and folders

Do you want to backup individual folders or files instead of an entire drive? You can now do so with a file backup. During a file backup, the files are backed up directly in the form of data. This type of backup contains only file information, no drive information is included.

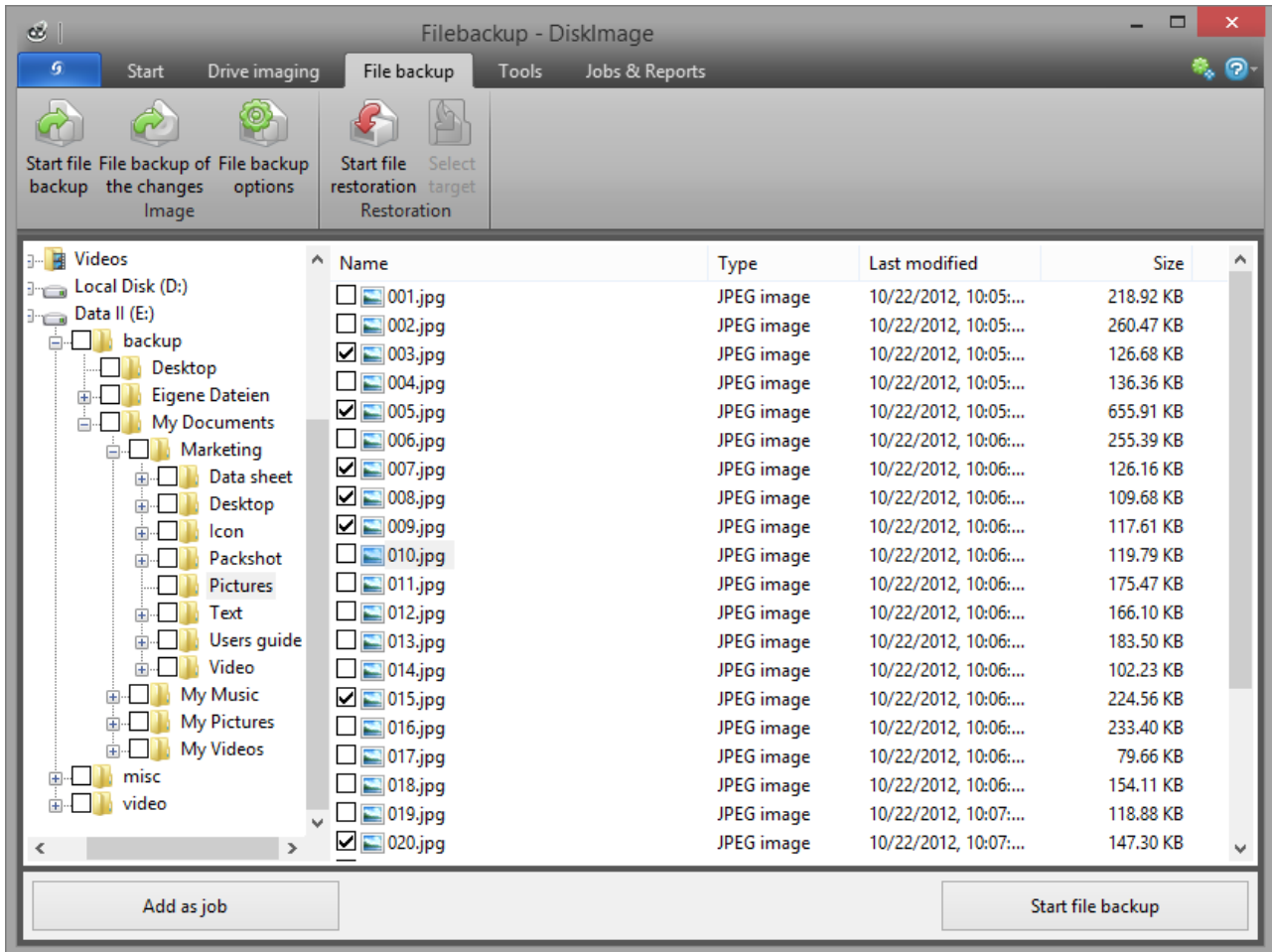
1. Click **File backup** on the start page of Laplink DiskImage. It may take some time to display your files and folders. Please observe the loading progress in the status bar.
2. Navigate to the folder you want to backup.
3. Check the box next to the folders you want to backup. Multiple selections are also possible. You can also select an entire drive. All files saved on the drive will be backed up.
4. Then click **Start file backup**.
5. In the dialog that follows, please verify whether the default target indicated corresponds to the target you want. If desired, you may also change the file name.
6. Click **Start** to continue with the file backup.
7. A compressed file will then be created with the file extension [OBK](#) (*.obk).

Selection criteria

Before starting file backup, there's an option for selecting files or file types in the folder that you want to have included or excluded from the backup.

- In the dialog, click **Criteria** and specify the settings you want.

Tip: You can specify further settings by clicking the icon [File backup options](#). If you want to repeat the file backup at a later time, you can create a job for it. To do this, click the icon [Add as job](#).



Restore entire computer or system partition

In order to restore your entire computer or system partition, you need to start Laplink DiskImage from a bootable medium "Restore entire computer or system partition" under Windows PE. Please proceed as described in chapter [Start directly from bootable disk](#).

Tip: For the restoration of an image onto a computer with hardware different than the source computer, please consult the notes in chapter [Machine independent restoration \(M.I.R.\)](#).

1. Start Laplink DiskImage directly from the bootable medium under Windows PE.
2. Select **Drive restoration** in the start page of Laplink DiskImage.
3. Click **Select image** in the form field or navigate to the storage location of the image in the browser button.
4. Select the image containing the system partition i.e. all drives of your computer and click **Open**.
5. All drives included in the image will be shown in the drive list.
6. Check the drives you want to restore from the image. If you want to restore your entire computer, check all drives.
7. Then select the target drive or disk that should be overwritten with data from the image.*
8. Click the Start drive restoration symbol to start the restoration process.
9. After restoration is successful, you can restart your computer.

***Note:** Keep in mind when selecting the target drive that in Windows PE as of Windows Vista, drive letters are different: Drive C: (normally containing the non-active operating system) will be assigned another letter (for example D).

Restore drives

To restore one or more drives from an image, proceed as follows:

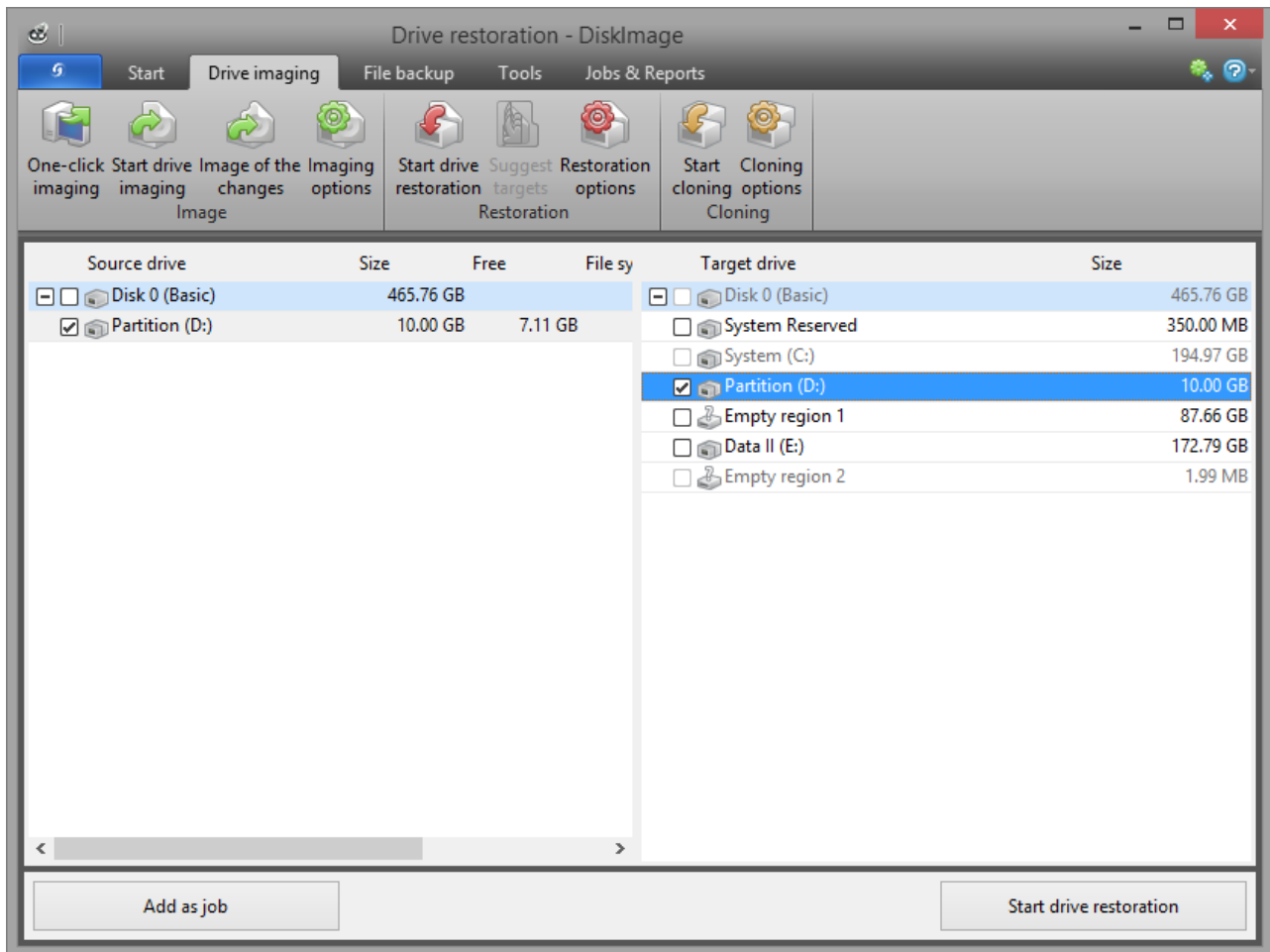
1. If you want to restore one or more drives from an existing image, click **Drive restoration** on the Laplink DiskImage start page.
2. Select the image you want to restore in the DropDown list of **Select image**. If the proposed images (*.obk) are not the ones you want to restore, check your drives and enter the path to the image file.
3. Select the image file (*.omg or *.vhd) from the browser and click on **Open**.
4. All drives contained in the image will then be displayed.
5. Click the drive that you want to restore ("play back").
6. Then, select the target drive for restoration by checking the box next to it. You can either replace an existing drive or create a new one: for example, in an empty sector.
7. Optionally, you can specify further settings for the restoration under **Restoration options**.
8. Whenever you have specified all settings, click on **Start drive restoration** to start the restoration.

Important: During restoration, the image overwrites your selected drive with the data of the drive contained within the image. All data saved on the target drive is thereby lost and replaced by that of the image.

Note: If your image is split among various disks, all these disks will be required for a restoration. If you have created an incremental image, all images - from the last complete image to the last incremental image - will be needed.

Note: If you have imaged an entire hard disk and the restoration is run on a different hard disks, then the new hard disk must possess at least as much space capacity as the source hard disk.

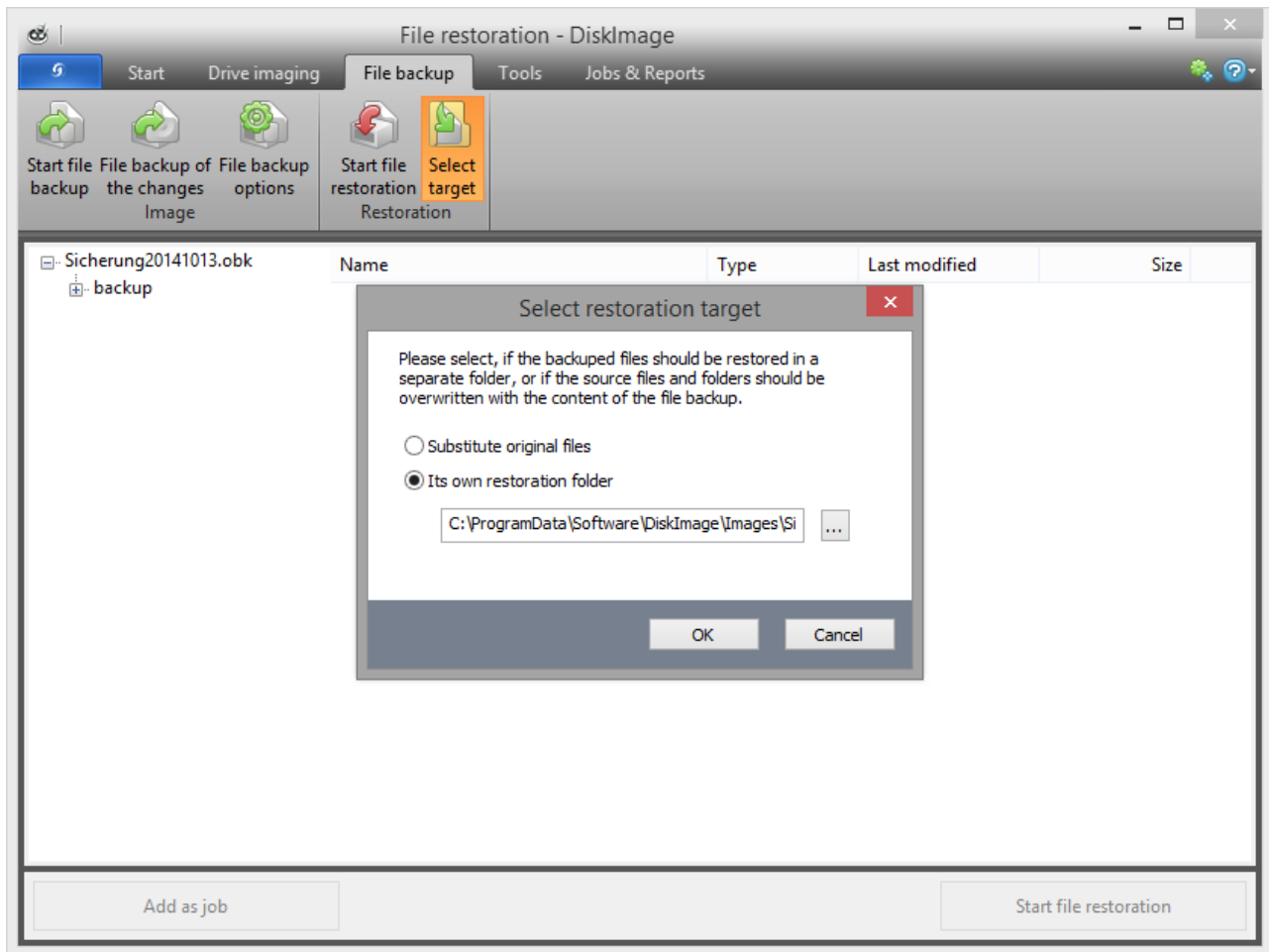
Note: If you want to restore an entire system or system partition, you'll need to start your computer with the Laplink DiskImage bootable medium and perform the restoration from there, see [Start directly from bootable disk](#). If you should run a restoration of the system partition to different hardware, read chapter: [Restoration on different hardware](#).



Restore individual files and folders

If you want to restore files or folders from already existing images, proceed as follows. The first thing to do is make sure you are able to access the image (*.obk).

1. In the Quick Access bar click **File restoration**.
2. Select the image you want to restore in the DropDown list of **Select image**. If the proposed images (*.obk) are not the ones you want to restore, check your drives and enter the path to the image file.
3. Now click the symbol **Select target folder**.
4. You can now restore data from the image in a new folder, or replace current data with that from the image.
5. Once you've done that, start restoration.



Create image of the changes only

If you only want to store the changes since the last image, you can create an **Image of the change**.

To create an image of the changes, you need to have created at least one complete image of the drives or folders involved.

Differential/incremental imaging

As a base image you can use either the complete image created using the “Used sector imaging”, “Forensic imaging” or “Direct forensic imaging”, or by using a previously created [incremental image/differential image](#).

Follow the instructions below:

1. Please make sure that the drive containing the base image is connected to your computer.
2. Start Laplink DiskImage and select **Drive imaging** on the start page.
3. Enable the check for **Incremental imaging**.
4. Select your base image in the browser window and click **Open**.
5. Now click **Apply** (if you want to specify further settings) or on **OK** to proceed with the imaging.
6. Click **Start drive imaging**.
7. Now you can either select the recommended target folder for saving the image, or enter a new target path. For the sake of clarity, we recommend saving the base image and any subsequent images in one folder. The image is automatically named after the creation date. You can however enter a name manually.
8. Click **Start**, to initiate the imaging process.

Note:When creating an image of the changes, Laplink DiskImage compares each sector of the existing image with the corresponding sector of the (source) disk being imaged. This might require more time than a complete image. The image of the changes, however, takes up much less space than a complete image.

Note: The option [Compare data with checksums](#) is set by default. The last incremental image is all you'll need as a base image for creating a new incremental image. **Use checksums to administer unchanged data** is not set, you will need the last base image and all the incremental images previously created, because all of them must be accessed for creating the new image.

Backup changes in a file

A complete image or a previously created image of the changes can be used as base image.

Follow the instructions below:

1. Please make sure that the drive containing the base image is connected to your computer.
2. Start Laplink DiskImage and select **File backup** on the start page.
3. Enable the check for **Incremental File backup**.
4. Select your base image in the browser window and click **Open**.
5. Now click **Apply** (if you want to specify further settings) or **OK** to proceed with the imaging.
6. Click **Start file backup**.
7. Now you can either select the recommended target folder for saving the image or enter a new target path. For the sake of clarity, we recommend saving the base image and its subsequent images in one folder. The image is automatically named after the creation date. You can however enter a name manually.
8. Click **Start**, to initiate the imaging process.

Clone drives

Entire storage volumes or individual drives can be cloned, which in turn can be used instead of the originals. This function allows you to clone a drive and all its saved data without creating image files. The source disks/drives will be reproduced without any changes.

Please keep in mind that a clone requires much more free space than an image.

Unlike images, there are **no** incremental or differential clones possible for reducing the data volume of successive "[Clone drives](#)" clones. In addition, a clone **cannot** be compressed or encrypted compared to an image.

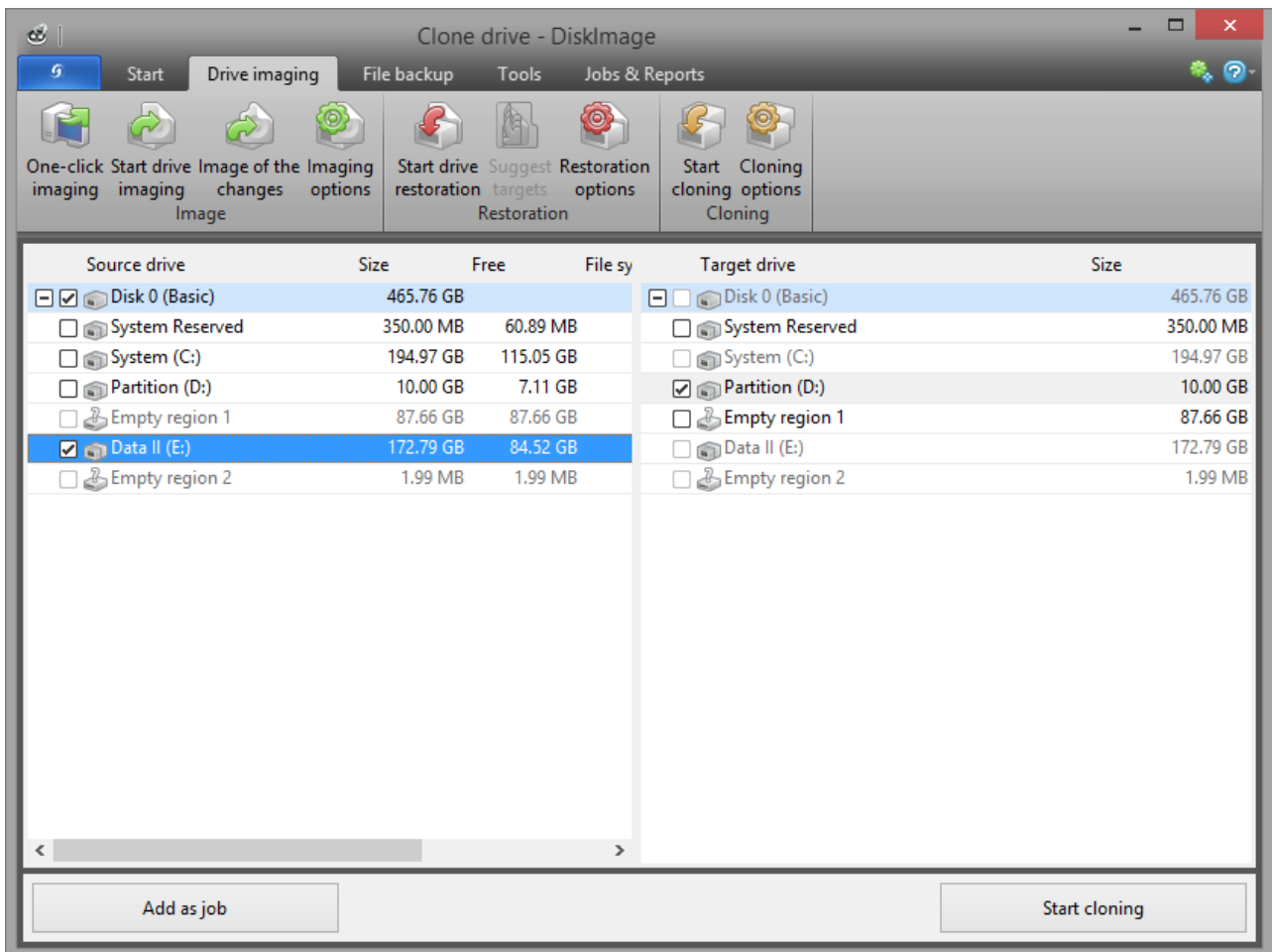
1. Select **Clone drive** in the Quickaccess bar.
2. Select the drive which you want to clone by enabling the check next to each drive or the entire disk.
3. You can set additional settings for cloning under [Cloning options](#).
4. You can then specify the target drive. Simply enable the check next to the drive or the disk.
5. In the following dialog under **Advanced**, you can specify whether certain functions should be executed when cloning is completed. These functions are disabled by default.
6. Once you've enabled all your settings, click **Start cloning**, to begin the cloning process.
7. You can also "recopy" your clone in exactly the same fashion - to put it back on your computer/drive.

Important! When cloning your drive (source drive), the selected target drive, will be overwritten. All data stored on it will be deleted and replaced by the clone! You should therefore save the clone on something like an external hard disk chosen for this purpose.

Note: When cloning a drive, you should adjust the properties of the target drive for future application. Make sure, for example, that the system partitions of the clone will also be able to boot.

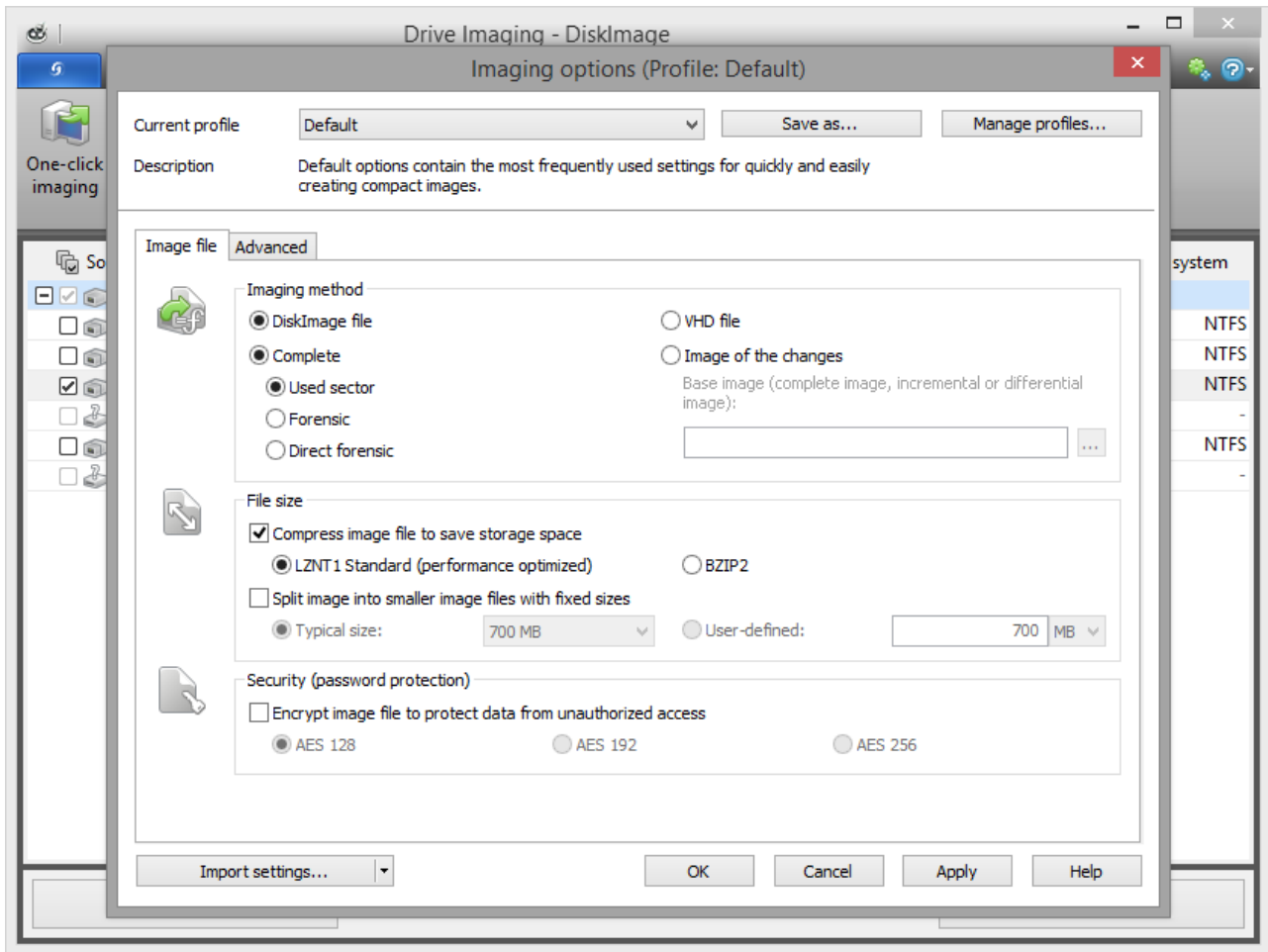
Note: If you're using a second hard disk as a target, Laplink DiskImage will change its signature. This will guarantee that there are no two hard disks with the same signature connected to your computer. There might otherwise be complications during cloning or even a possible system crash. With simple hard disk structures (basic disk), all partitions in the operating system will be recognized by a link from hard disk signature and partition offset. During cloning, the registry entries of the drive letters, including the letters, will be adapted to the target system.

Note: If you want to restore the clone of a system partition onto a PC with different hardware, please bear in mind the notes in chapter [Machine independent restoration \(M.I.R.\)](#).



Settings for drive imaging

Under the menu heading Drive imaging, you can specify settings and set them as default for every new image by clicking **Drive imaging/Imaging options**.



Drive imaging options

Select imaging method

Under **Drive imaging/Imaging options/Image file** you can specify which imaging method should be applied as standard to every new image. In most cases, the default option **Used sector** is recommended.

Used sector imaging

Using this imaging method will limit the imaging process to only used sectors on a drive. This method will let you save time, computer performance, and disk space. Used sector imaging is set in the program by default.

Image of the changes

If you only want to save changes made since the last imaging, select **Image of the changes** as method under Imaging options. This will allow you to create an image that saves only those changes that have occurred since the last [base image](#).

While creating an image of the changes, Laplink DiskImage compares each sector of the existing image with the corresponding sector of the disk(source)being imaged. This might require more time than a complete image. An image of the changes, however, takes up much less space than a complete image.

Note: If you want to create an image of the changes, you must have created at least one complete image of each drive that can then serve as a base image. Afterwards, the image of the changes you've created can also serve as a new base image.

Note: The option **Use checksums to administer unchanged data** is always set by default. The last incremental/differential image created is enough to serve as the base image when creating an **Image of the changes**. If **Use checksums to administer unchanged data** is not set, you will need the last base image and all existing incremental images because these must be accessed as part of the imaging process.

Forensic imaging

This imaging method is especially useful when creating images of non-supported file systems or when, for example, you would like to recover deleted data from a source drive using special data recovery software. With this method, an exact sector-level copy of the source drive is made. By saving all sectors of a partition or drive, the unoccupied and deleted portions of file systems can be imaged in their entirety.

Direct forensic

Direct forensic imaging is a special case. The difference, however, lies in data being read over deep system interfaces. As with regular forensic imaging, a complete copy of a source drive will be created. This makes it possible to, among other things, image an encrypted hard disk using encryption software.

Please note that direct forensic imaging is intended for imaging encrypted disks using encrypted data. This data remains encrypted even after the image is restored. If the source drive being used is an encrypted drive, only sector-based restoration is possible. The file-based restoration or browsing of such an image is not possible. In addition, spanned volumes (stripped/spanned) are also excluded from this, since the logical link here between the regions is taken over by the operating system. Direct forensic imaging makes no sense if the drives are not encrypted. Here we recommend forensic imaging because all sectors of the drive, including the sectors marked as free, will be included in the image.

