

Burning CD's and DVD's

Introduction.....	2
Reference Materials.....	2
Overview.....	2
Data CD.....	3
Audio CD.....	3
MP3 CD.....	3
Video CD (aka VCD).....	3
Types of blank CD's.....	3
DVD Capability.....	3
Storage Media Capacity.....	4
Storing and Marking CD's and DVD's.....	4
Single and Multi-session CD's.....	4
CD & DVD possibilities.....	5
Software Overview.....	5
Using Windows XP Built-in Software.....	5
Enabling XP built-in CD Burning.....	5
Determining how much space you need.....	6
Burning CD's with XP built-in software.....	8
Using the Free Astroburn.....	10
Burning a Data disc with Astroburn.....	10
Copying a CD or DVD with Astroburn.....	18
Using Roxio CD Creator (now Roxio Creator 2009).....	19
Creating CD's with iTunes.....	21
Creating CD's with Windows Media Player.....	21
Creating CDs and DVD's with Nero.....	21

Introduction

There are several ways to burn CD's. The Windows XP operating system has some features built in for creating simple CD's. To perform some more advanced tasks you will need additional software such as Roxio Media Creator, Nero Burning or one of several free programs including Astroburn. There will be more on these programs later. Several example exercises for burning CD's are discussed in this document and in some of the other reference documents.

In many cases, the methods for burning CD's are the same for DVD's. One exception is the creation of movie or video DVD's. This requires software in addition to Windows and includes such programs as Roxio or Nero. Video editing software such as Adobe Premiere Elements is an excellent example. This advanced topic is not included in this document.

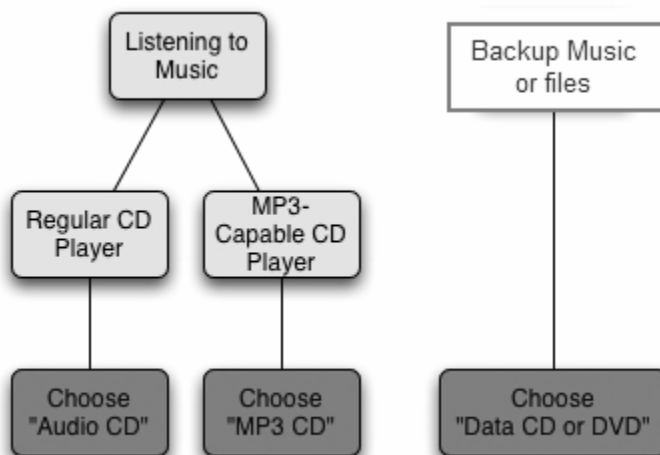
Reference Materials

This document can be found online at www.edwardns.com. Click the Workshops menu at the top to locate the document. Also, documents covering how to create CD's with Roxio CD Creator, Windows Media Player and iTunes is also available at the same place.

A Microsoft article is available here <http://support.microsoft.com/kb/306524>

Overview

There are several types of CD's including Data CD's, Video CD's, Audio or Music CD's and MP3 CD's. This document will address some of these. The figure below will illustrate the purpose of several CD types. The main type is a plain old data CD (or DVD) which is used primarily to store or archive any file type. A description of several types of CD's and DVD's follow.



Data CD

Basically, a data **CD** is one in which you merely burn or record files and/or folders onto the **CD**. The files can be of any type including pictures, video files, audio files or any other type of file. The main purposes of this CD type include backing up, archiving or sharing files. Sharing includes transferring files from one PC to another.

Audio CD

An audio CD is similar to a music CD that you buy online or in a store: it can be played on any standard CD player, such as a CD deck or a portable CD player. Music is stored on Audio CD's uncompressed. All digital data is present, no data is lost as in compressed files therefore, the files are much larger. (essentially WAV) digitally encoded files.

Audio CDs can only be burned confidently onto CD-R media. Some CD players can read CD-RWs, short for CD-ReWriteable but some cannot.

MP3 CD

An MP3 CD is a specialized type of data disc. All files copied to an MP3 disc will be, if needed, converted to MP3 format. Like the Data CD, files can be organized into folders. Media files on the MP3 CD can be accompanied by M3U formatted playlists, which are used by some MP3 players to play the MP3 files on the disc. When placed in an MP3 compatible CD or DVD player, MP3 discs are played like any audio CD. MP3 Discs can be created using CD-R or CD-RW media.

Video CD (aka VCD)

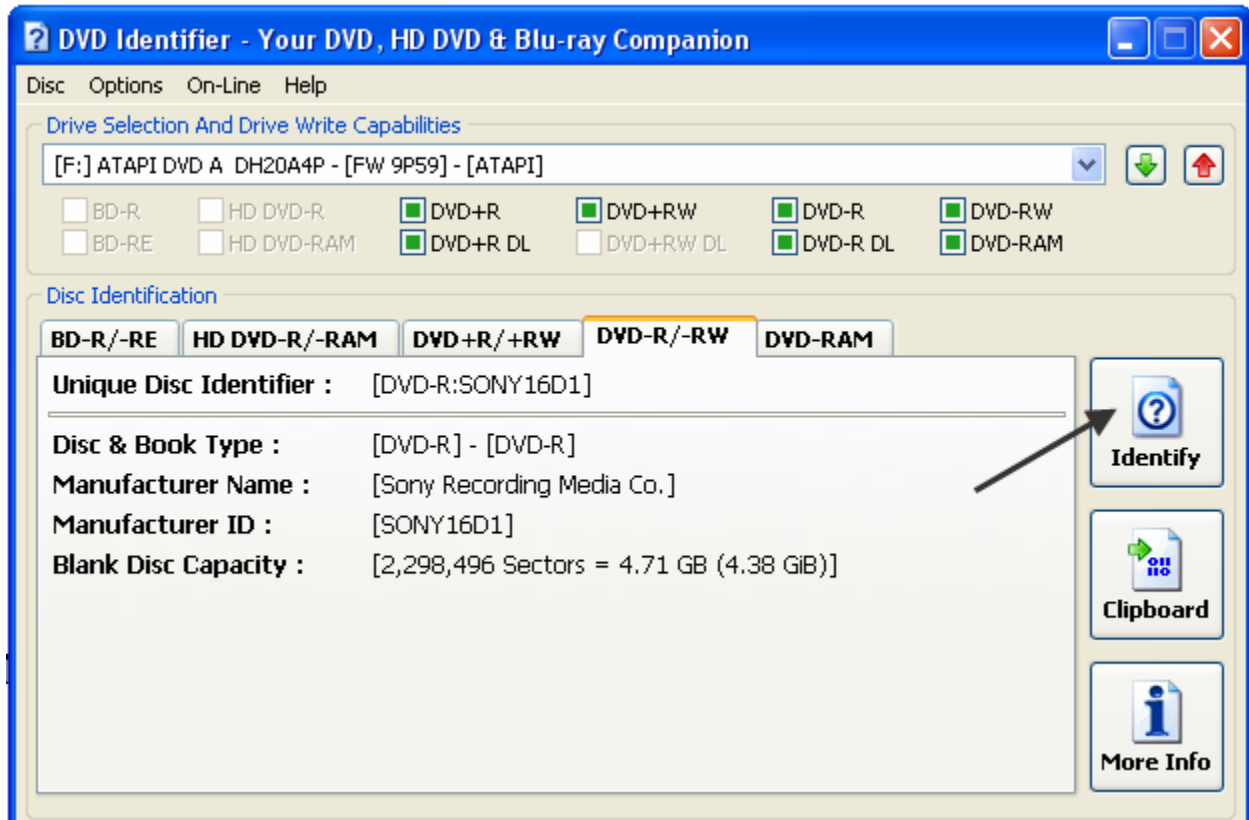
This is a standard digital format for storing video on a Compact Disc. VCDs are playable in dedicated VCD players, nearly all personal computers, most modern DVD-Video players, and some video game consoles. This type of CD is often created to share a video slide show. This type of CD will not be discussed in this document.

