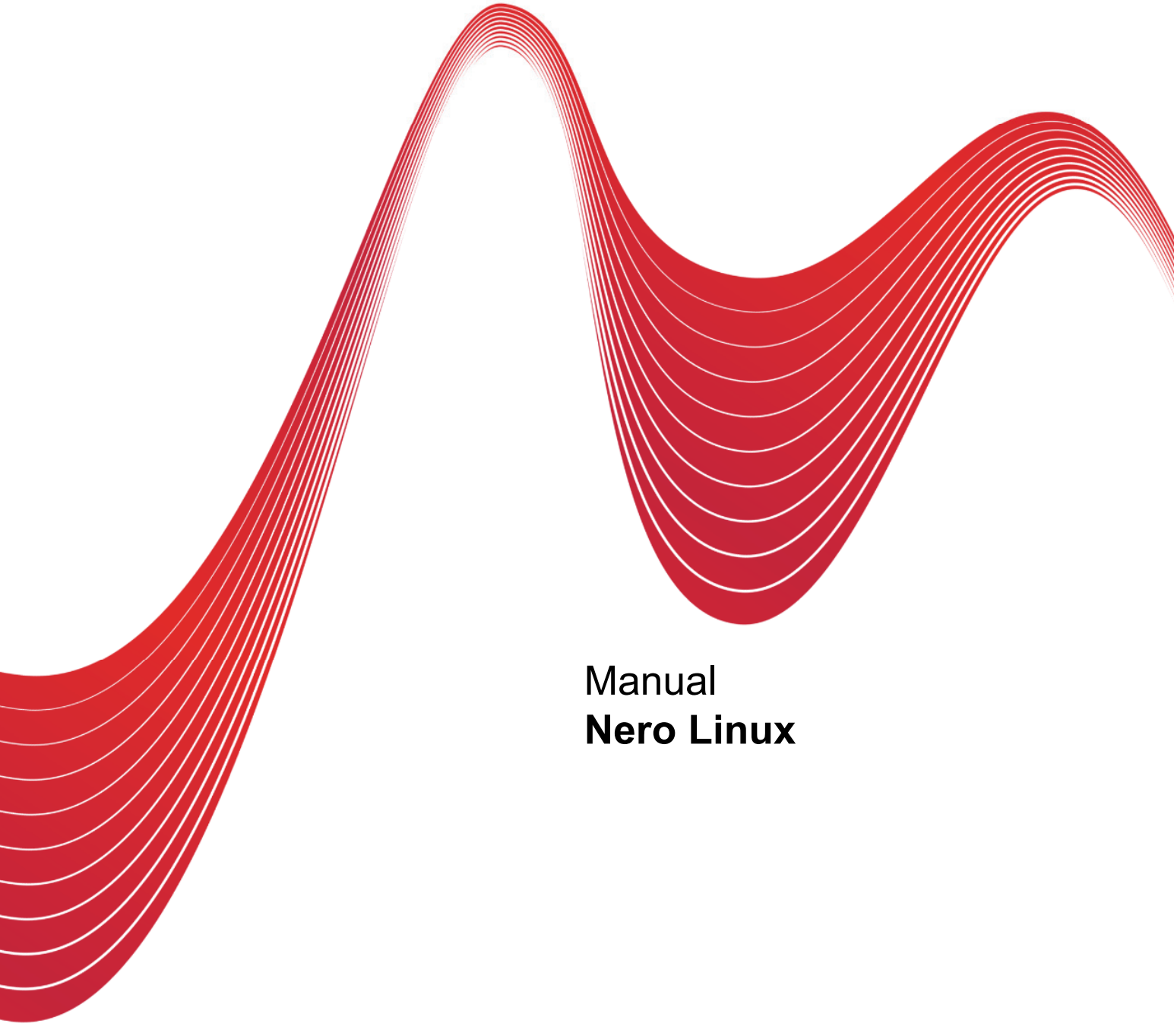
nero

Linux 4



Manual

Nero Linux

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1 Start Successfully

1.1 About Nero Linux

The powerful burning software Nero Linux allows you to burn your data, music and videos to disc. Nero Linux gives you full, customized control of your burning projects. You can − among other things − define the file system, the length of the file name, and the character set; you can also change the disc label.
Despite its wide range of features, Nero Linux has remained an easy-to-use burning program that creates discs in just a few steps. You select the disc type to be burned, define the project type, add the required data and then start burning.

Nero Linux includes a graphical user interface that uses Nero Burning ROM, the well-known burn program under Windows, as a basis.

Nero Linux is therefore the burning solution for the Linux community.

1.2 Working With the Program

The main function of Nero Linux is to select files and folders and to burn them to a disc. This is done in three basic steps:

- In the **New Compilation** window, select a disc type and the disc format and set the options on the tabs.
- In the selection screen, select files that you want to burn.
- Start the burn process.

See also:

Compilation Screen→ 15
New Compilation Window→ 15
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1.3 About the Manual

This manual is intended for all users who want to learn how to use Nero Linux. It is process-based and explains how to achieve a specific objective on a step-by-step basis.

To make best use of this documentation, please note the following conventions:

	Indicates warnings, preconditions or instructions that have to be precisely followed.
	Indicates additional information or advice.

1. Start …	The number at the beginning of a line indicates a prompt for action. Carry out these actions in the order specified.
→	Indicates an intermediate result.
➔	Indicates a result.
OK	Indicates text passages or buttons that appear in the program interface. They are shown in boldface.
(see…)	Indicates references to other chapters. They are executed as links and are shown in red and underlined.
[…]	Indicates keyboard shortcuts for entering commands.

2 First Steps

2.1 Installing Nero Linux

Nero Linux is packaged in the RPM and Debian format. These formats are used by the majority of Linux distributions.

The RPM format is used by Red Hat Enterprise Linux, SuSE Linux and Fedora.

The Debian format is used by Debian GNU/Linux and Ubuntu.

To install Nero Linux, proceed as follows:

1. Download the Nero Linux package file from www.nero.com to your computer.
2. If you want to use a graphical interface for the installation, double-click the Nero Linux package file.
   → Your distribution's software installer tool is opened and walks you through the quick and uncomplicated installation process.
3. If you want to use a terminal:
   1. Open a terminal.
   2. Go to where your package is located.
   3. To install the RPM package enter **rpm -i nerolinux-<version>-<machine>.rpm**
      To install the Debian package enter **dpkg -i nerolinux-<version>-<machine>.deb**

   → Some shortcuts will be added in the KDE and GNOME programs menu. The Debian package will also add a shortcut to Nero Linux in the Debian menu subsystem repository. You can now easily start Nero Linux over the created shortcut.
   The Nero Linux Express application is installed with Nero Linux. Nero Linux Express is a wizard-driven application based on Nero Linux.

If you do not get shortcuts, you can copy the generic ones that are located in /usr/share/applications/nerolinux.desktop and /usr/share/applications/nerolinuxexpress.desktop.

2.2 Advanced System Settings

We recommend the following configuration of your system in order to achieve best burn result. In any case, if Nero Linux detects an incorrectly configured setting on your system, it will warn you when starting.

System Configuration

You can set Nero Linux configuration warnings in the **Options** window on the **System Configuration** tab.

2.2.1 Device File Names

Here you will find explanations on how to find your device file names and how to set up access to them. In Linux systems, all the devices are associated with specific files called device files. All device files that are available on your machine are located inside the **/dev** directory. Depending on the version of the Linux kernel you are using, your recorder device file name may differ due to the low-level driver it is using.

The kernel is the heart of your Linux system. For example, the kernel provides low-level drivers which gain access to devices.

How to get the Linux kernel version

To find out which Linux kernel you are using you can enter uname –r into a terminal.

Device file names also differ according to the interface on the recorder. Currently, you can have many different interfaces on a recorder: IDE, SCSI, USB, FireWire (IEEE 1394) or Serial ATA.

2.2.1.1 IDE Devices

Most internal recorders are connected to the IDE bus. Linux assigns them a device file according to their position on this bus (bus number and master/slave settings).

Basically, you should have the following naming convention:

- /dev/hda : Primary Master device
- /dev/hdb : Primary Slave device
- /dev/hdc : Secondary Master device
- /dev/hdd : Secondary Slave device

If you have an additional IDE controller on your motherboard, the file names scheme is the same - it uses the remaining letters (for example /dev/hde and /dev/hdf).

2.2.1.2 SCSI Devices

SCSI recording devices are handled by two different drivers under Linux. Therefore two different device files are created to handle one physical device:

- /dev/srX or /dev/scdX : Used only to read data from media
- /dev/sgX : Used by Nero Linux to communicate with the device

(**X** is a number identifying your device)
If your recorder is correctly recognized by the Linux kernel it should appear in the file /proc/scsi/scsi. Unfortunately, there is no way to determine the X number from the SCSI coordinates of your recorder. But usually the numbers are used incrementally, starting from 0, corresponding to the position of the device in the /proc/scsi/scsi file.

Usually all distributions ship a kernel configured with these options. Depending on your kernel configuration, one of these files can be unavailable. In order to have both files, you should make sure that your kernel is configured with the following options:

- CONFIG_SCSI (SCSI support)
- CONFIG_BLK_DEV_SR (SCSI CD-ROM support : provides /dev/scdX)
- CONFIG_CHR_DEV_SG (SCSI generic support : provides /dev/sgX)

For more information about how to configure your kernel for recording CDs or DVDs, you can refer to the generic Linux HOWTOs. For example see

- CD-Writing HOWTO: http://www.ibiblio.org/pub/Linux/docs/HOWTO/other-formats/html_single/CD-Writing-HOWTO.html
- CDROM-Writing HOWTO: http://www.ibiblio.org/pub/Linux/docs/HOWTO/other-formats/html_single/CDROM-HOWTO.html

Nero Linux uses /dev/sgX device files to communicate with your devices. That way, Nero Linux can send vendor specific commands such as those used to change the book type of a DVD.

2.2.1.3 External Devices

As all external devices are associated with a virtual SCSI device, the file name scheme is the same as with real SCSI devices.
If you do not see your external device in the /proc/scsi/scsi file after you plugged it in, make sure that the kernel is correctly configured. For more information please refer to your Linux distribution documentation.

If your external device is inside the /proc/scsi/scsi file and not present in the recorders list of Nero Linux, make sure you have the SCSI generic support enabled. Most of the time, loading the ‘sg’ kernel module fixes this problem.

2.2.1.4 Serial ATA Devices

Some new recorders now come with a Serial ATA connector instead of the old IDE one. These devices are correctly handled with the 2.6 kernel **libata**. However we strongly recommand to use a kernel 2.6.19 or higher to use such devices without problems.
Serial ATA devices controlled by the libata are – like external devices – associated with a virtual SCSI device so they should also appear in the /proc/scsi/scsi file.

2.2.2 IDE Devices Configuration

2.2.2.1 IDE Devices Configuration With 2.4 Kernels

With 2.4 kernels, all IDE devices that you want to be available in Nero Linux must use the ide-scsi driver (even CD/DVD readers). This driver associates a virtual SCSI device with a standard IDE device.

Usually, Linux distributions automatically configure everything so that only recorders use this driver. In such cases, you will not be able to use your CD or DVD readers in Nero Linux and you have to make the device use the ide-scsi driver.

Before you configure a device, make sure that you have configured your kernel with the following options:

- CONFIG_BLK_DEV_IDESCSI (SCSI emulation support)
- CONFIG_SCSI (SCSI support)
- CONFIG_BLK_DEV_SG (SCSI generic support)

Configuring a device so that it will use the ide-scsi driver is done by providing a specific argument hdx=ide-scsi to the kernel command line. For example, if the device file corresponding to your recorder is /dev/hdb, you will have to provide hdb=ide-scsi to the kernel command line.
If you do not know how to do this refer to your distribution documentation to find out how to pass options to the kernel at boot time. Note that most of the actual distributions provide some graphical frontends to modify the boot loader parameters:

- For **Red Hat Linux** run **ksconfig** (this application is called **Kickstart Configurator**). When the application is running, click **Boot Loader Options** and fill the **Kernel Parameters** field.
- For **SuSE Linux** run **YaST2**, select **System** in the left pane and then double-click **Boot Loader Configuration**. Once the module is launched, click **Edit Configuration Files** to set up the device parameters.

2.2.2.2 IDE Devices Configuration With 2.6 Kernels

With 2.6 kernels, the native IDE CD-ROM driver called ide-cdrom has been completely rewritten to use the latest technologies available and permit optical disc recording. This driver includes DMA acceleration that lets you use high-speed devices (like DVD recorders). Accordingly, the ide-scsi driver (that has been used with lower version kernels) has been deprecated. If you continue using this driver with a 2.6 kernel your devices will not be available with Nero Linux (note that you will also receive a warning message from the kernel at boot time).

In order to use an IDE device with Nero Linux under a 2.6 kernel, you must associate it with the ide-cdrom driver. Therefore, the kernel command line must not be associated with the "old", ide-scsi driver (no hdXX=ide-scsi parameter).

If you do not know how to do this refer to your distribution documentation.

2.2.3 Setting Correct Permissions on the Devices Files

2.2.3.1 Setting Permissions For Static "/dev" Support

If you want to give other users access to all disc devices you can do this in Linux by setting correct permissions for corresponding device file names. This takes place in the operating system and not in Nero Linux.

Requirements:

- You have enough privileges to do so.

To set up correct permissions on your device files, proceed as follows:

1. Open a terminal.
2. Type the following command (where X is the letter corresponding to the IDE device):
   1. chmod o+r+w /dev/sg*
   2. chmod o+r+w /dev/hdX
3. You can run the last command more than once if you have multiple IDE devices.

➔ Users are given read and write permission on all your SCSI generic devices (CD-ROM for example) and your IDE disc devices.

If you only want to give access to some users, another possibility is to create a new group called for example "nero" and change the group of the device files corresponding to your disc devices with it. Then give read/write permission to the group on these device files and finally, just add all the users that are allowed to use Nero Linux to the newly created group

2.2.3.2 Udev Support

Nero Linux supports udev, the new /dev file system implementation that is used in actual Linux distributions.
With this file system, all permissions are set during boot time using some specific configuration files. In order to make your modifications permanent, you have to change the files located in /etc/udev/rules.d. For more details, you can have a look at the udev FAQ.

In some rare cases a hotplug device that gets plugged in when Nero Linux is already started might not be recognized directly. In such cases, simply restart Nero Linux.

2.2.4 Setting up DMA Acceleration on IDE Devices

DMA acceleration provides an improvement in throughput for the disc drives and lets you safely use all your recording devices. Depending on your Linux kernel and distribution configuration you might have DMA acceleration that is automatically enabled at startup.
If your hardware supports it, we recommend enabling DMA acceleration not only for IDE hard drives, but also for disc drives such as CD/DVD readers and recorders.

This takes place in the operating system and not in Nero Linux.

If one of your devices does not have DMA acceleration, Nero Linux will warn you when starting the application.

Proceed as follows to activate the DMA acceleration on a device:

1. Type the following command as root: hdparm –d1 /dev/hdX
   (where X stands for the letter that corresponds to the IDE device)

➔ DMA acceleration is activated.

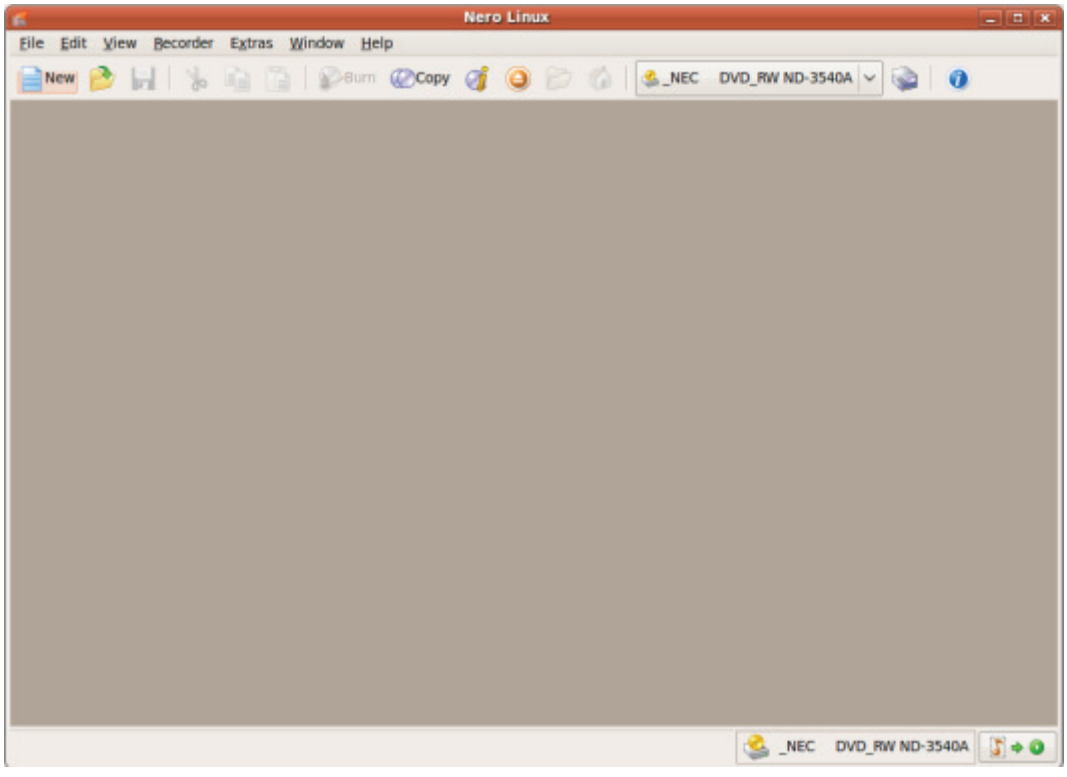
This setting is not permanent. If you want to enable DMA at boot time, you can add the command above in one of your startup scripts. As these scripts are distribution dependant, please refer to your distribution documentation to find out how to do this. Please note that most of the distributions have some graphical frontends to configure this.