Specify the size of an image file

An image can be split into multiple image files. If a disk doesn't have enough space to contain a full image of your selected drives, you will automatically be requested to enter another target location. It is also possible to manually set the maximum size of an image file before creating the image. If the image being created is larger than the entered file size, additional image files will be created.

This function is especially useful when you plan to burn your image onto a CD/DVD at a later time. Sometimes a CD/DVD is not large enough to contain the entire image file. We recommend your limiting image files to the size of the blank CD/DVD onto which you will be writing your images.

The image file can also be split at a later time using the [Convert image file](#) function. It is, however, recommended to split images at the time they are created to avoid any confusion that may arise.

- Under **Drive imaging/Imaging options/File size/Split image into smaller files with fixed sizes** you can specify the size of individual image files.

Encryption

Your data can be securely encrypted using the recognized AES method. This permits Laplink DiskImage to provide your image with an extremely high level of security with a key length of up to 256 bits.

- You can select the encryption level for your files under **Drive imaging/Imaging options/Image file/Security**.
- If you then start the imaging process (**Drive imagings**), enter a password when being prompted.

A belated encryption of the image is possible under [Convert image file](#).

Compress image

Under **Drive imaging/Imaging options/Image file** you find the settings **Compress image file to save storage space**. You can choose from the LZNT1 Standard or theBZIP2 process.

LZNT1:This is a compression type based on the Lempel-Ziv algorithm, which is laid out on a real time application. Speed is preferred over the rate of data compression.

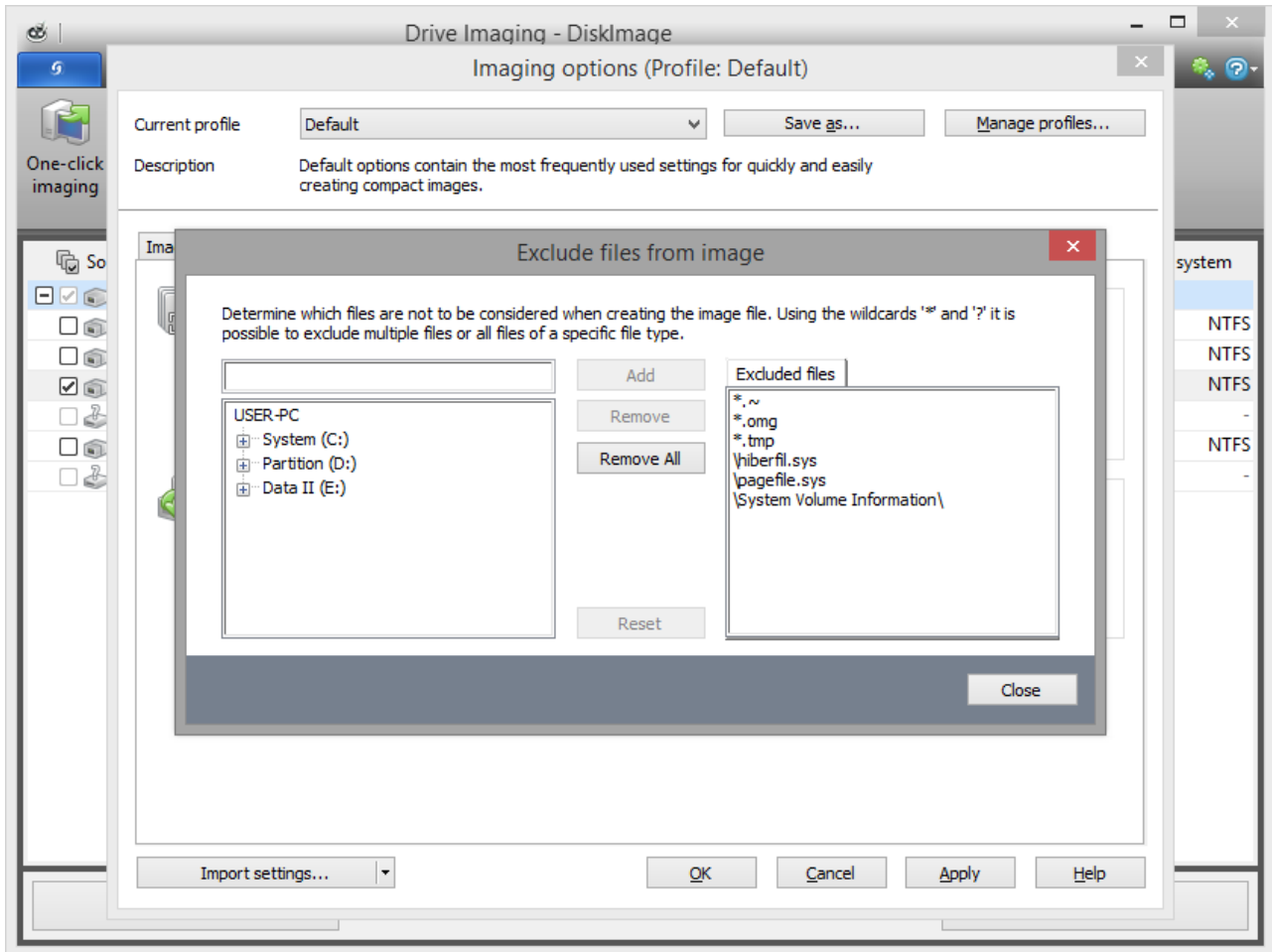
BZIP2: is a block type compression process. Compression rate is preferred over velocity.

You can also compress the image after creation under **Convert image file** in the Tools menu.

Note: Compression increases the time required to create an image file. However, the file then requires less space on the disk.

Exclude files from an image

Note: Several minutes may be needed for excluding files, depending on the amount of data on the hard disk.



Exclude files from an image

When using the imaging method Used Sector Imaging you have the option of excluding data from the image or compression. Please follow these instructions for excluding data:

1. Enable the check next to the drive to be imaged under **Drive imaging**.
2. Make sure you have selected the method **Complete/only used sectors** under **Imaging options**.
3. In the **Imaging options** click on **Advanced** and open the dialogue to exclude files in **Exclude from imaging**.
4. In the right hand window select the files and folders you wish to exclude from the imaging and confirm this with **Add**. Only the data on your selected drives will be excluded.
5. You can close the window after your settings are made. The changes you made will then be applied.

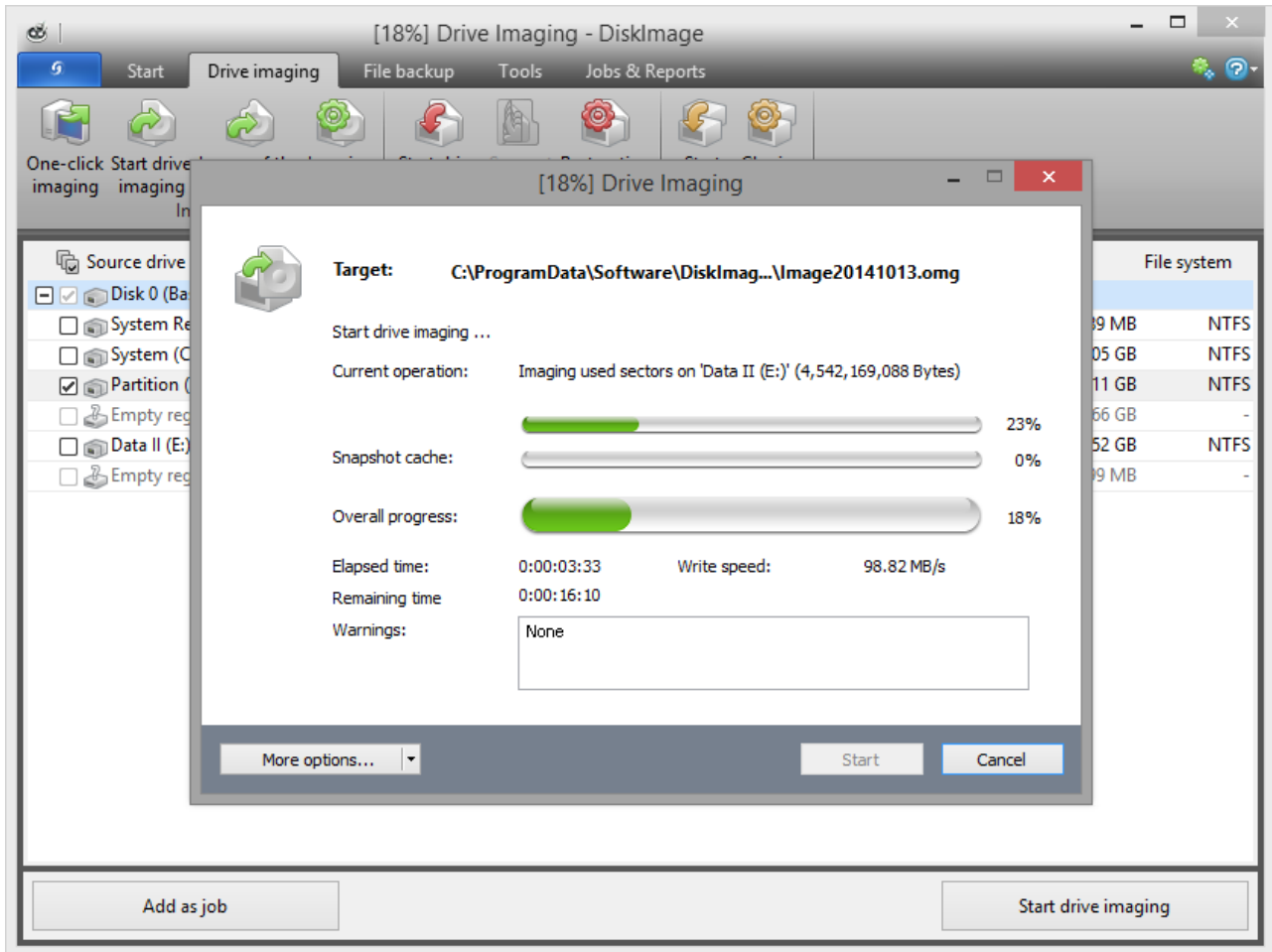
Exclude data from compression

Data that is already compressed, e.g. *.rar or *.zip files, will not be compressed any further during the imaging process and so may be excluded from compression. To exclude data from compression, please follow the procedure laid down in [Exclude files from an image](#).

Lock a drive

You can lock the drive you wish to image during the imaging process. This prevents any changes being made to the drive while the image is being created. The drive will no longer be displayed in Explorer and all applications will be closed. The drive is not locked by default.

Settings for drive imaging



Snapshot cache view(here an empty cache)

- To lock a drive, under **Drive imaging/Imaging options/Advanced** select **Imaging procedure/Lock drive during imaging**.

If you leave a drive unlocked during an imaging because, for instance, you want to continue working on the drive, the original status will be “cached”, i.e. stored in the working memory buffer. The working memory buffer space is, however, limited. You can see how much space is available by looking at the memory buffer display.

Note: It is not possible to lock a system partition. If you want to prevent temporary files from being written onto a particular drive, enter the entry NoSnapshotTmpFiles in the Registry. More information can be found in the chapter [Explanation of registry entries](#).

Please note: If you exceed the available working memory, original data sectors will no longer be saved and included in the image. This makes the image inconsistent and may render it unusable. In this case, after imaging, you should mount the image (Mount the image as a drive) and check its accuracy.

Note: To avoid overloading the memory buffer, close or stop all write procedures on the source drive: for example, running a defragmentation.

Ignore bad sectors

You can specify under **Drive imaging/Imaging options/Advanced** whether the read process should be aborted or continued in case of error. If continued, the bad sector will be saved in the image as an unused sector. The remaining data that is still readable will then be available in the image.

- Enable the check for **Ignore and automatically skip bad sectors while reading**.

Data comparison with checksums

Unchanged data resulting from incremental images is saved using checksums by default. Such a file will be slightly larger. That's why it's enough, when creating the next incremental image, to use an existing incremental image (with checksums) as the base image. This function is activated by default. If you save all images in a single folder, you can deactivate this function. Your images will then take up less space on disk.

- Please make sure that the function **Use checksums to administer unchanged data** under **Drive imaging/Imaging options/Advanced** is enabled.

Use profiles for drive imaging

Under **Drive imaging/Imaging options/Current profile** you can reset current settings to **Default**, or select an already existing profile.

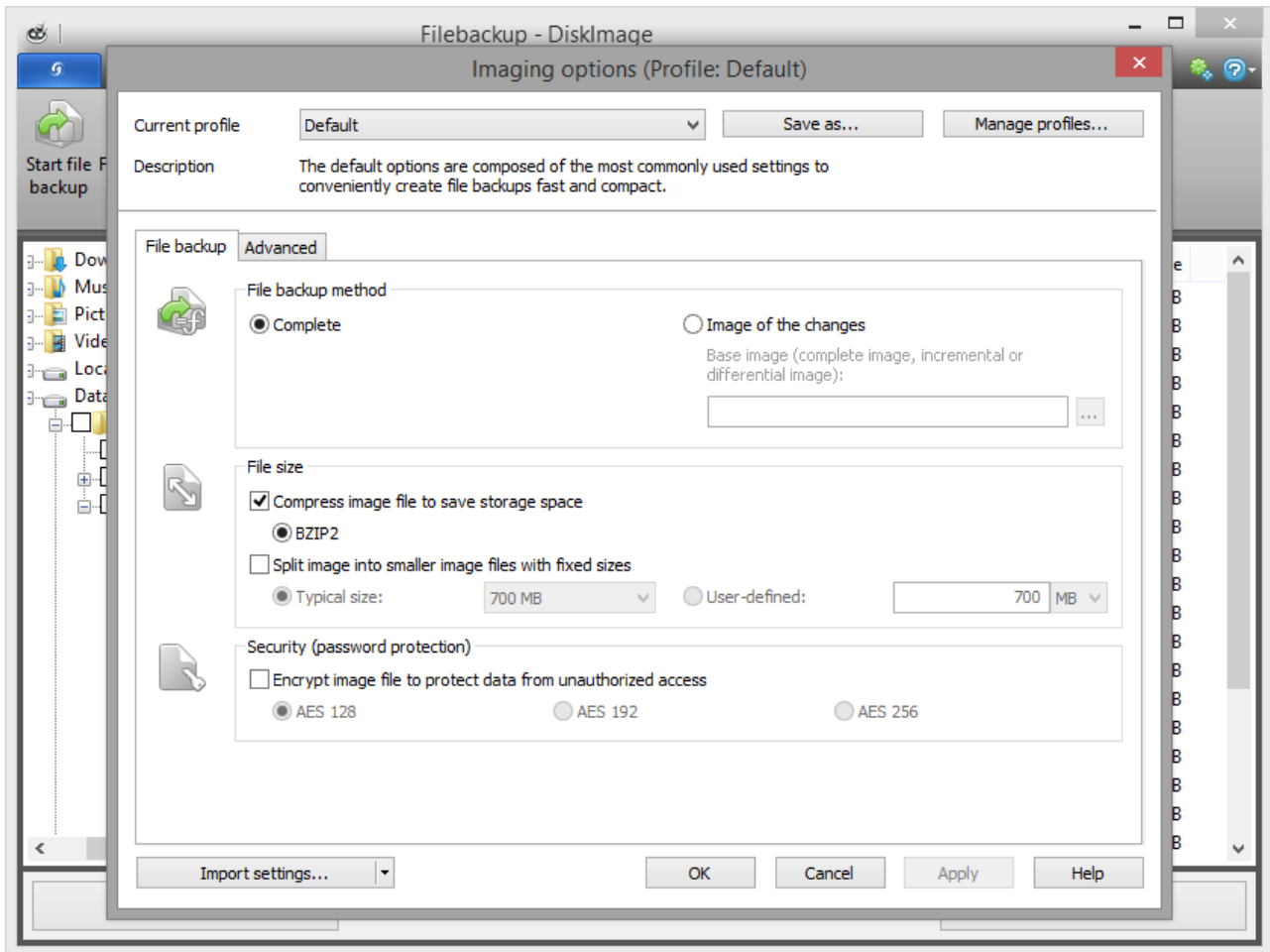
Under **Current profile** you can select a preset Multimedia or Archive profile. The Multimedia profile automatically excludes already compressed music and video data (i.e. *.avi, *.mp3, *.mpeg) from the compression. The Archive Profile excludes other compressed data such as *.zip or *.rar.

If you would like to save your user-defined settings, please follow these instructions:

1. Enable your settings under **Drive imaging/Imaging options**.
2. Select under **Save as....**
3. Give your newly created profile a name in the dialog window and confirm.
4. Under **Manage profiles** you can change or delete an existing profile.

File backup options

Under **File backup /File backup options** you can specify further settings that should be applied by default for the current or every new backup.



File backup options

Specify imaging method for file backup

Under **File backup/File backup options/File backup /File backup method** you can specify which method should be preset for every file backup.

The options are:

- Complete
- Image of the changes

For normal use, we recommend the **Complete** method which is already set by default.

If you've already made one or more back ups of a folder or individual files, you can select the method **Image of the changes**. Only changes made since the last base image will be saved.

When creating an image of the changes, Laplink DiskImage compares the data of the existing image with corresponding data from the current folder. That's why this backup method might require more time than the creation of a complete image. On the other hand, an image of the changes normally requires much less disk space than a complete image.

Regulate the size of a file backup

A file backup can be split into multiple backup files. If one disk is not enough for storing a complete backup, you will automatically be asked to indicate a different storage location. It is also possible to manually set the maximum size of an file before. If the image being created is larger than the entered file size, additional image files will be created.

This function is especially useful when you plan to burn your image onto a CD/DVD at a later time. Sometimes a CD/DVD is not large enough to contain the entire image file. We recommend limiting image files to the size of the blank CD/DVD onto which you will be writing your images.

The image file can also be split at a later time using the [Convert image file](#) function. It is, however, recommended to split images at the time they are created to avoid any confusion that may arise.

- Under **File backup/File backup options/File size/Split image into smaller image files with fixed sizes** you can specify the size of individual image files.

Encrypt file backup

Your data can be securely encrypted using the recognized AES method . This permits Laplink DiskImage to support extremely high security levels with a key length of up to 256 bits.

- You can select the level of encryption for your files under **File backup/File backup options/Security**.
- If you then start the imaging process (**Start file backup**), enter a password when being prompted.

You also have the option of encrypting the image after it's been created under [Convert image file](#).

File backup advanced settings

You can specify further settings under **Advanced** in the File backup options .

Lock drive while imaging

While processing a file backup, you can lock the drive where the folders/files being backed up are located. This prevents any changes from being made to the drive while the backup is being created. The drive will no longer be displayed in Explorer and all applications will be closed. The drive is not locked by default. If the drive is not locked, changes will be buffered either in the snapshot cache (if installed) or over the volume shadow copy service of Windows so that these changed won't influence the backup.

Use check sums to administer unchanged data (for incremental file backup)

Unchanged data is saved by default using checksums by the method **Image of the changes**. The file is slightly larger. It's therefore enough if you enter an existing image of the changes as source image for the next **Image of the changes**(with checksums). This function is enabled by default. If you save all images in a single folder, you can also disable this function. Your images will then take up less space on the disk.

- Make sure that the option **Use checksums to administer unchanged data** under **File backup/File backup options/Advanced** is enabled.

Apply profiles for file backups

Under **File backup/File backup options/Current profile** you can reset the current settings to **default** for the image or select a wide ranging user-defined profile.

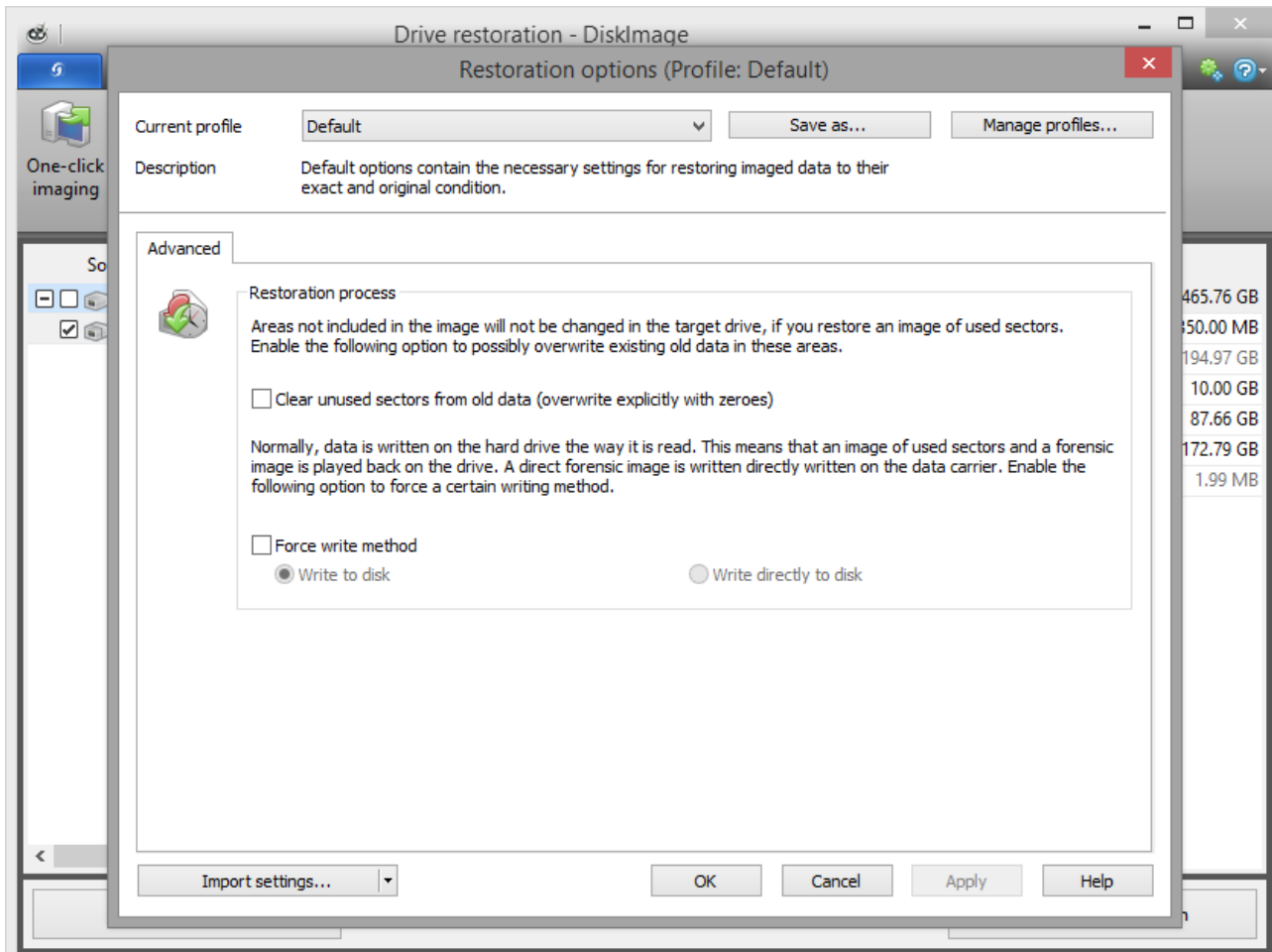
If you would like to save your user-defined settings, please follow these instructions:

File backup options

1. Enable your settings under **Drive imaging/Imaging options**.
2. Select under Imaging options **Save as....**
3. Give your newly created profile a name in the dialogue window and confirm.
4. Under **Manage profiles** you can change or delete an existing profile.

Settings for the restoration of drives

Under **Drive restoration/Restoration options** you can specify additional settings for the restoration of drives from an image.



Restoration options

Overwrite unused sectors

Under **Drive restoration/Restoration options** you can overwrite unused sectors explicitly with zeros: Data that has been stored in these areas cannot be restored - not even with specialized data recovery software.

Create a restoration profile

Under **Drive restoration/Restoration options** you can return the current settings for an imaging back to their default settings or select an already created profile.

Under **Current profile** you can choose between **Default** and **User-defined**.

If you want to save your user-defined settings, do the following:

1. Enable your settings under Restoration Options
2. Select **Save as**
3. Give your newly created profile a name in the dialog window and confirm.

Under **Manage profiles** you can change or delete an existing profile.

Force writing method

Under **Drive restoration/Restoration options/Advanced** you can force a writing method. "Write to drive" is the default writing method used during restoration of images created with the "Used sector" or "Forensic" methods. "Write directly to disk" is the only writing method used during "Direct Forensic" cloning. You can, however, force a user-defined writing method.

- Enable **Force writing method** and select the respective method.

Using the option **Write to drive**, data will be written to the drive with help from the operating system, and not from the offset to the disk.

With the option **Write directly to disk**, you can decide whether a restoration should be written directly to a disk, bypassing the file system driver. This function applies especially to encrypted disks and is required for restoring any disks that have been imaged using the direct forensic method.

Machine independent restoration (M.I.R.)

Until now, you were only able to restore a system partition onto a computer having hardware identical to the source computer. The same goes for the restoration of clones. The most frequent application scenarios have therefore been limited to the creation of images and restoration of these on the same computers

Laplink DiskImage now offers you the option of restoring an image, even the system partition, onto a computer with different hardware using the M.I.R. function (Machine Independent Restoration). You can also clone a computer with different hardware.

Enable M.I.R. if you've made changes to the hardware after imaging and these changes affect the functionality of the Windows operating system being started. M.I.R. is also necessary if you want to transfer an already existing computer configuration onto a new computer.

M.I.R. can therefore be used or enabled in the following cases:

- Restoration of an image onto a computer with different hardware or cloning/duplication of a computer.
- With the help of a bootable disk, M.I.R. can be used for exchanging damaged or malfunctioning drivers of an existing system.
- Migration of physical computers onto virtual machines or virtual machines on physical computers.

Note: When duplicating a source system, i.e. duplicating installed Microsoft Windows operating system versions and programs, we recommend changing the computer name and SID to avoid future problems when using the configured computer within the network.

Restrictions when restoring on different hardware

Under certain circumstances, it's possible that the restored or duplicated system does not start or is malfunctioning. The following configurations may lead to malfunctions:

- No hard disk was selected as target, only part of a hard disk (partition/volume/empty area).
- While creating the layout on the target, "delete layout" was not selected. This option makes it possible to create partitions/volumes on a different Offset.
- You did not select a hard disk as source but rather individual partitions/volumes and are missing the partitions/volumes containing the needed boot information.
- You are trying to boot from a hard disk connected to controllers that were not initialized by Windows at the time of booting, e.g. booting from a hard disk connected to the computer via a USB controller (not a USB stick).

Note: If error messages appear during booting, you will get instructions on how to proceed in chapter [Assistance when error messages occur during booting](#).

Note: To make sure a restored system or clone is bootable, it's important to create an image of the entire system hard disk and then restore/clone it completely.

Restoring with M.I.R. automatically

M.I.R. of Laplink DiskImage is available to you when restoring system partitions from an image or when cloning. Meant is the direct selection of the system partition or the indirect selection, e.g. the entire disk including the system partition.

Machine independent restoration (M.I.R.)

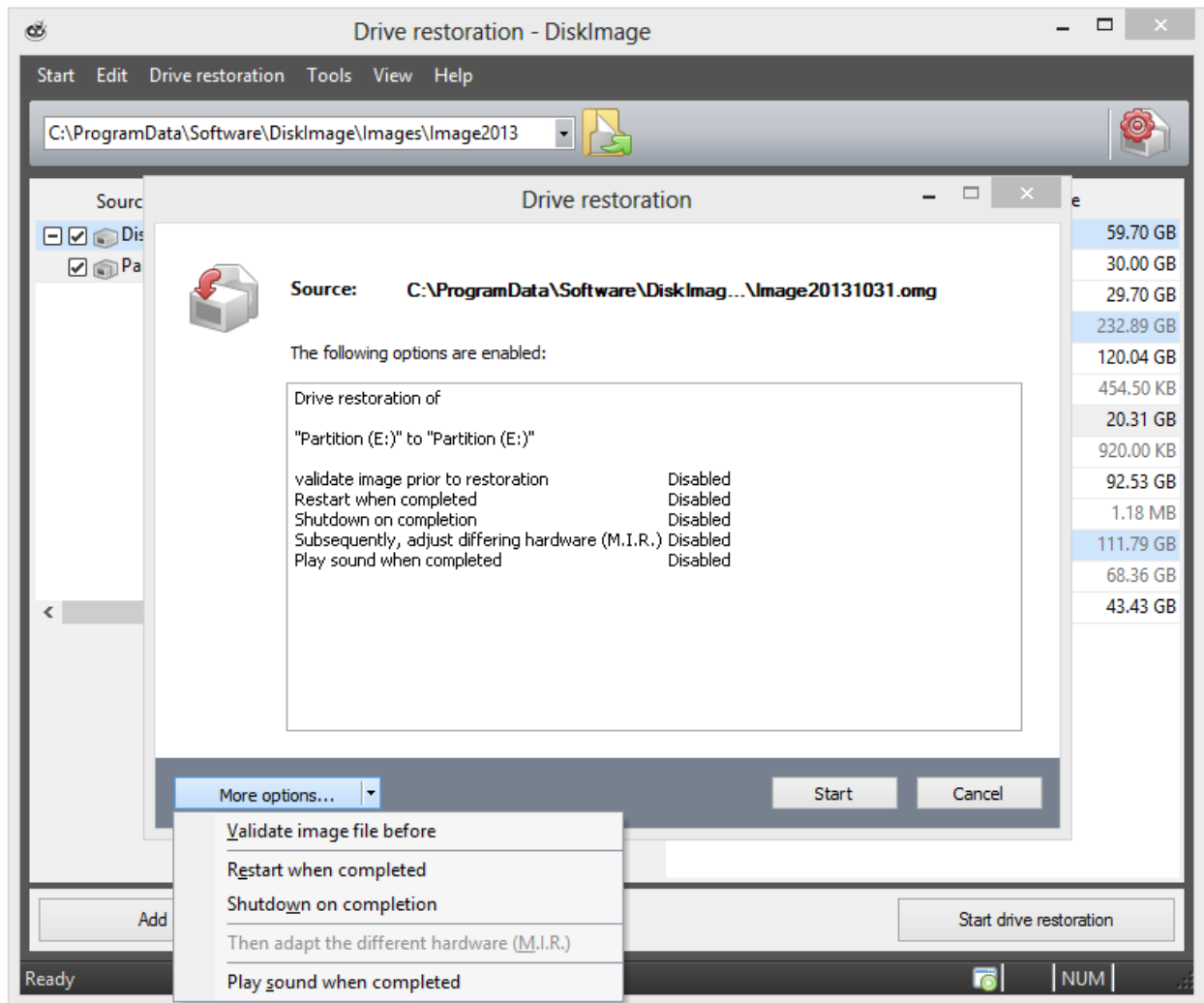
Whenever you want to restore or clone, simply enable the M.I.R. function before the restoration or cloning process is completed. The automatic adaptation will do the rest.

