Laplink® DiskImage™: Server Edition

User Guide

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Introduction

Thank you for choosing Laplink DiskImage: Server Edition!

As you probably know all too well, important data can be unexpectedly 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.

Easily protect against data loss: Create image files of your drives on a regular basis and you'll be fully protected against data loss. The Start Page for Laplink DiskImage offers easy access to tasks such as imaging, restoring, and cloning.

Advanced imaging options: 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 would 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 while the image is created.

System Requirements

- **Operating System**: Windows Server 2008 R2/ Windows 7/ Windows Server 2008/ Vista/ Windows Server 2003/ XP/ Windows 2000 Server/ Windows 2000

- **RAM**: Install DiskImage - Min. 256 MB RAM; Run DiskImage from a bootable CD - Min. 1 GB RAM.

Note: A bootable CD can be created from the DiskImage ISO file, which is available from the DiskImage download Web page (accessible from the My Downloads page of your Laplink Support account).

Laplink recommends that you download the ISO file and burn it to a bootable CD, which can then be used for disaster recovery. See the DiskImage download Web page for recommendations of software that can be used to assist in creating the bootable CD.

Installing Laplink DiskImage

Note: Please make sure that no other backup or imaging software is installed on your computer when installing or working with Laplink DiskImage. Using more than one backup / imaging software application on the same PC can cause problems with the computer's hard drive.

1.   Start the computer on which you would like to install Laplink DiskImage.

2.   Log on as a local Administrator or user with equivalent privileges.

3.   Insert the Laplink DiskImage CD into the CD-ROM drive, or double-click the executable file.

        Note: Two separate installation files are given for 32-bit and 64-bit operating systems. Make sure to use the installation file that is correct for your operating system.

4.   Follow the prompts in the Wizard, and click **Install**.

5.   When prompted, restart your computer.

IMPORTANT: When you purchase Laplink DiskImage, you are purchasing a license that limits you to using DiskImage on one (1) installation. For complete details, refer to the End User License Agreement (EULA).
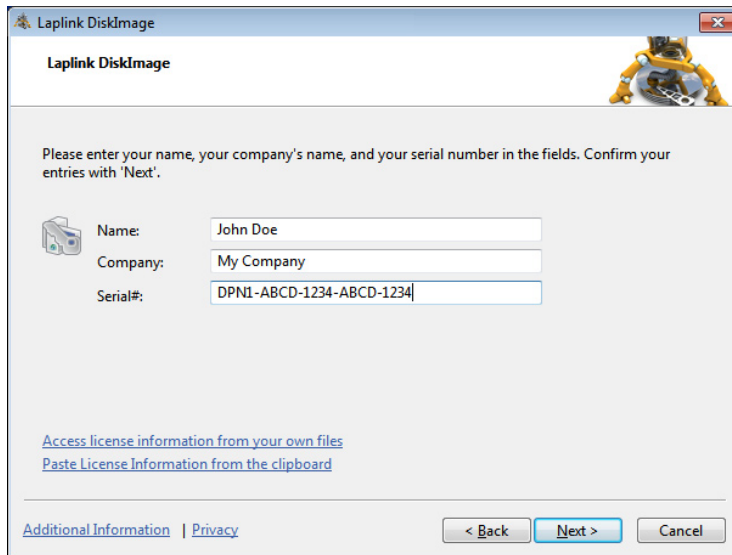
If you do not enter a valid serial number, you will only be able to use a trial version of Laplink DiskImage for up to 30 days. To purchase additional licenses of DiskImage, please visit http://www.laplink.com or contact our Sales department at (800) LAPLINK (527-5465) or (425) 952-6001.

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Registration

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 serial number (also called a registration code).

The 'Registration Wizard' will always appear after starting the application if you are using an unregistered trial version or have entered the serial number incorrectly.

1. Start Laplink DiskImage on your PC. Select **Enter Your Registration Code** in the **Registration Wizard** and click **Next**. Enter your Name, Company, and Serial Number.

Note: Please make sure that you do not confuse the digit "1" with "I" or add any extra spaces.

2. Click **Next**, enter your E-mail address, and click **Finish** to start the application.

Should you run into any problems when entering your serial number, please contact our Support Team:

http://www.laplink.com/help

Introduction to Data Protection

Laplink DiskImage is a reliable and affordable solution to protect your data whether you are a business or home user. Laplink DiskImage offers everything from the creation of images to the restoration of individual files - everything you need to professionally protect your data.