2.3 Enter Serial Number

By opening Nero Linux or Nero Linux Express for the first time, you have to enter your name and serial number in order to activate the program. The activation will be valid for both applications.
However, you always have the option of entering a new serial number in the program afterwards.

3 Main Screen

The main screen of Nero Linux is the starting point for all actions. It consists of a menu bar and a toolbar with buttons and a drop-down menu.



Main window with menu and toolbar

The following menus are available:

File	Provides program facilities such as opening, saving, and closing. You can also open the setting options for the compilation, update the compilation, and define configuration options.
Edit	Provides editing facilities for the files in the selection screen such as cutting, copying, and deleting. You can also display the properties of a selected file.
View	Provides the option to customize the user interface and to refresh the file browser.
Recorder	Provides recorder facilities. You can select the recorder here, start the burn process, and erase a rewritable disc. You can also eject a disc and display disc information.
Extras	Provides the option to convert tracks into other formats and to save the songs on an Audio CD to the hard drive.

Window	Provides the option to alter the position of the compilation area and browser area.
Help	Shows information about the application. You can also enter a new serial number.

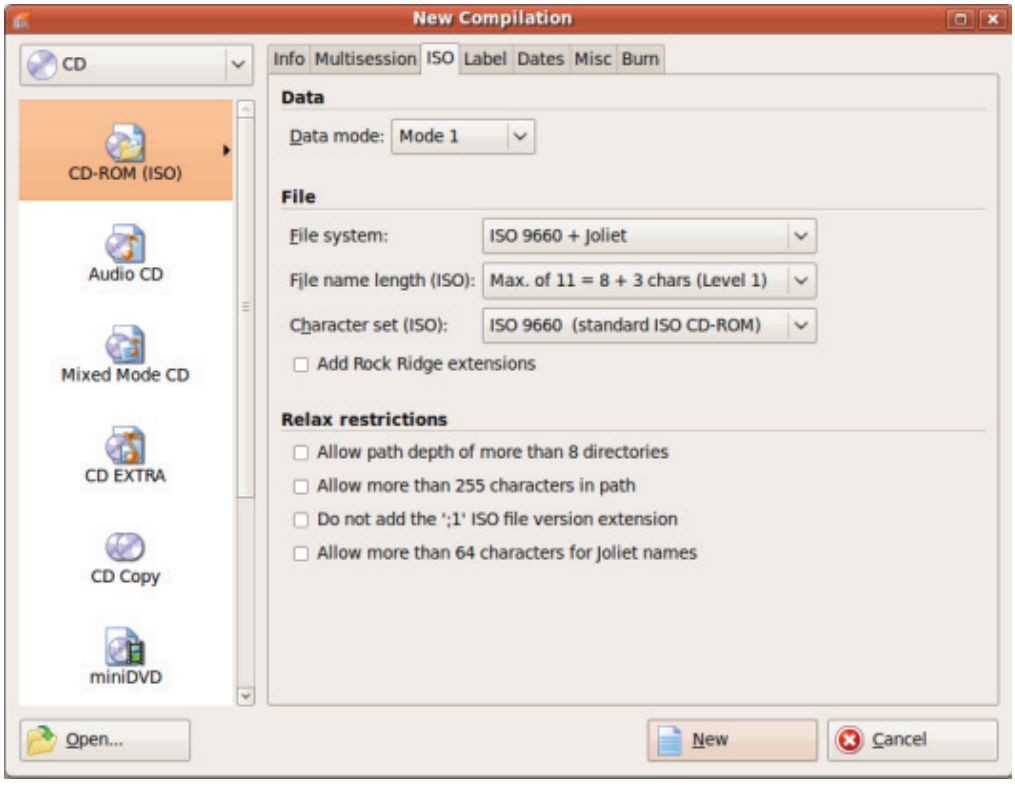
The following configuration options are available in the tool bar of the main screen.

	Opens the **New Compilation** window where you can set options for a burn or copy process.
	Opens an existing compilation.
	Saves the active compilation.
	Cuts selected elements in the compilation (selection).
	Copies selected elements of the compilation (selection).
	Pastes a selection that was cut or copied beforehand.
	Starts the burn process by opening the **Burn Compilation** window containing the **Burn** tab.
	Starts the copy process by opening the **New Compilation** window containing the **Burn** tab.
	Displays information on the disc inserted, such as contents (if any) and capacity for instance.
	Opens the selected drive.
	Shows or hides the file browser.
	Displays the user's home folder contents in the file browser.
Recorder selection menu	Displays available recorders.
	Opens the **Choose recorder** window where you select an available recorder for the burn process from a list.
	Displays information on the program and version number.
	Plays an audio file that is dragged from the compilation to the button.

4 Compilation Screen

4.1 New Compilation Window

In the **New Compilation** window you can select the disc type and configure the options for the disc format. The window basically looks the same for all disc types. The only difference is the tabs that are available. When you start Nero Linux, the **New Compilation** window opens automatically. If the window is not open, click the **New** button. The window consists of a drop-down menu, a selection list, various tabs, and buttons.



New Compilation window, CD-ROM disc type

If the Image Recorder is not enabled, only those disc types supported by the recorder are displayed in the drop-down menu. If the recorder can only burn CDs, the drop-down menu is grayed out.

Using Nero Linux you can create image files for disc types that the installed recorder cannot burn. You can enable this function via the **File** > **Options** > **Expert Features** menu, **Enable all supported recorder formats for image recorder** check box. The drop-down menu in the **Compilation** window then makes available all supported disc types.

The following entries are available in the selection list:

Entry **CD/DVD-ROM/Blu-ray (ISO)**	Creates a data disc, each file type can be burned. The burned data complies with the ISO standard.
Entry **Audio CD**	Creates a standard Audio CD that can be played on all (audio) CD players at least.
Entry **Mixed Mode CD**	Creates a CD with data and audio files in a single session. Usually a data file is followed by one or more audio files for instance (e.g. soundtrack for PC games). Older Audio CD players are often not capable of recognizing the data file and attempt to play it.
Entry **CD EXTRA**	Creates a multisession CD with audio and data files that are stored in two sessions. The first session contains the audio files and the second session the data. Common CD players play the first session as Audio CDs. The second session can only be used by PCs with a CD-ROM drive, it cannot be recognized by a normal CD player.
Entry **CD/DVD/Blu-ray Disc Copy**	Copies a source disc to a CD/DVD/Blu-ray Disc.
Entry **miniDVD**	Creates a CD that uses the specifications of a DVD. The miniDVD has the same technical options and qualities as a DVD. It can easily be played on a PC, whereas there is no guarantee that it can be played in all DVD players. You can use Nero Linux to burn a miniDVD if the DVD video title, i.e. a complete DVD folder structure, is already available.
Entry **CD/DVD-ROM/Blu-ray (Boot)**	Creates a bootable disc.
Entry **CD/DVD-ROM/Blu-ray (UDF)**	Creates a data disc; all file types can be burned. The burned data complies with the UDF standard.
Entry **CD/DVD-ROM/Blu-ray (UDF/ISO)**	Creates a data disc; all file types can be burned. The burned data complies with the ISO and UDF standards.
Entry **DVD-Video**	Creates a DVD that delivers high-quality playback of video and/or picture files on DVD players. You can use Nero Linux to burn a DVD if the DVD video title, i.e. a complete DVD folder structure, is already available.

The actual entries that are available and the actual disc types (e.g. **DVD**) to which can be written depend on the used recorder.

You can find more information on Blu-ray support at www.nero.com/link.php?topic_id=416.

The following buttons are available:

Button **Open**	Opens a file browser where you can find and open a saved compilation. You can also open an image file in order to burn a disc.
Button **New**	Creates the selected compilation and displays the selection screen where you can select the files for burning.
Button **Cancel**	Closes the **New Compilation** window.

You can set the options for the respective disc format on the tabs in the **New Compilation** window.

Which tabs are available depends on the disc type that is selected.

The following tabs are available:

Tab **Info**	Shows statistical information on the compilation.
Tab **Multisession**	Contains options for configuring multisession discs. This tab is only available if a burner is installed.
Tab **ISO**	Contains options for configuring the ISO file system.
Tab **UDF**	Contains options for configuring the UDF file system.
Tab **Label**	Defines the labels of the disc.
Tab **Dates**	Allows you to define the dates of the compilation and of the associated files. You can also specify a validity period for the disc. You can access the data regardless of the validity period specified.
Tab **Misc**	Defines whether (and if so, which) files are stored in the buffer memory.
Tab **Audio CD**	Contains options for configuring audio files. You can also enter additional information about the CD.

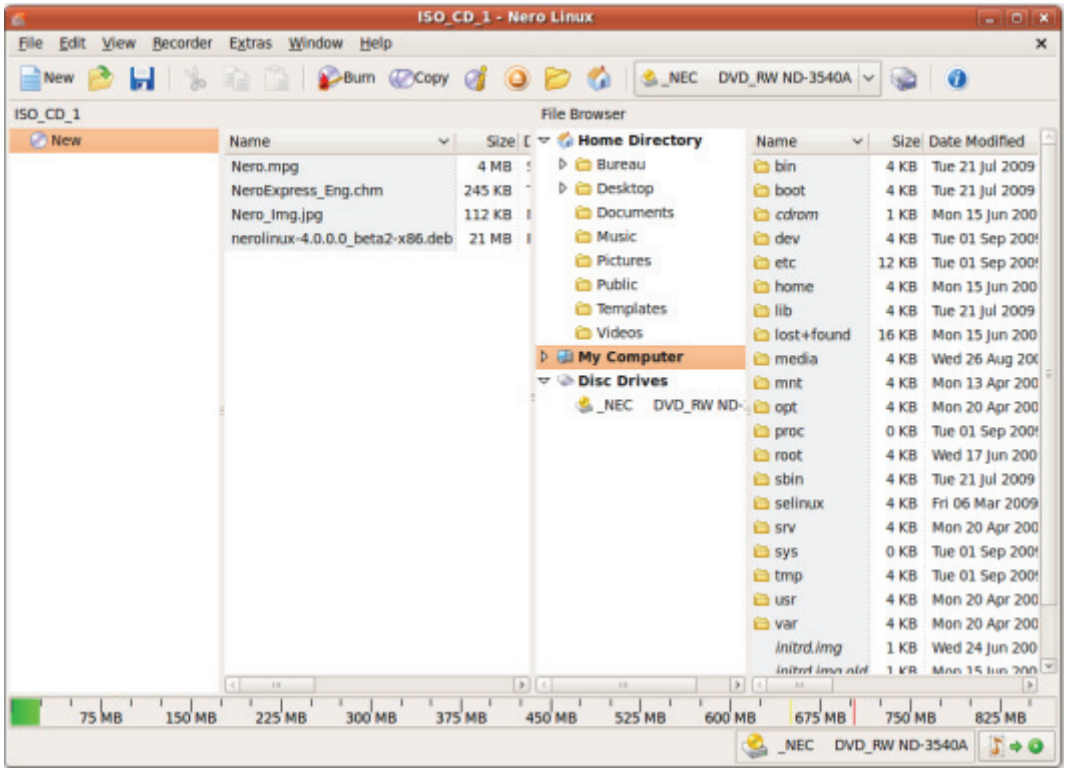
Tab **Boot**	Contains options for configuring a bootable disc.
Tab **Burn**	Contains options for configuring burning.

See also:

- Multisession Settings→ 22
- ISO Settings→ 22
- UDF Settings→ 24
- Audio CD Settings→ 27
- Burn Compilation Window→ 48
- Burn Settings→ 49
- Copy Settings→ 54

4.2 Selection Screen

The selection screen is the starting point for work that you want to do on compilations. The selection screen is displayed in the main screen after you select the disc type and format and click the **New** button. The selection screen consists of the compilation area, the browser area and a capacity scale.



Selection Screen

The compilation area is named after the relevant compilation. Files and folders are compiled here for burning. In the browser area (**File Browser**) you can find the elements that you want to burn.
The bottom margin of the screen contains a capacity scale in MB for data discs or minutes (min) for Audio CDs. The exact size of the scale will depend on which disc type you have selected.

You can switch the units of the capacity scale by double-clicking on the scale.

If the Browser area is hidden, you can show it again using the  button.

When you are compiling files, a capacity bar indicates how much space the files need on the disc. The color of the capacity bar indicates whether the data will fit on the disc or not:

Green capacity bar	The data will fit on the disc.
Yellow capacity bar (from the yellow mark on the scale)	The data might fit on the disc. The size of the disc that has been inserted will determine whether the data will fit or not.
Red capacity bar (from the red mark on the scale)	The data will not fit on the disc. (Unless you have inserted an oversize disc.)

The yellow and red marks are set by default for discs that are commercially available. The disc type you have selected will determine the exact scale value.

Capacity of the CD recordable disc

For example, blank CDs are available with a capacity of 650 MB or 700 MB. Therefore the yellow mark is set for CDs at 650 MB and the red at 700 MB.

Display the Capacity Bar

If the capacity scale is hidden you can display it again by clicking the **File** > **Options** > **Compilation** menu and by selecting the check box **Show the compilation size in the Nero status bar**.

5 Data Disc

5.1 Compiling Data Disc

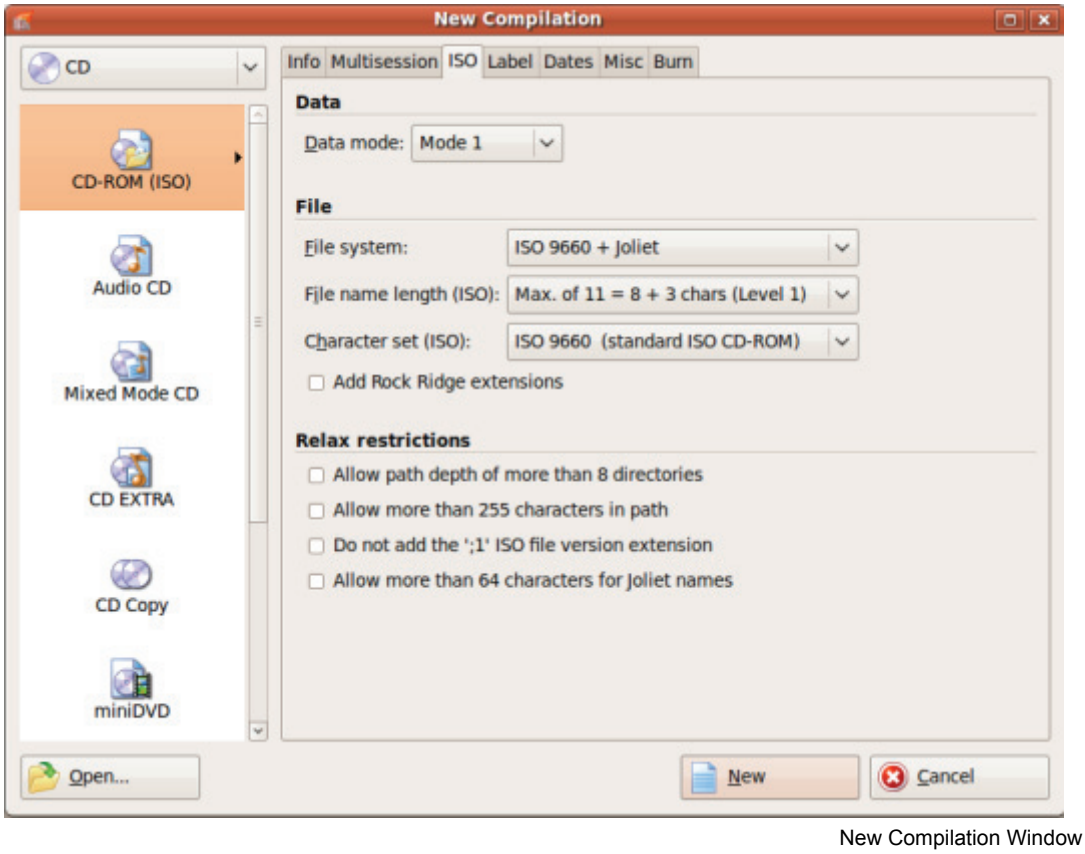
With Nero Linux you can compile and burn all types of files and folders. If a Blu-ray recorder is installed on your computer you can burn data CDs, data DVDs and data Blu-ray Discs. If you have a CD recorder you can only burn data CDs. The procedure for all data compilation methods is identical.