For restoration on different hardware proceed as follows: The example here describes restoration from an image:

1. To restore an entire system or a system partition, you'll need to start your computer with an Laplink DiskImage bootable medium and perform the restoration from there. To boot from CD proceed as described in chapter [Start directly from bootable disk](#).
2. On the start page of Laplink DiskImage click **Drive restoration**.
3. Laplink DiskImage, by default, will always go the place where the last image was saved. If the image file presented is not the one you want, browse through your drives and enter the path to the image file.
4. Select the image file in the browser and click **Open**.
5. All drives contained in the image will then be displayed.
6. Click the drive that you want to restore ("play back").
7. Then select the target drive for restoration by checking the box next to it. You can either replace an existing drive or create a new one: for example, in an empty sector.
8. Once you have specified all the settings, click **Start drive restoration** to begin the restoration.
9. Under Additional options, enable the setting **Adapt to different hardware afterwards** in the restoration or cloning dialog.
10. You can then follow the other dialog prompts and restart your computer once restoration is successful.

Important: During restoration, the image overwrites your selected drive with the data of the drive contained within the image. All data saved on the target drive is thereby lost and replaced by that of the image.

Machine independent restoration (M.I.R.)



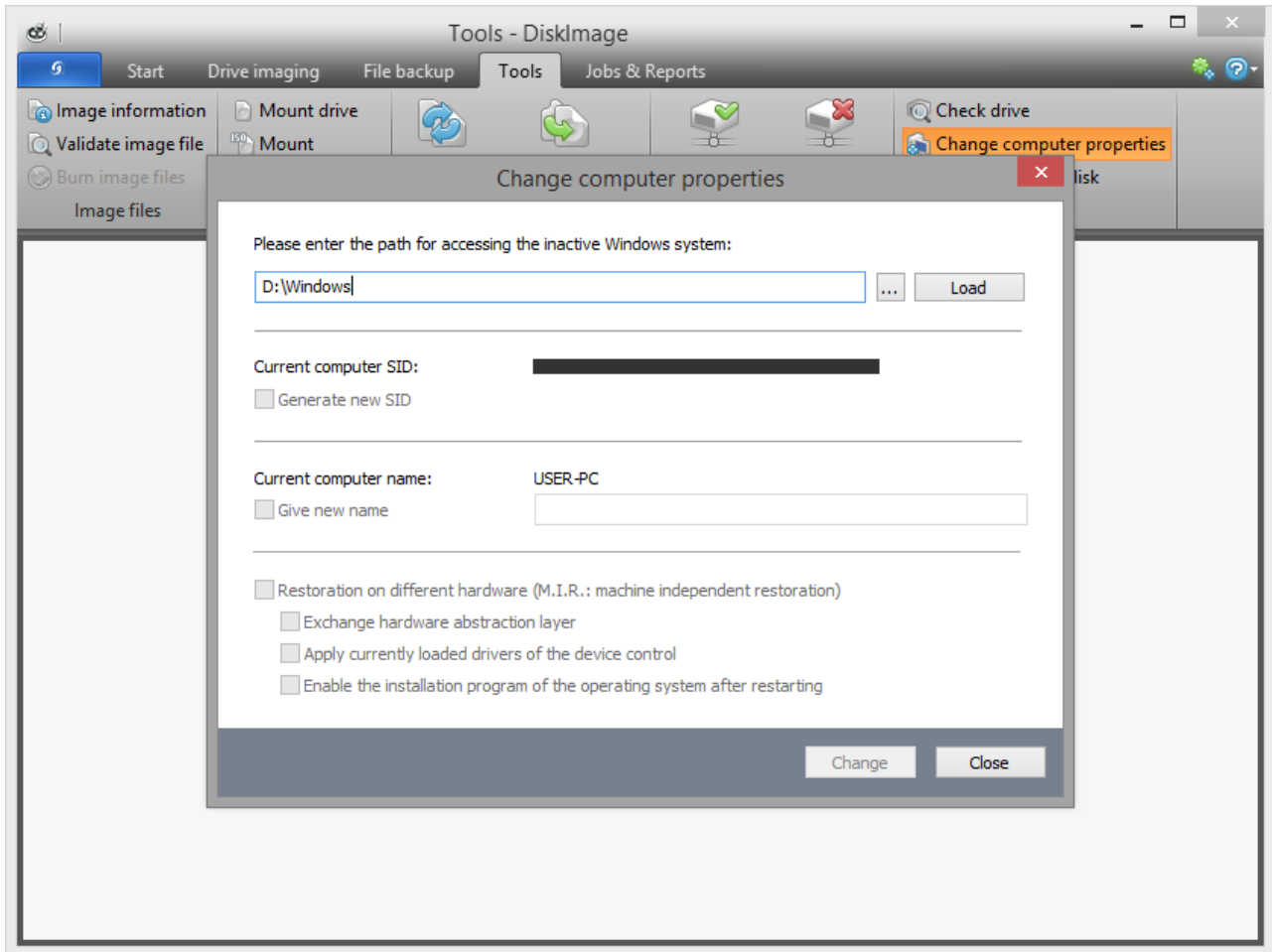
Enable automatic adaptation on changed hardware (M.I.R.)

Manual adaptation

You can make manual adaptation to the changed hardware following restoration or cloning.

- To do this, run a restoration or cloning of the system partition or the entire computer.
- After successful restoration, please open the Laplink DiskImage dialog to change the computer properties **Tools/Change computer identity**.

Machine independent restoration (M.I.R.)



Change computer identity manually

The adaptations made by M.I.R can be divided into three activities which can be enabled/disabled when selecting **Restoration on different hardware** (machine independent restoration).

Exchange hardware abstraction layer (HAL)

Windows operating systems must be compatible with a variety of hardware platforms. This portability is achieved through a special layer within the operating system that is responsible for the management and control of hardware, architecture and machine-dependent devices, such as the I/O interfaces, Interrupt Controller and multi processor communication mechanisms. This layer is commonly installed on and aligned to the current hardware on an installed and running Windows. If the hardware is exchanged, it becomes necessary to align the layer accordingly in order to ensure smooth and continued functionality of the operating system and the programs installed.

Apply currently loaded drivers of the device control

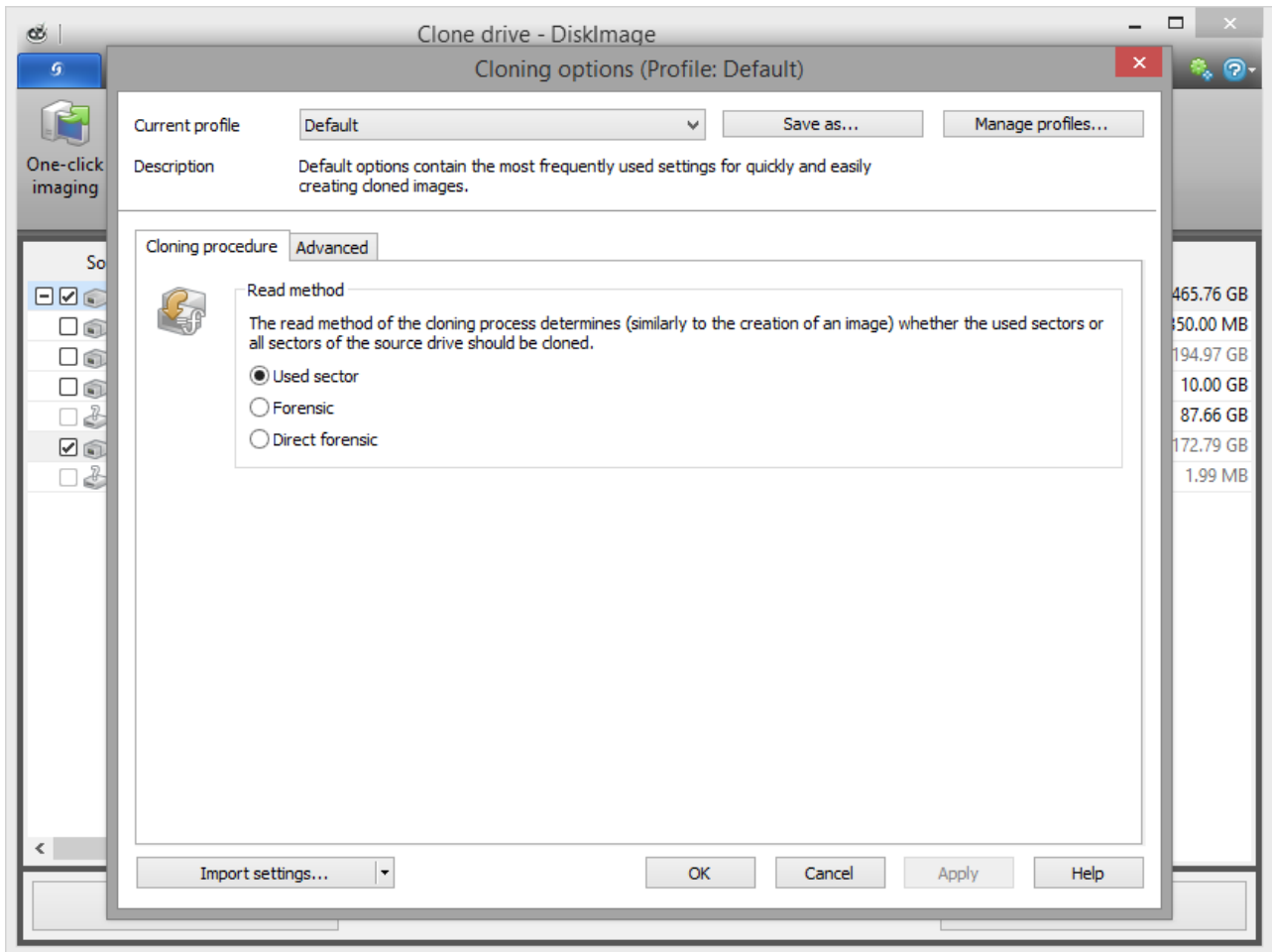
Drivers are an interface between the I/O-Manager and the corresponding hardware. They are not accessed directly, but over the hardware abstraction layer. After replacement, the corresponding driver of new hardware has got to be installed in order to make sure it can work properly with this layer.

Enable the installation program of the operating system after restarting

This activity tells the Windows operating system that the internal setup should be run to complete the information at the next start. The Windows operating system will then be able to automatically adapt itself after incomplete changes, and complete the registration of the new hardware.

Settings for Cloning drives

Under **Clone drive/Cloning options** you can specify further settings to clone drives. To specify the settings, you need to open the Cloning options window.



Settings for cloning drives

Set read method

Under **Clone drive/Cloning options**, you can set your individual read method just as you can when creating an image. (Cloning method). The cloning methods are constructed in a way similar to the imaging methods.

It's possible to choose from "Used sector", "Forensic" or "Direct forensic" methods. You can read more about this under [Select imaging method](#).

Lock a drive

You can lock the drive you want to clone during the cloning process. This prevents interim changes to the drive being made during creation. The drive will no longer be displayed in Explorer and all applications will be closed. The drive is not locked by default.

1. To lock a drive, enable it under **Clone drive/Cloning options /Advanced/Read procedure**

2. If you leave a drive unlocked during cloning, because, for instance, you want to continue working on the drive, the original status will be "cached", i.e. stored in the working memory buffer. The working memory buffer is however restricted. You can see how much is available in the Memory buffer display.

Note: Locking a system partition is not possible. If you want to prevent temporary files from being written on a particular drive, make the entry NoSnapshotTmpFiles in the registry. More information can be found in the chapter [Explanation of registry entries](#).

Please note: Should you exceed the available working memory, the current changes will be written directly to the target drive. This makes the image inconsistent and may render it unusable.

Note: To avoid overloading the memory buffer, close or stop all write procedures on the source drive, for example, running a defragmentation.

Ignoring bad sectors

You can specify under **Clone drive/Cloning options/Advanced** whether the read process should be aborted or continued in case of error. If continued, the bad sector will be saved in the copy as an unused sector. The remaining data that are still readable will be present in the image.

Write over unused sectors

You can specify that unused sectors of the source drive be overwritten with zeros under **Clone drive/Cloning options/Advanced/Clear unused sectors from old data**. By enabling this function, you will not be able to restore data of the empty areas from the drive clone.

This function will be run during the next clone activity of the selected drive.

Tip: If you delete data normally under Windows, it still remains intact on the hard disk. The data will no longer be accessed by the operating system and remains invisible for the user. The space is declared as free area by Windows. This data can still be restored using special software. To make sure that nobody can restore data from the drive clone, enable the function **Clear unused sectors from old data**. After overwriting, not even specialized data recovery software will be able to restore this deleted data.

Force writing method

Under **Clone drive/Cloning options/Advanced** you can force the writing method. "Write to drive" is the default writing method used for the "Used sector" and "Forensic" cloning methods. "Write directly to disk" is the only writing method used during "Direct Forensic" cloning. You can, however, force a user-defined writing method.

- Enable **Force writing method** and select the respective method.

Using the option **Write to drive**, data will be written to the drive with help from the operating system, and not from the offset to the disk.

With the option **Write directly to disk**, you can decide whether a restoration should be written directly to a disk, bypassing the file system driver. This function applies especially to encrypted disks and is required for restoring any disks that have been imaged using the direct forensic method.

Create a profile for cloning

Under **Clone drive/Cloning options**, you can reset the default settings for cloning or select an existing profile.

Settings for Cloning drives

Under **Current profile** you can choose between **Default** or **User-defined**. If you wish to save your user-defined settings for cloning, please follow the instructions below:

- Select **Save as** and enter a name for the new profile.
- Under **Manage profiles** you can change or delete an existing profile.

Start directly from bootable disk

Start directly from bootable disk

If you start Laplink DiskImage directly from bootable disks such as CD, DVD or a USB stick, you will have access to all available functions .

The bootable disk contains Windows PE and can be used, for example, to restore an entire computer or a system partition, if an image has already been created. You can use the bootable disk with Laplink DiskImage even if your Windows is incapable of booting as a result of software error. In addition to Laplink DiskImage, the CD includes a number of other system recovery tools that can be used to try starting Windows without restoring from an image. More information is available in the program help of each integrated tool.

Starting from CD/DVD

1. Make sure that your system is able to be started from a CD. You can configure the necessary settings in BIOS. Further information can be obtained from your motherboard manufacturer.
2. Insert the Laplink DiskImage Start CD in your computer's CD/DVD drive.
3. Restart the computer. Follow the instructions at the start of the CD.

A black rectangular box with white text that reads "Press any key to boot from CD or DVD.._".

4. The system settings will subsequently appear in the window. Select a language and region.
5. At the next stage you can load drivers for those devices where no drivers under Windows PE were initially found, see also chapter "[Load Drivers](#)".
6. Laplink DiskImage will start after confirmation of the license regulation.

Start from USB stick

To boot from an USB stick, you normally have to change the boot sequence in the boot menu of your computer. Alternatively, you can also configure the necessary settings in BIOS. Further information can be obtained from your motherboard manufacturer.

1. Open the boot menu while the computer is booting.
2. You can change the sequence in the menu by placing the USB entry (removable devices) at the beginning.
3. After that, your computer will recognize your USB stick as boot medium, and will start the program from there.



Note: The sequence in the boot menu is normally only valid for the current computer status. This step might have to be repeated the next time your computer is booted.

Tip: If you purchased Laplink DiskImage electronically, you will find more information on the creation of bootable disk here: [Create boot medium](#).

Start directly from bootable disk

Note: If you want to restore on different hardware, you should also consider the notes in chapter [Machine independent restoration \(M.I.R.\)](#).

Note: The Start CD, needed for running Laplink DiskImage without an operating system and for restoring system partitions, is not included in the Laplink DiskImage Special Edition.

Loading drivers

If a device such as a hard disk or network card is not automatically recognized when using the bootable medium under Windows PE, a necessary controller driver (e.g., RAID controllers) might be missing.

You can start loading a new driver immediately after inserting the Start CD using the dialog **Laplink System settings** and the tab **Drivers**.

Please follow these instructions for loading a new driver:

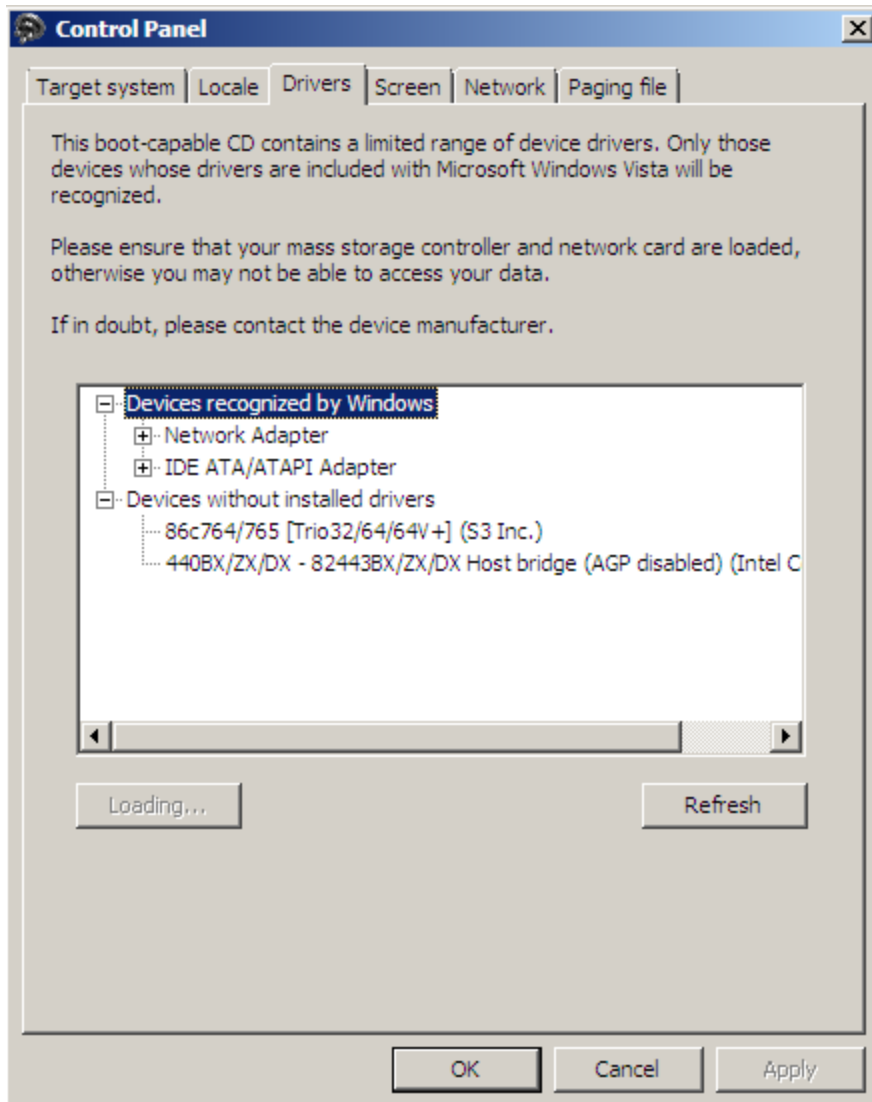
1. Open the tab **Drivers** in the dialog **Laplink System settings** as described above. All recognized Windows devices as well as all devices missing installed drivers will be displayed.
2. Select the device for which you want to load a driver.
3. Click **Load**.
4. Select the desired driver such as one on a connected hard disk, USB Stick or CD*.
5. In the dialog, select **Open** to install the driver.
6. You'll then see a program message informing you about the status of the installation.

*** Note:** You can remove the Start CD from the drive in order to insert a driver CD from a manufacturer.

Note: Under certain circumstances, you may receive a notice requiring you to restart if you have loaded an additional driver under Windows PE. This message is automatically generated by Windows PE but is irrelevant when starting from a CD. Simply reject the request and follow the further instructions in the pop-up window.

Note: Encrypted drives are not supported under Windows PE

Start directly from bootable disk



Loading drivers

Create boot medium

You can also run Laplink DiskImage without installation directly from a bootable medium. The boot medium is based on Windows PE and can be used for, among other things, restoring your entire computer or the system partition provided you have created a corresponding image.

The "Create bootable disk" option can be found under Tools when you open the program.

Although we strongly recommend the option under Tools, some users may still prefer BuildPE for creating a boot CD or USB-stick. Once you have the special BuildPE link, you'll need a blank disk (CD-R, DVD, Blu-ray Disc or USB-Stick) and the needed hardware (burner for CD-R/DVD or Blu-ray).

If you're unsure, just contact our Support. We'll be happy to help you further. Remember to keep your license information handy: <http://www.laplink.com/help>.

Scheduling functions

The Job Assistant provides options for scheduling program functions to be run automatically. You can, for example, plan to have your data drives imaged once a week.

- You will be forwarded to the corresponding activity window for your selected job via Start **Jobs and reports**, which lists all jobs and reports created in Laplink DiskImage. With a double click you can see the corresponding report or edit the job.
- You can create a new job schedule by clicking the **Add as job** symbol after selecting the drive or a folder in the activity window.

Note: In order to execute jobs on a regular basis, the starting conditions (e.g., source drive, images, or target drives) have to be the same. If you make changes to a drive's name, the storage location of the image, or on the layout of a target drive, the job may no longer be executed successfully.

Example: If you've created a job for incremental imaging, you need to enter where you saved all the previous images serving as a basis for the new incremental image. If you've moved the "base image" to another storage location, you'll need to enter the new storage location in the Job Assistant: otherwise the new path will not be found and the job cannot be run successfully.

Note: The tabs for Scheduling and Notification are not available in the Job Assistant when starting from the Laplink DiskImage bootable medium.

Create a Job - General information

Before setting up a job, you'll have to select an activity.

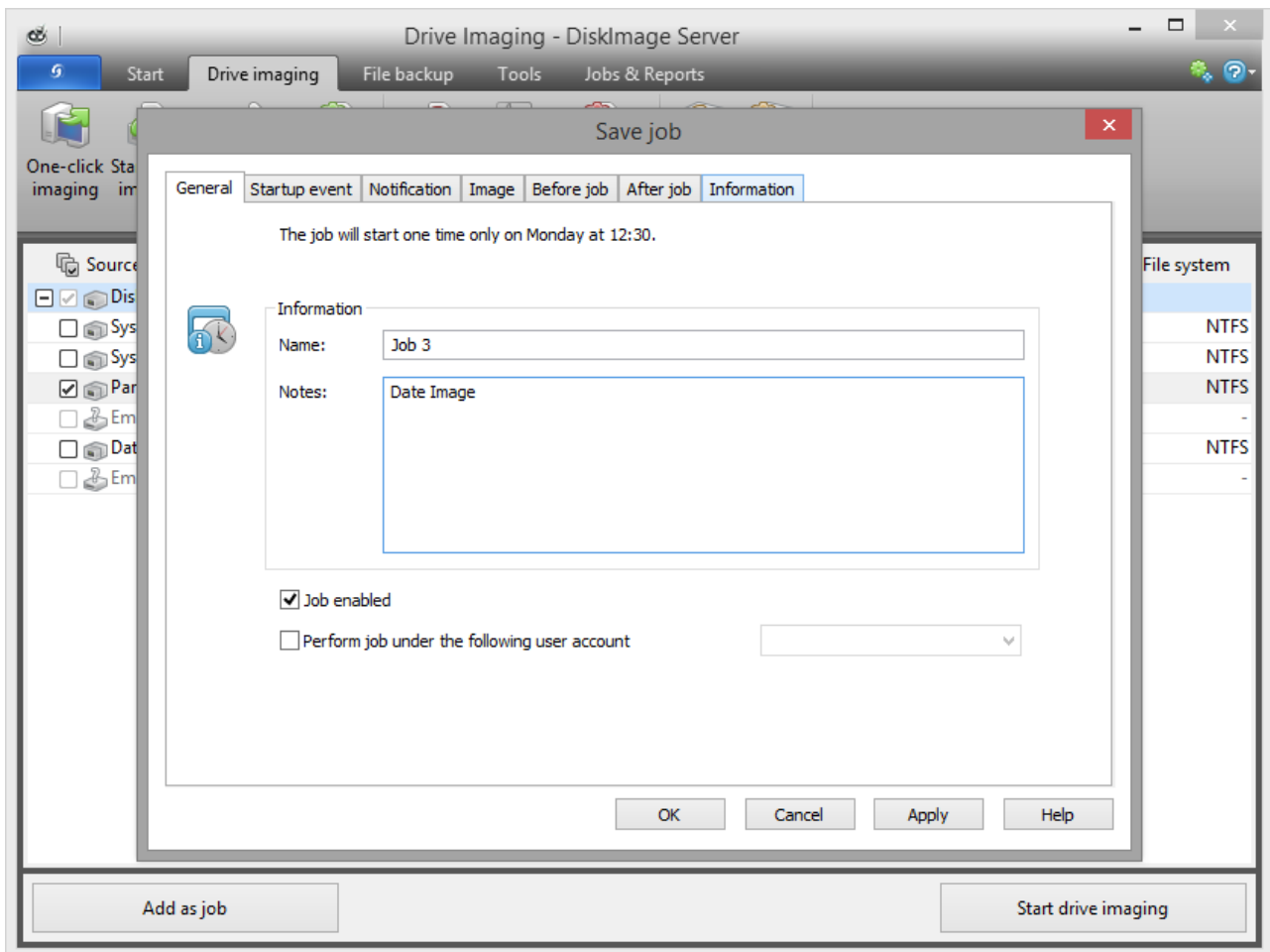
1. On the start page, click the activity you want to perform, e.g. **Drive imaging**, or **File backup**.
2. Select a drive or, in case of a file backup, a folder.
3. Click Options if you want to specify certain settings for a job, such as the imaging method, encryption, or compression. Your settings will then be saved and applied to the subsequent job.
4. Now click the symbol **Add as job**.
5. Enter the name of your job in the dialog. It will later be used for the creation of the report and serve as reference. The name of the job has only symbolic meaning and may already be applied to other jobs.
6. Specify further settings such as scheduling, notification, imaging, etc.

In the field **Notes** you may enter text for providing a few details about the job.

Job enabled

If you don't wish to run a job for a short period of time but don't want to delete it altogether, you may disable it. The job will then not be run until you enable it once again.