Types of blank CD's

There are several types of CD's including CD-R (CD-Recordable) and CD-RW (CD-Read-Write). I prefer using CD-R's since they are less complicated to use, more compatible among various PC's and more reliable. CD-R's should be purchased in bulk since this is the least costly way and they should be 700MB or 80 minutes. Older ones are 650MB. It pays to use quality brands since the life expectancy is longer (in theory). A good web site for learning about this topic is www.cdrfaq.org.

DVD Capability

A great program for testing your DVD burning capabilities is DVD Identifier, which is available for free at <http://dvd.identifier.cdfreaks.com/>. Here is the result for my PC below. If you place a blank DVD in the drive and click the Identify button as indicated below, you will get some statistics on the DVD. Notice that my drive is compatible with DL or Dual Layer DVD's.



Storage Media Capacity

Type	Number of average pictures	Number of typical Word documents
CD 700 MB	140	2,500
DVD 4.7 GB	940	17,000
DVD DL (Dual layer) 8.5 GB	1900	34,000

Storing and Marking CD's and DVD's

- On-line supplies are available at <http://www.sleevetown.com/paper-cd-sleeves.shtml> and others sites- just search Google.
- Always store disks in vertical position, not stacked on each other.
- Use only Sharpie permanent marker.
- Avoid CD labels since if they peel, they can jam the drive.

Single and Multi-session CD's

CD's can be recorded in various ways; the two most important methods are single session and Multisession. Single session CD's, once recorded, cannot be altered; when recorded they are "finalized". Files cannot be added or deleted. Multisession CD's are CD's that can continue to have data added to them in individual sessions until the disk is either full or closed. When you record a CD using 3rd party software such as Roxio or Nero, you have a choice between

Multisession and Single session CD's. You should be aware that Multisession CD's created with one program may not be compatible with another program. For this reason, Multisession should be only used with one PC. Once the disk is closed, however, it can be read by any PC.

For simple tasks, the Windows XP built-in software can be used. This software can only create Multisession data CD's and cannot copy CD's nor create single session CD's. To perform all of the other tasks associated with CD's and DVD's, a 3rd party application is required.

Note that the steps shown below for Roxio and Nero may vary from the version that you have installed on your PC. Roxio Media Creator 7 and Nero 6 were used for these examples. The important thing is to understand the philosophy.

CD & DVD possibilities

- Copy or backup files (documents, pictures) to CDs or DVDs
- Copy a CD or DVD
- Create a music CD
- Create an MP3 CD
- Create a Video CD (VCD)
- Install software from a CD
- Create a Movie DVD from your videos or even stills
- Play a Movie DVD
- Copy a Movie DVD (if not copy protected)

Software Overview

Goal	Software to use
Burn a few files to a CD (cannot close CD)	XP Built-in software
Burn a few files to CD or DVD	Vista Built-in software
Create various types of CDs and DVDs, copy also	Astroburn (free)
Create Music CDs or Mixes	Windows Media Player (free)
Create Music or MP3 CDs	itunes (free)
Do just about anything	Roxio or Nero (\$79 to \$99)
Get info on your drives or disks	See notes below

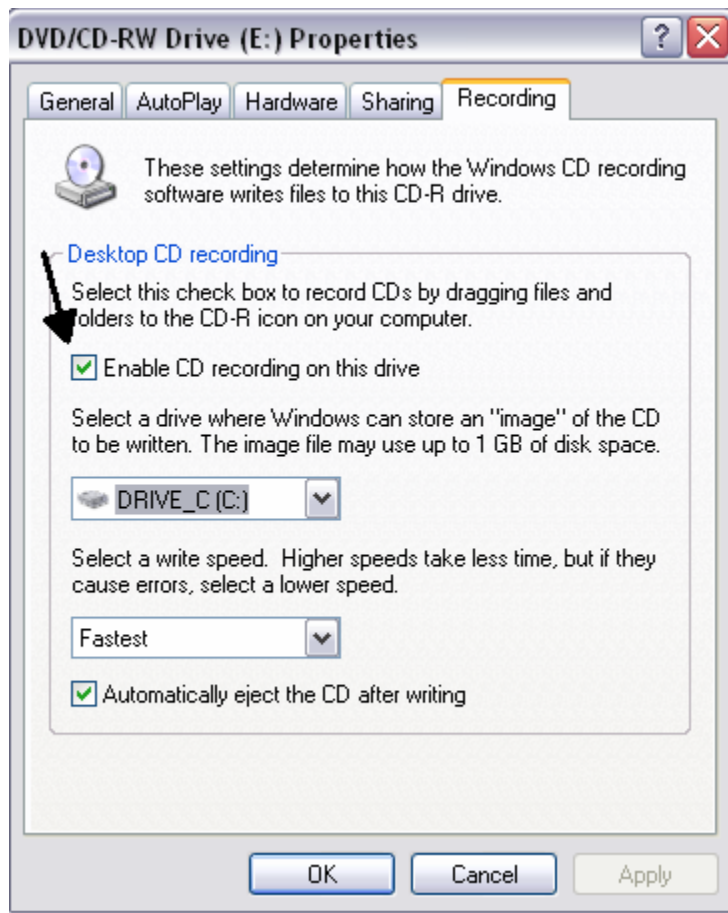
Notes: Either Roxio or Nero has the tools to do this as well as the free program DVD Identifier, which is available at <http://dvd.identifier.cdfreaks.com/>.

Using Windows XP Built-in Software

Enabling XP built-in CD Burning

1. Place a blank CD-R into your CD burner drive and close any windows that pop up
2. Open My Computer
3. Right-click the CD Drive icon and select Properties
4. Select the Recording tab

5. Ensure that “Enable CD recording on this drive” is checked (see figure below)

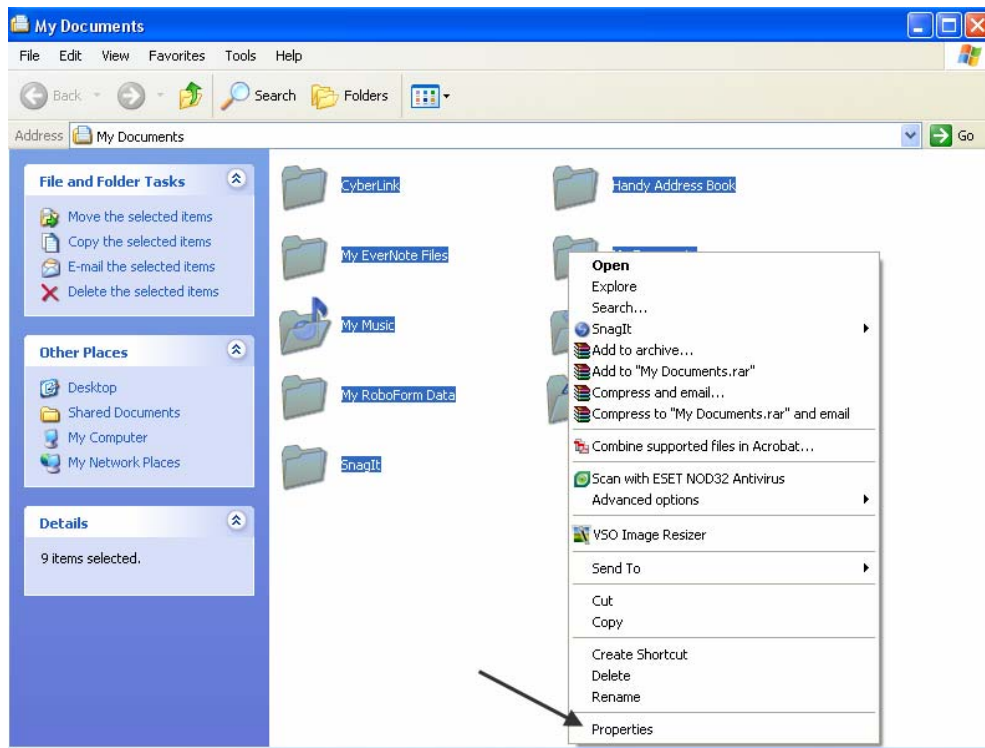


6. If you prefer that Windows not automatically eject CD when writing is finished, you can uncheck this option.
7. Click OK