The Image Recorder is also suitable for creating an image of a disc type not supported by the connected recorder. For example, you can therefore create a DVD image without having installed a DVD recorder. You can then write the image to a disc at any time.

To create a data disc, proceed as follows:

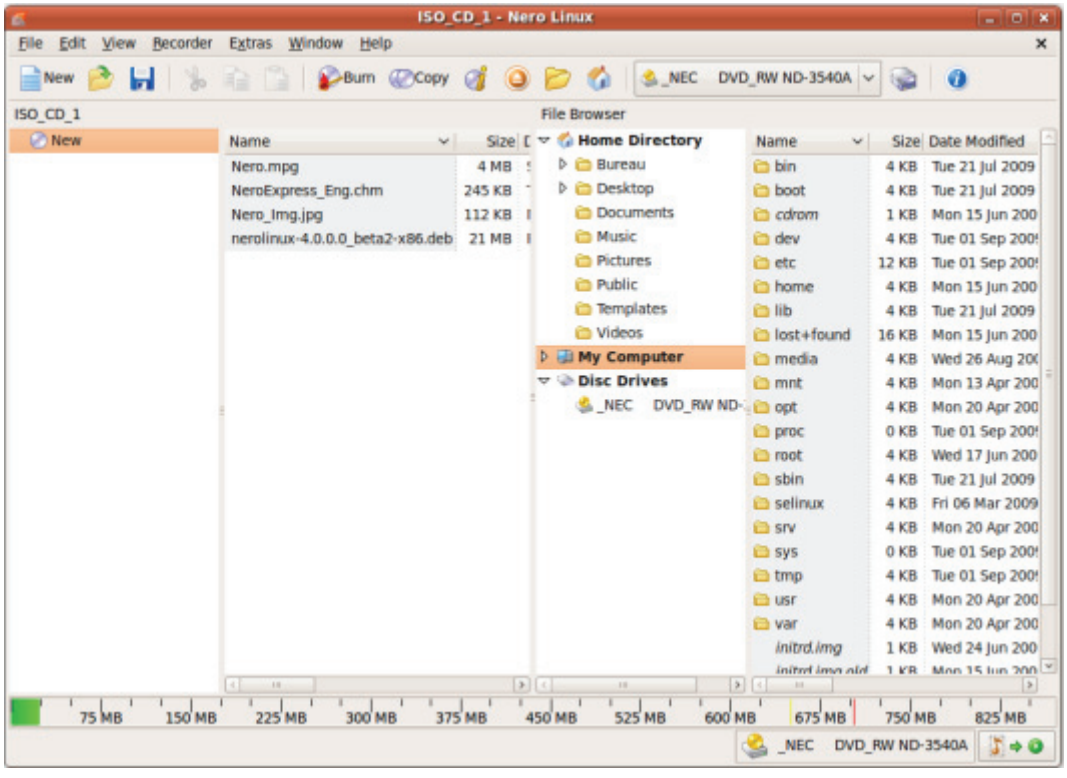
1. Select the desired disc format (**CD**, **DVD**, **Blu-ray**) from the drop-down menu in the **New Compilation** window. (In the case that the **New Compilation** window is not opened, it can be opened by clicking the **New** button on the main screen.)

   → The selection list shows the compilation types that can be burned.



New Compilation Window

2. Select the desired compilation type for a data disc from the selection list (**CD/DVD-ROM/Blu-ray Disc (ISO)**, **CD/DVD-ROM/Blu-ray Disc (UDF)**, or **CD/DVD-ROM/Blu-ray Disc (UDF/ISO)**.
   → The tabs with the configuration options that are valid for this compilation type are displayed.
3. Set the options you require on the tabs.
4. Click the **New** button.
   → The **New Compilation** window is closed and the selection screen is displayed.



Compilation screen

5. Select the files/folders that you want to burn from the browser area.
6. Drag the required files/folders into the compilation area on the left side.
   → The files are added to the compilation and displayed in the compilation screen. The capacity bar indicates how much space is required on the disc.
7. Repeat the previous step for all files that you want to add.
   → You have successfully compiled a data disc and can now burn this compilation.

See also:

Burn Compilation→ 44

5.2 Defining Options

5.2.1 Multisession Settings

The **Multisession** tab provides the option to create multisession discs for data discs. Multisession discs can be burned in multiple sessions until you have reached the maximum disc capacity. A session is a self-contained data area that is burned using a single process, and consists of a lead-in (with the table of contents), one or more tracks, and a lead-out. Discs without the multisession option, e.g. Audio CDs, are burned in a single session.
If a new multisession disc is being started, Nero Linux also saves (if possible) the point of origin for the files. This information is used when continuing the multisession disc.
If a multisession disc is being continued, Nero Linux automatically sets a cross reference to the imported session, i.e. the table of contents for the imported session is copied to the table of contents for the current session. You must define which session is being imported at the start of the burn process. The files in the previous sessions are retained and continue to take up space.
In this case Nero Linux automatically verifies whether the correct multisession disc has been inserted for continuation. If not, the disc is ejected.

If you disable the **Finalize disc** check box on the **Burn** tab, you can always burn additional sessions on the disc, but then only the last session will be visible and you will only be able to access data from the final session.

Multisession disc

Multisession discs are particularly suitable for backing up important files burned on a regular basis.

The following configuration options are available on the **Multisession** tab in the **Multisession** area:

Option button **Start Multisession disc**	Burns the selected compilation in one session to the disc. If the disc already contains sessions, you can also select this option. Sessions are then not imported and cross references are not set.
Option button **Continue Multisession disc**	Continues a multisession disc by burning an additional session to a disc with at least one session. Cross references to the imported session are set in the process.
Option button **No Multisession**	Creates a disc without a multisession.

5.2.2 ISO Settings

The **ISO** tab provides options for configuring the ISO file system.
ISO 9660 is a system-independent standard. It can be read on all operating systems.

The following features apply:

- Permits eight characters (Level 1) or 31 characters (Level 2) for the file name.
- Permits eight characters for the folder name.
- Restricts the maximum directory depth to eight levels (including root folder).
- The characters A-Z, 0-9 and the underscore (_) are permitted.

In the **ISO** tab, in the area **Relax Restriction**, the restrictions imposed by the selected file system can be relaxed. For example, you can allow a higher path level or more than 64 characters for the Joliet name.

If the disc should be read on all operating systems, select ISO 9660 as the file system and clear all check boxes in the **Relax restrictions** area.

If the disc is to be used mainly on computers with Microsoft Windows and you want to use lowercase letters and/or foreign language characters for the file names, select **ISO 9660 + Joliet** as the file system.

The following setting options are available on the **ISO** tab in the **Data** and **File** areas:

Drop-down menu **Data mode**	Selects the mode for the data. **Mode 1** and **Mode 2/XA** are available. Newer drives can easily read Mode 1 and Mode 2/XA CDs. However, some older drives cannot read Mode 1 discs correctly. In the case that the disc is to be able to be read in any case on older drives, select the Mode 2/XA format.
Drop-down menu **File system**	Selects the file system that is used for the data. **ISO 9660 only**: ISO format alone is used. **ISO 9660 + Joliet**: ISO format is used and is enhanced by the Joliet standard. **ISO 9660:1999**: The latest ISO format update is used. Among other things it allows the use of 207 characters and a deeper directory depth.
Drop-down menu **Length of file name**	Defines the possible length of the file name. **Level 1** and **Level 2** are available. In Level 1 the file name can be eight characters long and the file name extension (e.g. *.doc) three characters. In Level 2 the file name can be 31 characters long.
Drop-down menu **Character set**	Defines the character set used for ISO names.
Drop-down menu **Add Rock Ridge extension**	Adds a Rock Ridge extension to add POSIX rights to the items on Unix systems.

5.2.3 UDF Settings

The **UDF** tab provides options for configuring the UDF file system. The UDF standard was developed by Osta (Optical Storage Technology Association) in response to the requirements of DVDs. The standard works on all platforms.

The following setting options are available in the **Options** drop-down menu:

Entry **Automatic Settings**	Sets options automatically for the UDF file system. We recommend that you select this entry.
Entry **Manual Settings**	Enables you to manually define the UDF partition type and the file system version.
Entry **Enable Xbox compatibility mode**	Creates a disc that is compatible with an Xbox. This entry is available if the **No Multisession** option button is selected on the **Multisession** tab.

A disc that is compatible with Xbox cannot be created as a multisession disc.

6 Audio CD and Audio Files

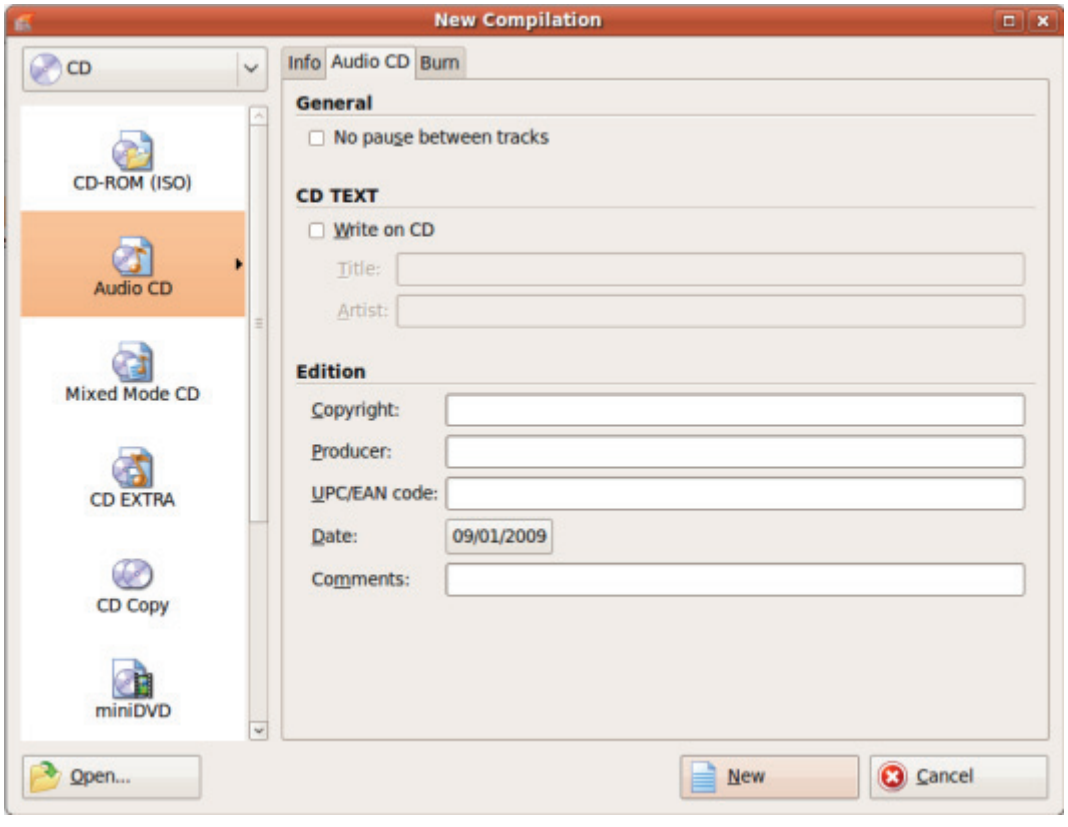
6.1 Compiling Audio CDs

Using Nero Linux you can create an Audio CD that contains music files. It can be played using all standard CD players. To compile an Audio CD, source files with different audio formats are automatically converted into Audio CD format before being burned.

> Some CD players cannot play CD-RWs. Use CD-R discs to burn Audio CDs.

To create an Audio CD, proceed as follows:

1. Select the **CD** entry from the drop-down menu in the **New Compilation** window. (In the case that the **New Compilation** window is not opened, it can be opened by clicking the **New** button on the main screen.)
2. Select the **Audio CD** compilation type from the selection list.
   → The tabs with the configuration options that are valid for this compilation type are displayed.



Audio CD

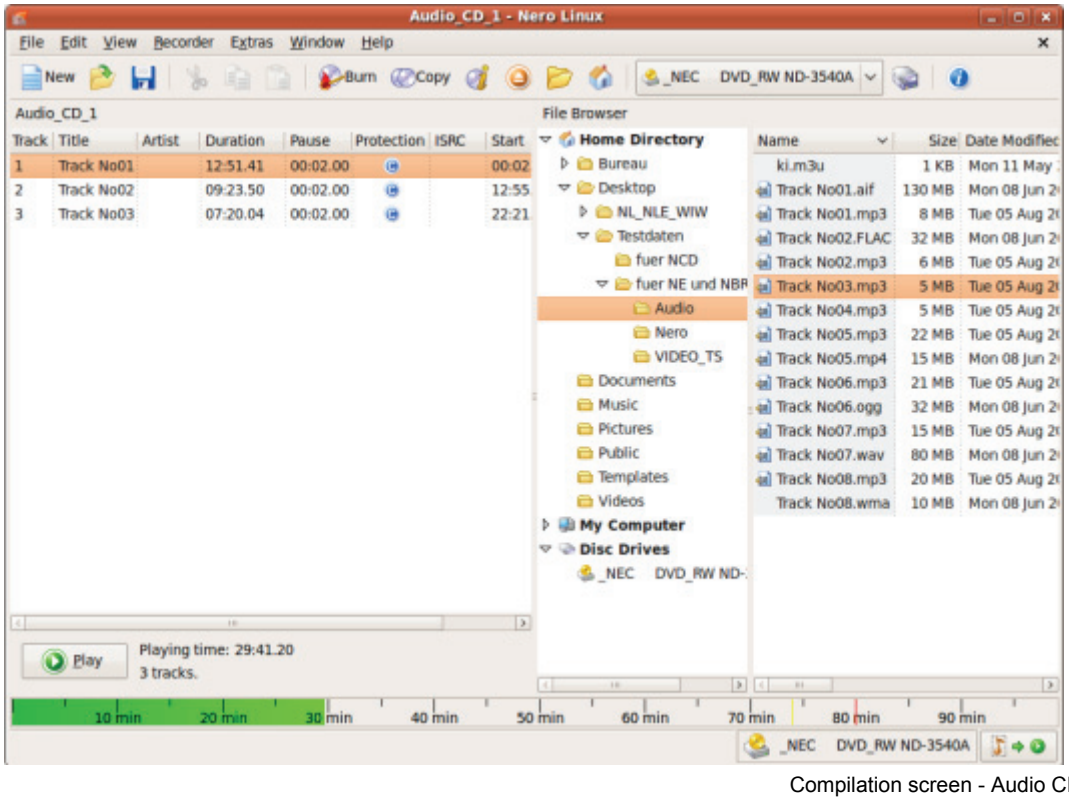
3. Set the desired options on the tabs.

   Audio CDs should always be burned using the disc-at-once method. This entry is selected by default.

4. Click the **New** button.
   → The **New Compilation** window is closed and the selection screen is displayed.

5. Select the audio files that you want to burn from the browser area on the right side. The audio file can come from the hard drive or from an Audio CD.

6. Drag the desired audio files into the compilation area on the left side.
   → The files are added to the compilation and displayed in the compilation screen. The capacity bar indicates how much space is required on the disc.



Compilation screen - Audio CD

7. Repeat the previous step for all audio files that you want to add.

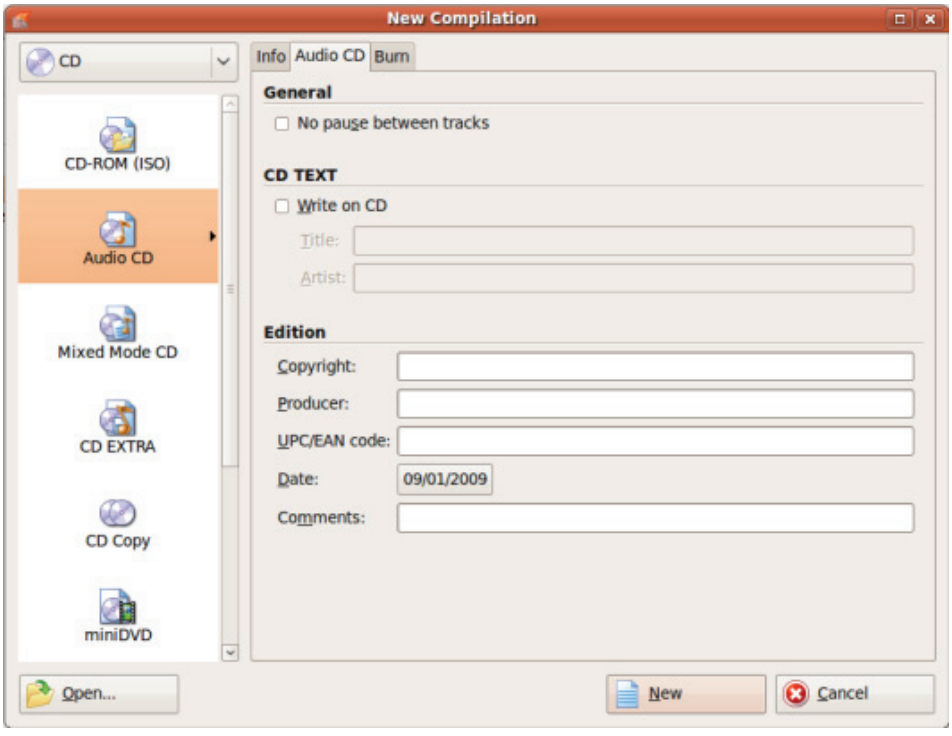
8. Customize the properties of the audio file to suit your requirements.
   → You have successfully compiled an Audio CD and can now burn this compilation.