Scheduling functions



Job assistant general information

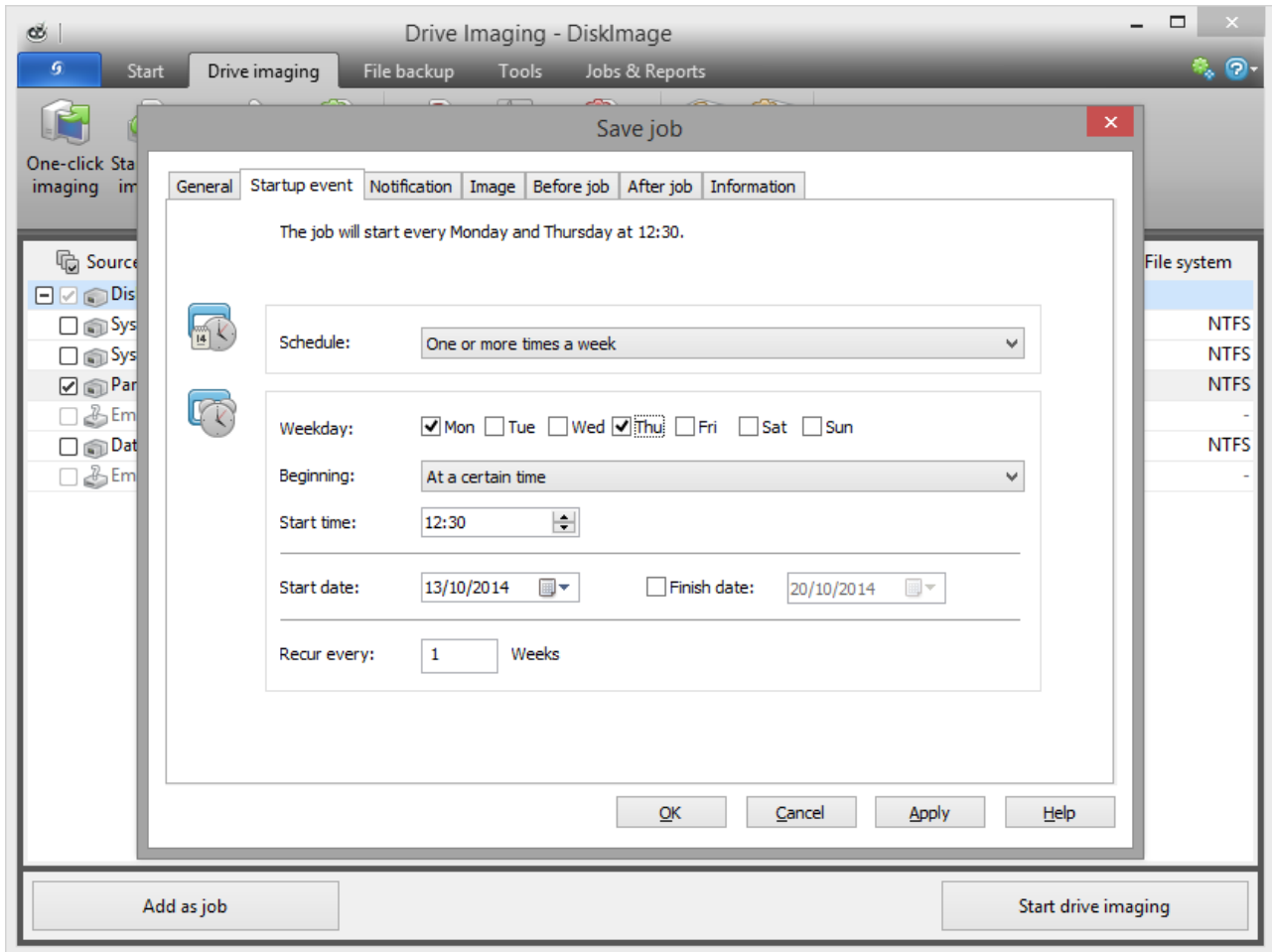
Execute Job as User

When creating a job, a recognized user can be selected in the security settings. When the task is executed it will be listed under that user's account. This applies both to saving the image as well as preliminary work and editing. This enables the use of commands in preliminary work and editing, but these require authentication information and access to a network.

Scheduling

Under Scheduling in the Job assistant, you can specify the exact moment when a job should be run. A job can be performed one time only or repeatedly. The options for execution (date, day of the week) will change along with the corresponding selection.

Scheduling functions



Scheduling jobs

For one-time execution:

- Time

For weekly execution:

- Selection of weekday, date, and time
- Selection of the start and finish dates for the interval. The job will be performed, for example, five weeks in a row, once a week.

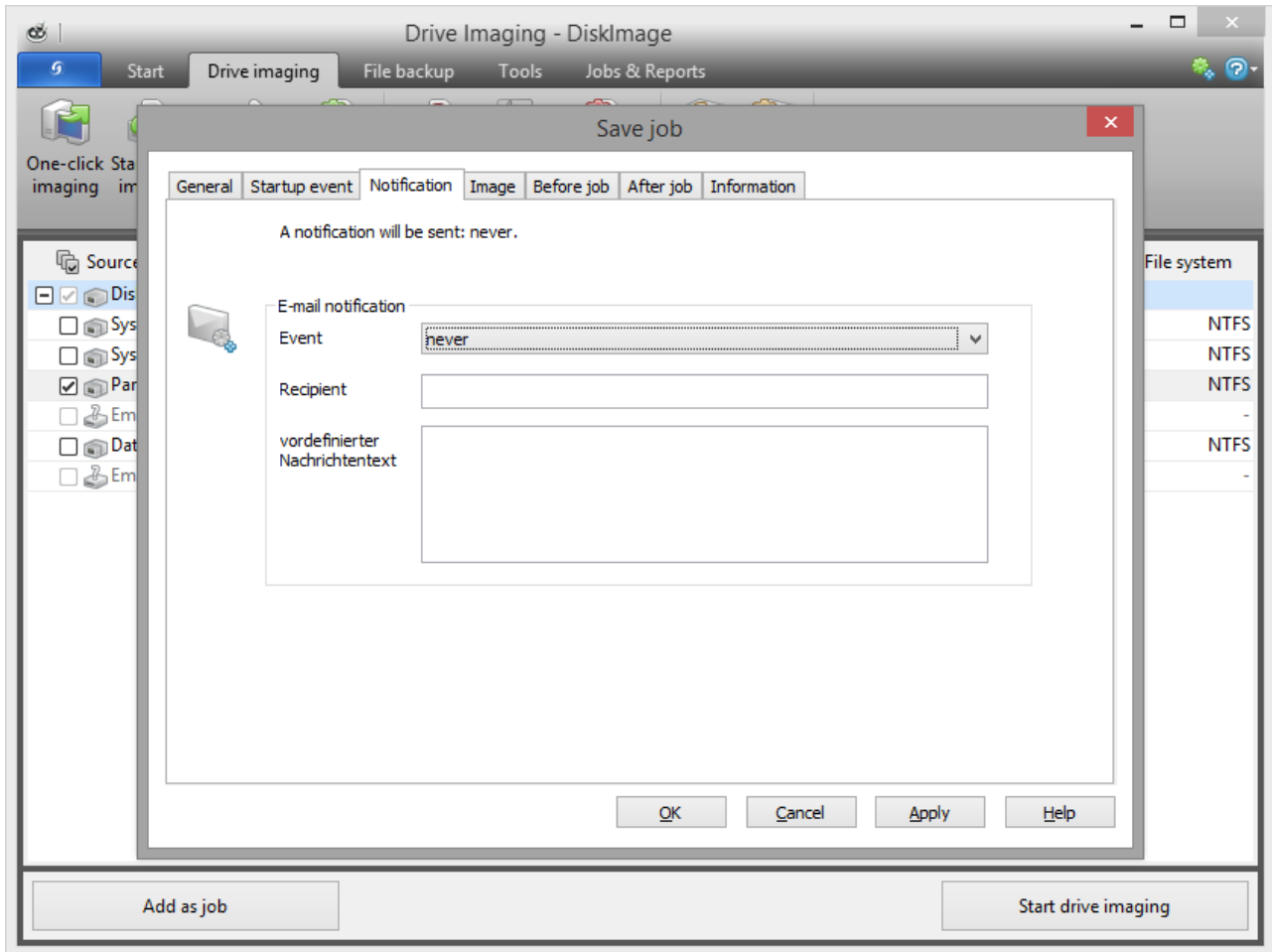
Notification

In the **Job assistant** under **Notification**, you can arrange to be notified by email about the running of tasks during events.

- If you want to be notified about the running of a job, select an event and enter your email address in the field for recipient.

Note: In order for your entry to be successfully processed, you'll have to set the sender data of your email server in **Program settings** under [Notification](#).

Scheduling functions

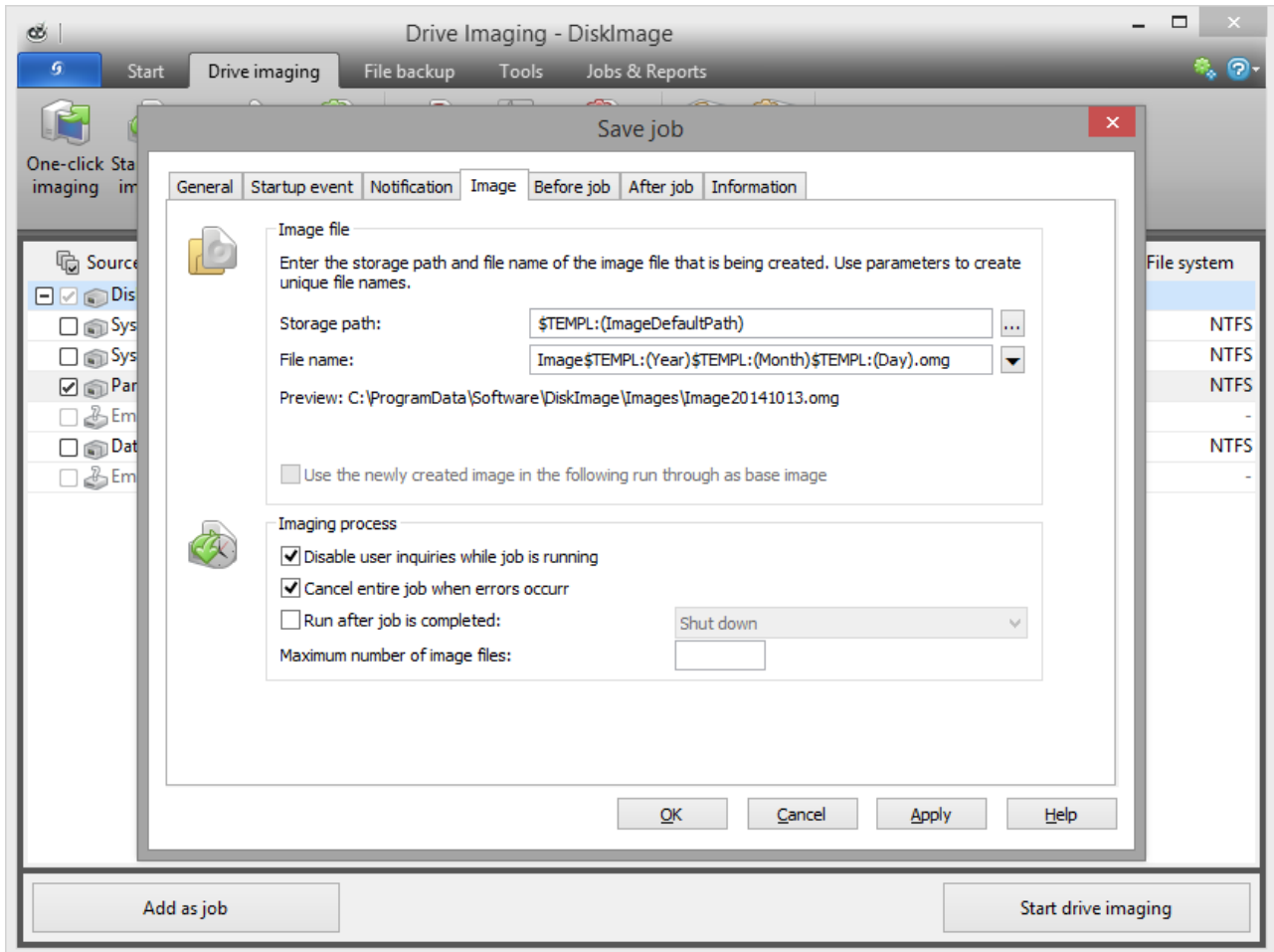


Job: Notification

Settings for a job

You can set additional options for your job in the fourth tab (**Image**) of the Job Wizard. The choice of settings is based on your selected activity. For an imaging activity, you could, for example, enter a storage location and a name for the image.

Scheduling functions



Job Assistant: Imaging

Disable user inquiries while job is running

User inquiries are questions that can arise during the normal course of running a job or while the scripts are being processed.

If in doubt, you will need to confirm questions, e.g. with a security check if the name of the image already exists. The job will thereby be interrupted because the user either has to make a decision or additional information is required for continuing. You can setup some user queries with special parameters: for this please consult the script documentation.

User queries are currently made only if the user interface of Laplink DiskImage is open.

User queries will not be filed until the user interface is closed during job execution, or if you have enabled the option **Disable user inquiries while job is being run**. Should this interactive option be turned off, in a worst case scenario there will be no confirmation dialog while the job is being run and it will be aborted by default and logged as an error.

Abort entire job when an error occurs

The job will be aborted whenever an error occurs.

Run after job is completed

Here you can choose between **Restart** and **Shut Down**. If you don't select anything, the computer will return to its condition prior to imaging. It will usually just remain on.

Characteristics of an imaging job

Storage path

The target path to the storage location of the image will be applied from the program settings by default. You may, however, select or enter a new path manually.

Apply dynamically generated file names

For a file name, the terms "Image" and the dynamically mounted parameters "year", "month", and "day", will be used by default. In addition, you can select from a list of alternative parameters. If you're making, for example, a number of images on a single day, it's advisable to include the "time" in the file name. Otherwise, files with the same name would emerge and that could lead to the imaging process being aborted.

Note: If you're using Laplink DiskImage on a computer in a network, the data from the computer will be automatically read and file names will be dynamically generated. You could, for example, add the "Computer Name" to the image name for use in a network.

Create a job for incremental or differential imaging

In order to create a differential or incremental imaging job, you'll need a [complete](#) or [base image](#) that was previously created. This complete image will serve as a base for creating differential/ incremental imaging jobs. The first image after the complete image is always a [differential image](#). Incremental images can be based on a differential or other [incremental images](#).

1. Select **Start drive imaging** from the Laplink DiskImage Start Page.
2. Click top right on **Imaging Options** and activate **Image of the changes** then select the base image. Now close the options Window.
3. Now click on **Add as job**.
4. Enter the name and the schedule for the image in the job dialogue.
5. Under Imaging you can either use the standard path or manually enter another storage location for the image.

The option **Use created image as base image for the following execution** is enabled by default. [Incremental images](#) will always be created based on the last image of changes. As a result of this, the data volume of the incremental image will end up being very small. All previous cumulative images and the last complete image will be needed for restoration. We recommend saving the complete image as well as any successive image of the changes in one folder.

If this is not possible, the default check has to be removed from **Disable user inquiries while task is running**. The process is only partially automatic because every time an imaging is performed, all earlier images will be requested. If these are not entered, the job will be aborted as a result of error.

The selection check for **Use created image as base for the following execution** is enabled by default. If you disable it, all further images will be created as differential ones using the last complete image for their base. Restoration will then require the last differential image along with the complete. Incremental images that were created in the meantime will no longer be needed. The data volume of these differential images is correspondingly larger than a series of incremental images.

Run commands before and after a job

Carrying out commands before and/or after a job can allow you to stop certain Windows services and then restart them again afterwards. If you're using Laplink DiskImage on a Microsoft Exchange or SQL-Server, you could stop these services beforehand, create the image and then have them automatically start again once the imaging is done. You no longer need to create a script to do this.

Before Job

If you select this option, the commands entered in the text field will be carried out before the job begins. You can also import existing command files so that their contents will be shown in the text field. Just click on **Import** select the file in the dialog (.BAT, .CMD or .TXT). Confirm with **OK**.

Note: Please make sure that all commands exist and are able to be carried out on the target computer. All commands will be carried out under the SYSTEM User and his permissions.

After Job

If you select this option, the commands entered in the text field will be carried out when the job is completed. Entry and application is similar to the command instructions in "Before Job".

Note: Please make sure that all commands exist and are able to be carried out on the target computer. All commands will be carried out under the SYSTEM User and his permissions.

Job information

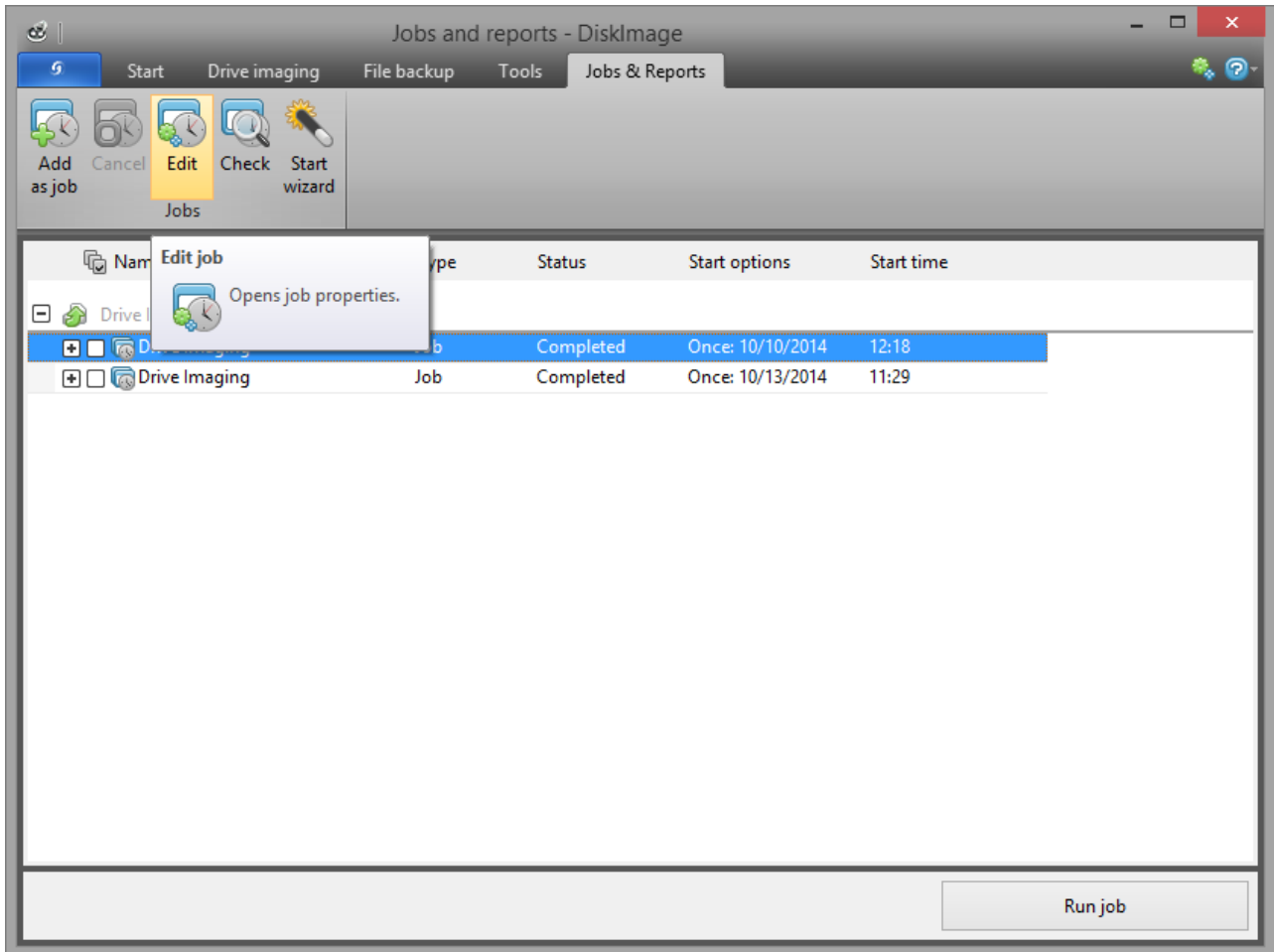
The exact settings of a job are listed under **Information** in the Job assistant. The view provides information only; you will not be able to make any changes there.

Edit jobs

1. To edit a job select **Jobs and reports** in the start page of Laplink DiskImage.
2. You can change a job by selecting it in the job list and then clicking the symbol **Edit**.
3. The Job assistant will then appear with the settings of the job.
4. Make the desired changes in the properties and confirm the changes with **OK**.
5. If you decide not to apply the changes, click **Cancel**.

For certain tasks, e.g. deleting or importing/exporting one or more jobs, you have to select the desired jobs in the list. Afterwards, you can run desired tasks on all selected jobs.

Scheduling functions



Edit jobs

Check job

To check if the settings for a job are valid, i.e., to check if its contents and syntax can be executed on a local system, select **Jobs and reports** in the file menu on the Start page of Laplink DiskImage.

Then select the job you want to check and click on **Check job**.

Delete job

To delete a job select **Jobs** in the start page of Laplink DiskImage.

Mark the job you wish to delete with a check and then click on **Delete**.

Run jobs

To run a job select **Jobs and reports** in the start page of Laplink DiskImage.

Start will begin the selected activity after a security question is answered.

Export jobs

To export a job, select **Jobs and reports** on the start page of Laplink DiskImage.

Mark the job selected in the job list and then select **Export**. Save the job file (*.xml) on an external storage volume so that it can be used again on another computer (see "Import jobs").

Import jobs

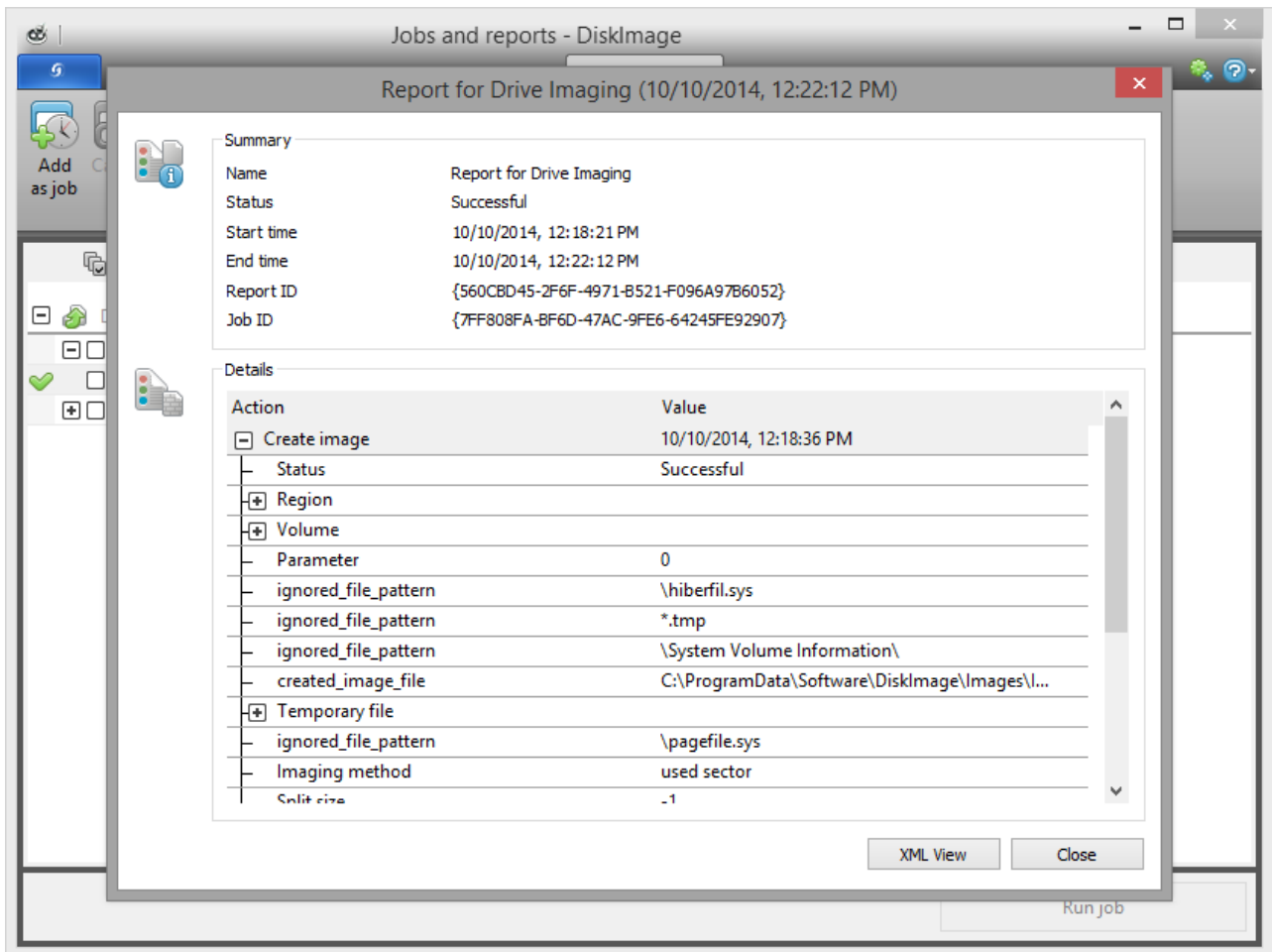
To import a job, select **Jobs and reports** on the start page of Laplink DiskImage and select the function **Import jobs**. Select the desired job in the dialog window. This will then be added to the Job List.

You can then transfer the created job from one computer to another, without having to make new settings for the job.

Reports

A status report will be created for every action performed by Laplink DiskImage. It can be accessed as a XML document from the start page of Laplink DiskImage under **Jobs and reports**.

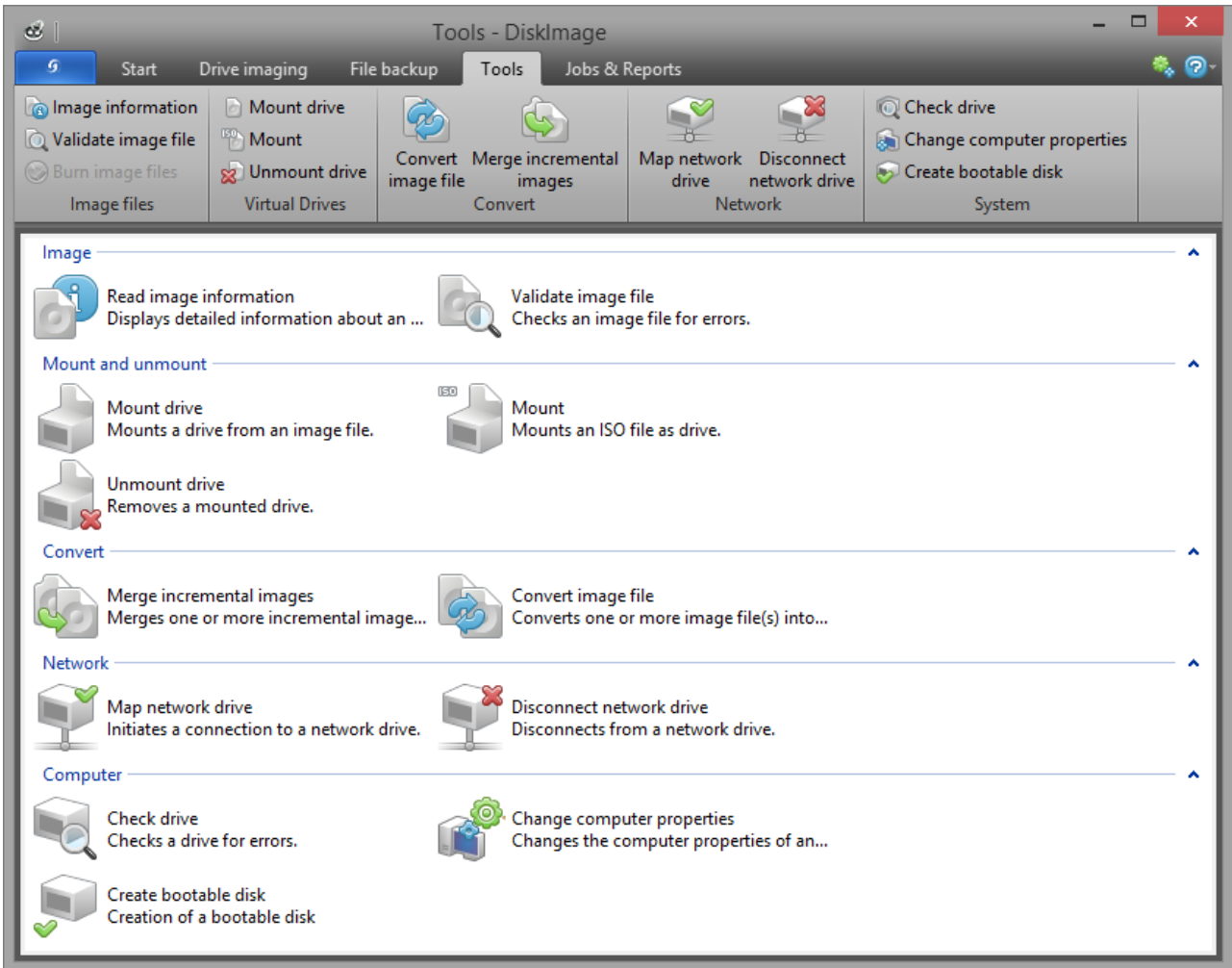
In the report you will find all information about the progress of an installation or a job.



Reports

Tools

The tools menu includes options for processing images and further activities.



Selection of tools for an activity

Read image information

Select **Read image information** to access information on existing image files (*.omg/*.obk). After you've selected an image file in the browser window, you'll see information such as the imaging method, date of creation and image contents displayed.