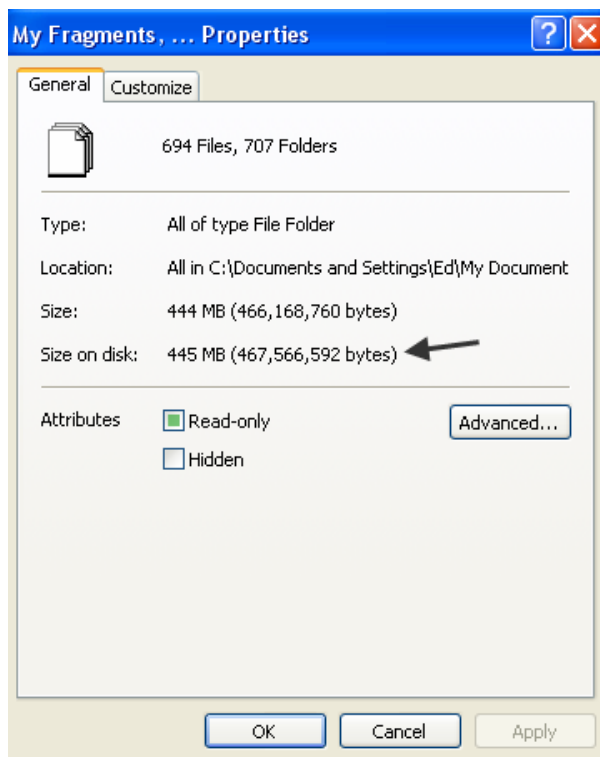
Determining how much space you need

Let's assume that you plan to backup a folder to another media such as a CD. You should first determine the size of the folder to see if it will fit on a CD. To determine the size of your “My Documents” folder, for example, follow the steps below:

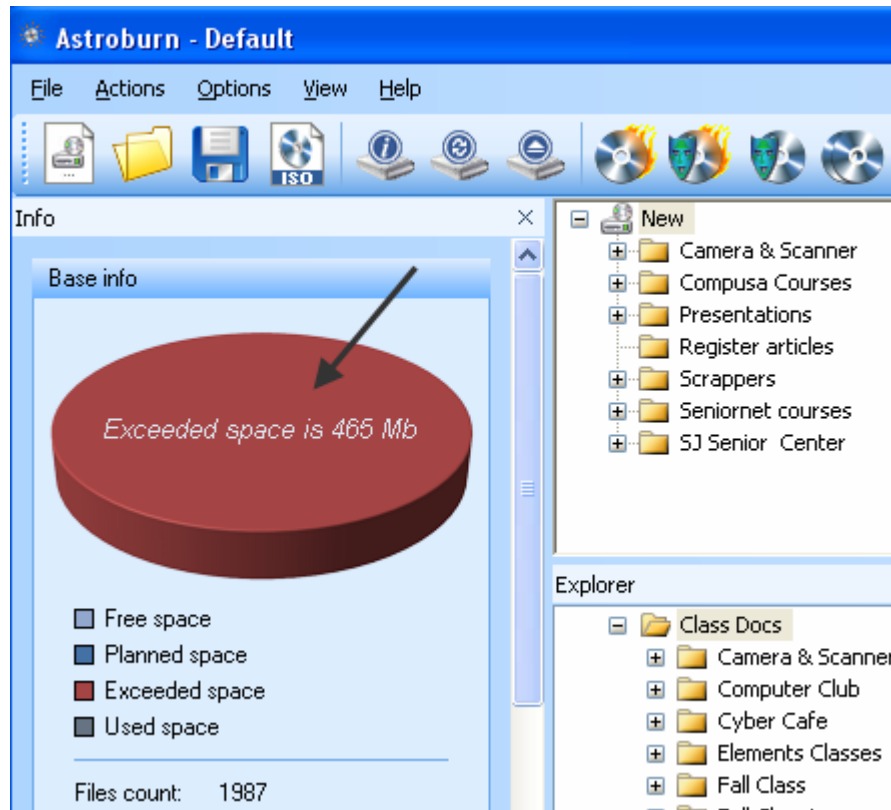
1. Click Start, My Documents to open the folder or use any other method to show the contents.
2. Click Edit, Select All to select the entire contents
3. Right-click and one of the selected items and select Properties as shown below



4. In the Properties screen you can see the size as shown below. In this case the size is 445 MB (mega bytes). Since a CD can hold 700 MB, the entire contents of MY Documents will fit on one CD. If it does not, you will have to use more than 1 CD.

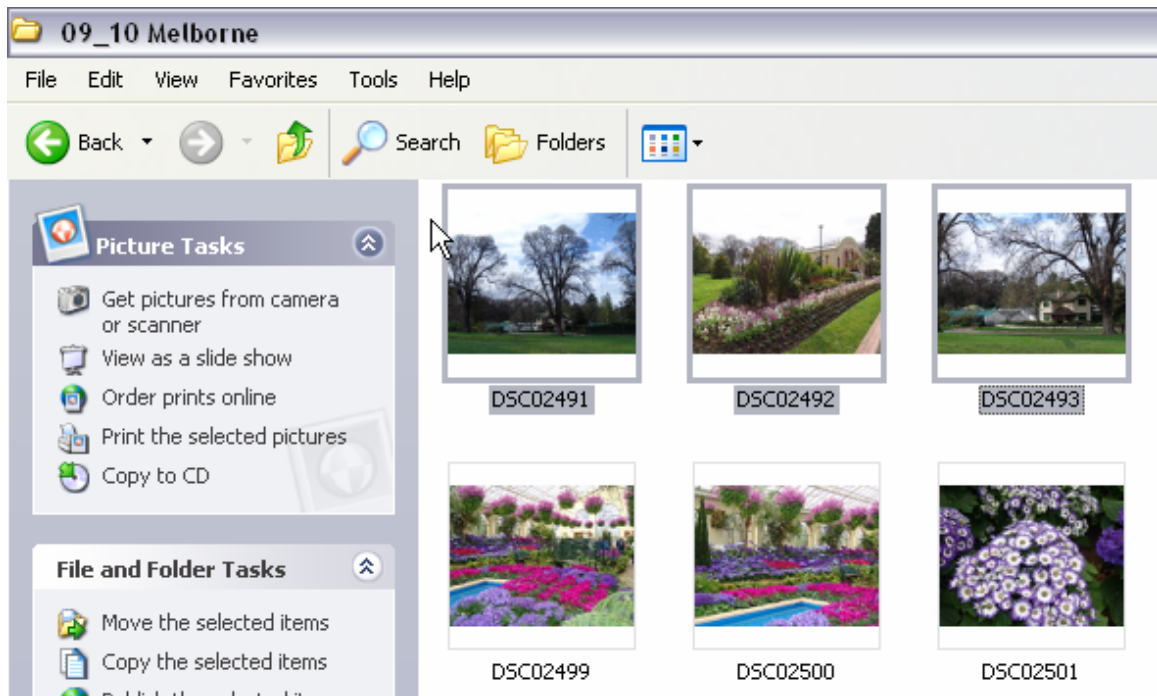


5. If you use a program such as Astroburn, it will give you a warning as shown below and will not let you burn the CD. Roxio, on the other hand, Roxio will let you continue and use a technique called “Spanning” where the backed up data will span several CD’s. Restoring the data later requires the same Roxio software, however. This technique is not recommended unless you are an experienced Roxio user.