Overview of Important Features

- **Create Images While System is Running**: Maintenance needed for images could take up to half a day and hinder your computer from running at full capacity. Laplink DiskImage allows you to create reliable images of individual disks without hindering your computer use.

  The Snapshot function with integrated buffer memory ensures that the stored data is exactly the way it was when the image was created. Changes to the data, due to usage or to the user, do not influence the running image creation. This ensures consistent image creation without any interruptions.

  After imaging all of your data, your installed environment is available immediately should you encounter any problems.

- **Imaging Methods for Every Need**: Different imaging methods allow the adaptation to different needs. You get a space saving image if you select the setting **Used Sector**.

  If you want to be able to later rescue data from a damaged hard disk, then we recommend choosing **Forensic**, in which all sectors are imaged.

  After creating a base image, you can create incremental or differential images to save modifications since the last image.

- **Clone**: When cloning, an exact copy of a disk is created, which can be used instead of the original disk. This function enables you to make a cloned image of an entire drive with all the saved data, and without having to create image files. More disk space is required for a clone than for an image.

  No incremental or differential follow up image can be done with a clone, which would lessen the data volume. In addition, an image can be compressed (clones cannot) and/or encrypted, which makes the data unusable for unauthorized users.

- **Scheduling for Regular Automated Imaging**: Laplink DiskImage enables a time scheduled execution of activities through the creation of "jobs". With the help of the Job Assistant Wizard, data can be imaged regularly at predefined times.

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- **Restoration of Entire Computers and Individual Volumes**: Restoring your data is as easy as creating an image. If you want to restore data volumes, it is sufficient to start Laplink DiskImage under Windows.

  If you want to restore an entire computer including its operating system and all applications, then run Laplink DiskImage directly from a bootable CD.

  When starting Laplink DiskImage directly from the bootable CD, it is not necessary for the operating system to run properly. The CD includes a bootable Windows operating system including all the needed drivers to run DiskImage. If special hardware is not recognized, you may need to download additional drivers (e.g., for a controller or network cards).

  Note: A bootable CD can be created from the DiskImage ISO file, which is available from the DiskImage download Web page (accessible from the My Downloads page of your Laplink Support account).

  Laplink recommends that you download the ISO file and burn it to a bootable CD, which can then be used for disaster recovery. See the DiskImage download Web page for recommendations of software that can be used to assist in creating the bootable CD.

- **Restoration of Individual Files**: You can also restore single files from an image quickly and easily. Simply load the created image as a virtual drive. This allows you to copy files or folders from the image file onto existing drives. However, making changes to the image file, such as deleting or adding files, is not possible.

- **Apply System Environment on a New Computer**: Laplink DiskImage can also assist you when installing or configuring newly acquired computers.

  If all the computers are the same, just set up one computer, install Laplink DiskImage, and create a system image. Then apply the image on all remaining computers. Time consuming individual installations are a thing of the past.

  Note: A DiskImage volume license is required if applying an image to multiple computers. Contact Laplink Corporate Sales for information on volume licensing: CorpSales@laplink.com

Laplink DiskImage Definitions

- **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 expanded partitions.

  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.)

- **Image**: An image is a "copy" of your drive or partition. This "copy" contains all information from the original drive/partition. A special feature of an image is that the file format is compressed and takes up much less disk space than the original.

  The more often you create images of your drive, the less you need to 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 clicks of the mouse, you can recover the original status of your drive as of the last imaging.

- **Image File**: An image can be made up of many image files (*omg). For instance, if the storage medium you wish to put the image on is not large enough, you can split the image onto different storage media. When splitting an image onto several disks, a new image file is created on each volume that forms part of one image. It is vital that the volumes (CD/DVD) are numbered in case you wish to recover a drive with the image or use it as a base image for an incremental imaging.

- **Complete Image**: All data to be imaged will be imaged again and stored in a folder on the target volume during a Complete Image procedure. Complete images can be created by choosing the methods **Used Sector**, **Forensic** or **Direct Forensic**.

- **Images of Changes Made**: After you have created at least one complete image, you can record changes made to your hard disk or partitions by using a differential or incremental image.

  - **Differential Images**: Differential images match their data with one of the previous complete images and store the changes. The first "follow up" image after the complete image is always a differential image. To restore a differential image, you will need a complete image as well as the differential image.