Tools

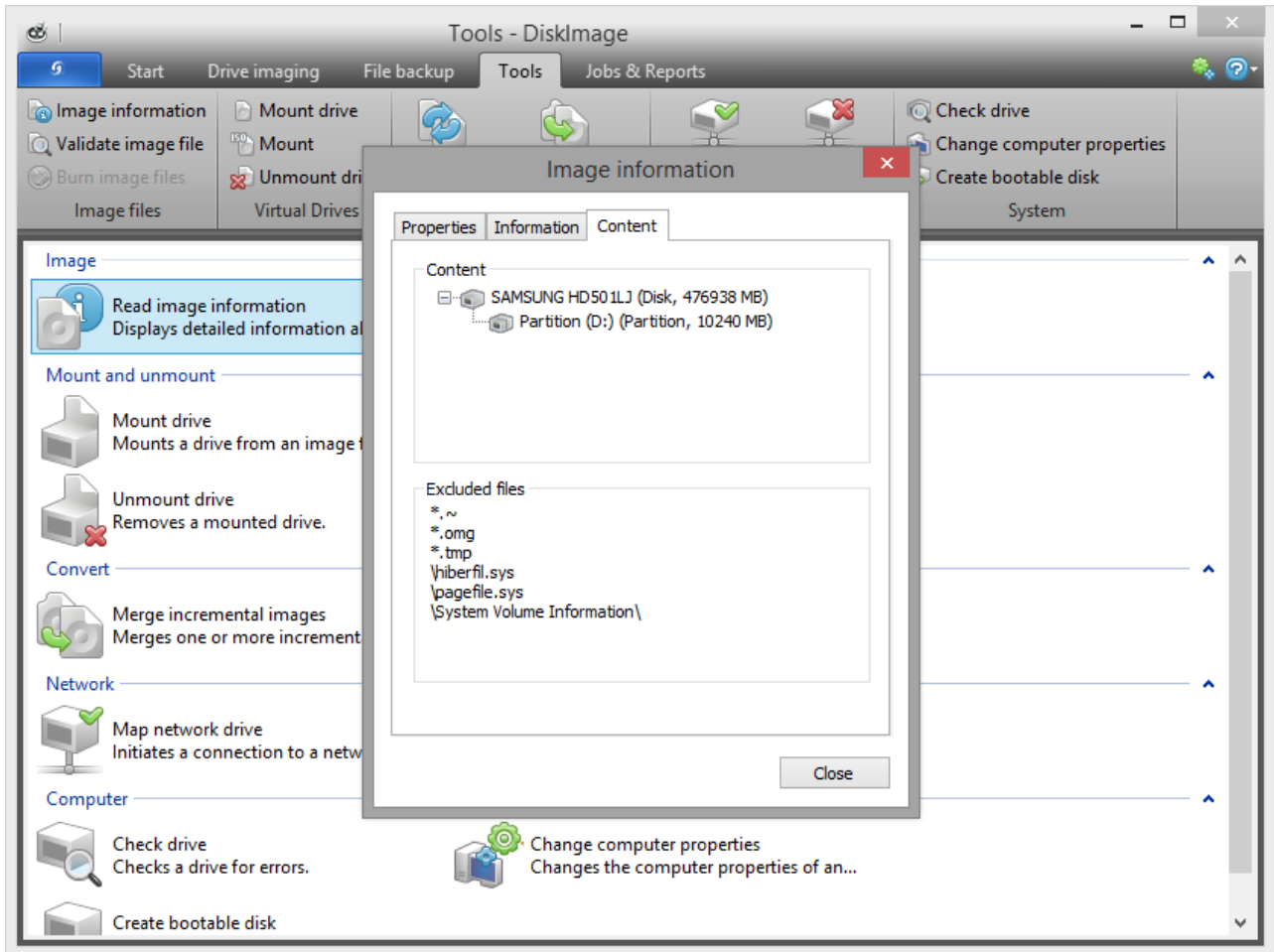
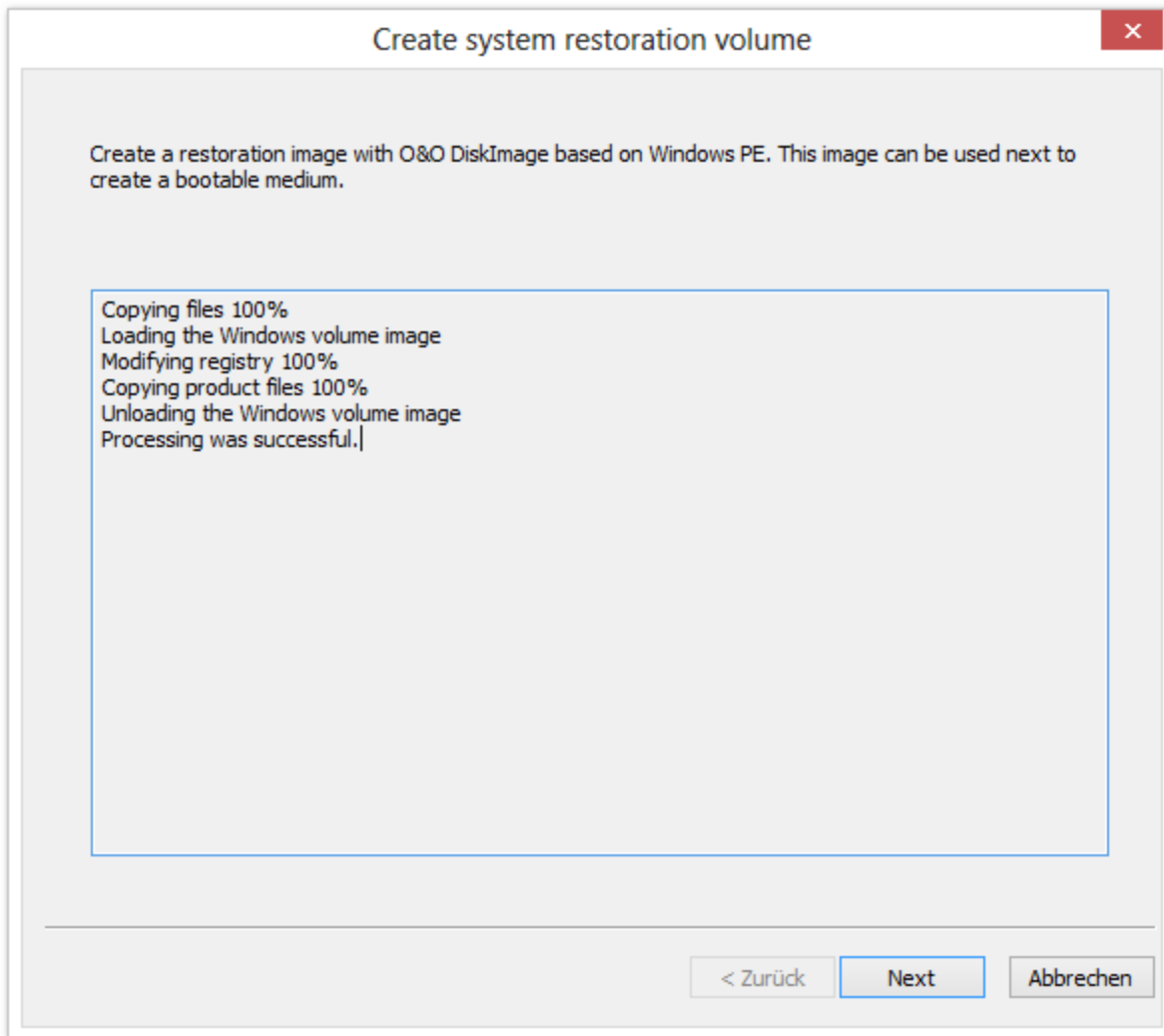


Image information

Create bootable media

To create a bootable medium, select the Tools menu and then Create bootable disk. * A wizard helps you create the disk in 2 simple steps. In the first step, all required data are determined and copied and the settings required for starting Laplink DiskImage. The CD image is then created. In the second step, the CD image will be saved as a file that can be burned onto a CD / DVD or written to a USB stick.



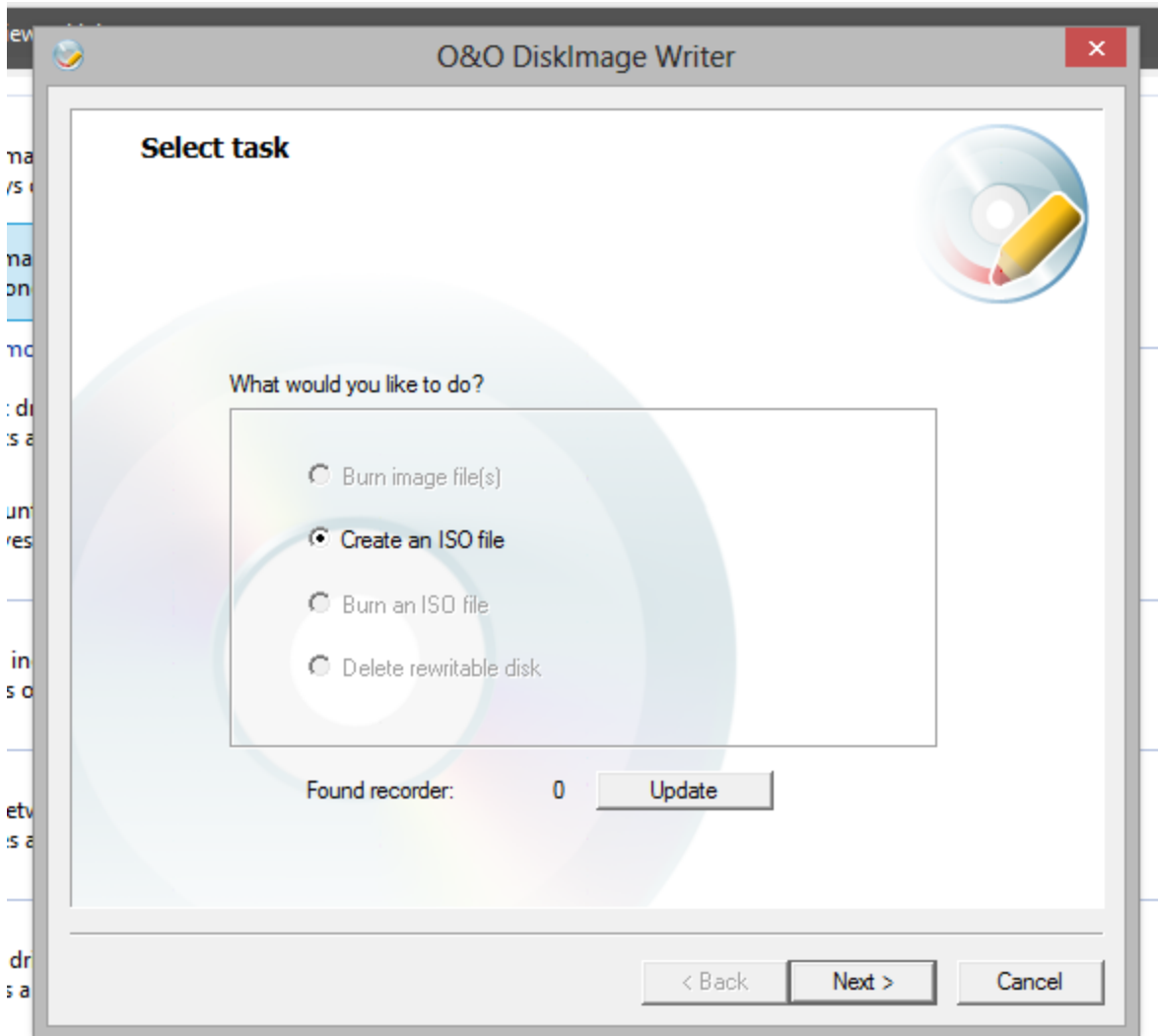
Create a restoration image

The bootable media is created from the current operating system. If you have a 64-bit operating system, a 64-bit boot disk is created. With the help of such a 64-bit boot media, images from GPT hard disks can be restored onto UEFI / EFI systems, for example.

* This option is available from Microsoft Windows 7 on

Burn Wizard

With the Laplink DiskImage Writer (Burn Wizard) you can burn your image on CD/DVD/Blu-ray Disk (BD), create ISO files, burn ISO files and delete rewritable disks.



bootable disk

Burn Wizard

Burn image file(s) on CD/DVD

To save your image to CD/DVD, you need to first create an image and save it on an internal or external drive*. Only then will it be possible to burn your image files (*.omg) or your virtual hard disk (*.vhd) to CD/DVD. It is **not** possible to store an image or a virtual drive directly, i.e. without buffering it, on CD/DVD.

Before starting the burn process, make sure that you have inserted an empty disk in the optical drive.

1. Under **Tools** click **Burn imaging file(s)**.
2. Select the job **Burn image file(s)** in the Laplink DiskImage Writer.
3. Select your image file with **Add**. Depending on the size of the image file you can select one or more files.
4. Then, click **Next** and follow the instructions in the dialog. Please also pay attention to the notices that appear.
5. If one disk is not enough to hold your entire image, you can burn your image files one after another.

*** Note for the creation of images:** After selecting your drives for imaging, limit the image files to the size of your blank CD/DVD under **Drive imaging/Imaging options/Image file/File size**. The image file will then be divided into several parts during the imaging process. The splitting of the image file at a later time is also possible, (See [Convert image file](#)”).

Note: When renaming individual parts of the image, it is recommended to keep the "number portion" of the file name (the number in parentheses) so that you can trace the order of the files and avoid problems when restoring the images at a later time.

Tip: In addition to CD/DVDs, the program also supports Blu-Ray Disks and HD/DVDs.

Create ISO file

1. Under **Tools** click **Burn image file(s)**.
2. To create an ISO file, select **Next** in the Laplink DiskImage Writer and then **Create an ISO file**.
3. Then select the files via **Add** in the Windows-Explorer.
4. Before following the dialogue further, check the path for saving the source file and pay attention to the occasional notes that appear.

Burn ISO file

1. Under **Tools** click **Burn image file(s)**.
2. To burn an ISO file on CD/DVD, select **Next** in the Laplink DiskImage Writer and then **Burn an ISO file**.
3. Then select the files via **Add** in the Windows-Explorer.
4. Before following the dialogue further, check the path for saving the source file and pay attention to the occasional notes that appear.

Delete rewritable disk

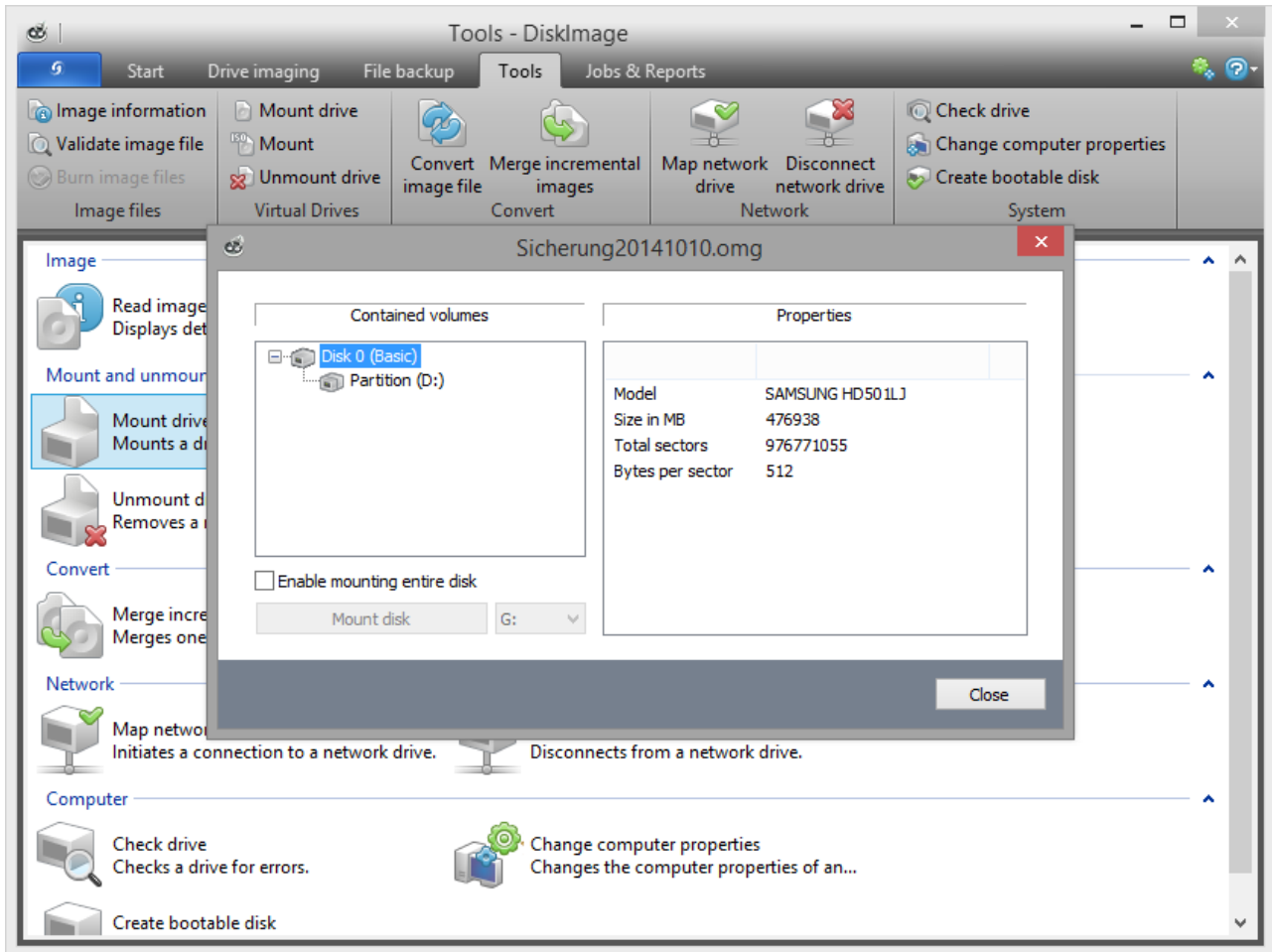
Laplink DiskImage can help you delete rewritable disks.

- To delete a rewritable disk, under Tools/Burn image files select Delete rewritable disk in the LaplinkDiskImage Writer and follow the prompts in the dialog.

Mount drives from image files

You can have your created image file displayed in Windows Explorer as a virtual drive. This allows you to copy files or directories from the image file onto existing hard disks. It is, however, not possible to make changes (such as deleting or adding files) to the virtual hard disk mounted from the image file.

Create bootable media



Mount image file as a drive

1. Open **Tools** in the menu bar and select the option **Mount drive from image file**.
2. In the dialog window, select the image file (*.omg) from which you want to mount the drive. If you are not sure, you can look up the details of the image under **Image information**.
3. After selecting the image file, all drives included in the image will be listed in the program window.
4. Select the displayed drive from the image.
5. Afterwards, you can select any name from the drive list (e.g. G:) for the drive from the image.
6. Then, click **Mount drive**. The virtual drive from the image will then be visible as a regular drive in the Windows Explorer.

Please note that you may only access sectors which contain image files. Refreshing can take a few moments.

Note: Please keep in mind that drives can only be mounted from an image if the image is available locally. You cannot mount a drive from an image located in the network.

Enable mounting disk:

If you create an image of one or more partitions/volumes, the image contains additional information about the disk (or hard disk) along with the imaged data. This information will concern the hard disk's structure as well as its corresponding system areas such as the master boot record, possibly existing extended boot records, the LDM (logical disk management) database or the GUID partition table. With the function **Enable mounting disk**, you can load this information or use it for acquainting the hard disk to the operating system based on the disk's original information. We recommend using this function when you want to restore deleted or destroyed data from a forensic image.

Note: Creating a virtual disk out of an entire hard disk can result in recognition problems for the virtual disk when the following applies to the hard disk being imaged:

- defective or invalid partition tables
- partitioning process not supported by your operating system (e.g. GPT)
- dynamic hard disks containing volumes that are spanned, striped, mirrored or RAID5 when not all the hard disks being used were imaged
- encrypted hard disk

Technical limitations

- Windows refresh problem: if you're working with a remote desktop connection, a new login will be needed for displaying the mounted drives.
- Mounting images larger than 2TB is not supported by Windows XP (32-bit).

Note: After restarting from Windows, the virtual drive is removed automatically from the drive list.

Mount ISO file as drive

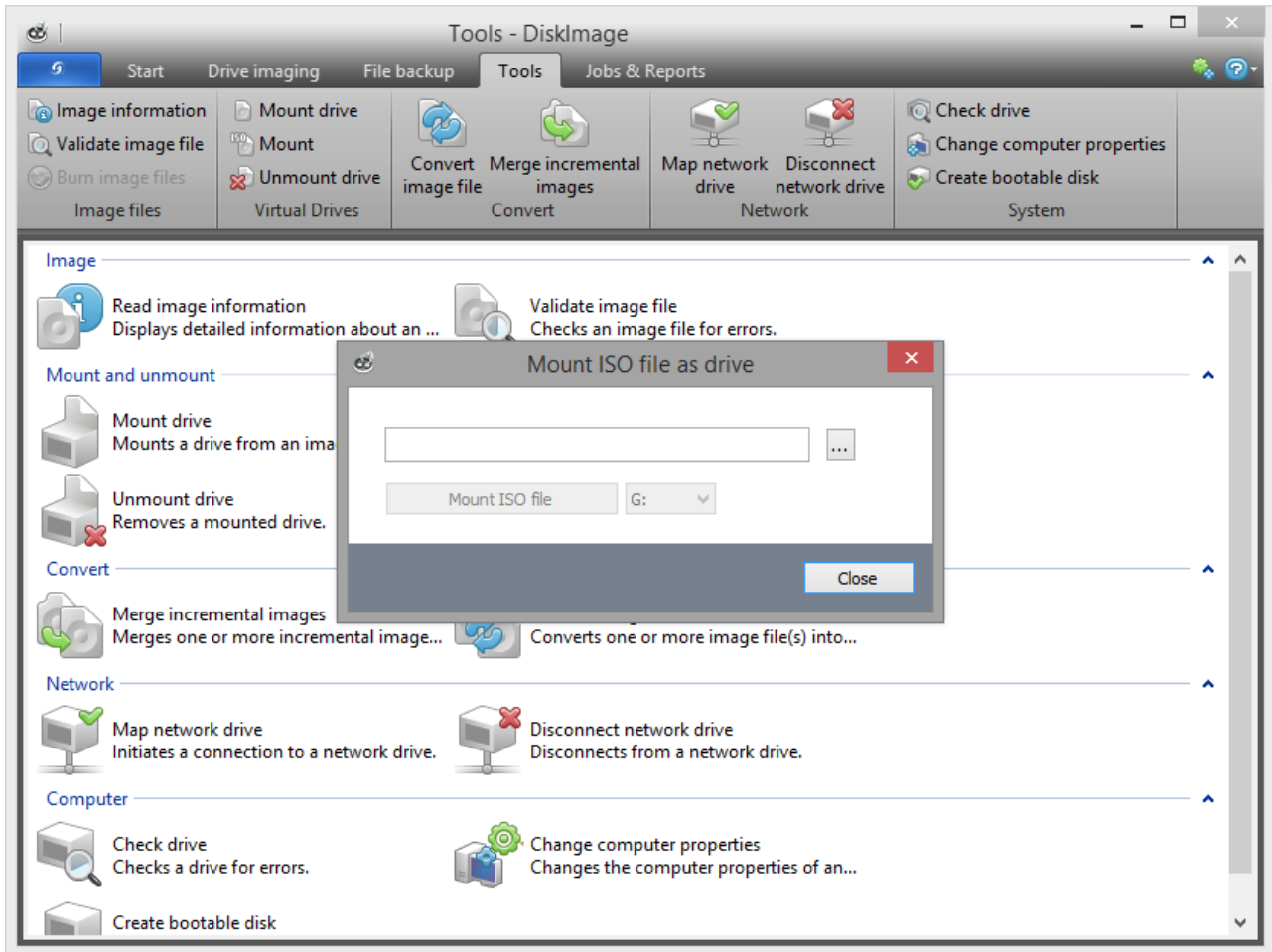
If you have saved data as an ISO file, you can mount this ISO file as drive and view the files it contains. This allows you to copy individual files and folders from the ISO file onto existing drives. It is, however, not possible to make changes (such as deleting or adding files) to the virtual hard disk mounted from the ISO file.

1. Open **Tools** in the menu bar and select the option **Mount ISO file as drive**.
2. Select the ISO file (*.iso), whose content you want to mount as a drive.
3. After selecting the ISO file, click **Mount ISO file**. If you want to label it with a certain letter, you can select another letter from the list.
4. Refreshing can take a few moments.
5. The virtual drive from the ISO file will then be visible as a regular drive in the Windows Explorer.

Tip: If you want the virtual drive to also be visible in the Laplink DiskImage drive list, make sure to check **Include CD and DVD drives** under **Program settings/General** and click **Show drives not able to be imaged** under **View**.

Note: After restarting from Windows, the virtual drive is removed automatically from the drive list.

Create bootable media



Select ISO file

Unmount drive

If you no longer want to display a virtual drive you've mounted from an image file, click under **Tools** on **Unmount drive** and remove the drive in the program window

Tip: After restarting from Windows, the virtual drive is removed automatically from the drive list.

Convert image file

The tool **Convert image file** allows you to change the properties and content of existing images (OMG) or a virtual hard disk (VHD). It creates a copy of the image file (OMG) or virtual hard disk (VHD), so that the original image remains intact.

Further settings like compression, encryption or splitting images into several image files with a certain size are possible. Please note the restrictions that apply to [Handling virtual hard disks \(VHD\)](#).

Merge images

In Tools under **Convert image file/Add** you can select the drives for merging.

This enables separate image files to be merged together. Only image files of similar types can be merged: that means only forensic, direct forensic or used sector images can be combined.

- Simply add the drive from the list.

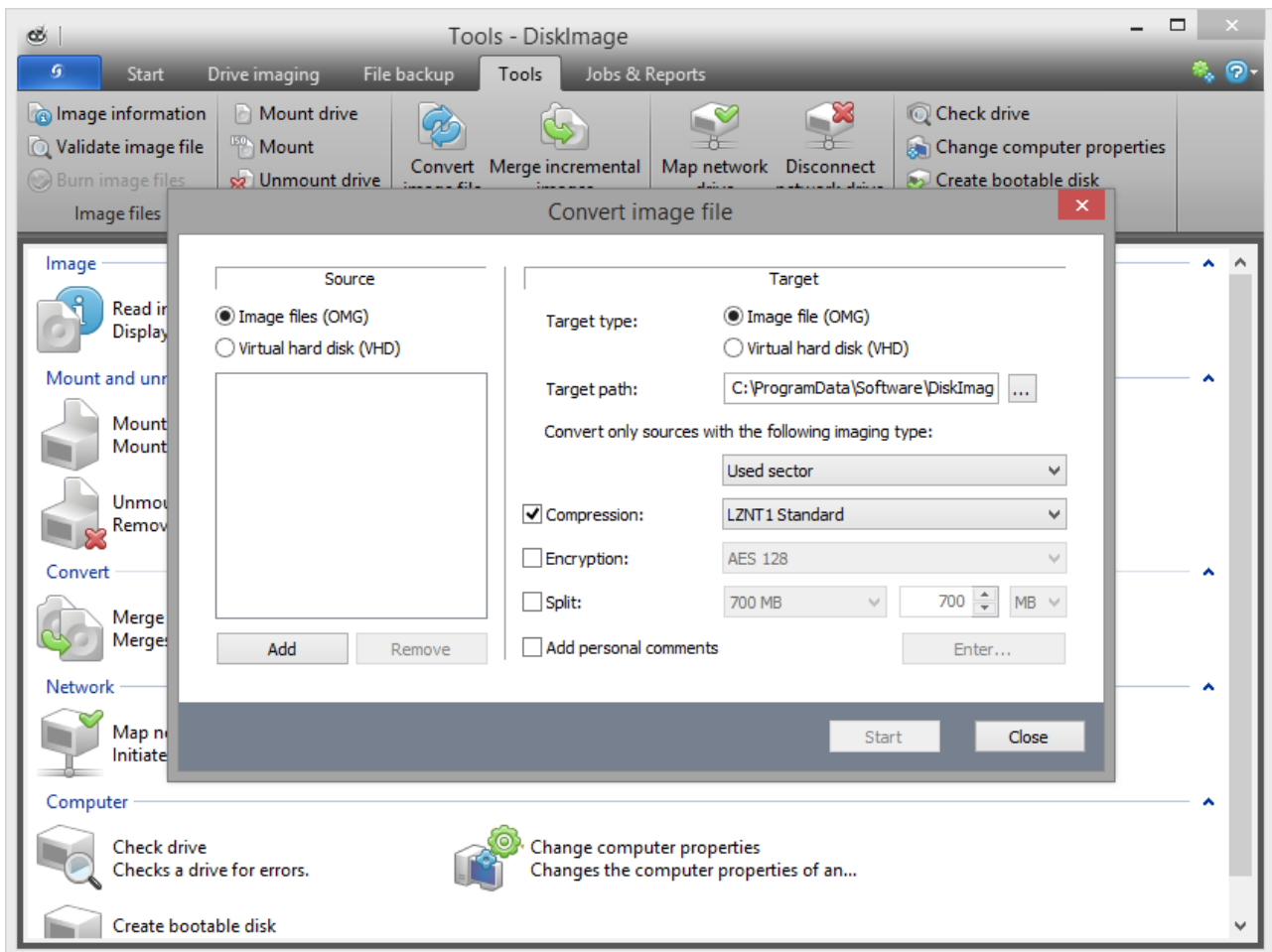
Handling virtual hard disks (VHD)

To simplify working with Microsoft Virtual PCs (VPC), you can now convert image files into virtual drives (VHD). The converted image can be integrated as a virtual drive in the VPC, without having to install Laplink DiskImage there. In a similar way, images (OMG) can be created of virtual hard disks (VHD).

1. To convert an image to a virtual drive file (VHD), click **Convert image file** in the Tools menu.
2. Select **Image file (OMG)** as source in the Convert image file dialog and attach the desired image file.
3. Enter **Virtual hard disk (VHD)** as target and click **Start**.