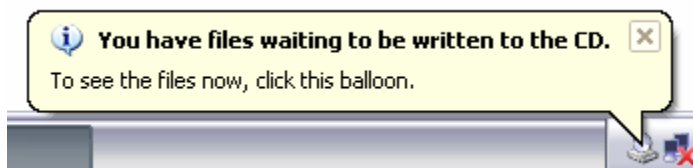


Burning CD's with XP built-in software

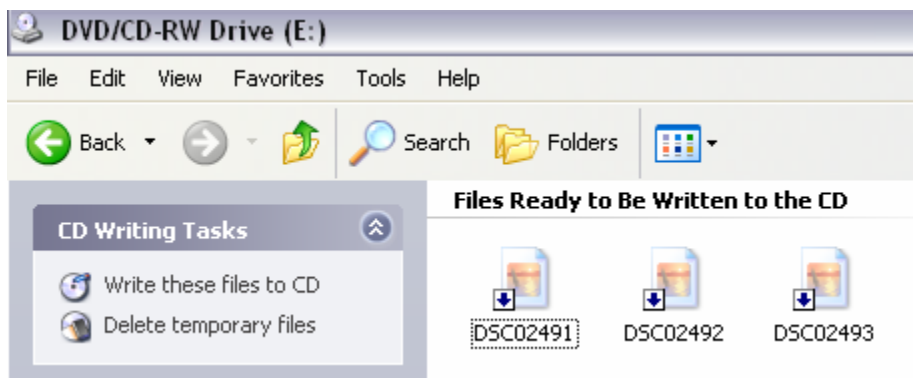
8. Using My Computer, navigate to the folder containing the files you wish to burn onto a CD. You can use the folder view to navigate. Switching between the Folder and Task Pane views is accomplished by clicking the Folder button at the top of the window.
9. Select View->Thumbnails
10. After navigating to the desired folder, make sure that the Task Pane is showing on the left.
11. At this stage you can select multiple files and/or folders that you want placed onto the CD.
12. After making your selection click Task Pane (see figure below – notice that 3 pictures are selected)



At this point you will get the Balloon window as shown below pop up. Just click in the center of it. If you should accidentally close this Balloon, just open My Computer and double-click your CD drive icon.

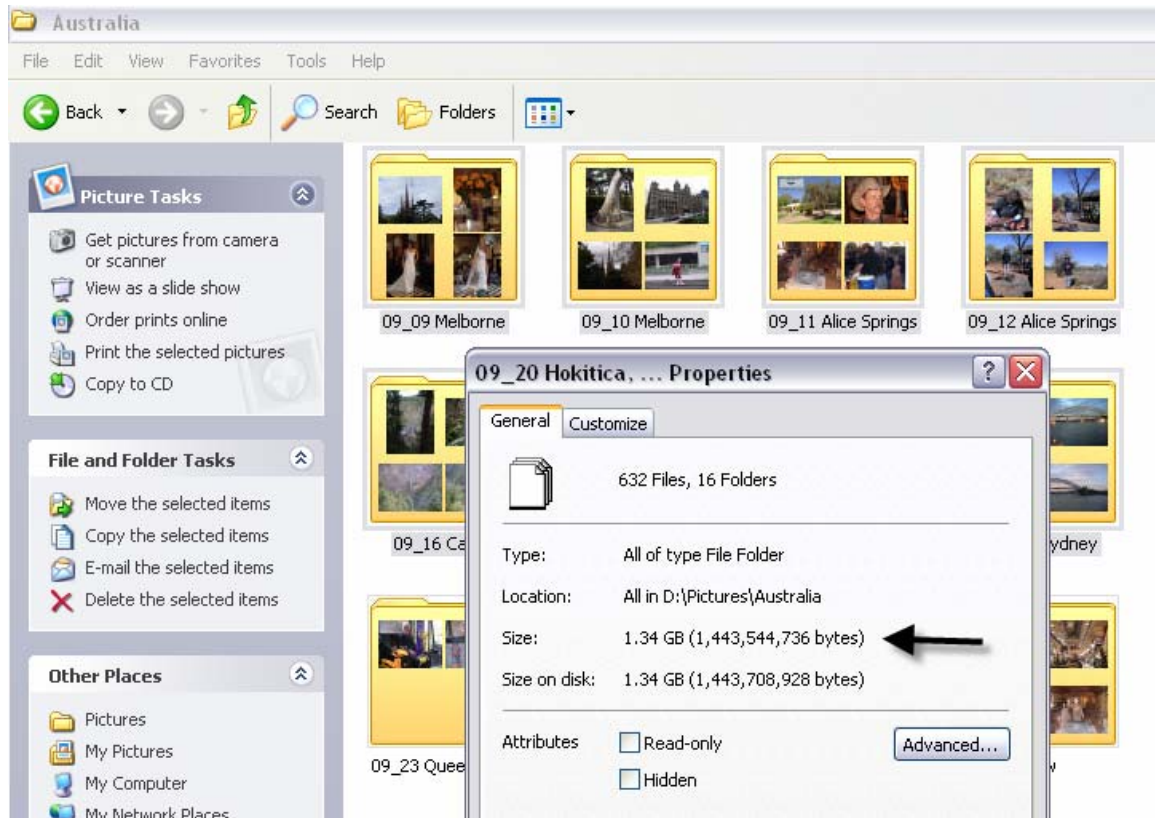


The window shown will appear next. Just click Write these files to CD. If you change your mind at this stage, just click Delete Temporary Files and start over. Windows creates multi-session CD's so you can add more files at a later time. This process can be repeated until the CD is full.



In the figure below, I selected multiple folders, then right-clicked any of the folders and selected Properties. Notice that the combined size of all of the selected folders is 1.34 GB

which is much more than will fit on a CD. Enough folders must be removed from the selection to get the size below 700 MB (for 700 MB CD-R's) before proceeding.



After clicking Write these files to CD, the Wizard will appear allowing you to add a name (Volume name) to the CD. There is no harm in letting Windows name the volume for you with a random name.

Usually, the CD will pop out after the process is complete. Check your CD before you finish by re-inserting it. It should autoplay or if it doesn't, just explore it and verify the contents.

Using the Free Astroburn

This program is available at <http://www.astroburn.com/home>.

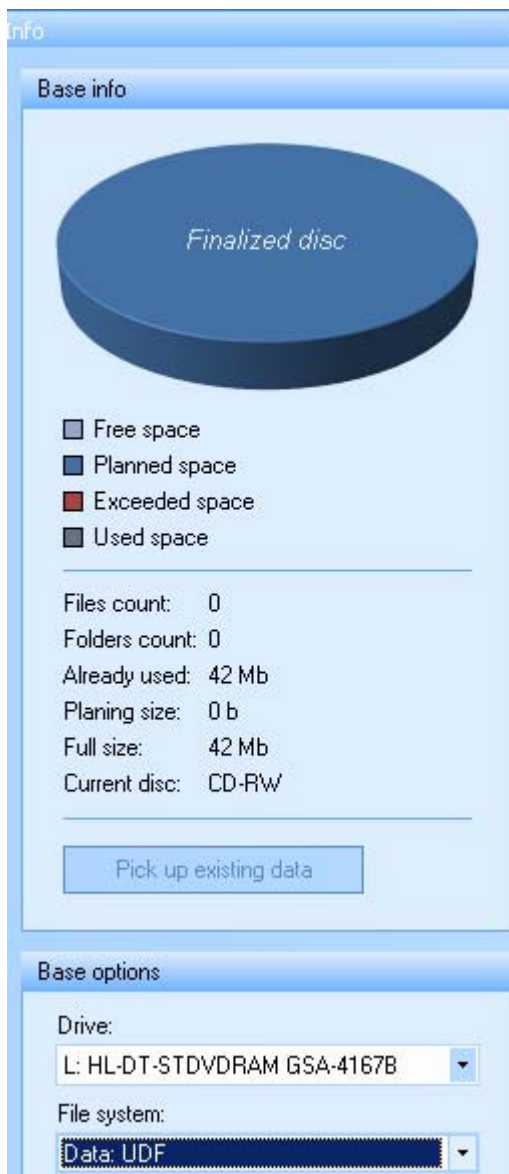
Note: When installing, be sure to uncheck "Commercial License" to get it for free and Decline the Astroburn Toolbar (unless you want to use it). This program adds only several mega bytes to your hard drive compared to Roxio that will add several hundred megabytes – but it can do much more.

Burning a Data disc with Astroburn

Ensure the file system is not set to "Audio CD". You can set the file system to the following:

- Data: ISO9660 (8+3 names): This file system will allow only 11 characters in file name and the file size is limited to 2 GB of one file.
- Data: ISO9660 + Joliet: This file systems is the same as ISO9660 (8+3 names), but you can use more than only 11 characters in file name (recommended).
- Data: UDF: This file system doesn't have any restriction like file name length or file size.

You can select either on of them by clicking on the "File system" dropdown-list at the bottom of [Info Panel](#):

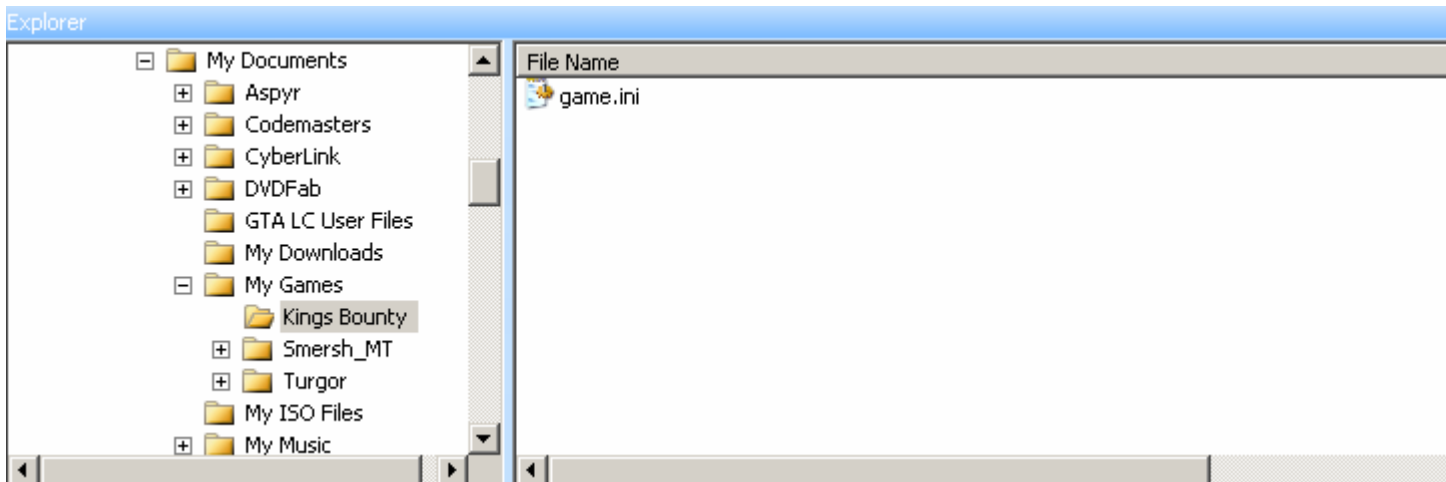


After pressing at one of these file systems in "File system" dropdown-list, you will notice [Project Panel](#) will change (only if previous file system was Audio CD):

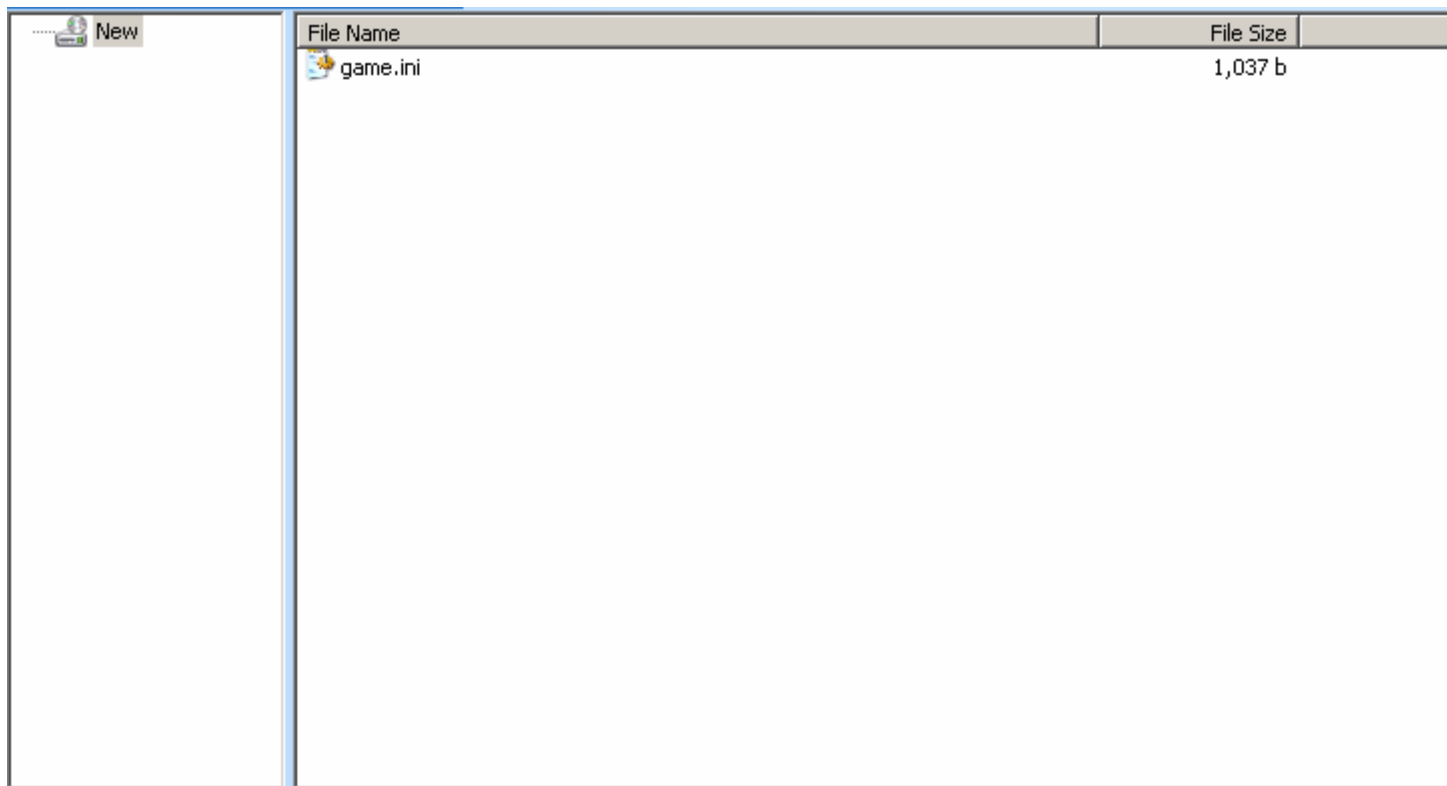


If you have more than one recorder, you have to select the recorder which should be used by clicking on the Drive dropdown-list and select the desired recorder.


Now browse to your data files on your hard disk drive in [Explorer Panel](#):

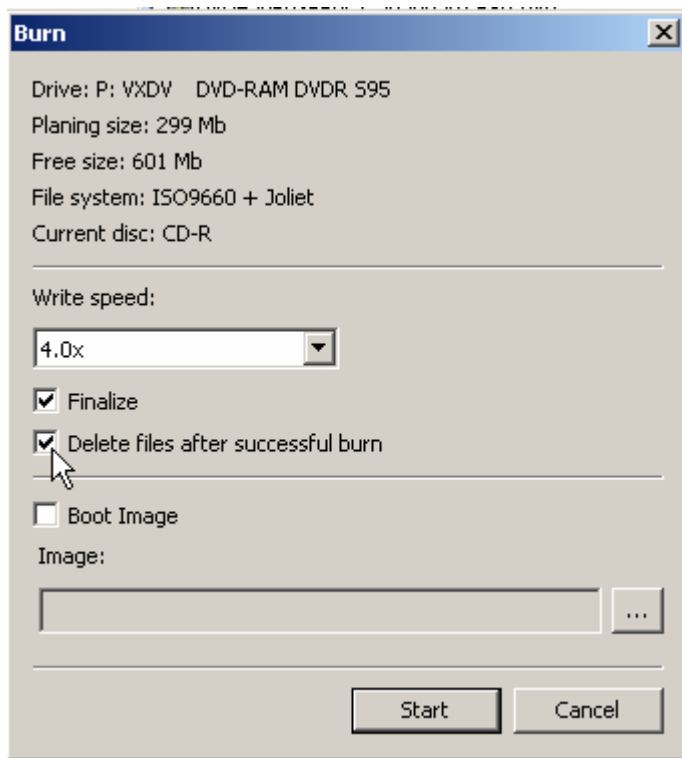


Move the desired data files via Drag'n'Drop from [Explorer Panel](#) (lower panel) to [Project Panel](#) (upper panel). You will see the file is now in Project Panel:

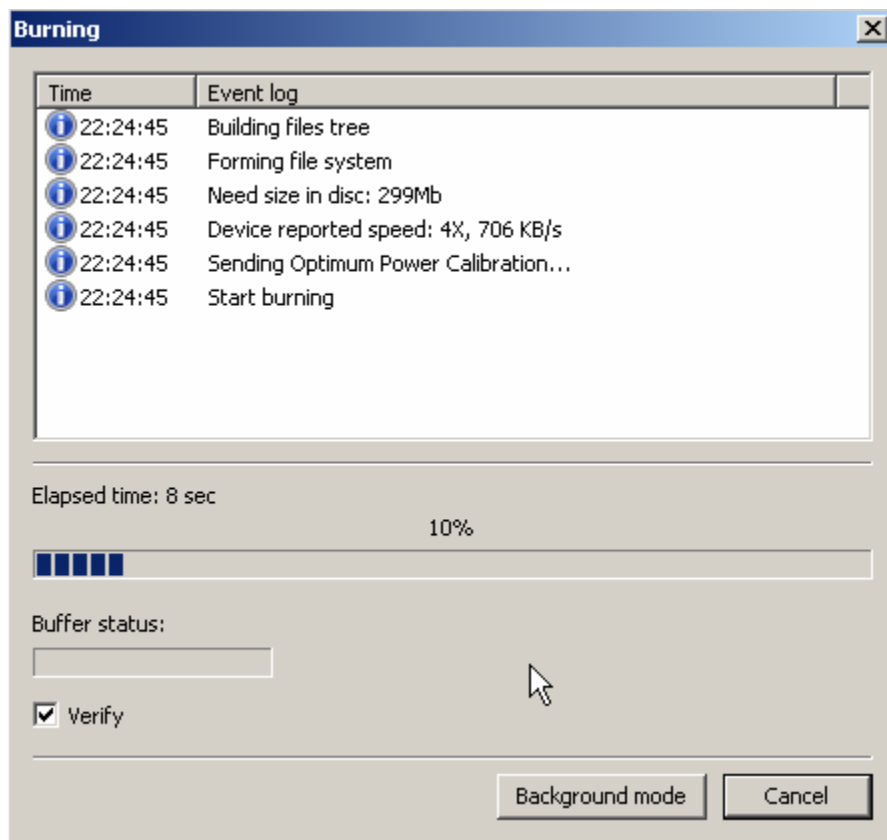


At the left side you can set the disk title (in the picture above it is "New") by pressing on "New" and either pressing F2 on your keyboard or pressing the right mouse button and then select "Rename". Now enter the desired disk title and either press with the left mouse button somewhere else or pressing on Enter on your keyboard.

When your project is ready to burn, press either on [Actions](#) in the menu and then on [Burn Project](#) or on the  button of the [main toolbar](#) to open the [Burn dialog](#):



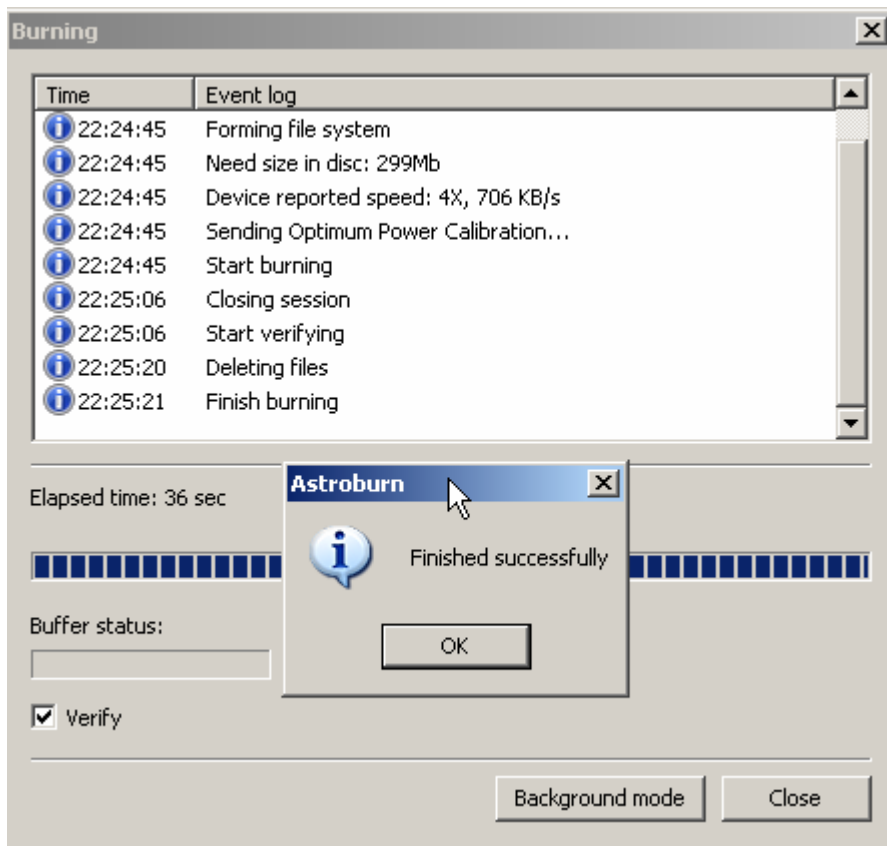
Select the write speed in dropdown-list, select if the disc should be finalized (no further writing possible) and if the files should be deleted after a successful burn by checking the proper checkbox and then press on Start button:



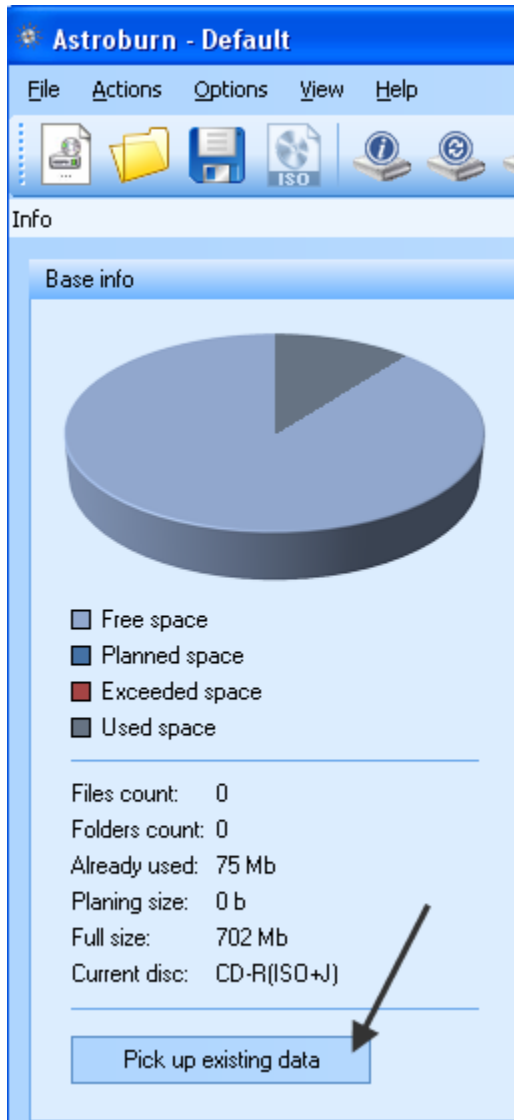
During the operation, you can either let Astroburn verify the burned data after the initial burning operation to check for bad data or set Astroburn to the tray. Just press on the "Background mode" button (tray icon will change during the time - based on the progress):