  - **Incremental Images**: Incremental images store the changes made since the base image. As a rule, Laplink DiskImage compares the data, so that the incremental image does not require a complete image as a base image. The last incremental or differential image is sufficient for this.

To restore an incremental image, you need the last complete image as well as all the following images recording any changes.

- **Base Image**: A base image is used as the base for further images of changes made.

  Differential images require a complete image as base image. The last image of changes made as base image is normally sufficient to run incremental images. A differential image can for instance serve as base image for an incremental image. An incremental image can therefore also serve as base image for further incremental images.
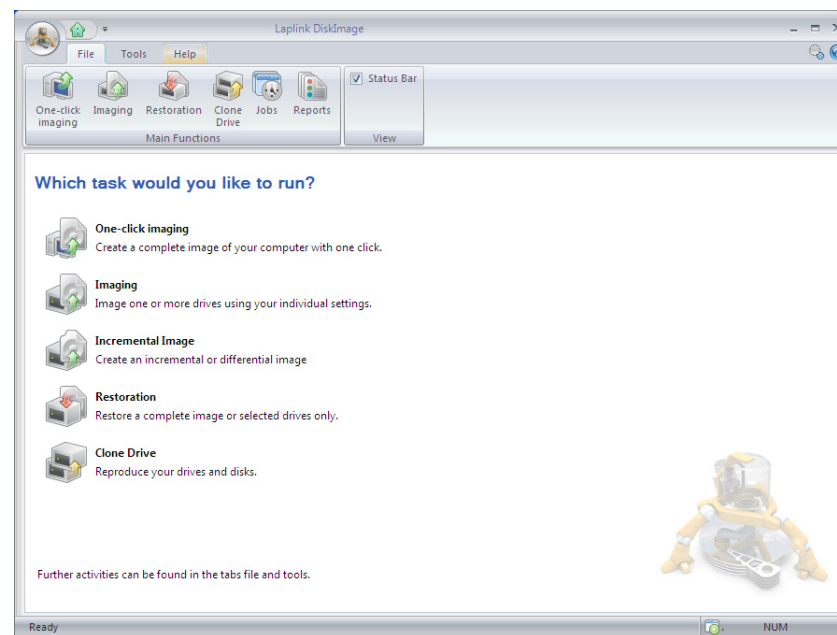
Start Laplink DiskImage - Two Methods

- **Start DiskImage from the Windows Start menu (if application is installed on the PC)**

  This option is recommended for the majority of users and provides access to most functions needed.

  1.   Go to the Windows **Start** button, then **All Programs/Laplink/Laplink DiskImage/Laplink DiskImage**.

  2.   Afterwards, the DiskImage Start Page displays all available program functions.

- **Start DiskImage from a bootable CD**

  Note: A bootable CD can be created from the DiskImage ISO file, which is available from the DiskImage download Web page (accessible from the My Downloads page of your Laplink Support account).

  Laplink recommends that you download the ISO file and burn it to a bootable CD, which can then be used for disaster recovery. See the DiskImage download Web page for recommendations of software that can be used to assist in creating the bootable CD.

  The bootable CD option is designed for users needing to re-image a system drive or restore system partitions, particularly useful in a disaster recovery scenario. Using the bootable CD, Laplink DiskImage can be run without an operating system and without installing the application on your PC.

Insert the DiskImage bootable CD into your CD-ROM drive, restart your PC, and follow the on-screen prompts.

DiskImage Tasks

The Start Page for DiskImage shows a list of all the basic DiskImage tasks. Clicking on any of the functions will bring up the appropriate window in which you can accomplish the desired task. Further instructions about each task follows.

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One-Click Imaging

One-click imaging is the fastest and easiest way to create a complete image of all your data and settings on your PC. Your entire computer, including system partitions, are imaged with one click.