You can also convert virtual hard disks (VHD) into an image file (OMG).

Note: The following options **cannot** be selected for a VHD: Compression, Encryption, and Split. In addition, only the following imaging methods are available "Only used sectors" or "Forensic".



Convert image file into a virtual hard disk

Combine incremental images

If you have already created several incremental images, you can combine them to form a new base image. The newly created base image is now a "complete" image. Older images that contained only changes can be deleted once the combining has been completed.

1. Make sure your computer will be able to access all drives where the base and incremental images are located.
2. In the menu bar under **Tools** click **Merge incremental images**.

3. A program window will appear where you can select and merge the existing image files.

Note: Only consecutive image files (Image of the changes) with the same base image may be merged. By clicking **Image information** and the corresponding **Drive information** you will find all details about the image(s).

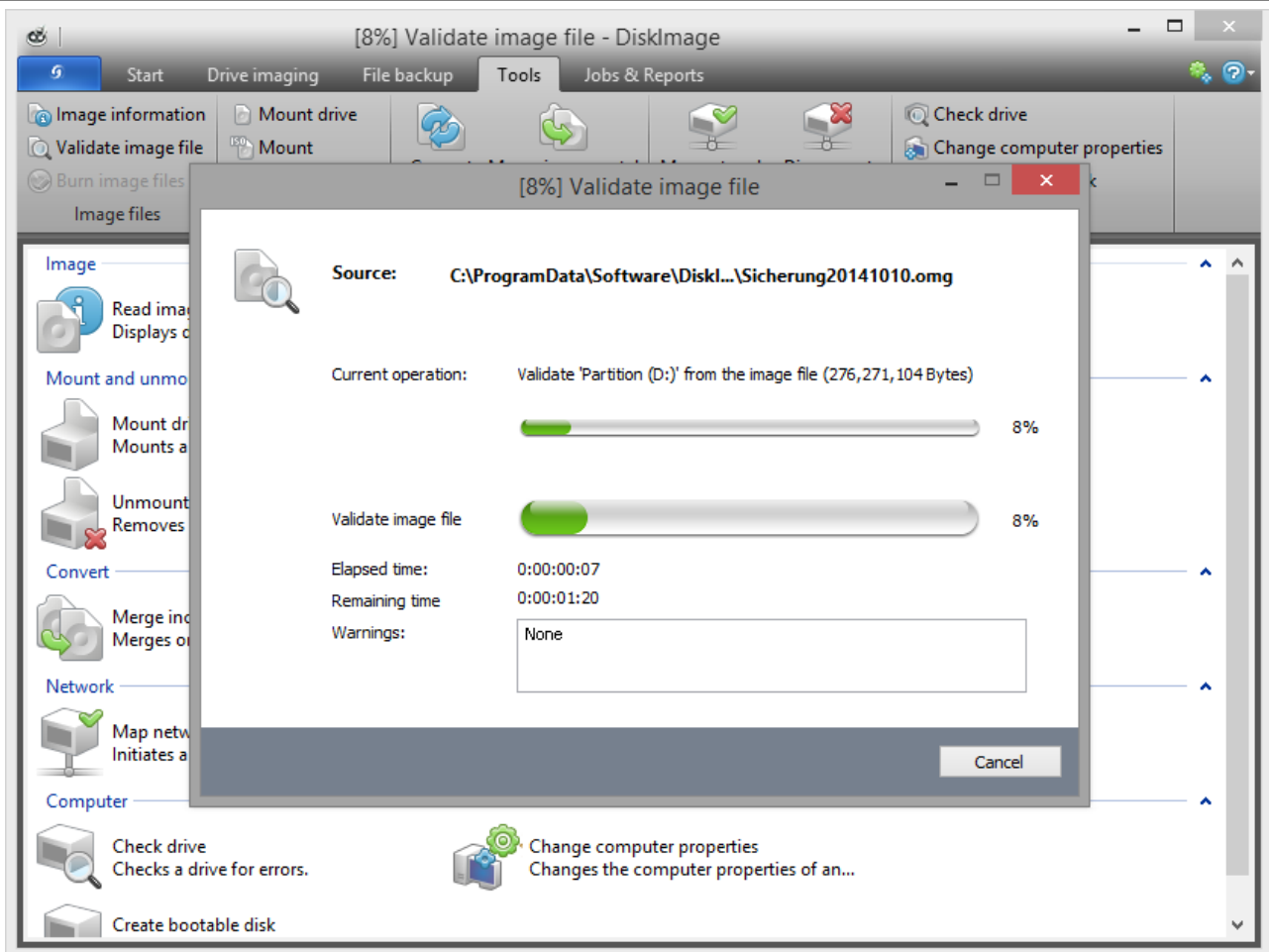
Check image file for errors

Under **Tools** is a function called **Check image file for errors**. This function checks the structural integrity of an image file. It determines whether the logical structure is intact. Damage can be caused by virus attacks or defective hardware. In addition, encrypted and/or compressed images will be checked to determine if decryption or decompression is possible without error.

Reasons for an abortive validation:

- Encryption and decryption are not functioning
- Compression and decompression are not functioning (Windows API/System interfaces)
- The user has changed the image file
- Image has been changed by a program driver (e.g. anti-virus software)
- Image is stored on a defective volume

Note: To make sure your image is created or restored without error, keep the validation process running until the imaging or restoration is completed. If you choose to “Skip” or “Abort”, there’s no guarantee that your image will be created or restored intact.



Check image for errors

Check for drive errors

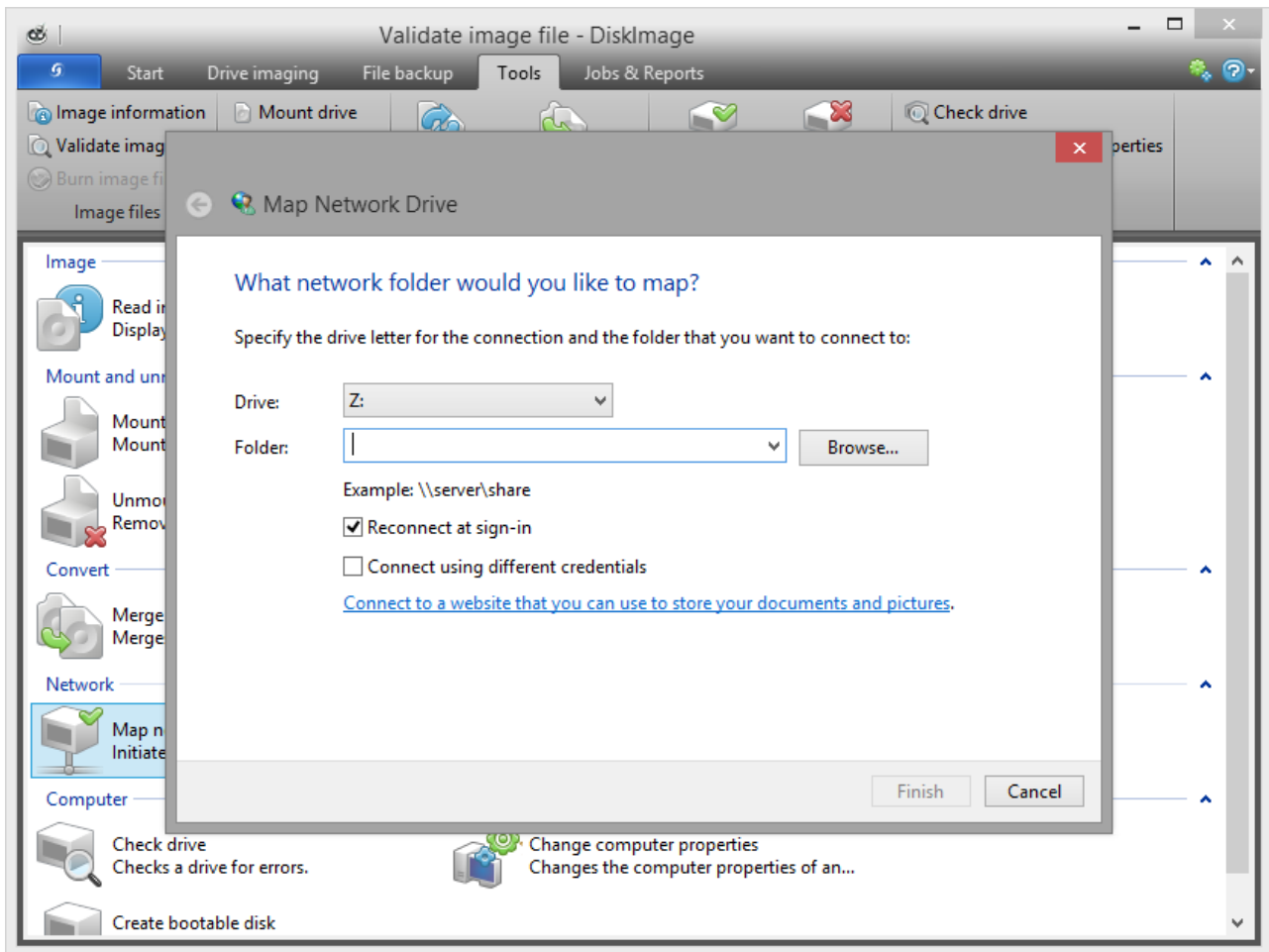
Under Tools the function **Check drive for errors** runs an intensive analysis of the file system and data storage interface to protect you against any possible loss of data.

The Wizard (CheckDisk) will guide you step by step through the process of checking your drives. Simply follow the instructions in the dialog window and select your drive.

In the next stage the analysis is carried out. You can monitor progress by means of the progress bar where all the program status messages are listed.

Map/Disconnect network drive

Under Tools in the ribbon bar, you can select the setting **Map network drive**. Under **Disconnect network drive** the connection can be interrupted.



Map network drive

Note: Network authentication is needed for accessing network drives when images are saved on or restored from them. Read more about it in the chapter [Authentication within the network](#).

Change computer identity

You can change the identity of your computer to avoid authentication problems whenever the same computer identity is already being used within a network. This can be helpful whenever a system image is being rolled out onto several computers across a network, meaning a fully installed and configured Windows computer is transferred onto the drives of another computer.

Although this method does save time and effort compared to other kinds of duplication, there is a problem arising with each cloned system having the identical computer SID. This influences the security in working group environments. In addition, the security of transfer media might be inhibited in networks with many computer SIDs.

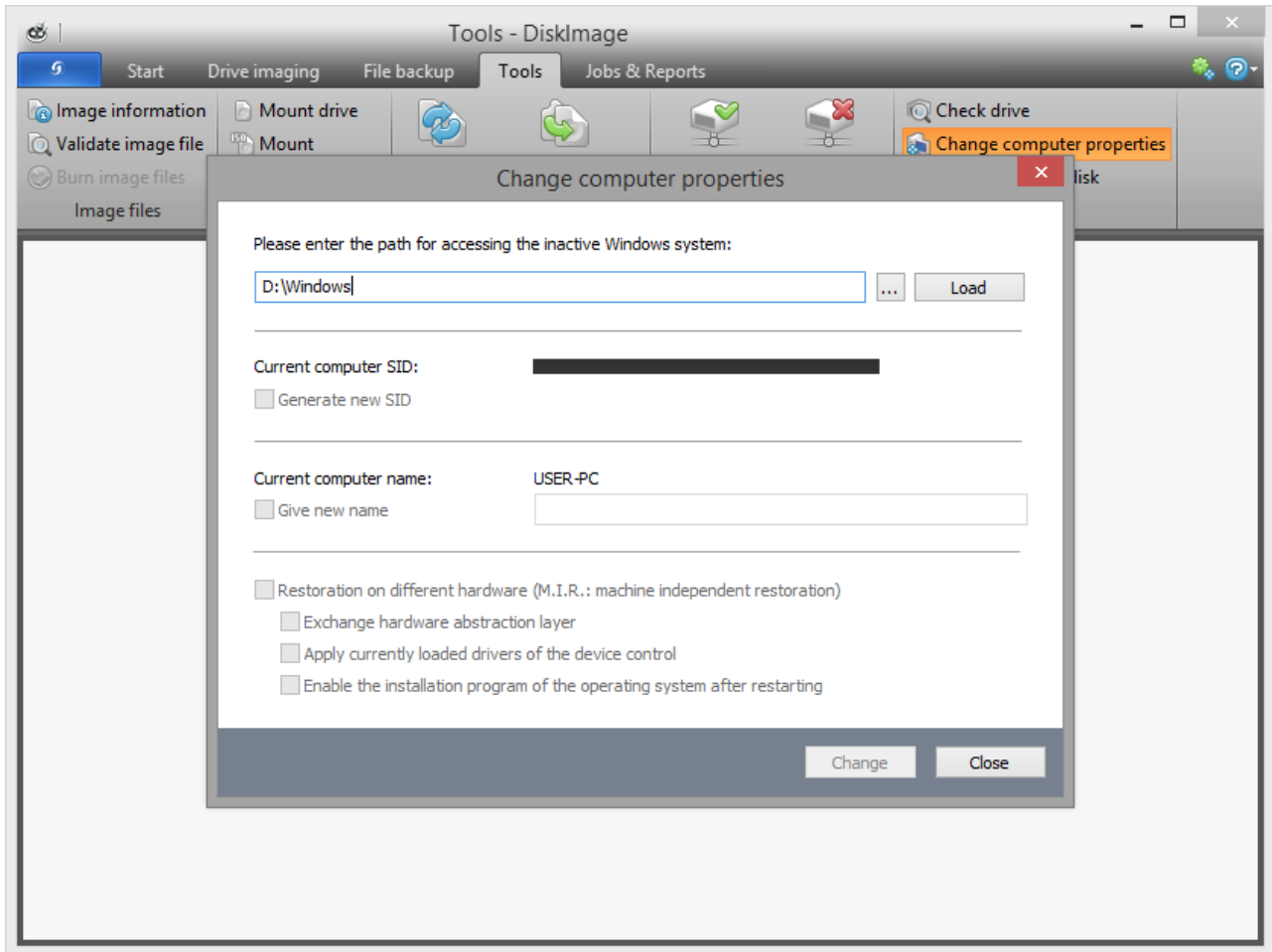
To avoid this problem, Laplink DiskImage provides an option for changing the computer identity.

Note: The SID can only be changed when you run Laplink DiskImage from the bootable medium (Start CD) and not during normal Windows operation.

Note: If an error occurs while changing the current computer SID, we recommend resetting the registration structures SECURITY and SAM.

1. Under **Tools** click **Change computer identity**.
2. Load the computer's non-active Windows system. The active system is the Windows PE being run on the bootable medium. This means that the non-active Windows system is the one not being booted by the hard disk. The path to the non-active Windows system is normally C:\Windows.
3. You should then enter a computer name for your computer (Give new name). **Change** saves your settings and the computer identity after you have changed them. **Close** cancels the dialog without applying any changes.

Create bootable media

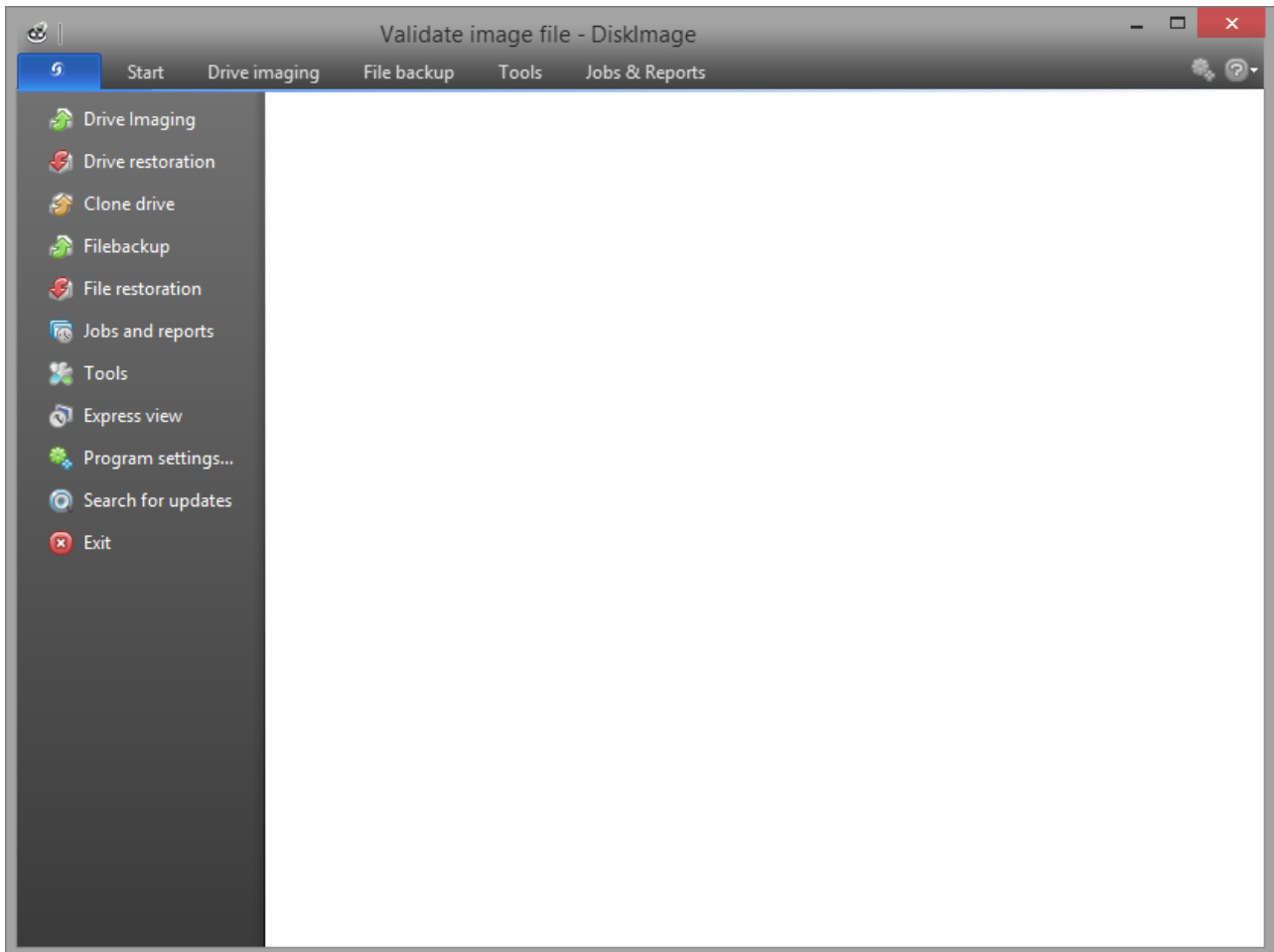


Change computer identity

Program settings

You can adapt Laplink DiskImage to your needs in the start menu via **Start/Program settings**. Here it's possible to determine, for example, whether created settings should be saved and applied as preferred settings when you start the program the next time.

Note:The tabs for General, Security, and Email notification are not available in the Program Settings when starting directly from the Laplink DiskImage bootable medium.



Button for program settings in the application menu

General - Change default settings

Under **General** in the **Program settings** you have the possibility to determine the program page that will be displayed at the start of Laplink DiskImage. You can, for example, specify that the "Imaging" page appears whenever you start the program.

Access removable drives

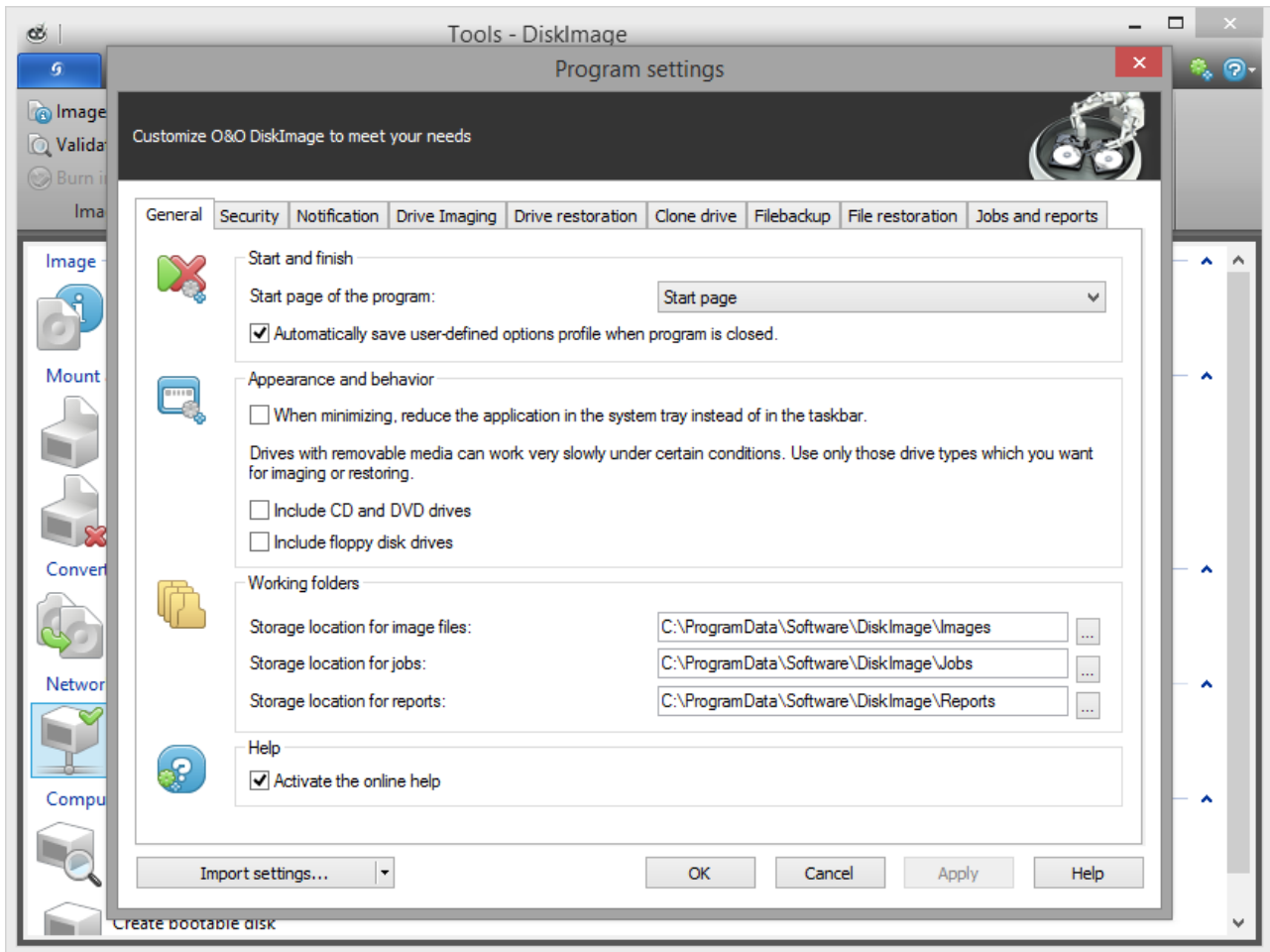
Under **Appearance and behavior** you can decide whether removable drives should be accessed when creating images or during restoration. As these removable volumes tend to work very slowly under certain conditions, it is advisable to use only those types which you would want for imaging or restoring.

Default settings for storage locations

Program settings

Under **Program settings/General/Working folders** you can determine and edit the folder in which the image should be saved by default. The path entered (target path) will be saved and applied to every imaging by default.

The storage location for jobs and reports can be similarly specified.



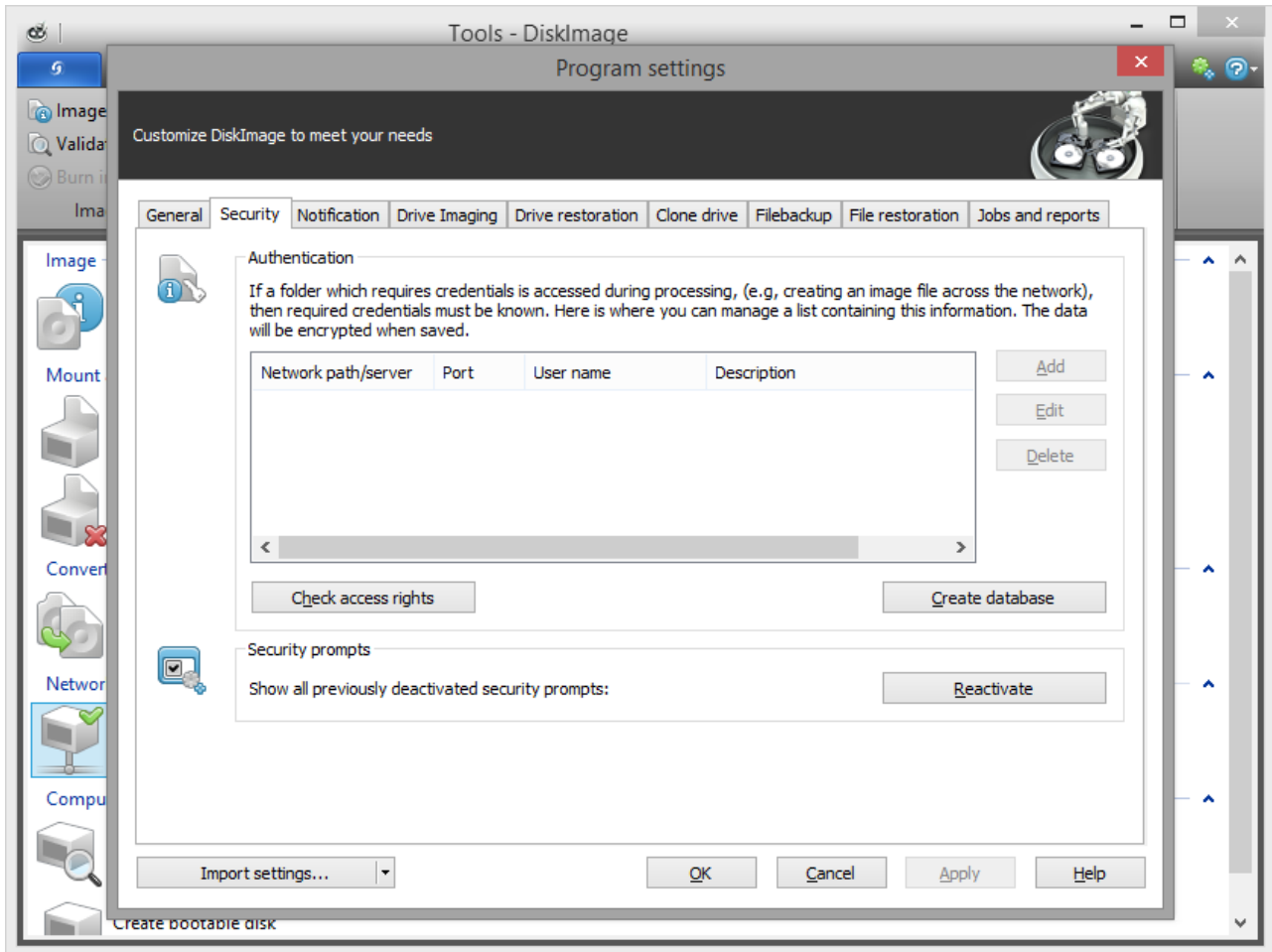
General program settings

Security - Network authentication

To login locally or to the network, e.g. to enable access to protected folders, you have to authenticate yourself. The authentication occurs through your user account. The user account is composed of the user name and the corresponding password, and can be coupled with additional permissions and sharing rights. It is possible to place the images on network drives while working with Laplink DiskImage.

Please use the password manager of Laplink DiskImage for automatic authentication.

Program settings



Authentication in the network

Reset security confirmations

Most of the security confirmations of Laplink DiskImage can be deselected. Once disabled, they will be suppressed and no longer be displayed. If you want all the security confirmations to be displayed as they were when the program first started, under **Program settings/Security** click **Reactivate**.

Explanation: Password management

Managing the password is a program feature which allows you to store authentication data and to manage it. These data is compresses in the password file, using the Advanced Encryption Standard-Algorithm (AES) and then stored. In addition, the order of the data sets is chosen at random.

A public and a private key are used to encrypt the password. The public key is set by default and can be changed in the registry under HKEY_LOCAL_MACHINE\Software\Laplink\Laplink DiskImage\. Please bear in mind that the key has to hold a value. An empty key will not be accepted. The private key is preset to a size of 64 Byte.

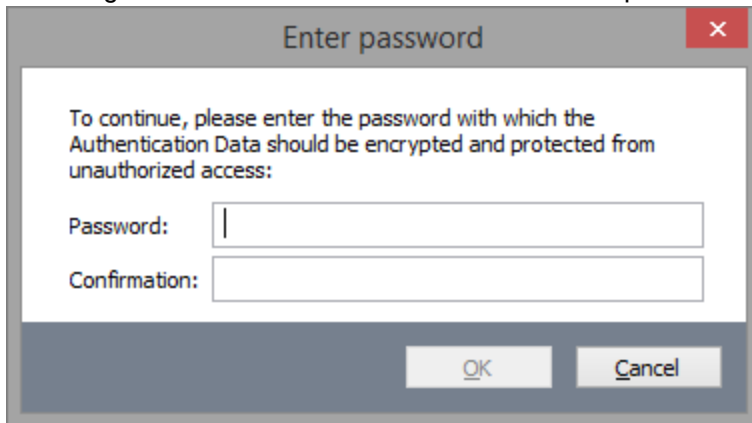
Important! Changes in the Registry may cause severe problems affecting the entire system and may cause the need to reinstall the complete operating system. Before making changes in the Windows Registry database, you should create an image of all the important data on your computer using Laplink DiskImage.