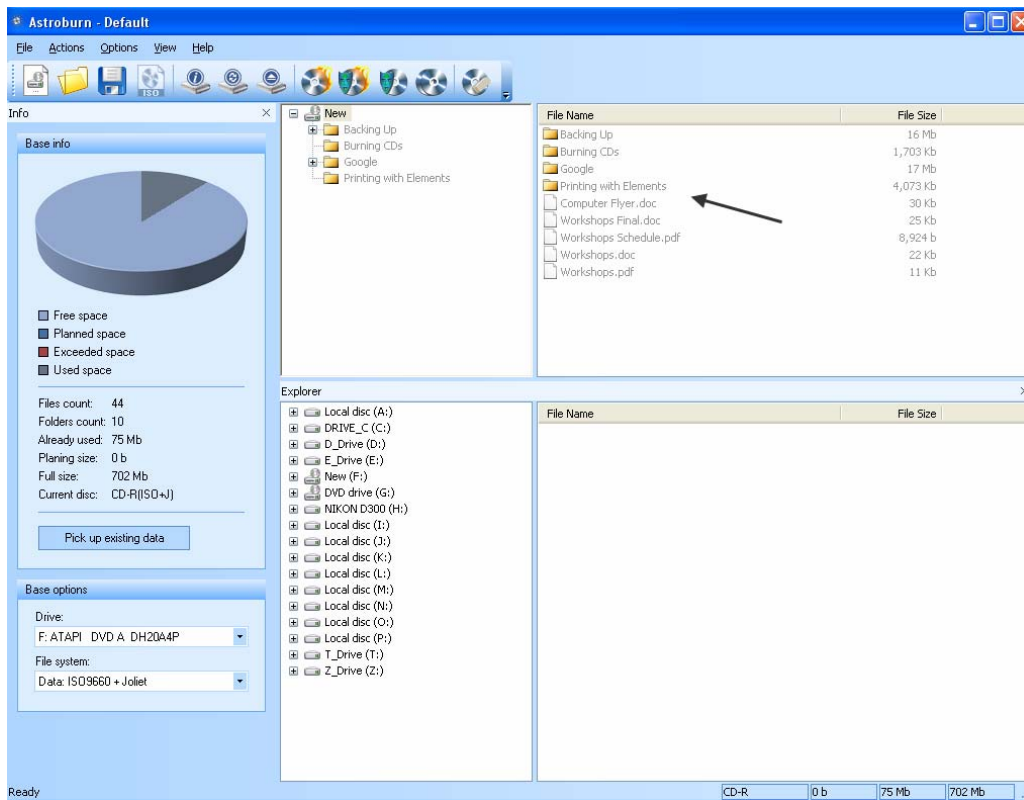
When the operation was successful, you will see the following dialog:



To create an appendable CD, leave the option to Finalize unchecked. When doing this, you can add additional data to the CD at a later time. When you insert an appendable CD into your drive while using Astroburn, Astroburn will enable the “Pickup Existing Data” option as shown below.



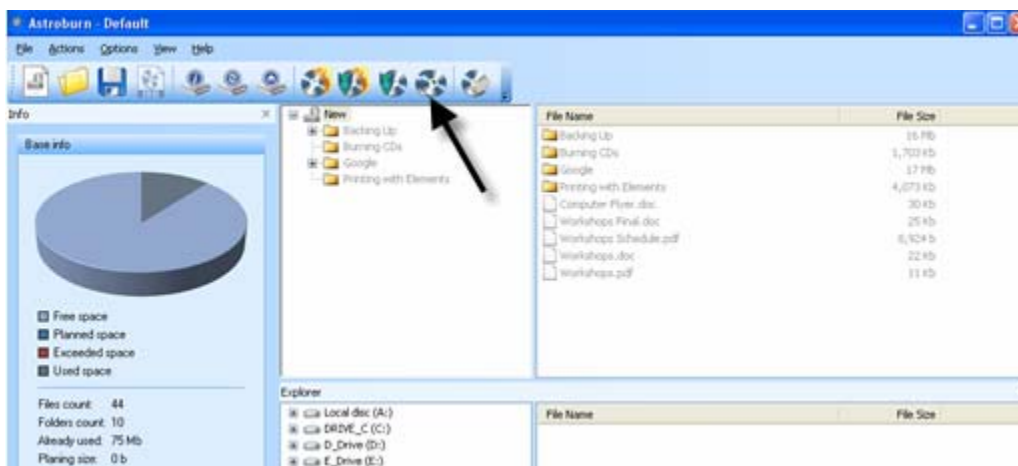
After you click this button, the data from the previous session(s) will be appended as shown below. You can now add additional data at burn another session. Be sure to check the Finalize option to finish the project (you have no more sessions to add).



Copying a CD or DVD with Astroburn

If you have 2 CD drives, some programs will let you place the original CD in one of them and a blank in the other. Astroburn only uses one of the drives. You start by placing the original CD or DVD in the drive, and then when prompted, you replace it with a blank. Here are the steps:

1. Place a blank CD or DVD in your drive and cancel any Wizards that open
2. Click the Burn button as shown below



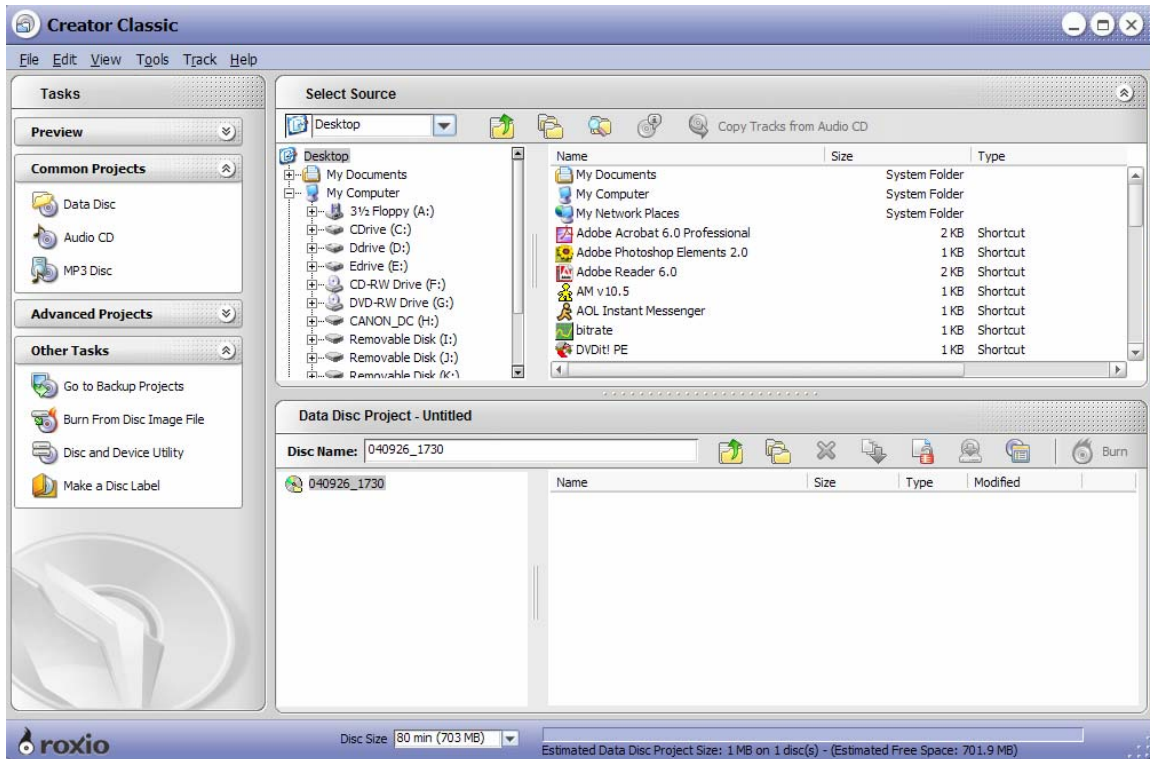
3. Follow the instructions until the disk is copied

4. Verify the copy

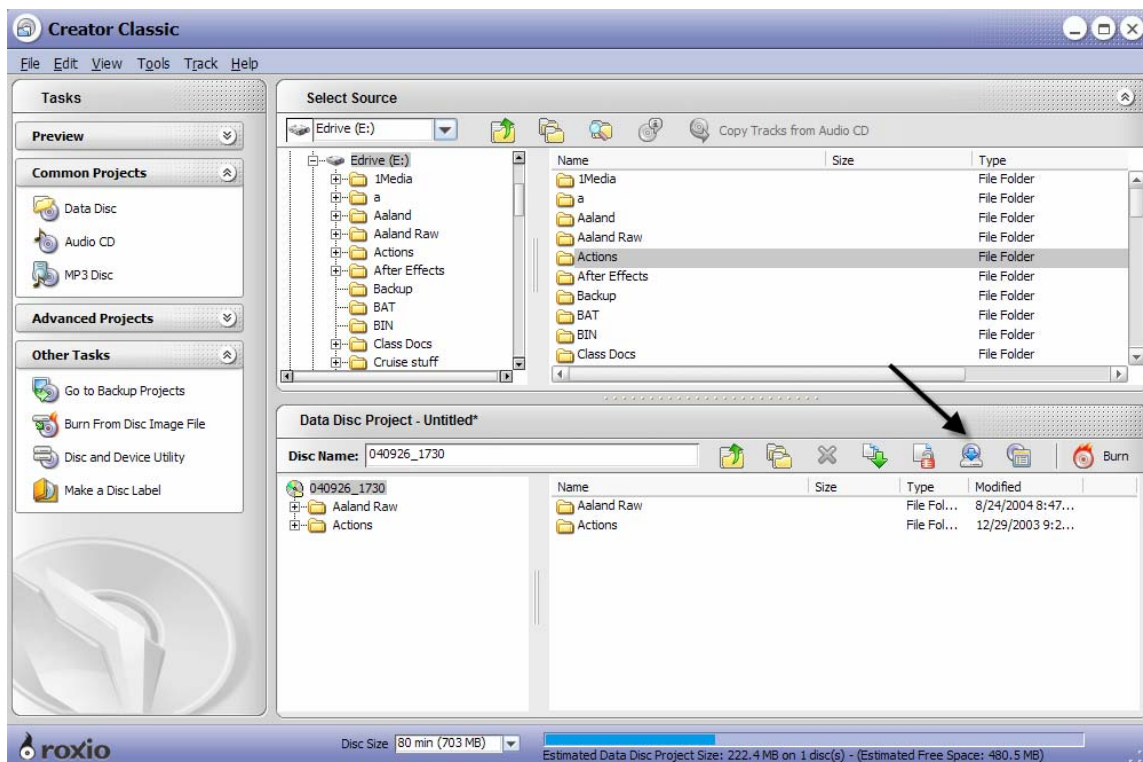
Additional help is available at <http://www.astroburn-help.com>.

Using Roxio CD Creator (now Roxio Creator 2009)

5. Place a blank CD in your CD burner
6. Open Easy CD Creator or in the latest version open Creator Classic. You will see the window as shown below

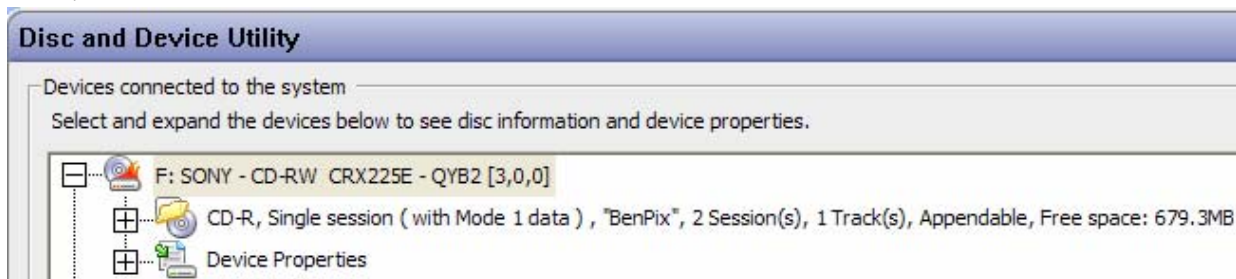


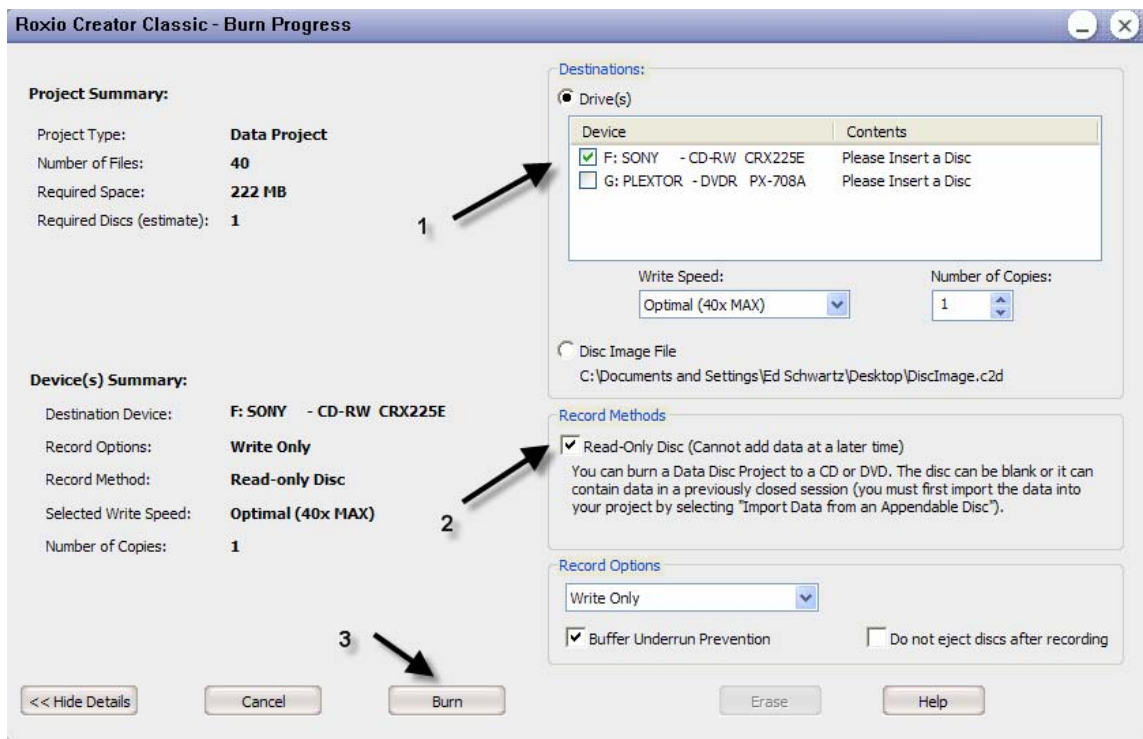
7. Click Data Disc in the left-hand pane.
8. Using the top window on the right, navigate to files and folders and just drag them to the lower window on the right. The example shown below has two folders that have been dragged to the lower window for burning onto the CD



9. Click the Burn button on the right. In the next window, click Details and you will see the window below.
10. If you create a multisession CD (don't place a check mark in the Read-Only Disk box, the next time you use the CD, you can click the Import Data from an Appendable Disk icon (see figure above) which will import the previous session. Note – if you click Tools/Disk and Device Utility, you can get the status of the CD that is in the drive. Below is shown the status for a multisession CD. It states that the CD is appendable.

1.





11. Select the drive (see 1 above). Since I have two burners I must select one of them.
12. Place a check in the Read-Only Disk box for a single session CD (see 2 above)
13. Click Burn

Creating CD's with iTunes

You can use iTunes to create Music CD's, MP3 CD's or Data CD's or DVD's. See the iTunes document on line on the Workshops page for further information.

Creating CD's with Windows Media Player

You can use Windows Media Player to create music CD's from your library or CD collection. These CD's can contain a selection of songs, more commonly called a mix, for playback in your car. See the on line document on the Workshops page for more information.

Creating CDs and DVD's with Nero

Another program that can burn CD's or DVD's is Nero. This program costs approximately \$79 and is similar to Roxio. A document on this program is available on line on the Workshops page.