If you need to create more advanced settings, such as imaging only one drive out of multiple drives on your PC, follow the steps in the next section **Create an Image of Your Drive**.
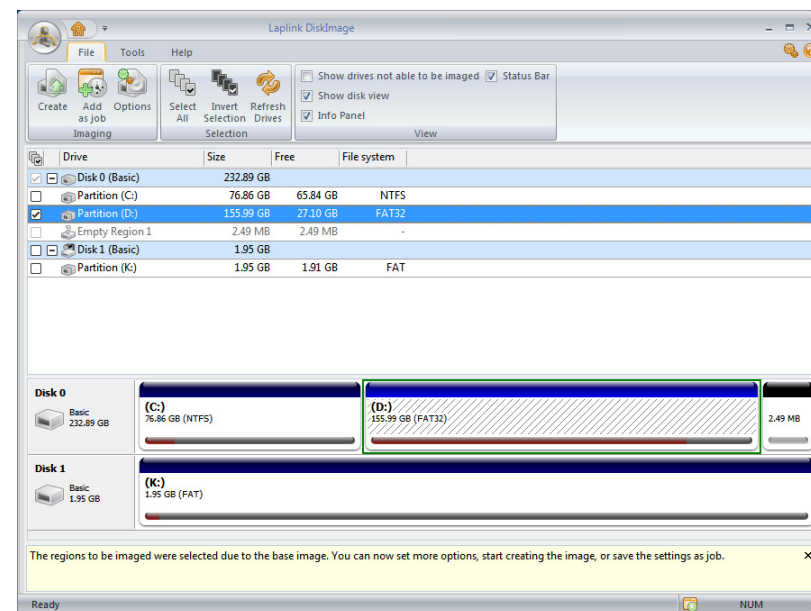
1.   On the DiskImage Start Page, click **One-click Imaging**. In the dialog box that appears, the default save location and image name are listed in the **Target** box. Type in a new file path and/or image name if you want to change from the defaults.
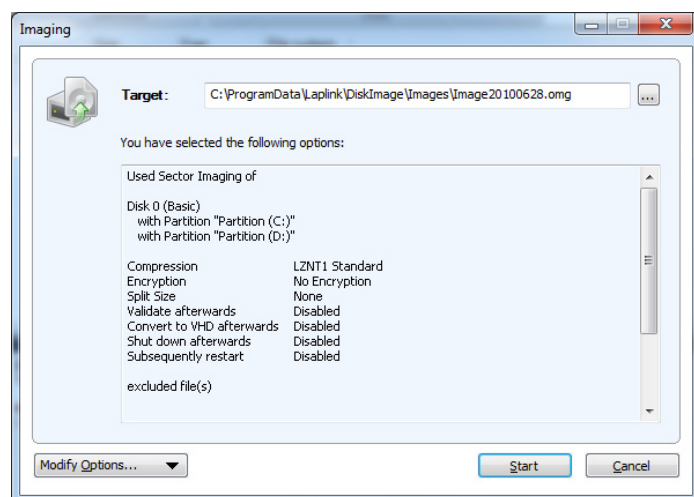
2.   Review the default imaging settings and click **Start**. The image file will now be created.

Create an Image of your Drive

1.   On the DiskImage Start Page or file menu, click **Imaging**. The program window for creating images will appear.

2.   Select the drive for imaging by clicking the check box next to it.

      Note: If all connected drives are not displayed, click 'Refresh Drives' on the 'File' tab.

3.   Choose any desired advanced settings by clicking **Options** under the **File** tab.

4.   Once you have completed the additional optional settings, under the **File** tab click **Create**.

5.   In the dialog box that appears, the default save location and image name are listed in the **Target** box. Type in a new file path and/or image name if you want to change from the defaults.

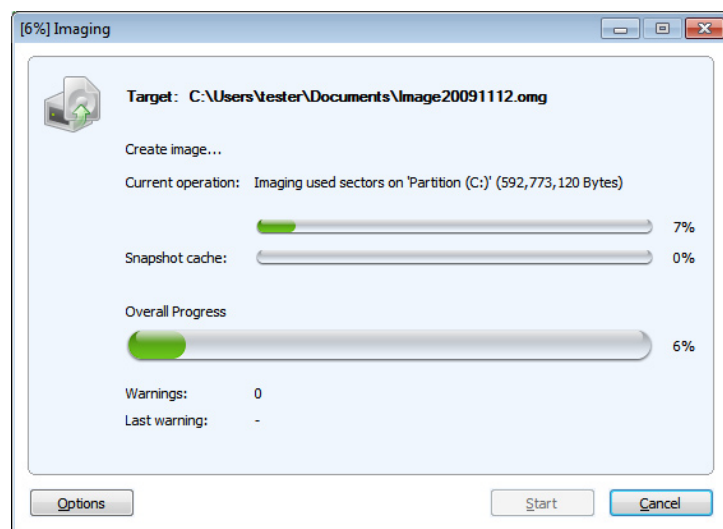# Laplink® DiskImage™ : Server Edition   User Guide

6.   Click **Start**. The image file will now be created.

Note: If one disk is not large enough to save an entire image, you will be prompted to enter a new target path.

To access information on the newly created image, click the 'Tools' tab and then 'Image Information'. Select the image file and click 'Open'. In the dialog box that appears, click the different tabs to review the image information.
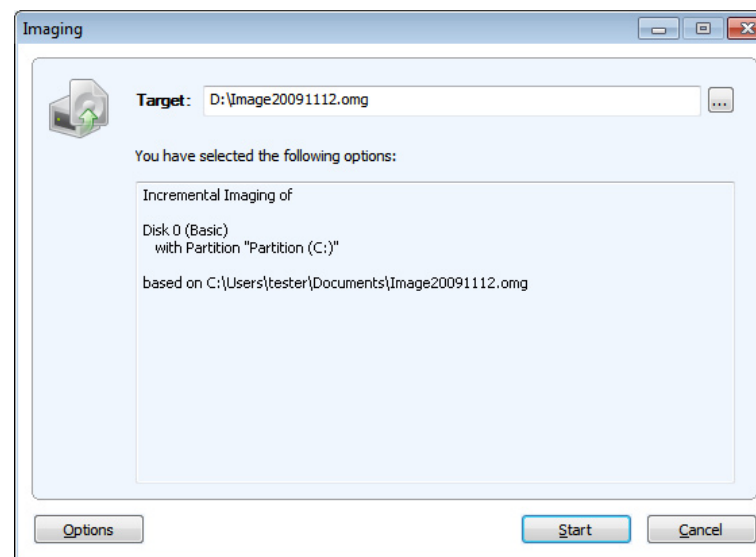
Create an Incremental Image

An incremental image is recommended when you have already made several images of your drive. When creating an incremental image, only an image of the changes to the base image is made. An incremental image normally has a smaller data volume than a base image.

To create an incremental image, you must have first created a base image of the respective drives. As a base image you can use either a complete image, using the imaging method **Used Sector**, **Forensic** or **Direct Forensic**, or by using a previously created incremental/differential image. The first "incremental" image after the base image is always a differential image.

Follow the instructions below:

1.   Make sure that the drive containing the base image is connected to your computer.

2.   Click **Incremental Image** on the DiskImage Start Page.

3.   In the dialog box that appears, select the base image and click **Open**.

4.   Click **Create**. The default save location and image name are listed in the **Target** box. Type in a new file path and/or image name if you want to change from the defaults.

Note: Since both the incremental and base images are needed when restoring an incremental image, Laplink suggests you store the base image and its respective incremental image file on the same drive.

5.   Click **Start**. An incremental image will be created from the base image. The Imaging Method of the original "complete" image (e.g., Used Sector) remains the same and cannot be amended.

Note: The option 'Compare Data with Checksums' is always set as a standard. While creating incremental images, it is sufficient to use the last incremental image as the base image. Should 'Use Checksums to Administer Unchanged Data' not be set, you

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will need the last base image and all the incremental images previously created, since all of them will be accessed to create this image.

Image Restoration

1.   Make sure that the drive containing the image is connected to your computer.

2.   Click **Restoration** on the DiskImage Start Page.

3.   Under the **File** tab click **Select Image**.

4.   In the dialog window that appears, select the desired image file (*.omg or .vhd) and click **Open**.
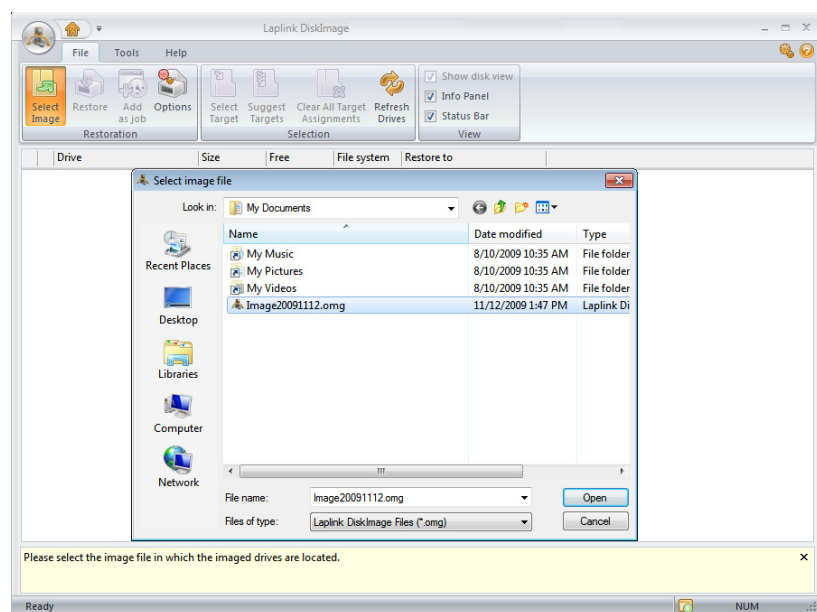
5.   Click the check box next to the drive you want to restore, and select a target drive for the image in the dialog box. You can either substitute an existing drive or create a new drive (e.g., in an empty sector).