See also:

Burn Compilation→ 44

6.1.1 Audio CD Settings

The **Audio CD** tab provides options for setting the Audio CD.



Audio CD Tab

The following configuration options are available on the **Audio CD** tab in the **General** area:

Check box **No pause between tracks**	Allows the audio files to merge into one another on the Audio CD without a pause (just like in live recordings). If the check box is cleared, there are pauses of two seconds between the audio files.

The following configuration options are available in the **CD Text** area:

Check box **Write on CD**	Enables the option for writing CD TEXT. With CD players that support CD TEXT, the title of the CD, the name of the audio file as well as the name of the artist appear in the display.
Input field **Title**	Defines the label of the Audio CD.
Input field **Artist**	Defines the artist.

You can also enter additional information about the Audio CD such as the producer or comments.

6.1.2 Track Properties Tab

On the **Track Properties** tab you will find basic information on the selected file in the **Source information** area. To open the window, mark an audio file in the compilation screen for Audio CDs and click the **Edit** > **Properties** menu.

Track properties

The following input areas are available in the **Properties** area:

Input field **Title (CD TEXT)**	Defines a title which is saved as CD TEXT. CD players that support CD TEXT show the title name entered here.
Input field **Artist (CD TEXT)**	Defines the artist which is saved as CD TEXT. CD players that support CD TEXT show the artist's name entered here.
Input field **Pause**	Defines the length of the pause in seconds or frames between the selected audio file and the next one.
Input field **International Standard Recording Code (ISRC)**	Identifies the CD title using a 12-character digital code. The ISRC is entered in the subcode and included silently. If you do not know the ISRC, you should leave this input field blank.
Check box **Protection**	Enables copy protection.

6.2 Mixed Mode CD and CD EXTRA

With Nero Linux you can compile CDs that include both audio and data files.

The following compilation methods are available:

- Mixed Mode CD
- CD EXTRA

A Mixed Mode CD includes the data and the audio files in one session. CD EXTRA includes the audio files in the first session and the data files in the second session.
The procedure for compiling the audio and data files is basically the same as the procedure for compiling data or music CDs. Please be sure to select the corresponding entry in the **New Compilation** window. The selection screen includes a compilation area for audio files and one for data files.

See also:

Burn Compilation→ 44
Compiling Audio CDs→ 25

6.3 Copy Audio CDs to Hard Drive

With Nero Linux you can save audio files from an Audio CD to the hard drive. In the process, the files are encoded, i.e. converted into a format that the computer can read. The audio file is usually compressed.
The Audio CD can be automatically identified with freedb. That way you have audio files that are accurately and fully named after the encoding process.

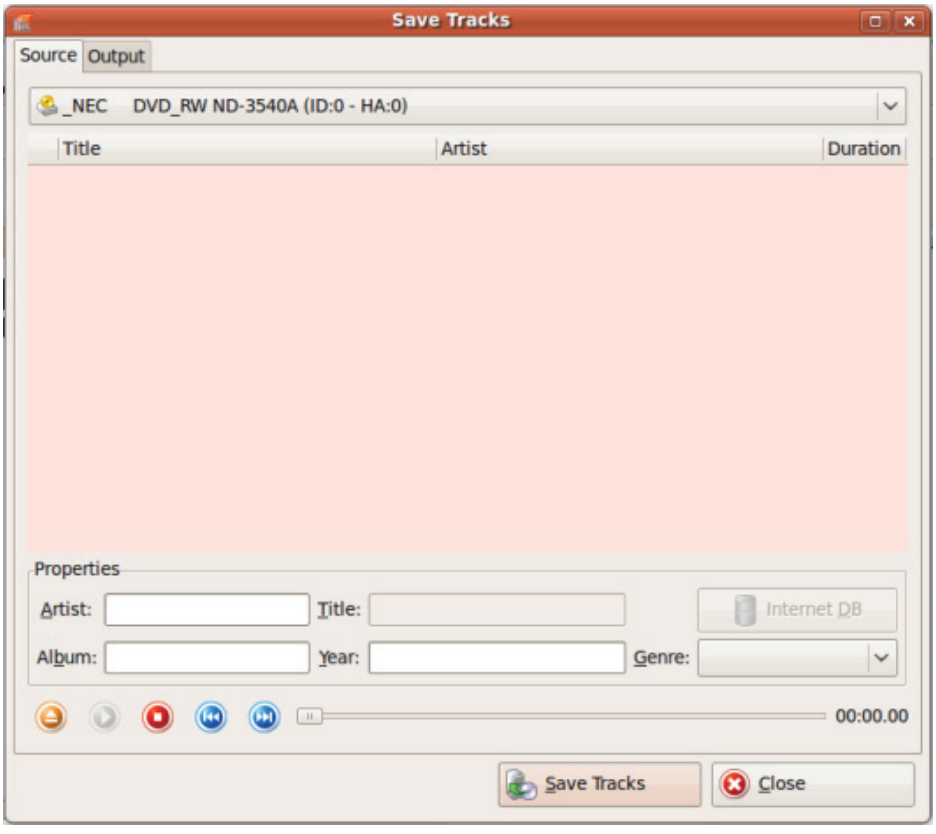
Internet Database freedb.org

Nero AG is not responsible for the www.freedb.org website, but just provides an interface to it.

Audio files from copy-protected Audio CDs cannot be saved.

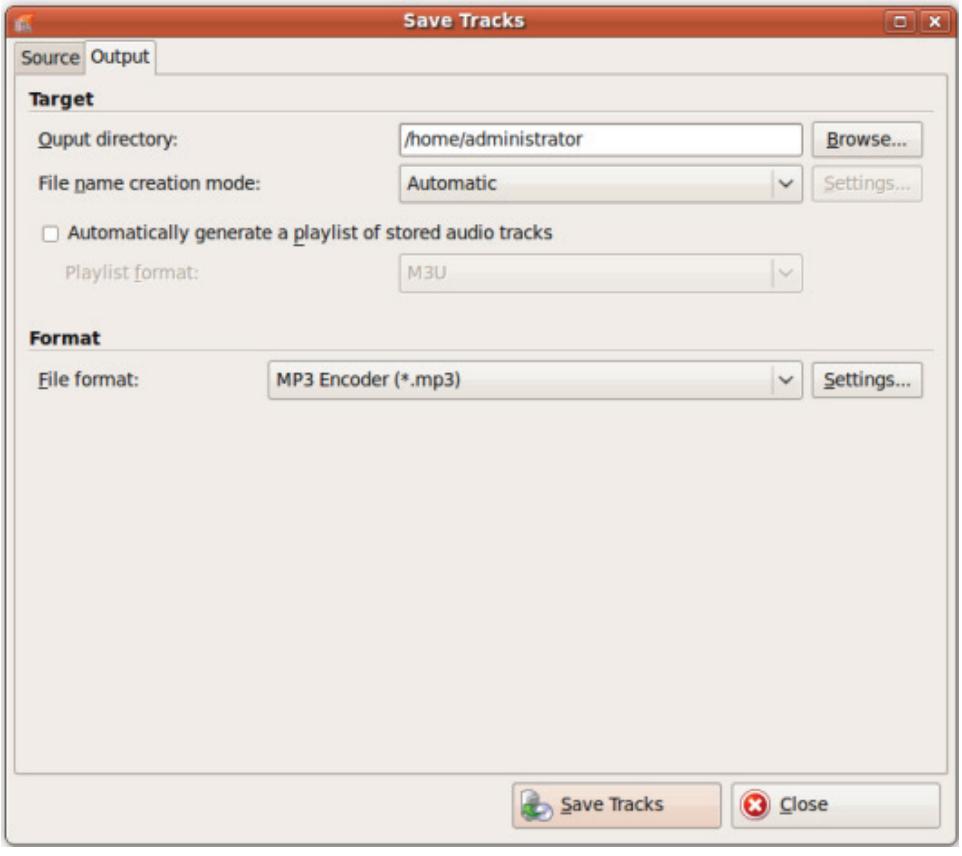
To save audio files, proceed as follows:

1. Click the **Extras** > **Save Tracks** menu.
   → The **Save Tracks** window is opened. The Audio CD content is displayed.



Save tracks

2. If you want the metadata to be filled out automatically, click the **Internet DB** button.
   → The disc is analyzed and the required information is sent to freedb. If a matching entry is found then that metadata will be used and displayed.
3. If necessary, edit the metadata (title, artist, album title, year, genre).
4. Click the **Output** tab.
   → The **Output** tab is opened.

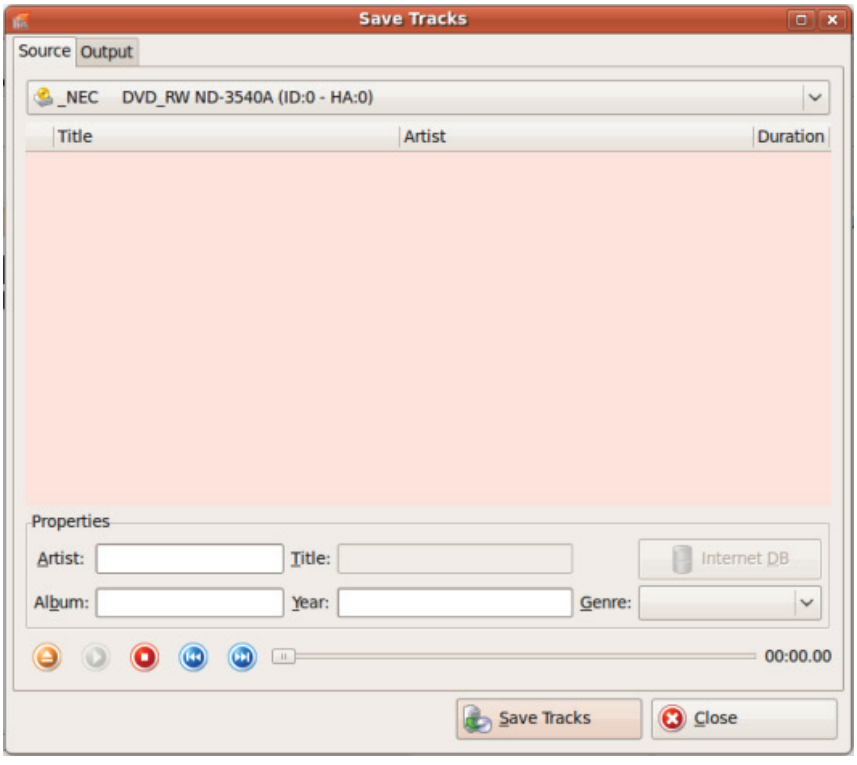


Save tracks - Output

5. Select the target file's audio format in the **File Format** drop-down menu
6. Select a method for creating the file name in the **File name creation mode** drop-down menu.
7. Define other settings according to your preferences.
8. Click the **Save Tracks** button.
   - → Conversion starts. The audio files are saved and named according to the method you chose.
   - → If you chose the **Manual** file name creation mode, a window is opened for every track. Here you can enter the individual file name.
   - → The **Progress** window indicates the saving progress. When the save process is complete, this window is closed automatically.
9. Click the **Close** button.
   - → The **Save Tracks** window is closed. You have saved your audio files.

6.3.1 Save Tracks Window

In the **Save Tracks** window you can define the settings for the audio files that are to be stored on the hard drive. You can open the window by clicking the **Extras** > **Save Tracks** menu.



Save Tracks - Source

The following setting options are available:

Tab **Source**	Specifies settings for the source of the audio data.
Tab **Output**	Sets output files configuration options.
Button **Save Tracks**	Starts the save process.
Button **Close**	Closes the window. The audio files will not be saved.

6.3.1.1 Source Tab

The **Source** tab displays the audio files on the Audio CD. The functions of the control buttons correspond to the familiar control buttons on CD players.

The following setting options are available:

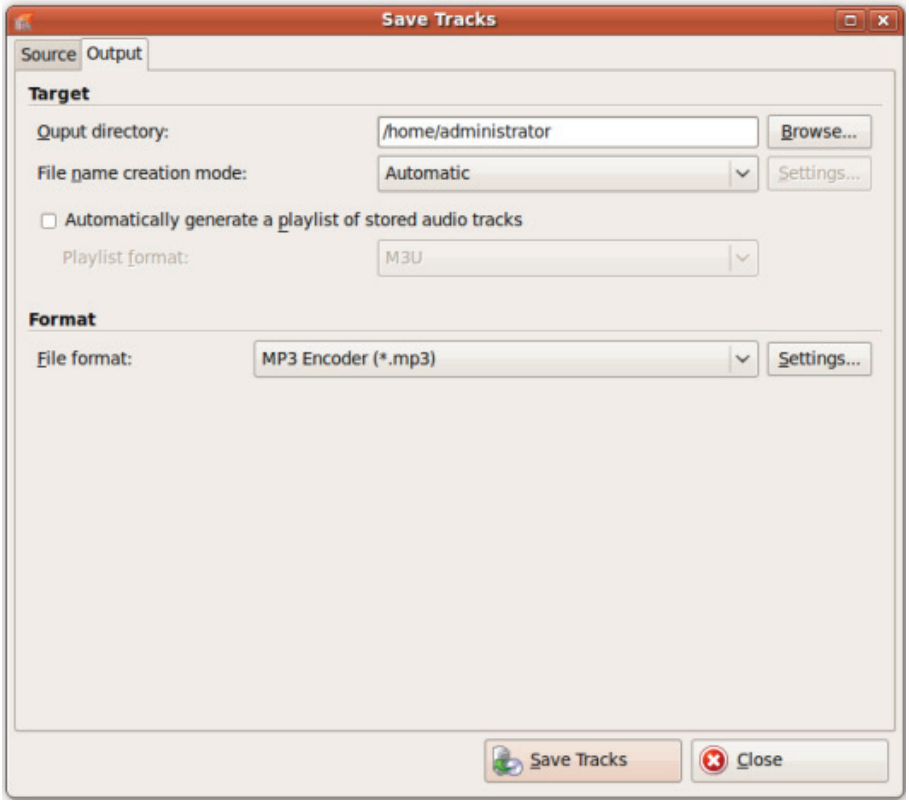
Drive drop-down menu	Selects the drive in which the Audio CD is inserted.
Title list	Displays the audio files on the Audio CD.
Area **Properties**	Displays the properties of the selected audio track.
Button **Internet DB**	Sends a query to the Internet database www.freedb.org and completes the properties of the Audio CD, such as title name, if an appropriate entry exists in the Internet database.

Internet Database freedb.org

Nero AG is not responsible for the www.freedb.org website, but just provides an interface to it.

6.3.1.2 Output Tab

You can define the properties of the audio files to be created on the **Output** tab.



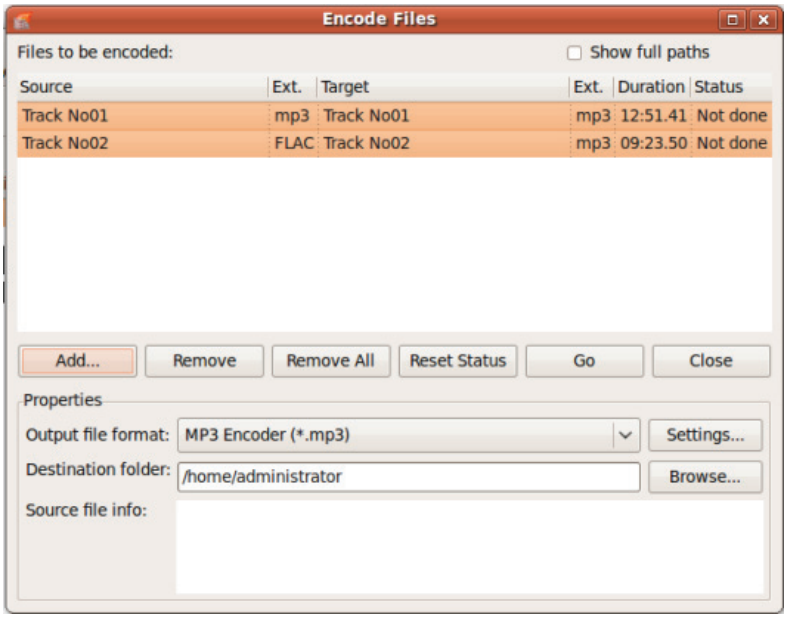
Save tracks - Output

The following setting options are available:

Input window **Output directory**	Selects the storage location for the output file.
Button **Browse**	Opens a browser window where you can select a storage location.
Selection list **File name creation mode**	Selects the method to be used for creating the name of the output file.
Button **Settings**	Opens a window where you can specify how the file name should be created. The methods **Automatic**, **Manual**, and **User Defined** are available.
Check box **Automatically generate a playlist of stored audio tracks**	Creates a playlist of the saved audio files.
Selection list **File format**	Selects the output audio format for the selected audio file.
Button **Settings**	Opens a window where you can define options such as bit rate and frequency of the output audio file.

6.4 Encode Files Window

In the **Encode Files** window, the audio files that are to be encoded are selected and the properties of the output are defined. You can open the window via the **Extras** > **Encode Files** menu. The window consists of a selection area and the **Properties** area.



Encode Files Window

The following configuration options are available in the selection area:

List **Files to be encoded**	Displays the selected files.
Check box **Show full paths**	Displays the full source and destination paths for the files in the **Files to be encoded** list.
Button **Add**	Opens the browser window where you can select a file to add it to the list of files to be encoded.
Button **Remove**	Removes the selected file.
Button **Remove All**	Removes all files from the list of **Files to be encoded**.
Button **Reset Status**	Resets the status of the selected file to **to do**.

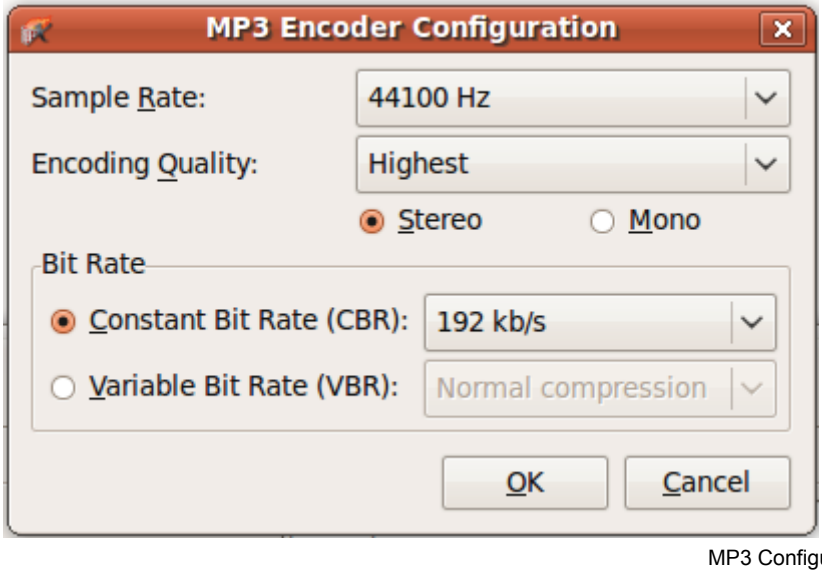
Button **Go**	Starts the encode process.
Button **Close**	Closes the window.

The following configuration options are available in the **Properties** area:

Drop-down menu **Output file format**	Selects the output audio format for the selected audio file.
Button **Settings**	Opens a window where you can define options such as bit rate and frequency for the output audio file.
Display panel **Destination folder**	Displays the storage location of the output file or output files.
Button **Browse**	Opens a browser window where you can select a storage location.
Display panel **Source file info**	Displays information on the selected audio file.

6.5 Encoding Options

Nero Linux can encode audio files in different formats.
Set options in the respective window that you can open via the **Settings** button. Settings are available for the **MP3**, **Nero Digital Audio**, **OGG Vorbis**, and **WAV** output file format.



MP3 Configuration options

The following setting options are available:

Drop-down menu **Sample Rate**	Specifies the scan rate per second and thus determines the frequency of scanning. The higher the frequency, the more frequently scanned.
Drop-down menu **Encoder quality**	Specifies the encoder quality. **Fast** and **Highest** are available. These settings specify whether you place more value on fast encoding (**Fast**) or more value on a superior psychoacoustic encoder model for the very best results (**Highest**). Only available for MP3.
Drop-down menu **Constant Bit Rate**	Selects a constant bit rate, i.e. the data flow per unit of time and the quality of the saved data are the same over the entire audio file. If the bit rate is small, less data is transferred. The file is then small, but quality is lower. If the bit rate is high, more data is transferred. The file size is then large, but the quality is high. Not available for WAV Encoder.
Drop-down menu **Variable Bit Rate**	Selects variable bit rate, i.e. the data flow per unit of time - and thus the quantity of the saved data - adapts to the dynamics of the audio file. The bit rate, for example, can be lowered at quieter points in the track. Select your desired quality level in the drop-down menu. Not available for WAV Encoder.
Drop-down menu **Bits**	Specifies the scan accuracy and thus determines the quality of the individual scanner. The higher the bit sign, the more accurate. Only available for WAV Encoder.
Option buttons **Stereo / Mono**	Specifies which channels are recorded.

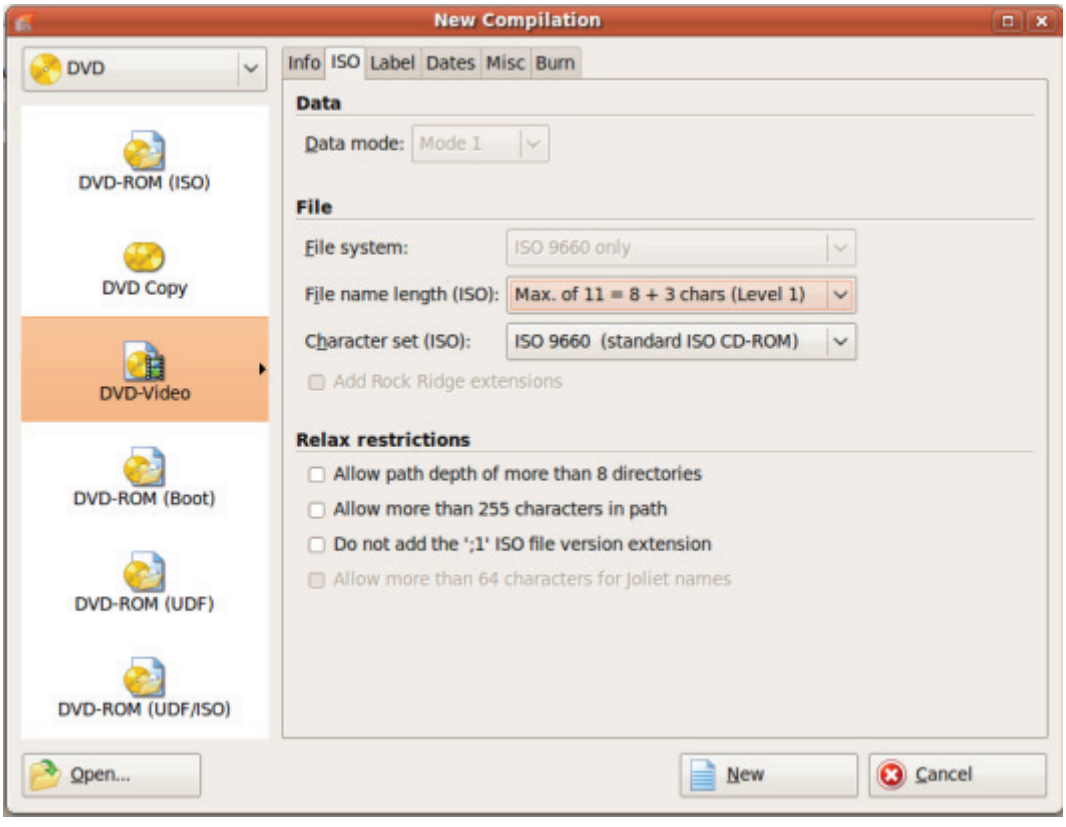
7 Compiling DVD-Videos or miniDVDs

With Nero Linux you can burn DVDs made up of DVD-Video files from your hard drive. You can play your burned DVDs on almost all DVD players.
The miniDVD is burned to CD. It uses the specification of a DVD and therefore has the same technical options and qualities as a DVD. However, playback is not guaranteed on all DVD players.

You can use Nero Linux to burn a DVD Video and miniDVD if the DVD video title, i.e. a complete DVD folder structure, is already available.

To compile a DVD-Video or miniDVD, proceed as follows:

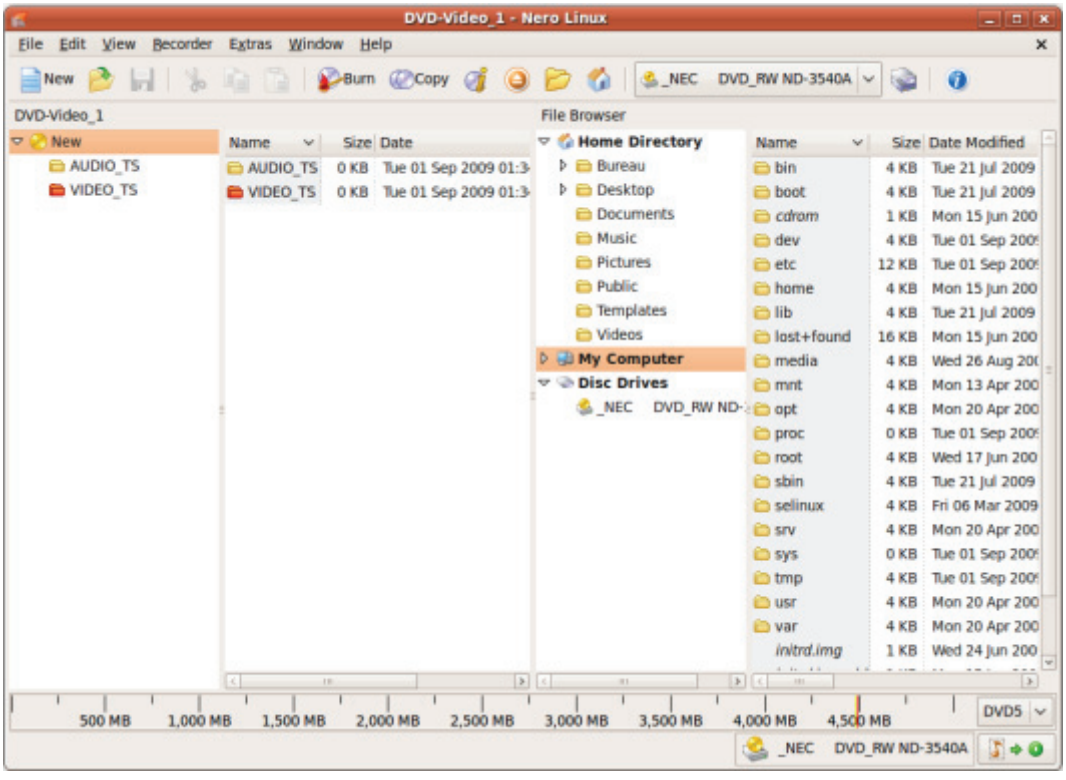
1. Select the **DVD** or **CD** entry from the drop-down menu in the **New Compilation** window. (In case that the **New Compilation** window is not opened, it can be opened by clicking the **New** button on the main screen.)
2. Choose the **DVD Video** or **miniDVD** compilation type from the selection list.
   → The tabs with the configuration options that are valid for this compilation type are displayed.



DVD Video Tab

3. Set the options you require on the tabs.

4. Click the **New** button.
   → The **New Compilation** window is closed and the selection screen is opened. It includes a compilation area for video and image files and an area for data.



DVD Video Compilation Screen

5. Select the video file that you want to burn from the browser area on the right side.
6. Drag the existing DVD folder structure of the video title (VIDEO_TS) into the video compilation area on the left side.
   → The files are added to the compilation and displayed in the compilation screen. The capacity bar indicates how much space is required on the disc.
   → You have successfully compiled a DVD-Video or miniDVD and can now burn this compilation.

See also:

Burn Compilation→ 44

8 Bootable Disc

With Nero Linux you can create a bootable disc with which the computer can be started without having to access the hard drive. For this reason a bootable disc is often used as an "emergency disc" to start the computer if it is not possible to access the hard drive.
Bootable discs are created in accordance with the "El Torito" standard, an extension to the ISO-9660 standard, which defines the structure of data discs. The disc contains a boot image and an ISO part. The boot image contains all files that are required to load the operating system and to start the computer. The ISO part can contain any number of data files that you can back up using this method.

8.1 Requirements for Booting From a Disc

To ensure that a computer can boot from disc, the start sequence must be set in the BIOS of the computer in such a way that the drive is addressed first as the boot drive (start sequence CD-ROM, C, A for instance). In the case of an SCSI CD-ROM drive, this drive must be connected to an SCSI adapter with a separate BIOS in which settings can be modified accordingly. (This will only work if there are no IDE hard drives present, as these come before the SCSI adapter in the boot sequence.)
When booting from a disc, you can only start an operating system that does not write to the medium, such as "MS DOS" or "Linux". During booting Microsoft Windows 2000 and Microsoft Windows XP write to the medium from which they are being booted. This is not possible with a disc and so the process is canceled and the PC cannot be started.

8.2 Bootable Disc Template

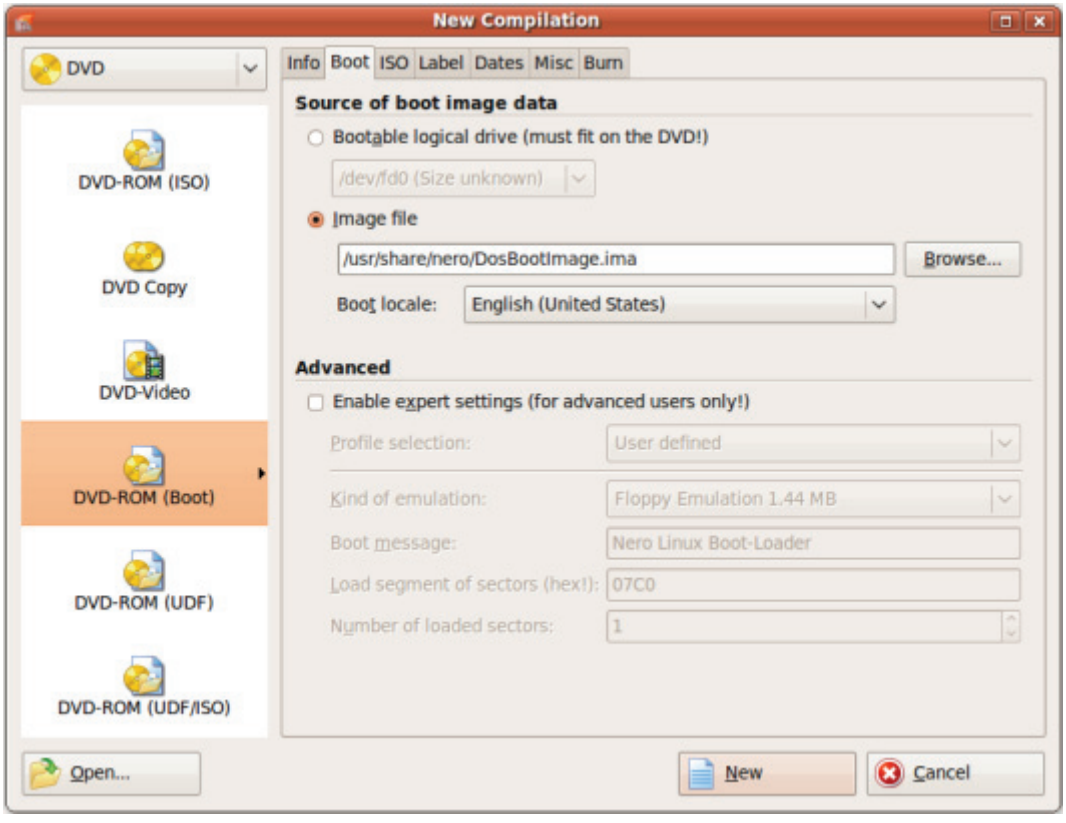
For Nero Linux, the template for creating a bootable disc can be either a logical drive or a drive image file which contains the contents of a drive as a file sector for sector. If the template for the bootable disc is a logical drive, the bootable disc will emulate this when the system is booting. There are three emulation types:

- **Floppy emulation**: This requires a bootable floppy disc for creating the bootable disc. At startup the bootable disc emulates a floppy disk. In the process, the drive letters increment, so that Drive A: corresponds to the bootable disc. The volume of the start data is limited by the capacity of the floppy disk (e.g. 1 MB).
- **Hard drive emulation**: A bootable hard drive is required to create the bootable disc. At startup the disc emulates Drive C. All drive letters from Drive C increment by one. The volume of the start data is limited by the capacity of the CD (e.g. 700 MB) or DVD (e.g. 8.5 GB). If, for instance, you have a 200 GB hard drive with only one (200 GB) partition, you cannot create a bootable disc from it without repartitioning your hard drive accordingly beforehand.
- **No emulation**: In this process the drive names are not changed. This type is used for bootable installation CDs. This setting is intended for users who do not require a floppy or hard drive emulation and who want to install their own device driver.

8.3 Creating and Burning a Bootable Disc

To create a bootable disc, proceed as follows:

1. Click the **New** button in the main Nero Linux screen.
   → The **New Compilation** window is opened.
2. Select the desired disc format from the drop-down menu.
3. Select the desired **Boot** compilation type.
   → The tabs for the bootable disc are displayed; the **Boot** tab is in front.



Boot configuration

4. If the template data for the bootable disc should originate from a logical drive:
   1. Select the **Bootable logical drive** option button in the **Source of boot image** data area.
   2. Select the entry you want from the drop-down menu.
5. If the template data for the bootable disc should originate from an image file:
   1. Select the **Image file** option button in the **Source of boot image data** area.
   2. Click the **Browse** button and select the desired image file.
   3. Select the **Enable expert settings** check box and select the emulation type for the image file from the **Kind of emulation** drop-down menu if appropriate.

DosBootimage

Nero Linux makes the boot image file **DosBootimage.ima** available. The path to the image file is entered in the **Image file** field by default. You can also select the language that should appear while the system is booting and select the correct keyboard layout from the **Boot locale** drop-down menu.

DosBootimage is an image of the Caldera DOS boot floppy disk and emulates a floppy disk. The image contains drivers for reading from disc drives and supports FAT32 (read/write) as well as NTFS (read only). If you choose **DosBootimage** for the bootable disc, the expert settings are already predefined.

Nero Linux provides already defined expert settings for Windows XP / Windows Vista or ISOLINUX bootable disc. You can select these in the **Profile selection** drop-down menu.

6. Select any other options required on the tabs.
7. Click the **New** button.
   → The selection screen is displayed.
8. Select the files/folders that should be written to the ISO part of the bootable disc and drag them into the compilation area.
   → The files/folders are displayed in the compilation area and the capacity bar indicates how much storage space is required on the disc. You have now created the bootable disc and can start the burn process.

See also:

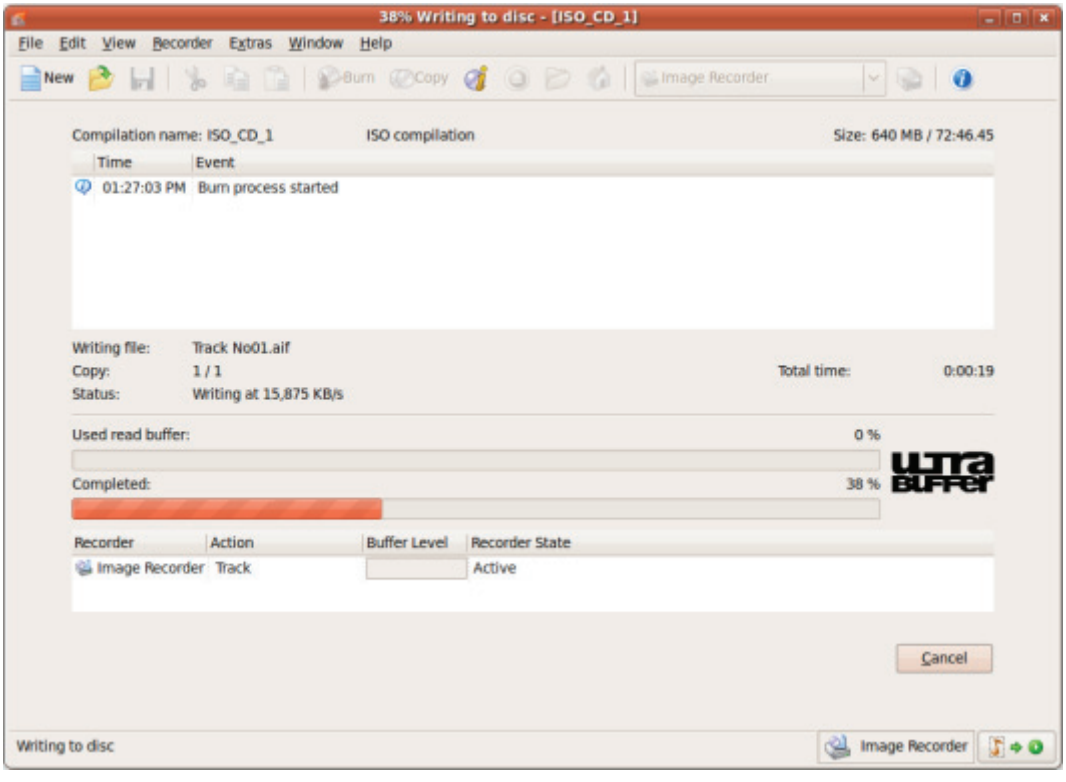
Burn Compilation→ 44

9 Loading Image File

You can use Nero Linux to burn a disc from a disc image that you have previously saved on the hard drive.

To load a saved image file, proceed as follows:

1. Select a recorder from the drop-down menu.
2. Click the  button in the main screen.
   → The **Open** window is opened.
3. Select the desired image file and click the **Open** button.
   → The **Burn Compilation** window is opened.
4. Set the desired burn options.
5. If technically possible, you can change the disc type in the drop-down menu.
6. Click the **Burn** button.
   → The burn process is started. A progress bar indicates the progress being made by the burn process. When the burn process is complete the disc is ejected.

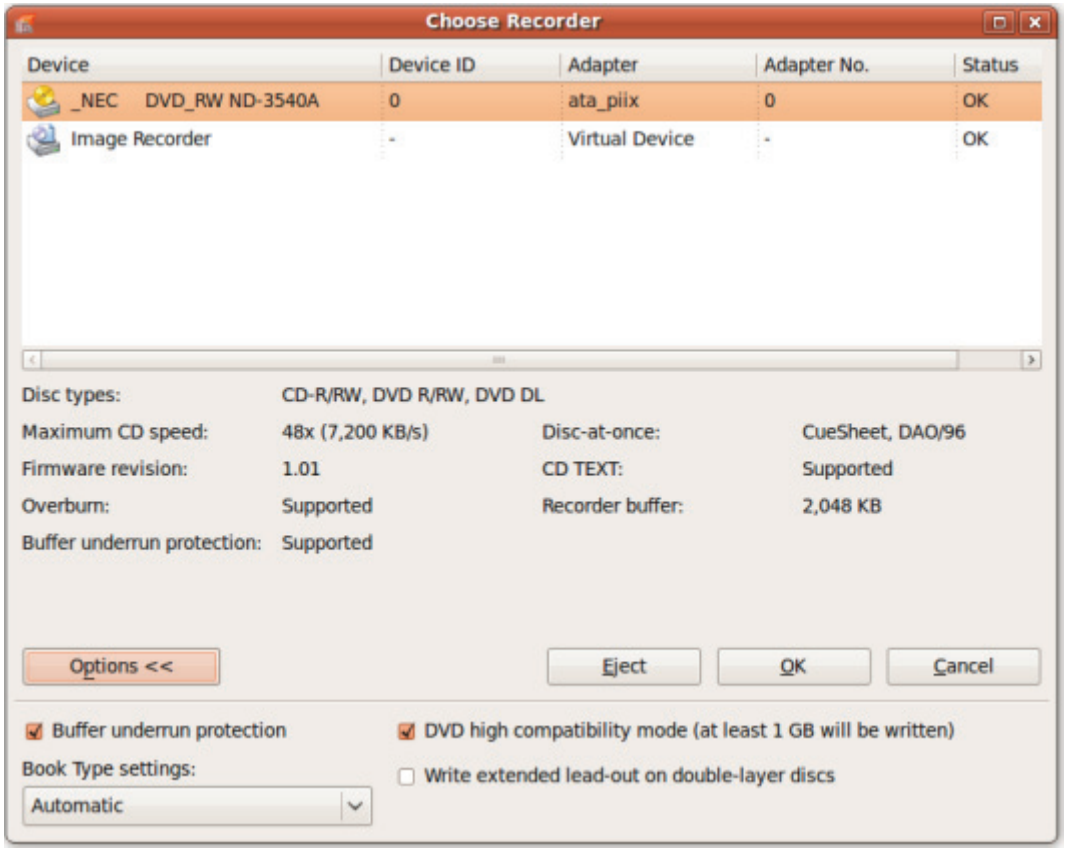


→ The burning process is complete. You can now remove the burned disc from the recorder.

10 Burn Compilation

10.1 Choose Recorder Window

In the **Choose Recorder** window you can select a recorder for burning. You can open the window via the button which is on the right side of the recorder drop-down menu. The window shows useful information about the recorder (e.g. supported disc types). In the advanced area you can set expert options. The available options depend on the chosen recorder.



Choose Recorder

The following setting options are available in the advanced area:

Check box **Buffer underrun protection**	Provides buffer underrun protection. This feature is particularly useful for burning CDs.

Check box **Write extended lead-out on double-layer discs**	Writes an extended lead-out of 515 MB on the second layer of a double-layer multisession DVD when this area contains less data. Doing so improves the read compatibility. This feature is particularly useful for burning a data multisession DVD on a double-layer disc. It is not needed when the DVD is going to be finalized.
Check box **DVD high compatibility mode**	Burns the DVD up to a radius of at least 30 mm (approx. 1 GB), even when the compilation contains less data. In doing so the DVD is forced to meet the DVD-Video specification which reduces the possibility of read errors. This feature is particularly useful for burning DVD-Videos.
Check box **BD defect management**	Burns the Blu-ray Disc in defect management mode. In doing so the burner allocates part of the disc so that it is once again able to burn the data that has been damaged in a write error. BD defect management reduces the write speed but increases data security. This feature is particularly useful for burning data Blu-ray Discs or for burning backups to Blu-ray Discs.
Drop-down menu **Book Type Settings**	Defines the book type setting for a DVD. This feature is particularly useful for burning to a blank DVD.

Four book type settings are available:

Automatic: Automatically selects the most suitable book type for this DVD.

DVD-ROM: Sets the book type to DVD-ROM. Select this setting if the DVD is to be played on several DVD players or your DVD player has difficulties with self-burned DVDs or of the DVD-, DVD+ or DVD-RW specification.

Physical disc type: Selects the book type which is specified on the DVD.

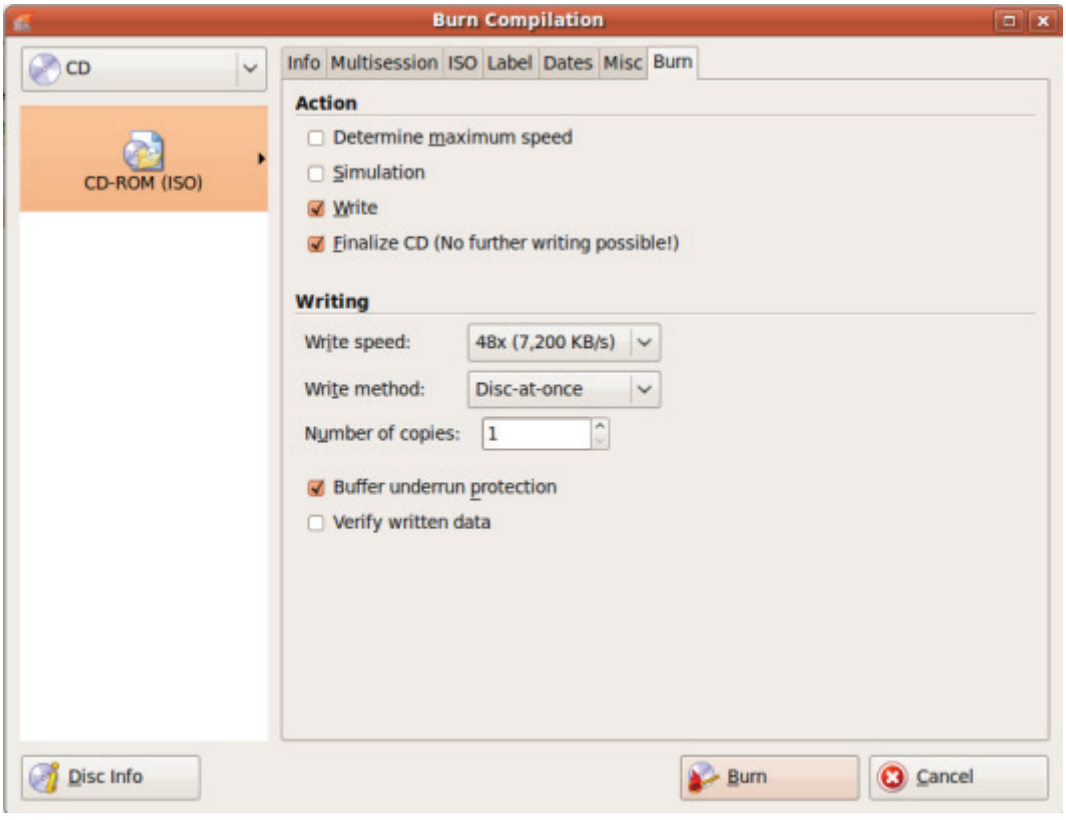
Current recorder setting: Leaves the book type setting to the recorder.

10.2 Starting the Burn Process

Many CD players cannot read rewritable CDs (CD-RW). You should therefore use normal CD-ROMs for burning Audio CDs.

To start the burn process, proceed as follows:

1. Click the **Burn** button in the main screen.
   → The **Burn Compilation** window is opened; the **Burn** tab is in front.



Burn Compilation window

2. Check or select the options on the individual tabs.
3. Insert an appropriate blank disc and click the **Burn** button.
   - → The burn process is started. On the screen a progress bar indicates the progress being made by the burn process.
   - → When the burn process has finished, a message window is opened.
4. If you want to display the extended area with the event log, click the **Details** button.
5. If you want to start another burn process with the same compilation, click the **Burn Again** button.
6. Click the **OK** button.
   - → The burning process is complete. You can now remove the burned disc from the recorder.

10.3 Burning With Image Recorder – Creating an Image File

To create an image file, proceed as follows:

1. Click the **New** button.
2. Create a new compilation of your choice.

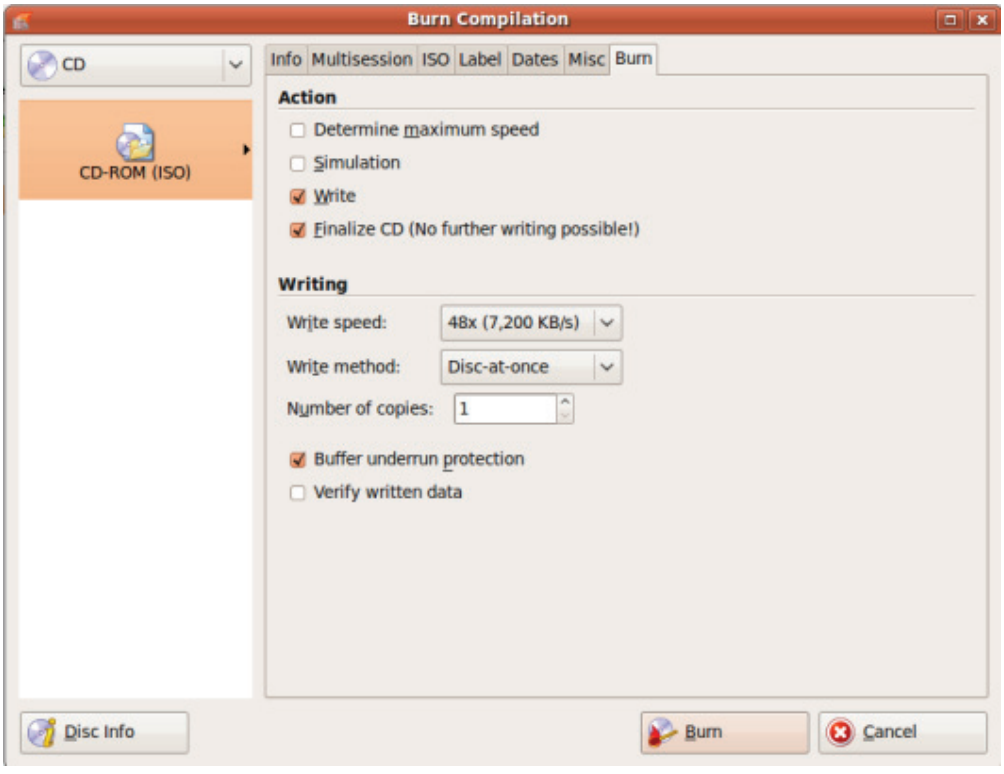
   Using Nero Linux you can create image files for disc types that the installed recorder cannot burn. You can enable this function via the **File** > **Options** > **Expert Features** menu, **Enable all supported recorder formats for image recorder** check box. The drop-down menu in the **Compilation** window then makes available all supported disc types.
3. Select the files that you want to burn.
4. If you have installed multiple recorders, select Nero Image Recorder from the drop-down menu.
5. Click the **Burn** button.
   → The **Burn Compilation** window is opened; the **Burn** tab is in front.
6. Click the **Burn** button.
   → The **Save Image File** window is opened.
7. Specify a file name and a storage location for the image file and click the **Save** button.
   → The image file is created and saved in the selected storage location. On the screen, a progress bar indicates the progress made while the file is being created. Once the creation process is over, a message window is opened.
8. Click the **OK** button.
   → The message window is closed and you have successfully created the image file.

See also:

Loading Image File→ 43

10.4 Burn Compilation Window

In the **Burn Compilation** window you can set or select the required burn options and then start the actual burn process. The window consists of a drop-down menu, a selection list, various tabs, and buttons.



Burn Compilation

The selected disc format is displayed in the selection list on the left. If multiple disc types are available for this disc format and if you have installed a suitable burner, you can select another disc type from the drop-down menu.
The following buttons are available:

Button **Disc Info**	Displays information on the disc inserted, such as contents (if any) or available capacity for instance.
Button **Burn**	Starts the burn process if a burner is connected. If a burner is not connected, the **Save Image File** window is opened. This button is only available if the **Write** check box is cleared.
Button **OK**	Accepts all changes and closes the window. This button is only available if the **Burn** check box is cleared.

Button **Cancel**	Closes the **Burn Compilation** window.

10.5 Burn Settings

The **Burn** tab on the **Burn Compilation** window provides options for the burn process.

The following check boxes are available in the **Action** area:

Check box **Determine maximum speed**	Checks how fast the compiled data can be accessed and reduces the selected writing speed if necessary. This prevents a buffer underrun. Recorders with a feature to prevent buffer underruns do not require a speed test. Not available when saving with Nero Image Recorder.
Check box **Simulation**	Simulates burning. In the process the simulation performs all steps that are also carried out during burning with the exception of setting the laser beam. A test determines whether there is a constant flow of data.
Check box **Write**	Enables the **Burn** button.
Check box **Finalize Disc**	Closes the disc so that you cannot write to this disc anymore. Depending on the disc format, finalizing may be necessary. Nero Linux automatically checks the box for the relevant disc formats.
Check box **Verify written data**	Checks the data written to the disc after the burn process. You can use this option particularly when burning backups to ensure that all data has been written correctly. This check box is only available if the selected recorder is not the Nero Image Recorder.

The following configuration options are available in the **Writing** area:

Drop-down menu **Write method**	Selects the method used to burn the disc. **Disc-at-once** and **Track-at-once** are available. **Disc-at-once**: Burns the entire disc in one go without having to turn off the laser between individual audio files. **Track-at-once**: Burns each audio file (track) separately onto the disc, i.e. the laser is turned off and turned on again after each audio file.
Input field **Number of copies**	Defines the number of discs that are to be burned. The default is set to one disc.

Check box **Buffer underrun protection**	Provides buffer underrun protection. This check box is only available if the selected burner supports a method which offers buffer underrun protection.

The speed test and simulation are not required for recorders that have a function for protecting against buffer underruns.

Audio CDs should always be burned using the disc-at-once method. This entry is selected by default.

11 Copying a Disc

11.1 Methods of Copying

Nero Linux can be used for copying discs. There are two methods for this:

- On-the-fly
- Copy Over Image

Each method has advantages and disadvantages which will depend on your requirements.

11.1.1 On-the-fly Copying

When using the on-the-fly method, insert the original disc into a drive and a recordable disc into the drive. The original disc in the drive is copied immediately without any time delay to the blank disc in the recorder. The on-the-fly method allows you to copy discs very quickly, and does not require any additional space on the disc.
In order to be able to use the on-the-fly method, you will need at least two drives: one for reading the disc and a disc burner for writing. The following requirements apply to the read drive and disc burner:

- The disc burner must feature buffer underrun protection, or the drive must be capable of delivering the data sufficiently quickly. The read speed should be at least twice as fast as the write speed.
- The read drive must be capable of delivering information on the number and type of sessions, otherwise Nero Linux may not be able to produce an exact copy.

If you want to copy Audio CDs, we recommend the copy image method because the quality of the read audio files can suffer depending on the drive.

11.1.2 Copy Over Image

With the copy over image method, an image of the original disc is saved to a file first. The image file is then burned to a blank disc. Copying using copy over image takes longer, but it often produces better results.
You must have sufficient storage space to use the copy over image method.

The copy over image method is particularly suitable in the following situations:

- Only one drive is available.
- You would like to make several copies of the same disc.
- You think it likely that read errors may have occurred on the source CD (for example because it is scratched).
- You attach importance to the best possible reproduction (particularly in relation to index positions and the quality of Audio CDs).

11.2 Copying Disc

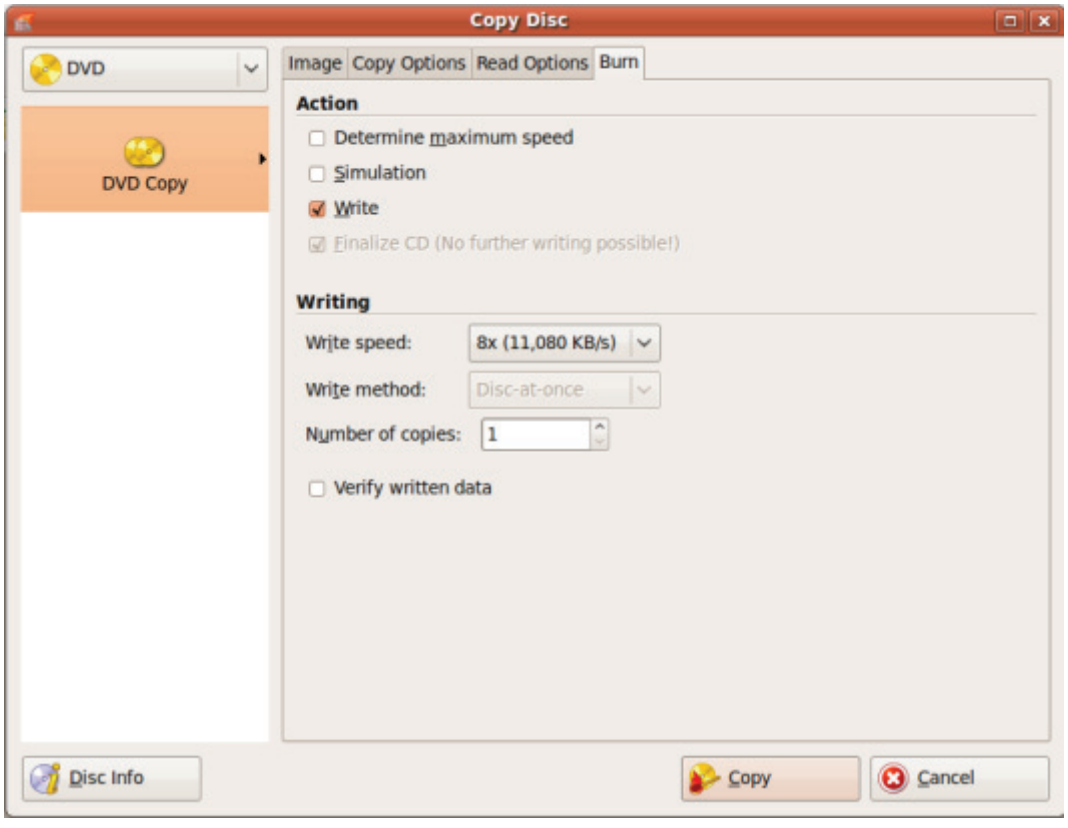
If you are not in possession of the copyright for the relevant CD/DVD and do not have authorization from the owner of the copyright, unauthorized copying of CDs violates national and international legislation.

Copy-protected Audio CDs cannot be copied using Nero Linux.

Some CDs/DVDs are copy-protected and cannot be copied. If you are not sure whether your CD/DVD can be copied, activate simulation before commencing the actual physical burn process.

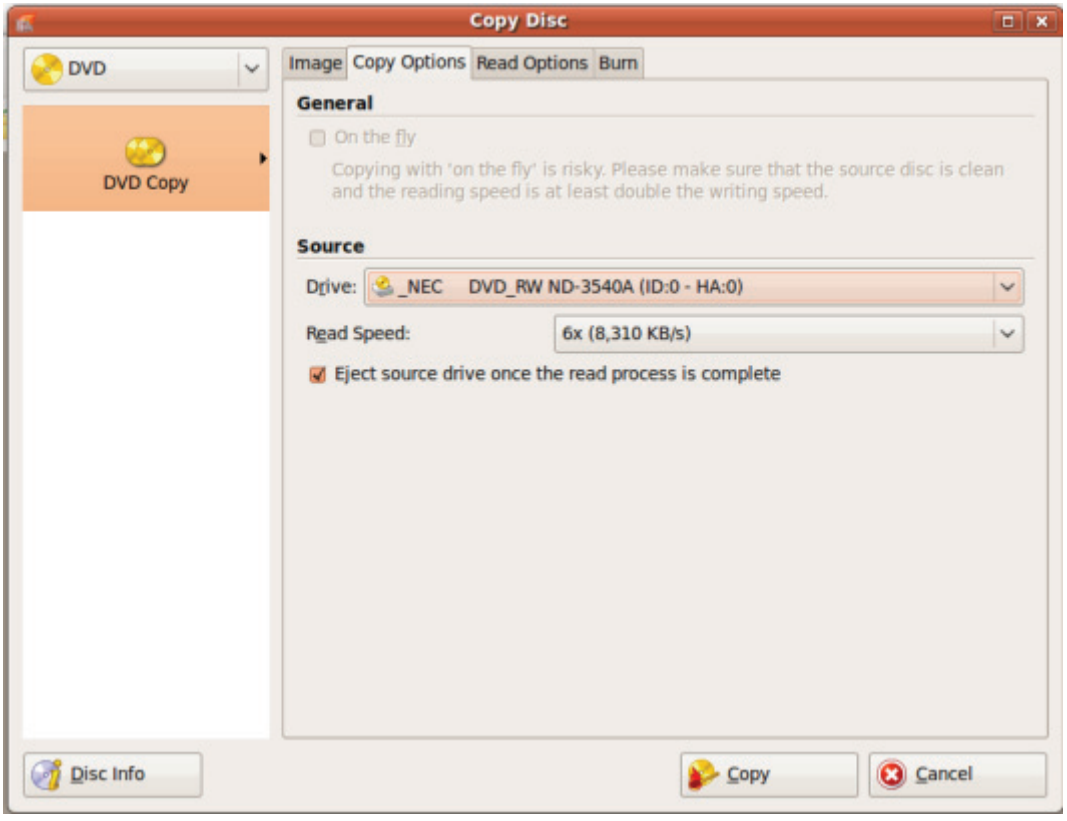
To copy a disc, proceed as follows:

1. Click the **Copy** button in the main screen.
   → The **New Compilation** window is opened.



Copy Disc window

2. Select the disc type you want from the drop-down menu.
3. Carry out the desired settings on the tabs.



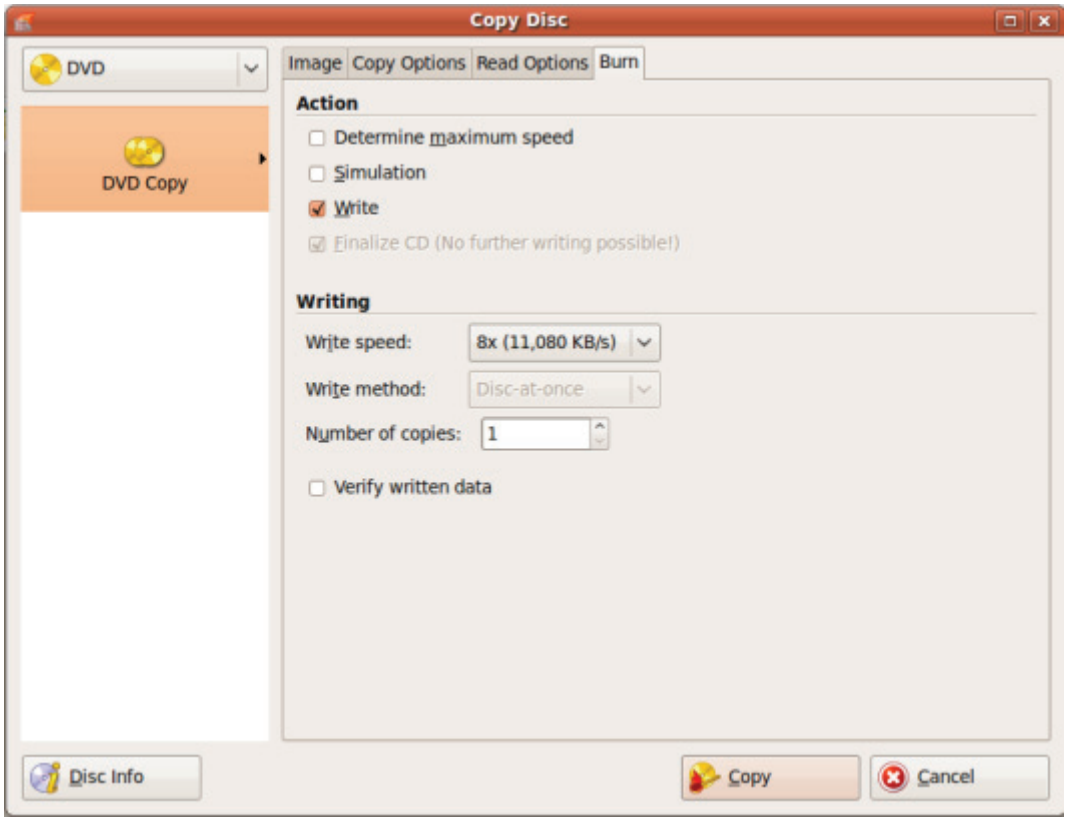
Copy Options tab

4. If you want to copy discs using the **On-the-fly** method:
   1. Select the **On the fly** check box on the **Copy Options** tab.
   2. Select the drive that contains the disc to be copied from the **Drive** drop-down menu.
   3. Insert the disc that you want to copy into the selected drive.
   4. Insert a blank disc.
5. If you want to copy discs using the **Image Copy** method:
   1. Clear the **On the fly** check box on the **Copy Options** tab.
   2. Insert the disc that you want to copy into the recorder.
6. Click the **Copy** button.
   → If you are copying via the drive, the copy process starts. If you are using Nero Image Recorder, the **Save Image File** message window is opened.
7. Enter a name for your image file in the **File Name** text box.
8. Select the relevant storage location in the **Save to** directory tree and click the **Save** button.
   → The copy and/or save process starts. You can follow the process status in the status bar. If you are using a single drive for copying, you will be prompted to remove the source disc and to insert a suitable blank disc after the image file has been written.

9. Click the **Next** button.
   ➔ You have successfully copied a disc.

11.3 Copy Settings

In the **New Compilation** window, define the options for copying at the beginning of the copy procedure. You can use the **Copy** button in the main screen to open the window. The **New Compilation** window consists of a drop-down menu, various buttons, and tabs.



Copy settings

Only those disc types supported by the recorder are displayed in the drop-down menu. If the recorder can only burn CDs, the drop-down menu is grayed out.

Using Nero Linux you can create image files for disc types that the installed recorder cannot burn. You can enable this function via the **File** > **Options** > **Expert Features** menu, **Enable all supported recorder formats for image recorder** check box. The drop-down menu in the **Compilation** window then makes available all supported disc types.

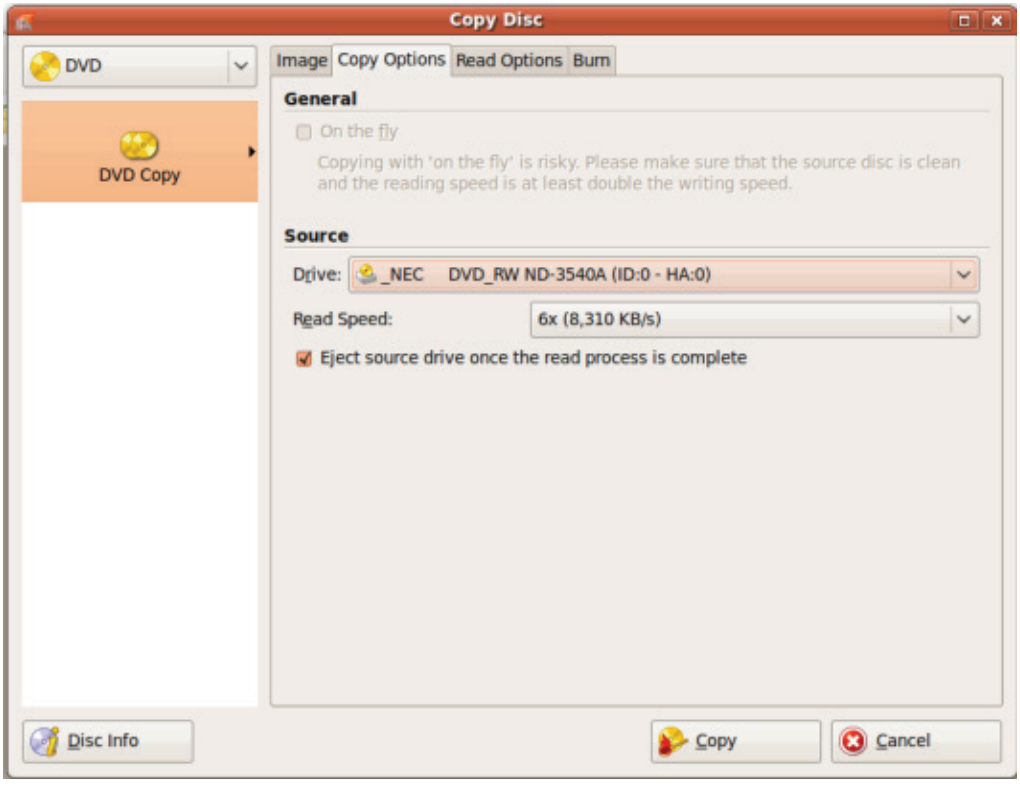
The following configuration options are available:

Button **Disc Info**	Displays information on the disc inserted, such as contents (if any) or available capacity for instance.
Button **Copy**	Starts the copy process.
Button **Cancel**	Closes the **New Compilation** window.

