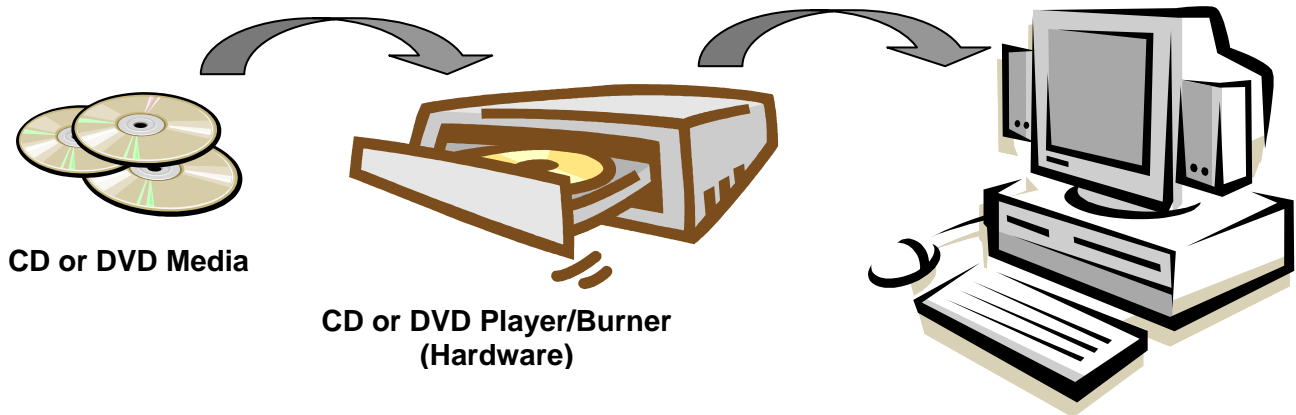


CD/DVD Burners. CD/DVD Media and applications.



Media

CD-R/DVD-R Can write once only.

CD-RW/DVD-RW Re-Writable - can write many times

A CD can hold 700 MB of data, or 80 min. of CD Audio. A DVD will hold 4.7GB of data or a 2 hr. movie. Double layer DVD's are now becoming available.

Player/Burner is the Hardware Device in your computer.

These are the main types:

CD-R or CD-ROM Will only read (data and audio) a CD

CD-RW Will read and write (data and audio) to suitable CD's

DVD-R or DVD-ROM Will only read and play DVD media/movies

DVD +/- R/RW Will read and write to suitable DVD media

Combo Drives are a combination of the above:

DVD-R, CD-RW Will read and write CD's but only read/play DVD's

In addition, both the Hardware and the Media have speed ratings – e.g. 8x 12x 48x, etc. For a CD, 20x means that it will take 4 min. to burn a full CD (80 min/20). The lower speed of either the Media or the Hardware is the speed rating to use. The media speed rating is the maximum – and is rarely achieved!

CD and DVD Re-Writable media is more expensive, slower and generally less reliable than the “R” type. DVD burners and media are available in “+R” and “-R” format. This is like VHS or Betamax. The “+R” format is generally considered to be most reliable.

If you have a CD burning software application such as Nero, Roxio, Easy CD Creator or Sonic, etc., it will include special software to format a CD (InCD, Direct CD, etc.) Using this special software, and a CD-RW, allows the CD to be used like a floppy. It can be unreliable

So I recommend you try to use CD-R and DVD+R media and not format your CD.

Software/Applications:

- DVD Movie Player (Win DVD, Nero, etc.)
- CD Writing (Roxio, Easy CD, Nero, etc)
- DVD Creator (Nero, Roxio, etc.)
- Windows XP and Windows Media Player can do all the above. Real Player can also be used instead of Windows Media Player
- WMP and Real Player will work on Windows 98/ME

Viewing/playing CD's and DVD's

Data on a CD or DVD can be viewed and copied to your computer with a CD-ROM and/or DVD-ROM (read only) (Demo)

Using Windows Media Player (or Real Player), we can play Audio CD's and DVD Movies. If available, album information is downloaded from the internet. (Demo)

Care of Media

A laser is used to write to a CD/DVD. The laser changes the property of a dye. The longevity of the media is dependant on which dye is used, and can range from 20 to 70 years. Media can deteriorate much faster if flexed, as tiny cracks allow moisture to penetrate. The top (mirror), is more susceptible to irreparable damage, than the underside. Small scratches in the underside can be removed with Brasso.