Note: If you make changes in the Registry, it will require loading the database again. In the following chapter you'll find brief explanations of the [registry entries](#).

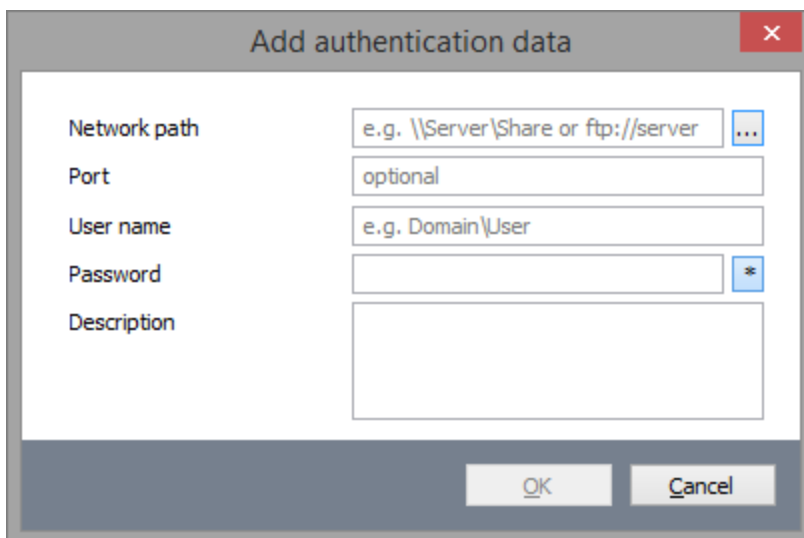
Network authentication

Enter the following settings under **Start/Program settings/Security**:

1. If you have not yet created a database, click **Create database**.
2. Enter any password you'd like and confirm your entry. This password will then be encrypted and filed. In order to encrypt the password, a new one will be generated that is composed of two parts: public (Public Key) and private (Private Key). This ensures that you are the only one who can open and read the password file. The Laplink DiskImage Service will have automatic access to this password as well.



3. Then click **Add** in the security dialog.
4. Under **Computer/Folder** enter the path under which the image is to be saved, or from where it is supposed to be loaded: `\\Computer name\Folder name` or `Domain name\Folder name\User name`. Alternatively, you can enter the computer name only if all the sharing options can be opened by the selected user.
5. You have to enter a qualified name of a user account when entering the user name. For example, the corresponding domain for the specific domain account has to be entered and covered, e.g. `domain\user1` or `User1@domain`.
6. Enter the network password of the user, or of his user account. Please keep in mind that the user under which you login has to hold access rights for the target or original folder. You can check for them under Properties in the corresponding target directory under Security.



7. You can also add descriptions to the credentials.
8. After the authentication, you can, for instance, enter a new "network path" as saving location and also restore an image from there.

Program settings

Additional information is available in chapter [Frequent questions on authentication](#). You can find a detailed explanation of the most important registry entries under [Explanation of registry entries](#).

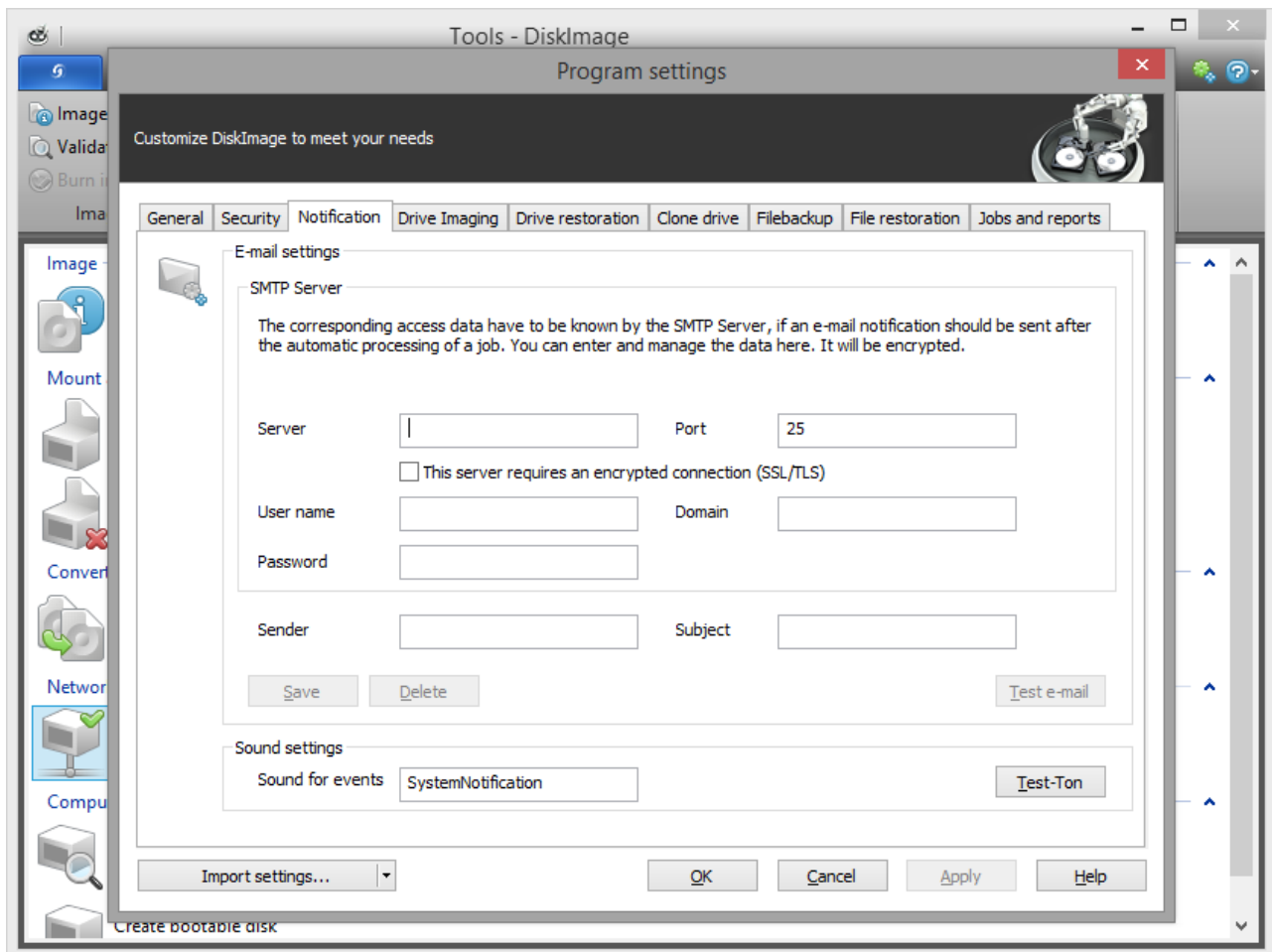
Settings for notification

To receive email notification about the running of a job, you'll have to enter the corresponding login data in the SMTP server. You will also need to enter the sender data.

- Execute the relevant actions in **Program settings** under **Notification**.

You can only enter your Email address in the Job assistant after you've entered the required data completely. [Notification](#).

Tip: Your domain does not necessarily need to be entered in the field "Domain". You can also enter the name of your Email Server so that the EHLO or HELO including the mail server name can be run. The Email notification will then also work under a stricter setup Server.



SMTP settings for notification

Suggestion: Try sending yourself a test email to make sure your entries are correct.

Change default settings for drive imaging

Under **Drive imaging** in the **Program settings** you can set specific settings for imaging.

Prefer external USB drive to store image files

If you enable this function, external USB drives will be preferred as the target drives for storing images.

Under the option **Automatically check image file for errors after creation** you can specify whether image files should be checked for errors immediately after they are created.

When you enable **Overwrite existing image files**, the prompting for overwriting image files with the same name will be suppressed during the creation of new images. This function is very useful when, for example, you're imaging data a number of times daily, and the image is automatically being named after the Day/Month/Year.

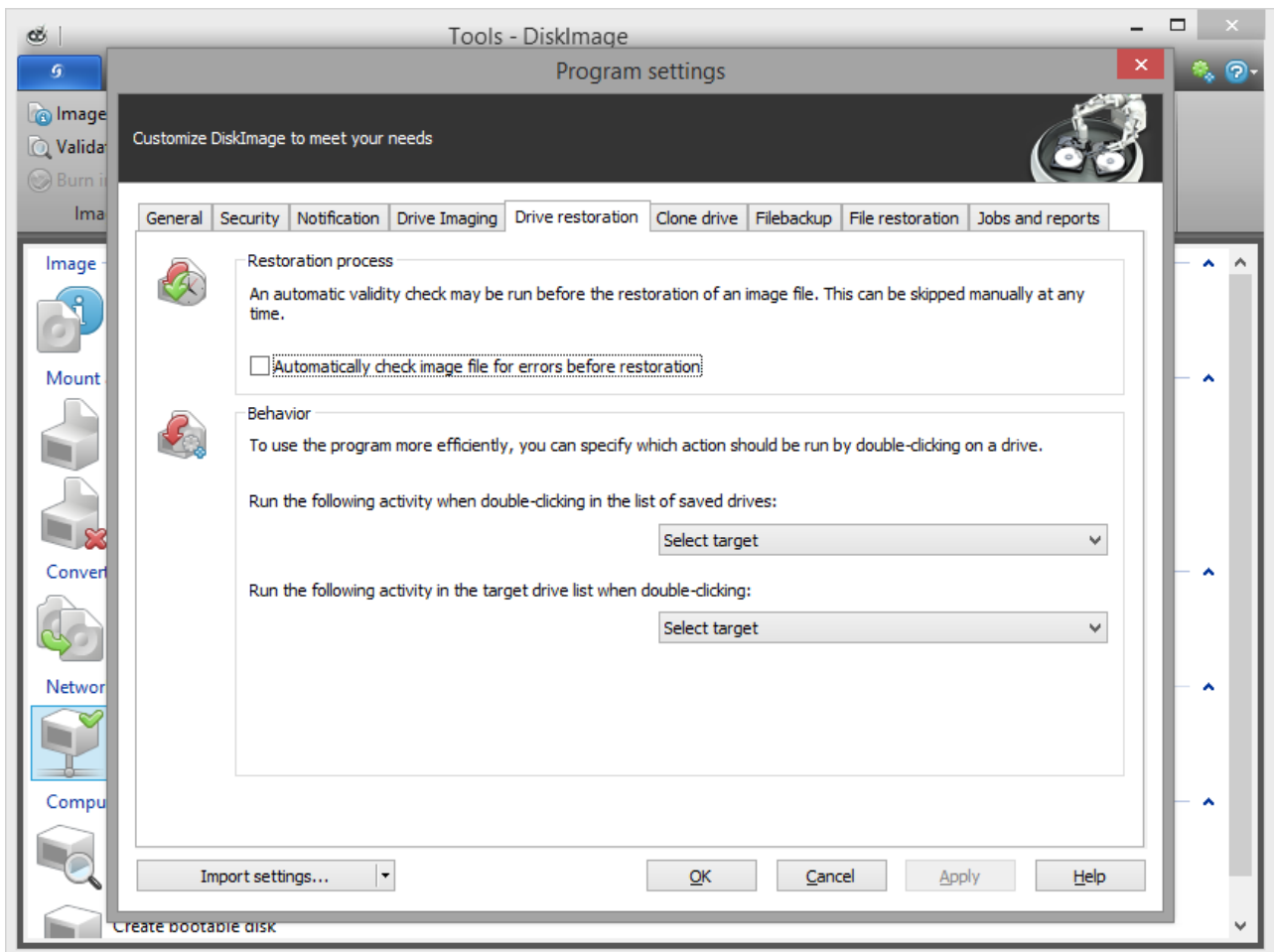
Under **Behavior** you can hide or un-hide drives that cannot be imaged by default in the user interface. Drives that cannot be imaged are for example: empty card reader or disk drives, the "Microsoft reserved partition" in GPT drives, OEM-BIOS-partitions in DELL and IBM or the system area in basic disks.

Change default settings for drive restoration

You can specify the default settings for restoration behavior under **Drive restoration** in the **Program settings**.

Under **Drive restoration** you can enable a validity check before the restoration of an image.

In addition, under **Behavior** you can specify which activity should be run when double-clicking a drive in the list.



Change presets for drive cloning

If you're looking to change or enable the default settings for cloning, click **Clone drive** in **Program settings**

You can specify, if drives not able to be cloned by default e.g. a CD/DVD drive or empty disk drive should be shown in the activity window "Cloning".

Also, you can specify what should happen when you double-click on a drive in the activity window "Clone drive".

Change default settings for file backup

Under **File backup** in the **Program settings** you can set specific settings for a backup.

Prefer external USB drive to store image files

If you enable this function, external USB drives will be the preferred target for storing images.

Under the option **Check file backup automatically after its creation** you can determine if image files should be checked for errors immediately after they are created.

By selecting **Automatically overwrite existing image files**, the prompt asking if you want to overwrite an existing older image file with the same name will be suppressed. This function is very useful when, for example, you're imaging data a number of times daily, and the image is automatically being named after the Day/Month/Year.

Under **Behavior** you can adapt the program user guidance individually. In the DropDown menu, you can select what will happen when you double-click a file or folder.

Change default settings for file restoration

Under **File restoration** in the **Program settings** you can change the default settings for behavior during restoration .

You can set the **Behavior** by double-clicking a drive in the activity window "File restoration".

Change default settings for jobs and reports

If you want to change or use the default settings for jobs and reports, click **Start/ Program settings** and then **Jobs and reports**.

Reporting

Detailed reports can be created for all program activities. To save space, you can select the activities you need for reports. Running a job always creates a report.

Behavior

Under **Behavior** you can specify which activities to run, if you double-click on a job in the job list.

You can also set the behavior by double-clicking a report in the report list.

TrayIcon

The Laplink DiskImage Tray icon is displayed by default in the info area of the task tray following successful installation of Laplink DiskImage. The tray icon will indicate whether Laplink DiskImage is currently enabled. The icon will be animated while an action is being processed, otherwise, the tray icon will remain still.

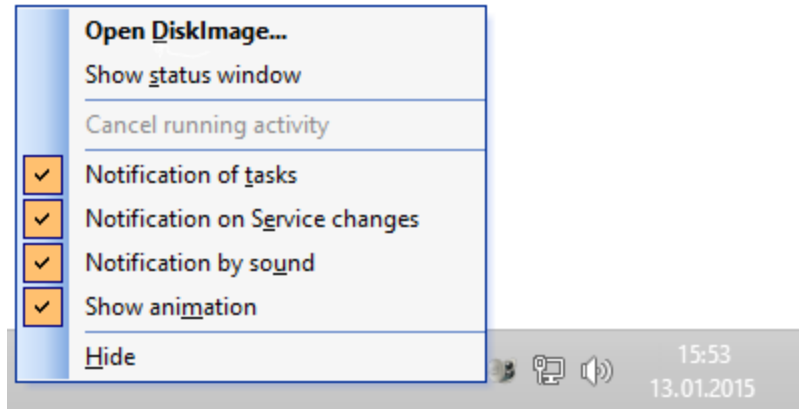
Right-clicking the tray icon will show you various control options for Laplink DiskImage. You'll be able to open the Laplink DiskImage program interface, cancel a running action, hide the tray icon, or suspend the animation.

If you don't have administrator rights for this computer, you will not be able to start Laplink DiskImage. It will not be possible to click.

Program settings

In addition, you'll be able to hide or show the progress of a job or changes in the service.

Our suggestion: If you'd like to have the tray icon permanently disabled (hidden), do so using the menu **Start/All programs/Laplink/Laplink DiskImage/Laplink DiskImage Tray**. The same path can be used for reversing the process whenever you want the icon to be shown.



Context menu of the TrayIcons

View

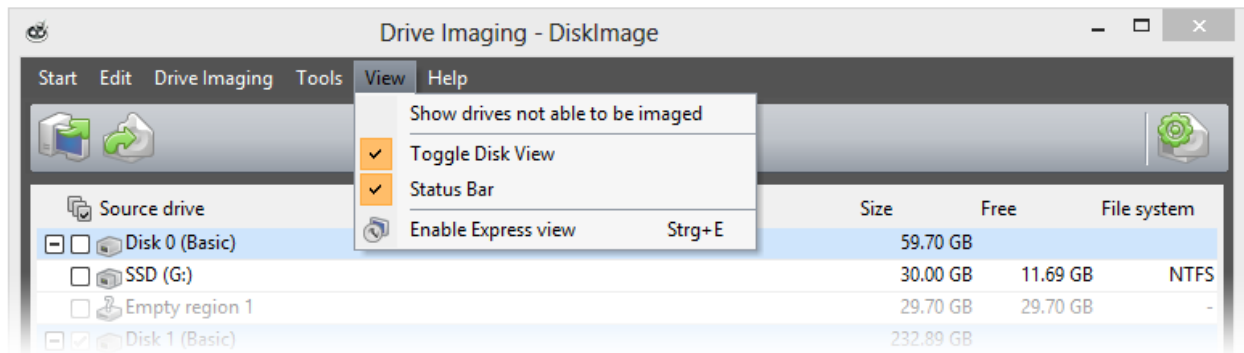
You can change the Laplink DiskImage interface according to your own preference. You have a choice of different views for each task.

Show drives that cannot be imaged: all sectors of hard disk will be shown - even those that cannot be imaged.

Show disk view: a graphical view of the hard disk and the individual partitions will be displayed.

Status bar: displays the current status of a job.

Express view: Displays only the main features of Laplink DiskImage.



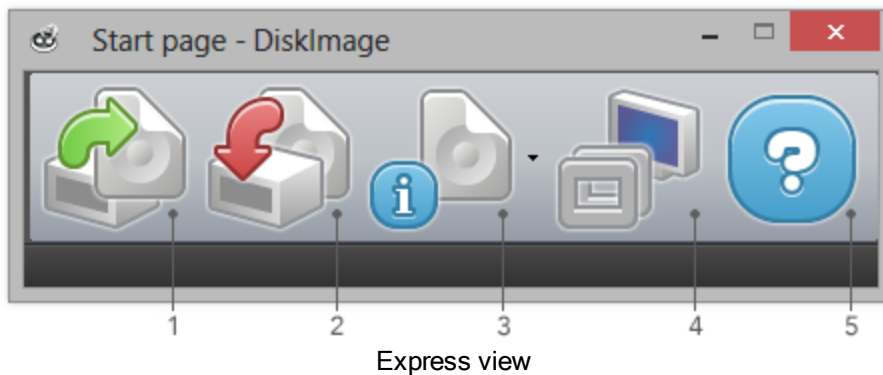
View menu

Use Express view

The Express view provides a simple and intuitive way of using the main features of the program. You can use the Express view for creating, mounting, and restoring images. You can also switch easily from one view to another.

Tip: If you want to hide certain function from the user, you can disable them over the Registry entry ExpressFlags. For further information consult chapter [Explanation of the Registry entries](#).

Note: Restoring the system partition is not possible while the computer's running. Use the Bootmedium for this and run Laplink DiskImage directly from it.



Key

1. Create image - starts the imaging of one or more drives.
2. Restore image - starts the restoration of the image.
3. Read image information - displays detailed information about an image file. You can also use the drop-down menu (small arrow on the right) to mount and unmount an image from a drive.
4. Restores the full view of Laplink DiskImage's user interface.
5. Displays the program's Help.

Status bar

The status bar informs you about Laplink DiskImage's loading processes and activities.

Under **View/Status bar** you can hide or un-hide it.

Frequently asked questions

When and how often should I make images?

We recommend imaging on a regular basis (at least once a month). The more regularly it's performed, the more up-to-date the data contained within those images will be. As a guiding rule, you should always image an intact system.

Which drives should I image?

You should generally image all drives, meaning the system drive (Windows), primarily Drive C, and all remaining data drives where private and business data, e.g. customer data, photo collections or music are stored.

Where should I store my image?

Don't save the image on the same hard disk where the imaged drive is located. It should be ideally stored on an external hard disk or a CD/DVD.

I just bought myself a new computer. If I take a complete image of my old computer, can I restore it to my new one?

Restoring data drives is not a problem even with differing hardware. However, system partitions can only be restored on differing hardware using the Start CD and the integrated M.I.R. You can read more about this in the chapter [Settings for restoration on different hardware](#).

Do I have unlimited use of all functions with the trial version?

The trial version is not restricted - all program functions are fully operational.

When do I need the bootable CD from Laplink DiskImage?

You will need the Start CD, if you want to restore your entire computer or a system partition. The Start CD can also be used, if the operating system doesn't start up anymore.

How do I save an image to CD/DVD?

1. You must create an image file(s) and save it to your hard disk before you can write it to CD/DVD.
2. When creating the image, under **Drive imaging/Imaging options/File size**, you should restrict the maximum image file size to the size of the intended removable medium where it will be saved.
3. Should the image exceed the selected maximum file size, it will be split into several image files.
4. You can then burn the image files to CD/DVD.
5. Select **Tools** on the start page, then on **Burn image file(s)** and follow the instructions.

What do I do when my image is too big for a CD/DVD?

1. If the Image you already saved to your hard disk is too big for the blank CD/DVD, you can, of course, still split the image file.
2. Under **Tools**, open up **Convert image file**.
3. Select the Image you wish to change by using **Add**.
4. Merge incremental Images
5. During conversion, one copy of the Image will be made while the original remains unchanged.

I have split the image and saved it on various disks (CD/DVD).

I want to:

- restore this image
- display drives from the image
- use the image as a base image for incremental imaging purposes

Frequently asked questions

- merge incremental images
- convert the image file

Before you go ahead with any of the above named steps, we strongly advise you to save all parts of the Image in a folder on your hard disk. Please ensure the folder is not on the drive where you wish to restore the Image. Once you have done this you can complete the steps outlined above by simply following the instructions in the corresponding chapters of the User's Guide.

Can I continue working during the imaging process?

You can continue working and making changes without any problem.

The working memory buffer is however restricted. You can see how much is available in the Memory buffer display. See Chapter "Lock a Drive".

Can I change an existing image?

Under Tools you can find the function Convert Image File. This enables you to change certain properties and contents of an existing image.

I have created an image of several drives. Can I extract the image from just one of those drives and store it separately?

Follow the instructions below:

1. Under **Tools** select Convert image file.
2. Select the image using **Add** and then select the drive you wish to separately image.
3. Click **Open** and select a drive. After confirming with OK, click Start.
4. After confirming with **(OK)** click **Start**.
5. The old image remains unaltered.

What is the difference between a clone and an image?

Using the **Clone drive** function, you can make a 1:1 copy of a drive including all its stored data, without producing any image files. The storage volume /drive is saved directly without compression. The advantage of a clone as opposed to an image is that the detour through an image file is avoided. You can access the clone of a drive without having to restore the drive. You do, however, require a lot more storage space for a clone than for an image.

Important! When cloning your drive (source drive) the selected target drive will be overwritten. You should therefore save your copy on an external hard disk, either in an unused region or overwrite a previously selected drive purely for this purpose.

Why are temporary files created?

If you leave a drive unlocked during an imaging because, for instance, you want to continue working on that drive, the original status will be "cached", i.e. stored in the working memory buffer. "Temporary files" are created in the process. The working memory buffer space is, however, limited. You can see how much space is available by looking at the memory buffer display.

What is the advantage of an incremental image?

An incremental image normally has a smaller data volume than a base image. In addition, you can identify the differences, more precisely, the changes made since the base image was created.

My incremental image is not smaller than my base image. Where does this file come from?

This can occur if you have, for example, defragmented your computer in the meantime. The newly structured file segments will then be recognized as “changes” and imaged as new files.

What does "Drive cannot be locked" mean? Does this affect the data imaging?

As a result of system processes having to be in constant operation, it's not normally possible for system partitions to be locked. You get this notification even when you want to image a data drive and this is directly integrated into the system processes. The notification doesn't generally have an effect on the imaging process; it is still able to be run without a problem. To be totally sure, shut down all running system applications, e.g. defragmentation or cloning processes, before imaging.

While duplicating, Laplink DiskImage reports that the target volume is too small although the source drive is smaller than the target disk. What is the reason for this?

Make sure you haven't selected the entire hard disk as your source. Example:

You have a hard disk with 100GB that is divided into two partitions:

- System partition (20GB)
- Data partition (80GB)
- While trying to duplicate the system partitions on an external 40GB hard disk, Laplink DiskImage reports that the target volume is too small.

By just making a check, you can select the system partitions as your only source, and not the entire hard disk.

What do I do if Laplink DiskImage takes very long to start, or doesn't even start at all?

Please read the note about [System requirements](#) and make sure you're using the latest versions of your drivers.

During restoration, Laplink DiskImage created a new temporary file on my hard disk. Where does this file come from?

Before creating an image, Laplink DiskImage normally deposits a number of metadata in a local file. This data is needed by Laplink DiskImage in order to create the image. The file will be included in the imaging to assure consistency in the image. This file will normally be automatically removed during restoration.

Under certain circumstances, it's possible that another action of the operating system or the user will prevent this temporary file from being deleted. This will then result in the file remaining undeleted in the system. You can, however, delete this temporary file without any risk.

Why are partitions that weren't imaged displayed when mounting an image in Explorer?

In addition to saving data from the partition being imaged, Laplink DiskImage also needs to save information about the disk on which that partition was originally located. All of this is required for mounting an image, converting it into a virtual disk, or performing any future restoration. There will also be information included about partitions that were not imaged. When mounting an image, just as when using a virtual hard disk after conversion from an image, Microsoft Windows uses this information to recognize that there were originally multiple partitions on the disk, and attempts to integrate them into the system. Because information/data about these partitions is missing, it's not possible to assign them to any file system. As a result, partitions that weren't imaged will be displayed as RAW, i.e., non-formatted.

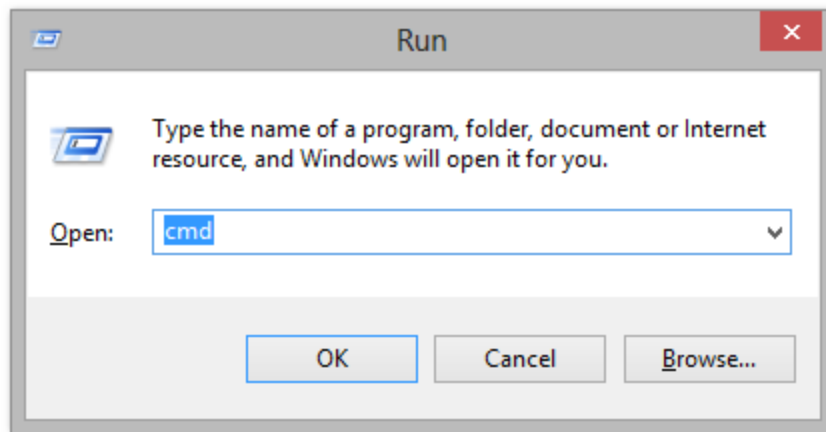
Frequent questions on authentication

Where do I find the domain and user name to use for authentication?

If you are not sure, please proceed as follows:

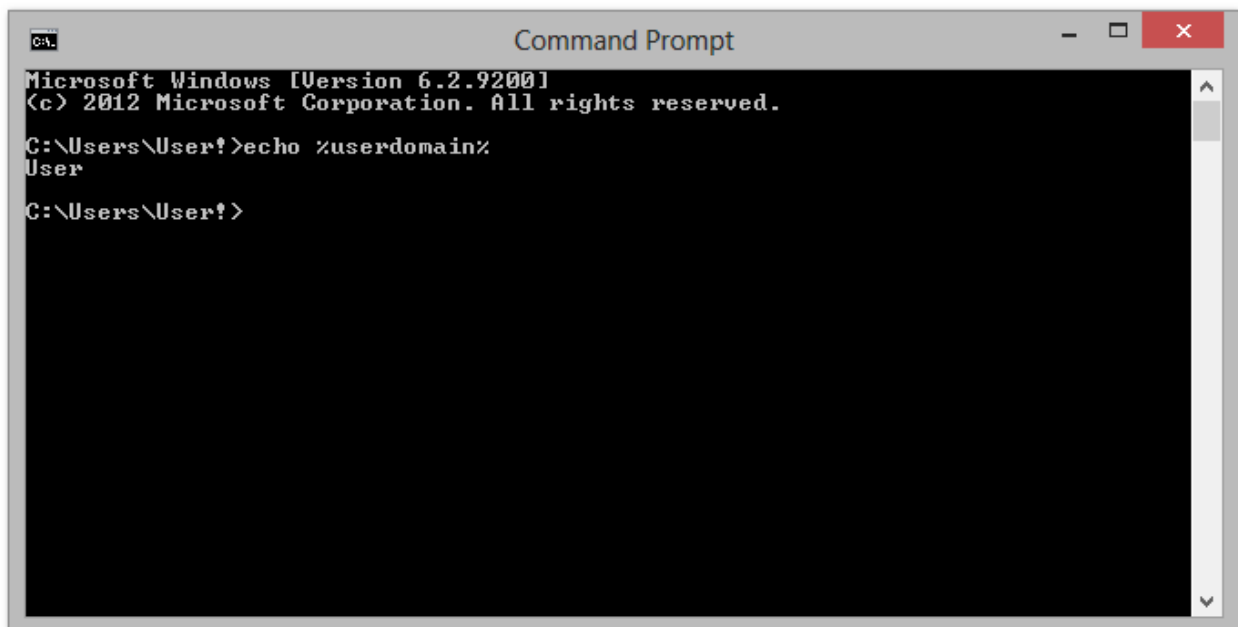
- Call the command line under **Run...** in the Start menu. Enter the command `cmd` in the dialogue.

Frequently asked questions



Call the command line

- Enter the command: `echo %userdomain%\%username%` into the command line and confirm your entry with Enter. If your computer is not signed on to a domain, your computer name will appear instead of the domain name.

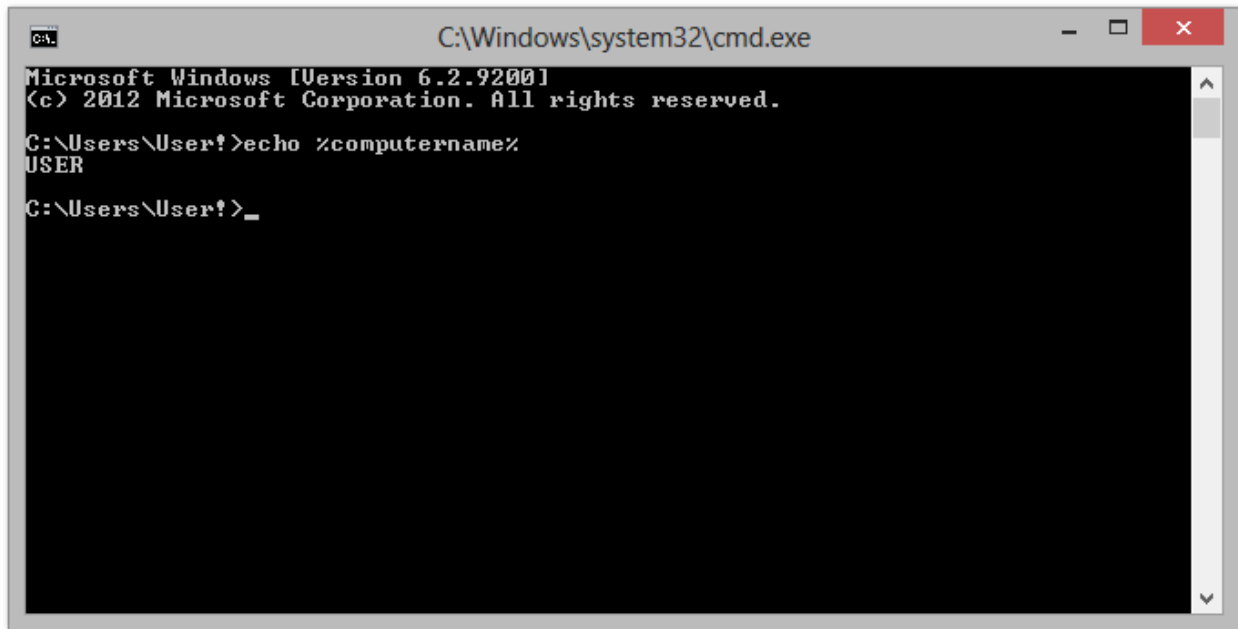


Get the user name in the command line.

Where do I find the computer name for, running activities?

If you are not sure, please proceed as follows:

- Call the command line under **Run...** in the Start menu. Enter the command `cmd` in the dialogue.
- Enter the command: `echo %computername%` and confirm your entry with Enter.



Get the computer name in the command line.

How can I check my access rights on the target computer or the target folder?

If you are not sure if your entries are correct, you can view them under **Program settings/Security** and recheck them.

Alternatively, you can check your access rights on the target computer in the properties of the corresponding target folder under "Security" in Windows Explorer.

- Click in the context menu of the folder on **Properties** and then **Security**. All users with access to the folders will be listed.

Although I have already entered my authentication data for a network drive, I am asked once again for every activity.

It is possible that you are requested to re-enter your authentication data for an activity like the restoration of an network drive image. The reason for this can be traced back to Windows. Certain dialogs, e.g. the browser dialog are not originally from Laplink DiskImage but from Windows. Because Windows doesn't have access to your Laplink DiskImage authentication data, it is necessary to re-enter the access data for the selected drive.

Explanation of the Registry entries

In the Windows registry, under HKEY_LOCAL_MACHINE\Software\Laplink\Laplink DiskImage\, you can configure certain settings for Laplink DiskImage. Please note that changes in the registry can influence the functionality of Laplink DiskImage and such changes will continue to be applied after restarting the computer.

Name of the entry	Type of entry	Short description
Image path	String	Path to the storage location from the image files.*
JobPath	String	Path to the storage location from jobs.*
ReportPath	String	Path to the storage location from reports.*

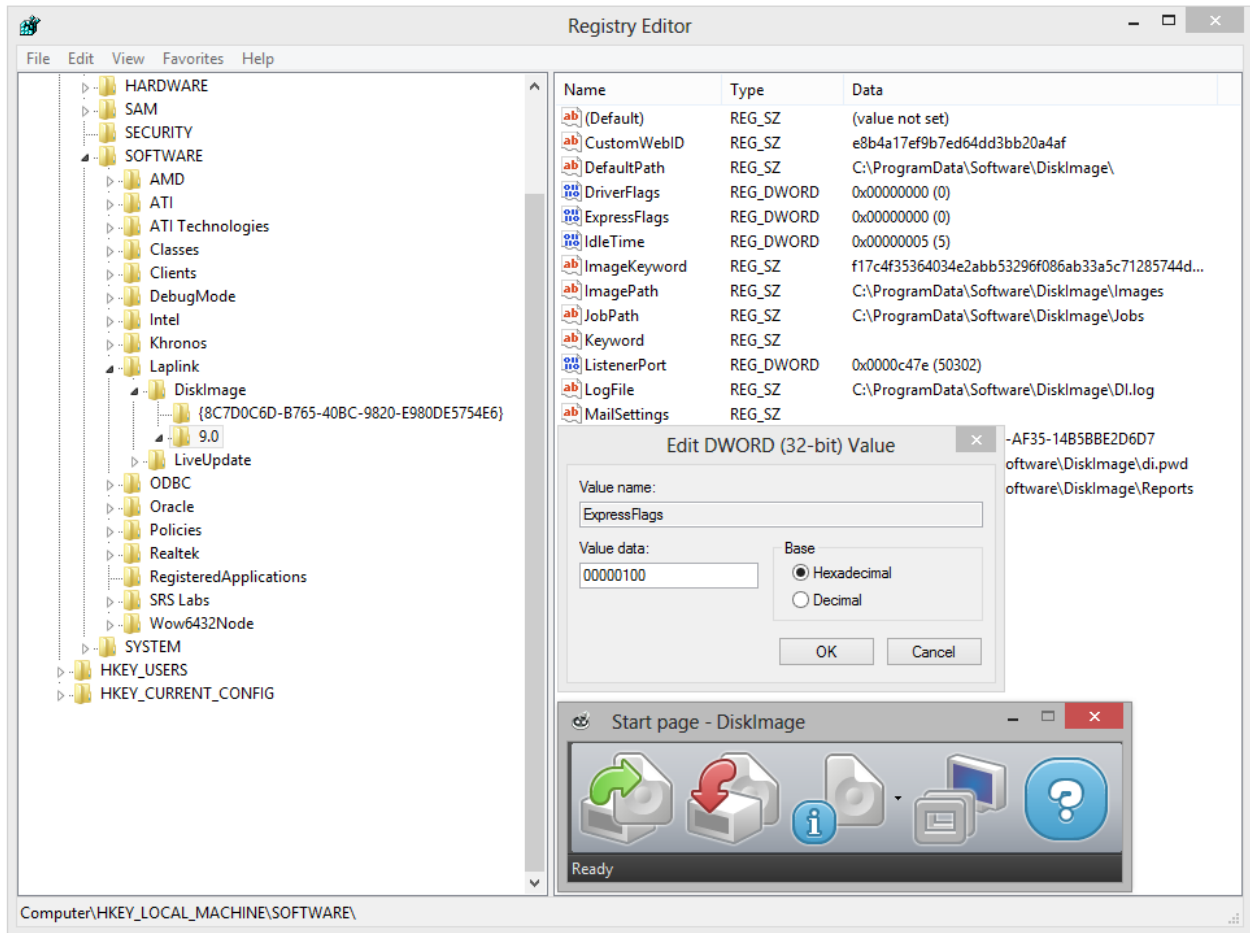
Frequently asked questions

Name of the entry	Type of entry	Short description
PwdFile	String	Path and name of the password file
PublicKey	String	Public key for password encryption. Can be changed whenever needed.
NoSnapshotTmpFiles	String	This key is optional: it does not need to be set. If it's set, this key will influence the behavior of the snapshot driver during the creation of temporary files. In this way you can specify those drives where no temporary files should be created. The syntax for the value is: <Drive letter>;<Drive letter>; (for example: c;d;e;)
Version	DWORD	Version of the type of image file. Current possible versions: 1 (up to and including version 4), 2 (current version)**
ExpressFlags	DWORD	Optional key for disabling buttons in the Express view. This key can help administrators limit the functionality that is available over the interface so that users can only have restricted access to the program's features. If the key isn't set, all buttons are enabled. The DWORD values can be changed so that certain buttons in the Express are disabled: <ul style="list-style-type: none"> • Create image button: 00 00 00 01 • Restoration button: 00 00 00 10 • Switch to full view button: 00 00 01 00 • Read image information button: 00 00 10 00 • Mount image button: 00 01 00 00 • Unmount drive-Button: 00 10 00 00 • Help button: 01 00 00 00

* Can also be controlled over the user interface. If you're not sure, make changes over the user interface. There you can find additional explanations and selection options.

** The format of image files was extended in Laplink DiskImage 4. In addition to the imaged data, checksums are placed in the image so that an identity check can be carried out for data inside the image. Older versions of Laplink DiskImage do not recognize this extended image format and would label the image as invalid. To help older versions of Laplink DiskImage work with images created by a newer version, the new version can create an image using the "old" format.

Frequently asked questions



Registry entries from Laplink DiskImage - Example: Disable button for "Switch to full view"(ExpressFlags)

Behavior when receiving error notices

Various error notices may appear while working with Laplink DiskImage. These can either be displayed in dialogs or seen in reports.

Error notice	Description
<p>IDS_ERROR_LOGON_FAILURE</p> <p>Registration has failed on account of invalid user name or authentication information.</p>	<p>User name and/or password is false. Where required, consult your system administrator.</p>
<p>IDS_ERROR_ACCOUNT_RESTRICTION</p> <p>The authentication information entered is valid but restrictions on the user account have prevented a successful authentication.</p>	<p>Change the settings of the respective user account. It's possible that there is a restriction such as "read only" enabled there.</p>
<p>IDS_ERROR_INVALID_LOGON_HOURS</p> <p>The user account is subject to time limitations and is therefore not available for registration at this time.</p>	<p>Maximum login time has expired. Please login again.</p>

Frequently asked questions

IDS_ERROR_PASSWORD_EXPIRED The password for the user account has expired.	Your password has expired. Please enter a new password.
IDS_ERROR_ACCOUNT_DISABLED The account referred to is currently disabled and cannot be accessed for registration.	User account was disabled. When applicable, consult your system administrator.
IDS_ERROR_ACCOUNT_LOCKED_OUT The user account has been automatically blocked because too many invalid registration attempts have been made.	User account was blocked. Where required, consult your system administrator.

Internal error codes

The internal error code (individually designed error code) is the last digit in the error code after the last period.

Error notice	Description
0x385	Invalid job or script.
0x387	Unsupported task or incorrectly written job / script
0x388	Parameter is false or is not supported by the task.
0x38A	An obligatory parameter is missing.
0x70	Invalid or damaged installation.
0x7D1	Unknown Host
0x7D2	Invalid Host Port
0x6A6	Invalid password file
x6A9	Invalid keyword in parameter (registry)
0x6AA	No password file registered
0x6AA	A target folder is missing in the password file.

Windows errors / Microsoft error definitions (primary value)

Error notice	Description
C0000240	Prompting was cancelled

Frequently asked questions

C0000022	Access denied: process requires access to an object to which access is being denied.
C0000033	Object (path/file) is invalid, e.g. is especially marked.
C0000034	Object (path/file) not found
C0000035	Same object (path/file) already exists.

Allocating objects

When cloning or restoring an image, the source and target can be linked differently. Source is the name for a drive or disk that is being restored from an image or that has been used as the base for cloning.

Terminology

- **Disk:** A hard disk or disk in general that contains one or more drives.
- **Area:** An area on a disk. It may be empty, contain disk information (MBR, GPT, LDM) or belong to a drive.
- **Drive:** A partition or a volume that is found on one or more hard disks.

Source and target may be linked in the following combinations:

	link from	to
1.	Source disk	Target disk
2.	Source disk	Target drive
3.	Source disk	Target area
4.	Source drive(s)	Target disk(s)
5.	Source drive	Target drive
6.	Source drive	Target area(s)
7.	Source area(s)	Target disk
8.	Source area	Target drive
9.	Source area	Target area

Support and Contact

To receive more information about Laplink DiskImage, please visit our website and get the latest information about product developments and support. Also included on our website are regularly updated FAQs and Knowledge Bases that address the most common issues regarding our products.

All registered customers receive installation support, free of charge, for the first 30 days after registration. When contacting our support team, please remember to have your registration code available.

In addition, it may be helpful to read the frequently asked questions section of the website before contacting our Support Team. It's always possible that your specific question or problem has already been addressed.

Laplink

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Web: <http://www.laplink.com/contact>

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Sales@laplink.com

Authorized Resellers

Our authorized reseller partners in over 30 countries stand ready to assist you with answers to all questions regarding the licensing and purchase of our software products. Their names and addresses can be found on our website, under the heading "Partner - Find Resellers". Just ask us, and we'll be happy to help you find an authorized partner in your vicinity.

End User License Agreement for Laplink Defrag, Laplink DiskImage, and Laplink SafeErase

This End User License Agreement (EULA) is organized into two sections: a General Section, applicable to all three Laplink products, and a Specialized Section, which includes the particular terms for each of these corresponding products.

Once accepted, these license terms will become part of your contract with O&O Software GmbH, Am Borsigturm 48, 13507 Berlin, publisher of Laplink Defrag, Laplink DiskImage, and Laplink SafeErase. If you have any questions regarding this contract and the license terms, our Service Team is available to help you. Send an e-mail to

info@oo-software.com.

The software product is protected by copyright laws and international copyright contracts as well as other laws and agreements concerning intellectual property.

GENERAL SECTION

1. Object and form of delivery

(1) You receive the software covered by the contract in executable form (Binary code) together with the relevant documentation released according to Section (5).

(2) The software provides the range of functions described in the given documentation. The documentation regarding functionality may be consulted prior to concluding the contract in the internet presentation on the following site:
<http://www.oo-software.com/>.

(3) Delivery will be made according to the way in which you have purchased the software, either by having a disk directly handed over or sent by mail to an address you have supplied or through the forwarding of a license as well as any required download information to a given e-mail address.

(4) If you are currently receiving updates as part of a maintenance agreement, these will continue to be supplied in the same way as the initial software delivery, i.e., for a disk sent by mail, a disk containing the update will be sent to the given address: for electronically delivered keys, a key for downloading updates will be sent to the given e-mail address.

(5) A printed copy of the documentation will not be included in delivery. The documentation consists primarily of electronic aids.

2. Requirements for application (system requirements)

(1) Installation of the software is not part of the agreement.

(2) Depending on the software, there are certain system requirements that must be met in order to use the software according to the terms of this contract. These will be defined according to each product in the Specialized Section of this contract.

3. Rights of use, including test versions, unauthorized transfer, and application

(1) You are granted, upon payment of the agreed one-time fee, a permanent, spatially unlimited and non-exclusive right to use the software.

(2) Test versions - if you have installed a test version, the right of use will be, according to the program, for a limited time only and/or technically restricted.

(3) One copy of the software is entitled to be used on a maximum of one (1) output device /workstation simultaneously.

(4) If you want to use the software on more than one output device/workstation, the rights of use must be extended accordingly. To find out which products are also available as volume licenses, please consult Sales@laplink.com. The

separate price list concerning Volume Licenses will apply to extending the rights of use without redelivery. A subsequent extension of the rights of use without redelivery does not result in further warranty.

(5) Any use beyond that agreed upon in the contract is one in violation of the contract. In such a case, you are required to report this use that exceeds the rights of use to the supplier without any delay. The parties will then try to bring about an agreement for extending the rights of use. For the duration of the excessive usage, i.e., until the conclusion of such an agreement or the cessation of the excessive usage, you are required to pay compensation for this excessive usage according to the amount indicated in our price lists. The amount of compensation will be calculated on the basis of a four year, straight-line depreciation. If we are not informed of the excessive usage, a contract penalty in the amount three times the price of the usage indicated in the price list will be due.

(6) You are entitled to create a backup copy of the software and to conduct ordinary data backups. The creation of more copies than the amount needed for the backing up of any future usage (including the backup copies and data backups) is not allowed.

(7) Copyrights and other trademarks within the software may not be altered or removed. They must be transferred onto every copy of the software.

(8) Unauthorized transfer - only when you have purchased the software with an accompanying disk are you permitted to transfer it and then, only under the following conditions: a resale of the software is only permitted when it involves an entire software copy, i.e., by surrendering your own usage of the purchased copy, you are entitled to transfer these rights of use of the disk to a third party according to the terms of the agreement. When making such a transfer, you are required to hand over to the third party all materials related to the software that are covered in the contract and to delete the software from any storage volumes (e.g., hard disks) remaining in your possession.

(9) Unauthorized rental and service - The purchase of this contract does not entitle you to any public transfer or rental of the software. You are also not entitled to include the software as part of your providing services for and in the presence of any third parties. You may purchase an appropriate license for doing this.

4. Payment

(1) The prices are given with the corresponding sales taxes included, unless otherwise indicated.

(2) Test versions - Downloads of test versions are provided free of charge, unless otherwise indicated.

(3) If you receive updates of your programs as part of a Maintenance Agreement, the terms of payment in these contracts will apply to these Maintenance Agreements.

(4) Data received may be forwarded on to third parties for purposes of collection.

(5) Until payment is made in full, a contract may be cancelled, for example, when your payment is delayed, it prohibits the further using of the software and demands the surrendering of all copies or this being impossible, to demand their deletion.

5. Material defect and defect of title

(1) The software package or download you receive is free of any material defect or defect of title.

(2) A material defect exists when the software is unable to be used as described in the documentation appearing on the Web site and included in delivery or available for downloading. O&O is constantly checking to make sure that other sources are not misrepresenting the functions and properties of the software as described in the documentation. You can therefore assume that any descriptions beyond those found in the software documentation have not originated with O&O and are also unknown to it. Please inform O&O if you learn of any software descriptions that include functions and properties not mentioned in the documentation.

(3) A defect of title exists when, after delivery of the software, the rights needed for using it as stipulated in the contract have not been effectively granted.

(4) Any claims concerning defects of material and/or title related to the software have a limitation period of two years subsequent to delivery of the program or transmission of the serial number needed for downloading. If you are not a private individual, the warranty period is shortened to one year.

If O&O has fraudulently concealed a material defect, a three year limitation period will cover claims related to this defect.

Payment for compensation that you might have been entitled to as a result of cancellation or an abatement can be refused upon expiration of the limitation period.

(5) You are required to inform O&O, in writing if possible, of any defects that arise immediately upon their discovery. While doing so you should also describe, as well as possible, how the defect is communicated, the effect it has on the program, and under which circumstances it occurs.

(6) Should defects be reported to O&O within the limitation period, it will undertake a resolution free of charge.

(7) As part of the resolution, the corrected software will be redelivered as agreed. An on-site analysis and correction of the error on your system will not take place.

If you have already entered your own data into the software, the software gives you the option of saving this data separately and then, after re-installing the software, restoring it with little effort. Correcting the software containing your own information would cost O&O undue time and expense. Such a correction can only be demanded in exceptional cases when a defect in the software has prevented the applied information from being saved separately and it is unable to be restored, and when such a correction is still acceptable for O&O.

O&O assumes the ensuing expenses for the resolution, in particular the costs for transport, labor, and material. You are personally responsible for installation. O&O specifically does not assume on-site installation as part of its obligation with regard to defects of material or title.

Should a change of the program be required as part of the resolution, O&O will make the necessary changes in the documentation without any charges.

(8) After the deadline you set for resolution has passed without a successful resolution, you can cancel the contract or reduce the purchase price and demand compensation instead of service or the replacement of any futile expenditures.

(9) A deadline is not required when:

- a. O&O refuses both kinds of resolution, even if it is entitled to do so as a result of the arising expenses or
- b. the resolution is impossible or
- c. the resolution is unacceptable to you or
- d. the resolution is unsuccessful.

A subsequent improvement is considered a failure after the second unsuccessful attempt unless there is something particular about the type of software or the defect itself or the surrounding circumstances that would indicate otherwise.

(10) You are not entitled to cancel the contract if the defect is negligible, nor may you, in this event, demand compensation instead of full service.

(11) In the event of cancellation, compensation is due for any uses made. The compensation for use will be based on a four year, straight-line depreciation of the purchase price.

(12) As a result of the abatement, the purchase price will be reduced by the amount which is calculated for deducting the defect from the value of the software. The standard used will be its value at the time the contract was concluded.

The amount, when necessary, is to be calculated by estimation. As a result of this reduction, any amount larger than that paid for the reduced purchase price will be refunded.

(13) If it turns out that a reported problem did not arise as a result of a defect in the software, O&O is entitled to invoice you, according to the amount charged in its price lists for such services, the expenses for analysis and correction of the problem if you can be accused of malice or gross negligence.

(14) The seller's warranty is canceled when changes are made to the software without expressed written consent or when the software is not used as intended or used in an improper software environment, unless you can prove that these facts had nothing to do with the problems that occurred.

6. Limitation of compensation

(1) O&O is liable for compensation for every legal ground to the extent described in the following provisions.

(2) The extent of liability of O&O for damages caused by malice or gross negligence arising from O&O itself or one of its vicarious or legal agents is unlimited.

(3) There is no limit to the extent of liability of O&O or any of its legal or vicarious agents for damages involving injury to life, physical well-being or health, or for simple breach of duty.

(4) There is unlimited liability for damages caused by serious organizational fault on the part of O&O as well as for damages arising from a missing guaranteed characteristic.

(5) For the breach of an essential contractual duty, O&O is liable for damages normally foreseen in a contract when none of the instances in provisions (2) - (4) applies.

(6) Any further liability for compensation is excluded, specifically excluded is liability without fault.

(7) Liability as defined by the product liability law remains untouched.

(8) If damage can be traced to have arisen through a fault on the part of O&O as well as on the part of yourself, you must have your share of the fault evaluated.

You are responsible for making a standard backup of your data at least once a day. For data loss caused by O&O, O&O is only liable for the expense of duplicating the data on your backup copies that need to be created and for the restoration of data which would have also been lost during a standard backup procedure.

7. Final provisions

(1) You may only balance claims from O&O with indisputable or legally valid claims.

(2) Changes and amendments to this contract must be made in writing. This also applies to changes to this provision.

(3) The contract is subject to German law. The uniform UN purchasing law (CISG) as well as the UNIDROIT Factoring Agreement of Ottawa do not apply.

(4) Any general terms and conditions on your part will not be applied.

8. Contact

This license agreement is subject to the laws of the Federal Republic of Germany. In the event you are not a private individual or a resident of the Federal Republic of Germany, we agree that the district court in Berlin will be the competent court for litigation arising from this contract.

If you have any questions concerning the O&O Software License Agreement, please contact:

O&O Software GmbH, Am Borsigturm 48, 13507 Berlin, Germany.

Telephone: +49 (0)30 991 9162-00, Fax: +49 (0)30 991 9162-99

E-Mail info@oo-software.com / sales@oo-software.com, Web www.oo-software.com

9. Contact

Laplink Defrag, Laplink DiskImage, and Laplink SafeErase are a rebranded products of

O&O Defrag, O&O DiskImage, and O&O SafeErase, respectively, for resale by Laplink Software, Inc. For Laplink Sales and Support, please see contact information located at the end of this document.

SPECIAL SECTION

1. Object and form of delivery

- LAPLINK DEFRAG

AMENDMENT TO SECTION 2: REQUIREMENTS FOR APPLICATION (SYSTEM REQUIREMENTS)

Laplink Defrag Professional Edition

The software requires Windows Vista (all Editions), Windows 7 (all Editions), Windows 8 (all Editions) or Windows 10 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems. Control of the program through a network management is not possible.

Laplink Defrag Workstation Edition

The software requires Windows Vista (all Editions), Windows 7 (all Editions), Windows 8 (all Editions) or Windows 10 (all Editions) operating systems. Application within the terms of this contract is not achieved without the use of one of these operating systems. The Laplink Defrag Workstation Edition may be used on computers with or without the user interface. You are entitled to control this program over the separately obtainable network manager.

Laplink Defrag Server Edition

The software requires Windows Server 2003 (all Editions), Windows Vista (all Editions), Windows Server 2008 (all Editions), Windows 7 (all Editions), Windows Server 2008 R2 (all Editions), Windows 8 (all Editions), Windows 10 (all Editions) or Windows Server 2012 operating systems. Application within the terms of this contract is not achieved without the use of one of these operating systems. The Laplink Defrag Server Edition may be used on computers with or without the user interface. You are entitled to control this program over the separately obtainable network manager.

- LAPLINK DISKIMAGE

Important note on the Windows PE Start CD

This note is only valid for the Laplink DiskImage Professional and the Server Edition Start CD. The Microsoft® Windows® Preinstallation Environment (Windows PE) is not a part of Laplink DiskImage Express and the Workstation Edition.

The Microsoft® Windows® Preinstallation Environment software included with this device or software may be used for boot, diagnostic, setup, restoration, installation, configuration, test or disaster recovery purposes only.

NOTE: THIS SOFTWARE CONTAINS A SECURITY FEATURE THAT WILL CAUSE END USER'S SYSTEM TO REBOOT WITHOUT PRIOR NOTIFICATION TO THE END USER AFTER 72 HOURS OF CONTINUOUS USE.

AMENDMENT TO SECTION 2: REQUIREMENTS FOR APPLICATION (SYSTEM REQUIREMENTS)

Laplink DiskImage Express Edition

The software requires Windows Vista (all Editions), Windows 7 (all Editions), Windows 8 (all Editions) or Windows 10 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems. Control of the program through a network management is not possible.

Laplink DiskImage Professional and Special Edition

The software requires Windows Vista (all Editions), Windows 7 (all Editions), Windows 8 (all Editions) or Windows 10 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems. Control of the program through a network management is not possible.

Laplink DiskImage Workstation Edition

The software requires Windows Vista (all Editions), Windows 7 (all Editions), Windows 8 (all Editions) or Windows 10 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems. Application within the terms of this contract is not achieved without the use of one of these operating systems. The Laplink DiskImage Workstation Edition may be used on computers with or without the user interface. You are entitled to control this program over the separately obtainable network manager.

Laplink DiskImage Server Edition

The software requires Windows Server 2003 (all Editions), Windows Vista (all Editions), Windows Server 2008 (all Editions), Windows 7 (all Editions), Windows Server 2008 R2 (all Editions), Windows 8 (all Editions), Windows 10 (all Editions) or Windows Server 2012 operating systems. Application within the terms of this contract is not achieved without the use of one of these operating systems. The Laplink DiskImage Server Edition may be used on computers with or without the user interface. You are entitled to control this program over the separately obtainable network manager.

AMENDMENT TO SECTION 3: RIGHTS OF USE, INCLUDING TEST VERSIONS, UNAUTHORIZED TRANSFER, AND APPLICATION

Creation and restoration of images

The source computer and each target computer are required to hold licenses, to create and restore images using Laplink DiskImage. One license is sufficient under the previously mentioned terms, if the source and the target computer is one non-virtual workstation. Each virtual machine is seen as an independent computer; in other words, each virtual machine needs its own license.

- O&O Enterprise Management Console

Important note on the Microsoft SQL Server

This product uses the Microsoft SQL Server or Microsoft SQL Server Express Edition. To the extent that these programs are part of the installation of this product, the terms of their licensing related to the use of this software will also apply to the terms of this agreement.

The use of Microsoft SQL Server Express Edition is free of charge in conjunction with this product. The purchase of licenses for O&O Enterprise Management Console and related products is separate from any possible purchase of SQL Server products.

AMENDMENT TO SECTION 2: REQUIREMENTS FOR APPLICATION (SYSTEM REQUIREMENTS)

The software requires Windows Server 2003 (all Editions), Windows Vista (all Editions), Windows Server 2008 (all Editions), Windows 7 or Windows Server 2008 RS (all Editions) operating systems. Application within the terms of this contract is not achieved without the use of one of these operating systems.

- LAPLINK SAFEERASE

AMENDMENT TO SECTION 2: REQUIREMENTS FOR APPLICATION (SYSTEM REQUIREMENTS)

The software requires Windows Server 2003 (all Editions), Windows Vista (all Editions), Windows Server 2008 (all Editions), Windows 7 (all Editions), Windows Server 2008 R2 (all Editions), Windows 8 (all Editions), Windows 10 (all Editions) or Windows Server 2012 operating systems. Application within the terms of this contract is not achieved without the use of one of these operating systems.

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