The following tabs are available:

Image	Gives the path to the temporary image file and provides information on the speed of the hard drive.
Copy Options	Contains options for configuring copying.
Read Options	Contains options for configuring reading of the original disc.
Writing	Contains options for configuring the burn process.

11.3.1 Copy Options



Copy Options tab

In the **Copy Options** tag the following configuration options are available in the **General** Area.

Check box **On-the-fly copying**	Creates the copy using the on-the-fly method. If this check box is cleared, the copy is created using the copy-over-image method.

The following configuration options are available in the **Copy Options** tab in the **source** area:

Drop-down menu **Drive**	Selects the drive for reading the disc. If a copy over image is created, we recommend that you select the recorder for reading in.
Drop-down menu **Read speed**	Defines the speed at which the disc is read in.
Check box **Eject source drive once the read process is complete**	Ejects the source disc once the read process is finished so that you can insert the target disc.

11.3.2 Read Options

The **Read Option** tab consists of several areas. In these areas it is possible to set options for reading an original disc.

The following configuration options are available in the **Profile** area:

Drop-down menu **Profile selection**	Selects predefined copy settings or a user-defined setting. In the case of predefined copy settings, Nero Linux sets the configuration options automatically. You can select the configuration options yourself with a user-defined setting.

The following configuration options are available in the **Database** area for the **CD** disc type:

Check box **Ignore read errors**	Ignores read errors on the original disc and continues the read process. If this check box is cleared, Nero Linux may interrupt the burn process depending on the type of error.
Check box **Write defect sectors**	Still passes on corrupt sectors (that have caused read errors) for burning. If this check box is cleared, corrupt sectors are not passed on and remain blank.
Check box **Read sectors in raw mode**	Reads PQ subchannel data.
Check box **Read all subchannel data**	Reads all subchannel data.

The following configuration options are available in the **Audio Track** for the **CD** area:

Check box **Ignore read errors**	Ignores read errors on the original disc and continues the read process. If this check box is cleared, Nero Linux may interrupt the burn process depending on the type of error.
Check box **Read indexes of audio data**	Reads the audio file indexes.
Check box **Read all subchannel data**	Reads all subchannel data.

The following configuration options are available in the **Advanced** for the **CD** area:

Check box **Read Media Catalog Number and ISRC**	Reads the media catalog number, a globally unique number for compilations, and the ISRC (International Standard Recording Code), a globally unique number for audio recordings.
Check box **Use jitter correction**	Jitter corrector removes scratches from audio and video files.

The following configuration options are available in the **Error Correction** for the **DVD** type disc:

Option button **Read with error correction**	Performs error correction while reading. In the process, the checksum of a corrupt sector is adjusted so that the sector in itself is consistent.
Input field **Read retry count**	Establishes the number of attempts that are made to correct errors.
Option button **Fast reading without error correction**	Performs fast reading without error correction.

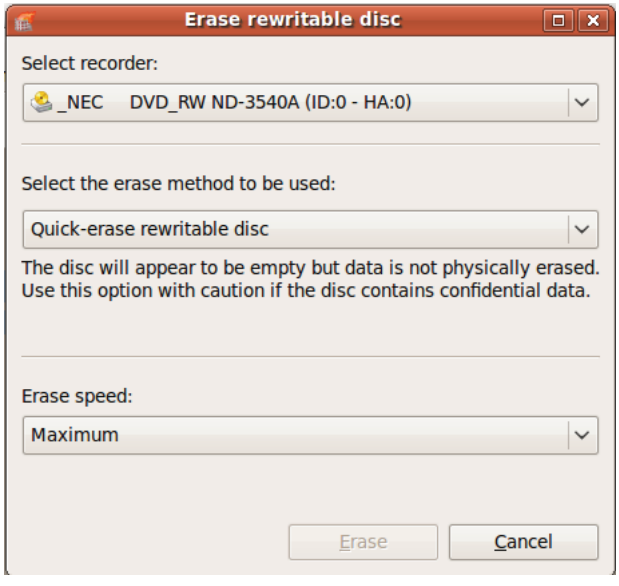
The following configuration options are available in the **Dealing with Non-Correctable Reading Errors** for the **DVD** disc type:

Check box **Ignore read errors**	Ignores read errors on the original disc. If this check box is cleared, Nero Linux may interrupt the burn process depending on the type of error.

With certain disc formats such as Audio CD, read errors often have little or no impact because they are not perceptible when the CD is played.

12 Erase Rewritable Disc Window

Nero Linux can be used to erase rewritable discs, i.e. discs with the RW specification, as long as your recorder supports this feature. Two erase methods are available for this purpose:
Quick erasing does not remove the data physically from the disc, but instead only makes it inaccessible by erasing the references to existing content. The data can be restored!
Full erasing removes the data from the disc by overwriting it with zeroes. The contents cannot be restored with conventional methods. Repeated full erasing increases the probability that third parties will not be able to reconstruct the contents.



Erase Rewritable Disc window

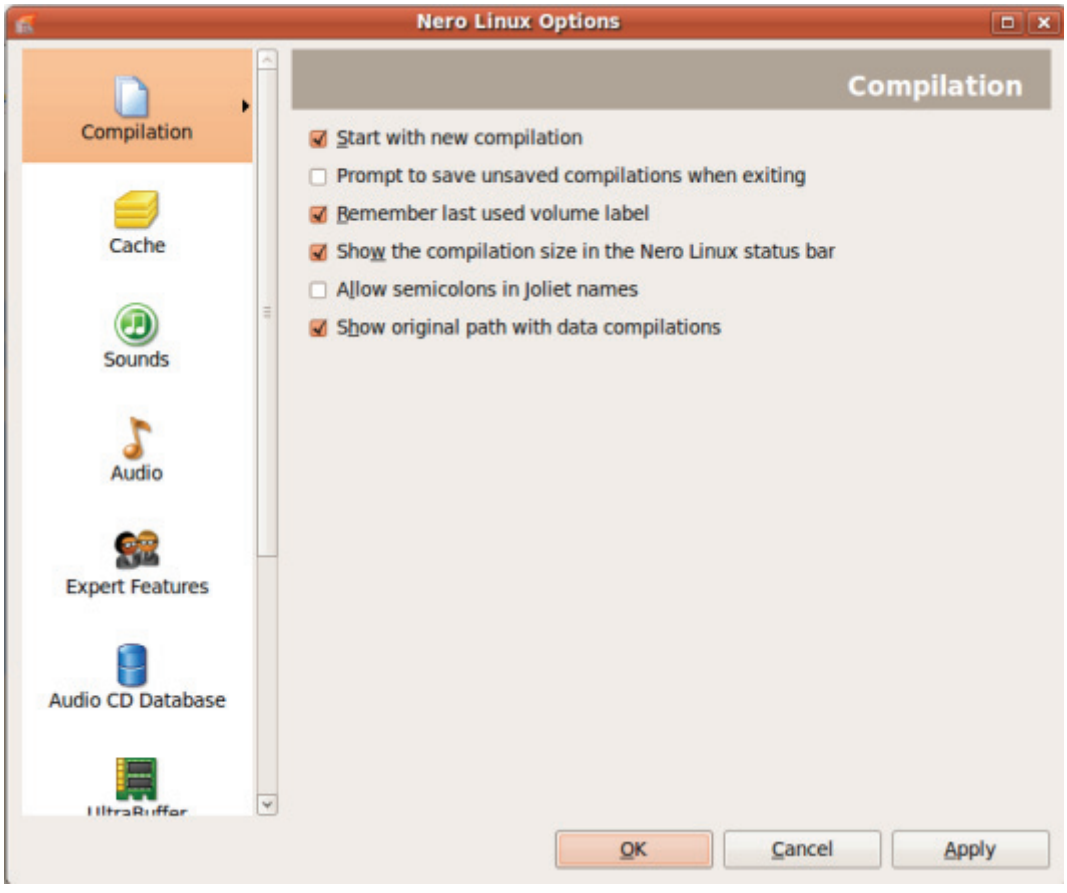
The following configuration options are available in the **Erase Rewritable Disc** window:

Selection list **Select recorder**	Defines the desired recorder.
Selection list **Select the erase method to be used**	Defines the erase method. Two options are available: The **Quick-erase rewritable disc** method does not physically erase all data from the disc, but only the references to the contents. The disc will appear to be empty even though the data is still physically available. Erasing a disc using this method takes between one and two minutes. The **Full-erase rewritable disc** method physically erases all data from the disc. The contents cannot be restored with conventional methods. Repeated full erasing increases the probability that third parties will not be able to reconstruct the contents. Erasing the disc using this method takes longer than the other method, depending on the type of disc involved.

Selection list **Erase speed**	Defines the erase speed.
Button **Erase**	Starts the erase process.
Button **Cancel**	Cancels the action and closes the window.

13 Configuration Options

You can define options for working with Nero Linux in the **Options** window.



Options Window

The following tabs are available:

Compilation	Contains options for the compilation and the selection screen.
Cache	Contains options for the cache.
Sounds	Contains selection options for sounds in connection with burn tasks.
Audio	Displays the directory for the audio plug-ins.
Expert Features	Contains options for configuring overburning and burning. We recommend that you retain the default settings.
Audio CD Database	Provides the option to use the Internet database.
Ultrabuffer	Defines the size of the RAM buffer.

System Configuration	Allows the system settings to be checked when the program is started.
File Browser	Contains options for configuring the file browser.
Misc.	Contains options for configuring compilations, burning, the database, the user interface, as well as advanced settings.

13.1 Expert Features

The following configuration options are available on the **Expert Settings** tab:

Check box **Enable Disc-at-once CD overburning**	Enables additional options and defines settings for the entire burn process.
Option button **Relative/Absolute maximum overburning size**	Defines how much a disc can be overburned.
Check box **Enable DVD overburning**	Enables the option that DVDs can be overburned.
Check box **Enable generation of short lead-out**	Enables the option to write additional data to your CD. This feature is only available if the **Enable Disc-at-once CD overburning** option is enabled.
Check box **Do not eject disc after burning**	Enables the option that your disc remains in the recorder and is not ejected when the burn process is finished.
Check box **Reload the disc after the burn is complete**	Enables the option that the disc is automatically reloaded after the burn process.
Check box **Allow to disable finalizing for burning a disc image**	Disables finalizing when an image file is saved.
Check box **Enable all supported recorder formats for image recorder**	Enables the option that all supported recorder formats for the Image Recorder are available. It is now possible to create compilations that the installed recorder cannot burn. For instance, you can create a Blu-ray compilation without a Blu-ray recorder and create an image file with Nero Image Recorder.

13.2 System Configuration

The following check boxes are available on the **System Configuration** tab:

Check if /proc and /sys are correctly mounted at startup	Checks if the folders /proc and /sys are correctly mounted. These folders contain files that are used by Nero Linux to detect when a device is added or removed.
Perform device permissions checks at startup	For further explanation on how to set permissions correctly see Setting correct permissions on the devices files→ 10.
Check IDE devices driver at startup	For further explanation on how to configure IDE devices correctly see IDE devices configuration→ 9.
Check if DMA acceleration is enabled for IDE devices at startup	For further explanation on how to set DMA acceleration on IDE devices correctly see Setting up DMA acceleration on IDE devices→ 11.
Check for mounted devices at startup	Checks for mounted devices. If a disc is mounted in a drive, then Nero Linux might not be able to use this device.

See also:

Device File Names→ 8

14 Technical Information

14.1 System Requirements

14.1.1 General System Requirements

To install Nero Linux you need administrator rights.

Processor and installed memory:

- 800 MHz Intel Pentium III processor, AMD Sempron 2200+ processor or equivalent
- At least 128 MB RAM or more

Hard disc space:

- 50 MB for program installation
- 700 MB free hard drive space for CD images and temporary files
- Up to 9 GB free hard drive space for DVD images and temporary files
- Up to 50 GB free hard drive space for Blu-ray Disc BD-R/RE dual layer disc images

Optical device:

- CD, DVD or Blu-ray recordable or rewritable drive for burning

Optional:

- Sound device and speakers
- Internet connection for updating the application, downloading the Help file; and freedb services. The costs for the Internet connection are carried by the user.

14.1.2 Linux Kernel Requirements

- Kernel version 2.4 or higher (2.6 recommended) with X-Window
- Glibc 2.3.6 and libstdc++6 4.1.1 (or higher)
- GTK+ 2.8.0 (or higher)

How to get the Linux kernel version

To find out which Linux kernel you are using you can enter uname –r into a terminal.

The kernel is the heart of your Linux system. For example, the kernel provides low-level drivers which gain access to devices.

14.1.3 Supported Distributions

Nero Linux supports the following distributions:

- Red Hat Enterprise Linux 5
- SuSE Linux 10.3
- Fedora 7
- Debian GNU/Linux 4.0
- Ubuntu 7.04

The distributions are supported as of the indicated versions.

14.2 Formats Supported

14.2.1 Disc Formats

- Audio CD
- Mixed mode CDs
- CD EXTRA
- miniDVD
- DVD-Video
- Nero Image (NRG)
- CUE-Image
- ISO-Image

14.2.2 Disc Types

- CD
- DVD
- Blu-ray - burning only

You can find more information on Blu-ray support at www.nero.com/link.php?topic_id=416.

The actual entries that are available and the actual disc types (e.g. **DVD**) to which can be written depend on the used recorder.

14.2.3 Audio Formats and Codecs

- MP3 / mp3PRO
- Moving Picture Experts Group-1 Audio Layer 3 (MP3)
- OGG Vorbis (OGG, OGM)
- Resource Interchange File Format WAVE (WAV, WAVE)

- Free Lossless Audio Codec (FLAC)
- Linear Pulse Code Modulation (LPCM, PCM, L16)
- Musepack (MPC) - only decoding

15 Glossary

AIFF

The Audio Interchange File Format is an uncompressed audio file format from Apple® and represents a sort of counterpart to the WAV format from Microsoft. Files are larger than when using a compressed format, but the quality is higher. AIFF compressed is the compressed variation.

Book Type

The book type defines the specification (e.g. DVD-, DVD+, DVD-ROM) of a DVD. In order to ensure correct playback, the DVD specifications are defined in books so that all media can be read correctly. The specifications are defined in the so-called Rainbow Books, which are distinguished by means of their color (e.g. Yellow Book).

Bootable CD

Booting refers to loading the operating system when a computer is started. This is normally done from the hard drive. However, if you do not want to boot or cannot boot your computer from your hard drive for whatever reason, you can load an operating environment from the drive with a boot CD.

Buffer Underrun

A buffer underrun is an interruption in the data flow in the internal memory (e.g. of the recorder). A buffer underrun results from an interruption in the data flow to the internal buffer. The buffer continues to deliver data until it is finally empty. When recording, data is fed continuously to the recorder's buffer in order to keep a steady flow of data. If the steady flow of data is interrupted, the media becomes unusable. Most modern recorders have a protective mechanism against buffer underruns.

CD-R

Compact Disc-Recordable is a technology for write-once media. The Orange Book standard defines the storage of audio data and other computer-readable data.

Disc-At-Once

Disc-At-Once refers to a method in which the laser in your recorder burns straight through in one session without turning off and on between each track. This method is best when recording Audio CDs you would like to play in your home or car stereo.

Frame

With an Audio CD, 75 sectors provide one second of played music. One sector consists of up to 98 frames; one frame contains 24 data bytes and 9 control bytes. Similarly, "frame" describes a full screen in television and video technology. Two successive half images result in a full screen within a second due to interlacing.

Image

An image refers to a single file on the hard drive that contains the image of a complete disc. A disc image can be used to create exact copies on media at a later point in time if problems

occur during the write process or if no recorder is connected to your PC. The image requires as much free space on the hard drive as the contents of the original disc take up.

Jitter

Jitter refers to an abrupt and undesired change in the signal characteristics. Small gaps occur in the data stream as a result. Audio correction synchronizes the data by overlapping the sectors. This way, the gaps are not audible.

Joliet

Joliet refers to an extension of the ISO-9660 standard for file names. Joliet was designed by Microsoft in order to represent more characters. The file name can be up to 64 characters long and contain the letters A-Z, a-z, umlauts, and the ß.

MP3

The MPEG-1 Audio Layer 3 audio format is used to reduce the size of audio files to a fraction of their original size (factor 1:10) with little loss of quality. You can estimate about 1 MB per minute as opposed to 10 MB for the original files. This value and the quality can vary depending on the complexity of the audio signal. The bit rate used can be used as a measure of quality. The higher the bit rate, the better the quality, but also the more memory required.

Multisession

A multisession refers to completing a disc in multiple cycles. After a first session has been written to the disc, information can then be added in another record because the disc has not been finalized.

Subchannel data

Subchannel data on a disc contains additional information, such as CD Text or information on positions.

WAV

The WAV audio format, also called WAVE or Waveform audio format, is an audio format from Microsoft and uses no data compression. WAV is the counterpart to the AIF format from Apple.

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Nero Linux is a Nero AG product.

nero Linux 4

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