To copy files to a CD (Windows XP only)

Applications (such as WordPad, Paint, etc.) are not able to save files directly to a CD. So any files you create, (e.g. a letter in WordPad), must first be saved on the hard drive. Typically, the files should be saved in the appropriate sub-directory in My Documents

To copy files from the My Documents folder on the computer, to a CD:

1. Close all applications until there is a "clean desktop"
2. Place the CD in the CD-RW drive.
3. Double *click* **My Documents** on the Desktop, or if not showing, go to **Start** and in the upper right of the new window that opens, *click* **My Documents**. Navigate to the folder where the files were saved.
4. Highlight the files you want. To select all the files and folders, *click* **Edit** then *click* **Select All**. To select multiple, non-contiguous files, hold down the Ctrl key and *click* on the files you want to copy, then:
 - a. In the left-hand pane (*click* the **Folders** button on the **Toolbar** if this option does not show), *click* **Copy this file** or **Copy the selected items** if more than one. In the "**Copy Items**" window that opens, select the CD-RW drive and *click* the **copy** button. **or**
 - b. Right-*click* on highlighted files, go to "**Send To**" and *click* on the CD-RW drive
5. A balloon will pop up from the Systray area that says "**You have files waiting to be written to the CD. To see the files now, Click on this balloon**". So, *click* IN the balloon.
6. A window will open. The right hand pane shows the files waiting to be written to the CD (little down arrows on the icon), along with any files already on the CD.
7. In the left pane under "**CD Writing Tasks**" *click* "**Write these files to the CD**"
8. The CD Writing Wizard pops up to walk you through the remaining steps.

Windows always creates a "multi-session" CD. This means that files can continue be added later, until the CD is full. If using software other than Windows, you will usually have the choice of leaving the CD open (multi-session), or closing it. (Demo)

That's it for Data files. Of course data includes Word documents, photographs, address books, even some audio files, etc.

Audio CD's

Audio CD's or albums you buy, are recorded using a special format – called CDA (Compact Disc Audio). Unfortunately, you can't copy tracks from an audio CD to your computer in this format. Audio formats include:

- .wav** Wave files. These are an uncompressed format – very high quality – but large files.
- .mp3** Compressed audio file. Very slight loss of quality – but 10x reduction in file size. Widely supported. Selectable “bit rate”
- .wma** Windows Media Audio. Newer format. Better compression than mp3 for same quality. Selectable and variable bit rates. Not widely supported.