6.   Click **Map**. Then, under the **File** tab click **Restore**, and then click **Start**. The image will now be restored.

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

Note: If you are not restoring the image onto the original hard disk, the memory of the hard disk you're using must have at least as much storage capacity as the original one. This is extremely important when imaging an entire hard disk.

If you split your image onto various storage volumes, all such storage volumes will be required for a restoration. If you have opted to make an incremental image, all images from the original base image and all subsequent incremental images will be required.

If you want to re-image a system drive, you will have to start your computer using the Laplink DiskImage Start CD and start the re-imaging from there.

Clone Drive

When cloning a drive, an exact copy of the drive is created, which can be used instead of the original drive. This function enables you to make a cloned image of an entire drive with all the saved data, and without having to create image files. You do, however, require a lot more storage space for a clone than for an image.

Compared to an image, a clone cannot be used to create follow up incremental or differential copies to lower the data volume. Also, a clone cannot be compressed and/or encrypted to prevent unauthorized access.

To clone a drive, please follow the instructions below:

1.   Click **Clone Drive** on the Start Page.

2.   Select from the list the drive you wish to clone.
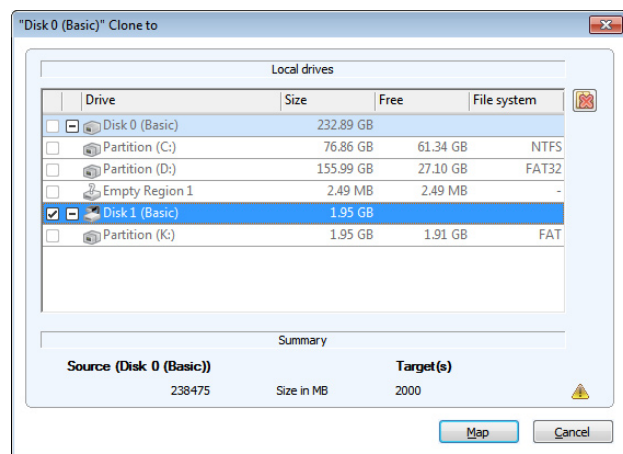
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3.   In the dialog box that appears, select a target drive.

4.   Then, click **Map** and confirm your entries. Click **Clone** under the **File** tab to start the process.

IMPORTANT: When cloning your Drive (Source Drive), the selected target drive (i.e., the place chosen for the clone to be stored) will be overwritten. All data stored on it will be deleted and replaced by the clone! You should therefore save the cloned image on, for example, an external hard disk chosen for this purpose.

Note: When making a cloned image of the drive, you should adjust the features of the target drive for future application. Make sure, for example, that the system partitions of the cloned image will be able to boot.

Additional options for cloning the image may be selected under 'Cloning Options'.

Mount Image File as Drive

Display an image file in Explorer as a virtual drive. You can then copy files or directories from the image file onto existing hard disks. Making changes to the image file, such as deleting or adding files, however, is not possible.

1.   Click the **Tools** tab, and then **Mount Drive**.

2.   In the dialog box, navigate to the folder where you saved the image. Select the image and click **Open**.
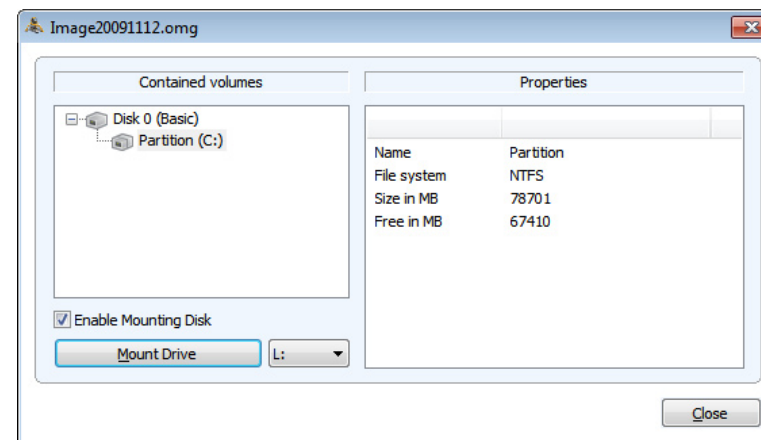
3.   Select the **Enable Mounting Disk** check box.

4.   Under **Contained volumes**, select the displayed drive as image (listed here in the example, "Partition (C:)").

5.   Click the drop-down arrow and select the desired name for the drive (e.g., K:).

6.   Then click **Mount Drive**. If the mounting process was successful, you will see the image displayed as Drive (K:) in Windows Explorer.

Note: You may only access sectors which contain image files. Refreshing can take a few moments.

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A notification to restart your computer may appear by the initial mounting of an image file under Windows 2000. Cancel this in order to mount the image as a drive.

Initializing an entire hard disk as a virtual drive can lead to problems of recognition for the virtual storage volume, if the imaged hard disk contains one of the following:

- a damaged partition table partitioning process not supported by your operating system (e.g. GPT)

- a RAID System component, where only one physical hard disk was imaged

- a dynamic drive

- encrypted hard disk

Note (Technical Limitations Refreshing under Windows): If you are working over a remote desktop connection, you must restart your computer to display the newly created drive.

Loading images, which are larger than 2TB, are not supported by Windows 2000 and Windows XP (32-Bit).

Burn Image File(s) to CD/DVD

To save your image to CD/DVD, it is necessary to have first created an image, as described in the section **Create an Image of Your Drive** (see page 5). The image file(s) must be stored on an internal or external drive. Only then will it be possible to save your image file(s) (*.omg) to CD/DVD. Images(*.omg) or virtual drives cannot be saved directly on CD/DVD without having first been saved on a drive.

To save your image to CD/DVD, please follow the instructions below:

1.   On the Start page, click **Imaging**. Then under the **File** tab, click **Options**. Under **File Size**, select the **Split image into smaller image files with fixed sizes** check box. Select the correct file size from the drop-down list to limit the image files to the size of your blank CD/DVD. The image will then be split into multiple image files. The splitting of the image file at a later time is also possible.

2.   Click the **Tools** tab, and then click **Burn image files**.

3.   Follow the instructions in the dialog box.
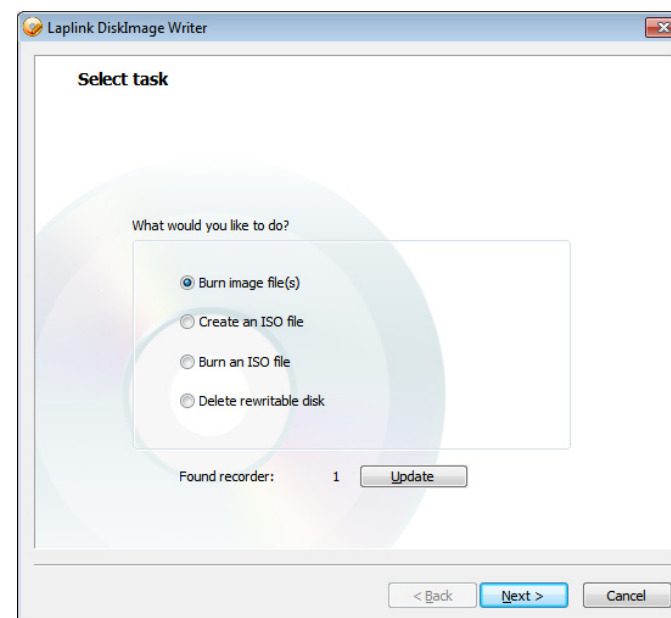
Note: Besides CD/DVDs the program also supports Blu-Ray Disks and HD/DVDs.

If you change the name of individual parts of the image, it is recommended to keep the "numerator" (the number in brackets), so you are able to trace the order of the parts and avoid problems during restoration at a later time.
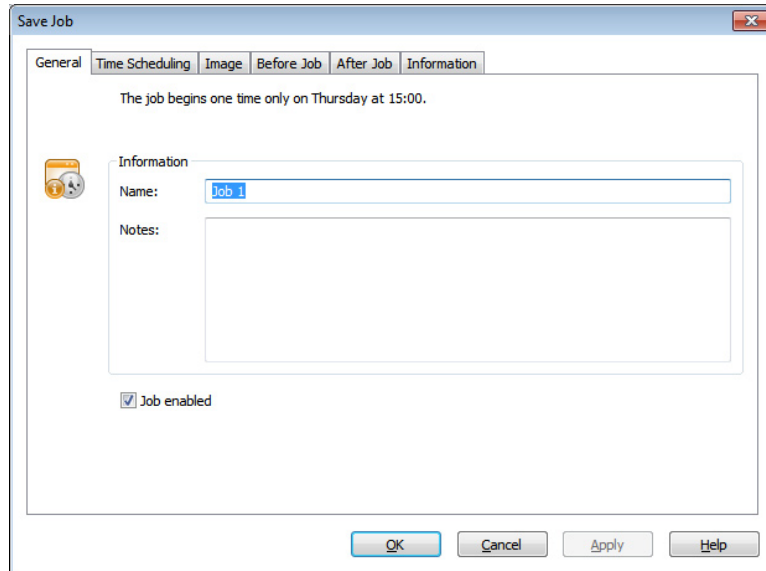
Create a Job

A job is a task (e.g. Imaging) saved with specific settings. A schedule to automate the task can also be set up if desired.

Note: Before setting up a job, you will have to select the corresponding activity.

1.   On the Start Page, click the task desired (e.g., **Imaging**).

2.   Put in place all the settings that are necessary for the job. Select, for example, the desired drives for imaging or specify additional settings under the corresponding **Options** in the program window. Your settings will then be saved and applied to the subsequent job.

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3.   Now click **Add as Job** and enter a name in the **Save Job** dialog box under the **General** tab for this particular job. The name will be used later for preparing the report, and will serve as information regarding the activity this job will run.

Additional options for this specific job can be chosen under the other tabs in the **Save Job** dialog box.

Schedule a Job

In the same **Save Job** dialog box (described in step 3 under the **Create a Job** section), under the **Time Scheduling** tab, choose whether to run the job once only or on a weekly schedule (e.g., every Monday).
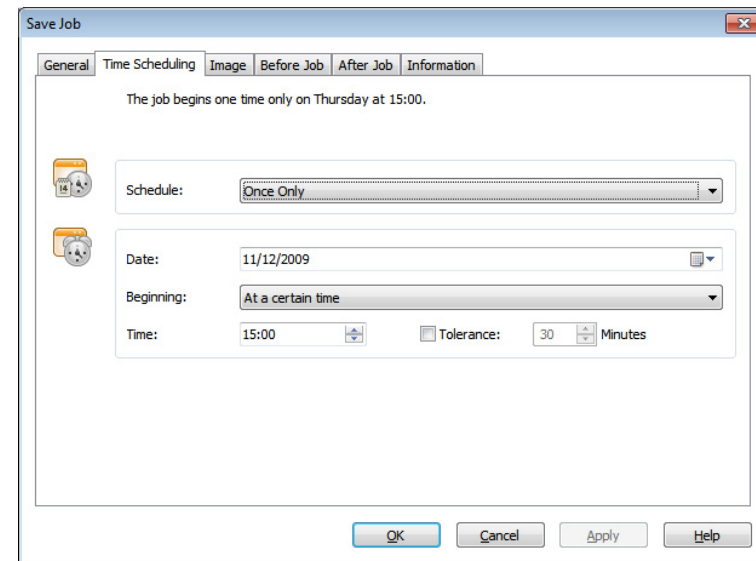
You may also choose the start date, time, and other options relating to the schedule.

Feedback and Support

We invite your comments about Laplink DiskImage . Please feel free to contact us at:

feedback@laplink.com

In addition to the contact information for Customer Service at the top of this page, you can engage in a live chat online with a Technical Support Representative at the Web address below, during the hours listed on the Web page:

http://www.laplink.com/contact/mychat.html