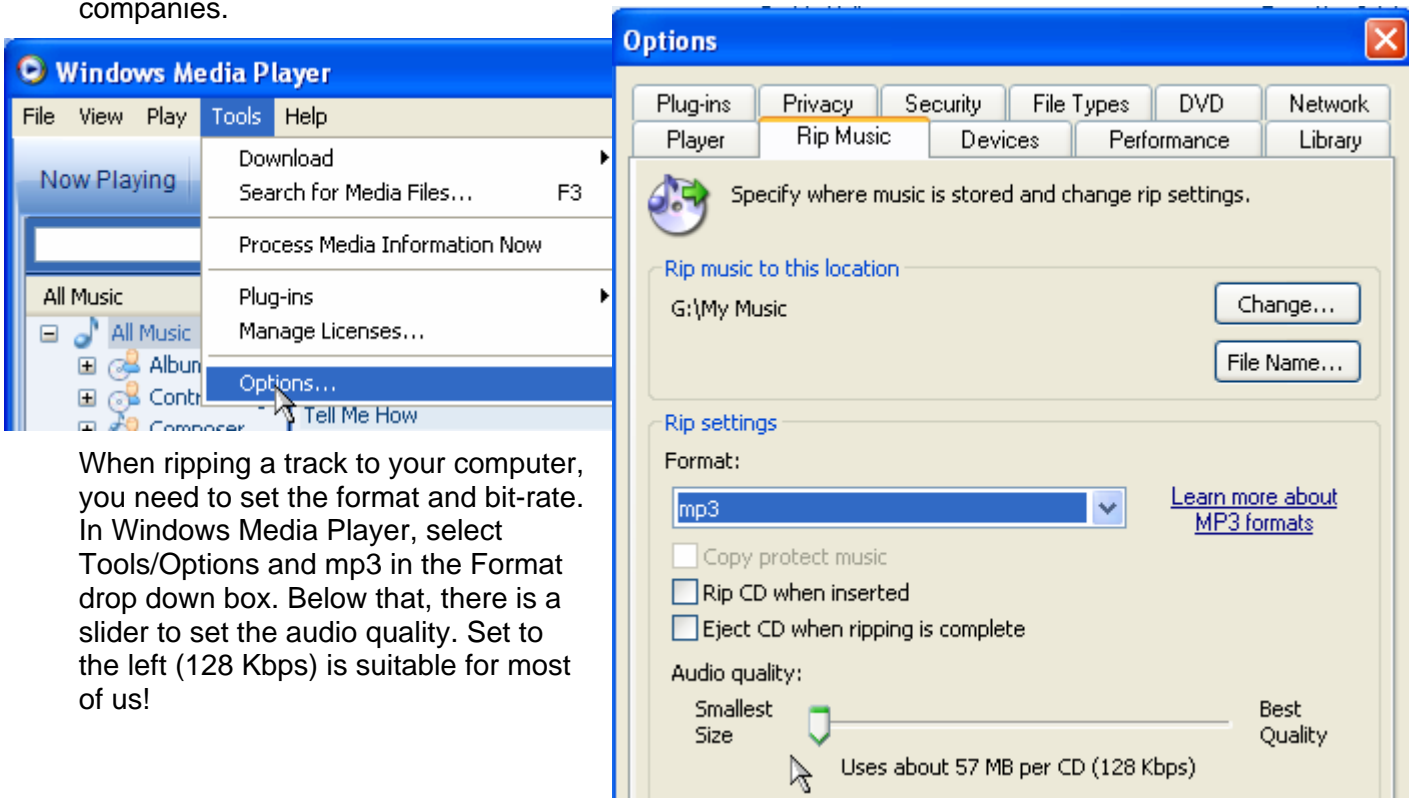
Listed below are where the various formats are generally supported. Also note, that CD-RW media is not readable by all home audio CD players.

Format	Home CD Player	Portable mp3 player	Computer	1 Album Size
.cda	All	No	Yes	500MB
.wav	No	No	Yes	500MB
.mp3	Few	All	Yes	50MB
.wma	No	Often	Yes	35MB

To ensure maximum compatibility, I would recommend only using CD-R for recording CD's and to use audio (.cda) for CD's and mp3 for your computer and portable players.

“Ripping” a CD or audio track

This is copying an album or track from an audio CD to your computer. To do this, the .cda format has to be converted to some other format that the computer can read. Originally, this was .wav format, now it's usually mp3. These files can then be used to create a new audio cd or saved as data files. It's called “ripping” as originally, people who did this were “ripping off” the record companies.



When ripping a track to your computer, you need to set the format and bit-rate. In Windows Media Player, select Tools/Options and mp3 in the Format drop down box. Below that, there is a slider to set the audio quality. Set to the left (128 Kbps) is suitable for most of us!

Demo:

Play Audio CD – retrieve album information

Rip some tracks – set rip format and quality.

Show size of the same album, ripped using lossless, mp3 and wma adaptive – formats.

Create new audio CD – from compilation

Play new CD

Copy mp3 and wma files to portable player – 12 CD's on one flash card!

Play portable player

If Time:

Stream audio from website of artist

Download an mp3 file.

Notes: