CDRDB

User's Guide

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This document provides configuration and usage guidelines for CDRDB, a CD-R Disc Image Database.

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Introduction

CDRDB is a simple database program for storing information about CD images. This document describes how to configure and use CDRDB.

Before this program was written the Author had many (hundreds probably) of old slowly deteriorating CD-Rs containing archives and backups in storage. They still contained useful data but with no index and no way of searching them that data was virtually inaccessible.

So it was decided as the first stage of a solution to image all of the CD-Rs (make .iso files of them) and record their details in a database (CDRDB) as the disc images filename alone could not record enough useful information. CDRDB allowed the disc images to just be numbered with all useful information being stored in a database. This means the original CD-Rs, which were slowly going bad, were no longer required and their contents could easily be indexed in the future using the disc images.

Because many discs had similar names like "Stuff", "*stuff*", "Junk 4", "backup 9, 18/03/2003", etc, the text on the disc alone was not unique enough to identify them. To solve this problem, each disc was put through a scanner to have a picture taken of it. This allows entries in the database to be matched up to the physical disc if needed.

1.1   System Requirements

CDRDB does not require a database server of any kind as it uses the embedded SQLite3 database engine. As such, all that is required to run the windows version is Windows XP or newer. Windows 2000 has received minimal testing and CDRDB appears to work on this version but there may be hidden problems.

It should also be possible to compile and run CDRDB on any platform supported by Nokias Qt toolkit, version 4.6 or newer. This includes Linux and MacOS X. The QtGUI and QtSQL modules are required along with the SQLite3 database driver. These should be included in your Qt installation.

Main Window

The main window (figure 2.1) shows a table of all the discs in the database along with the usual menu and toolbar.
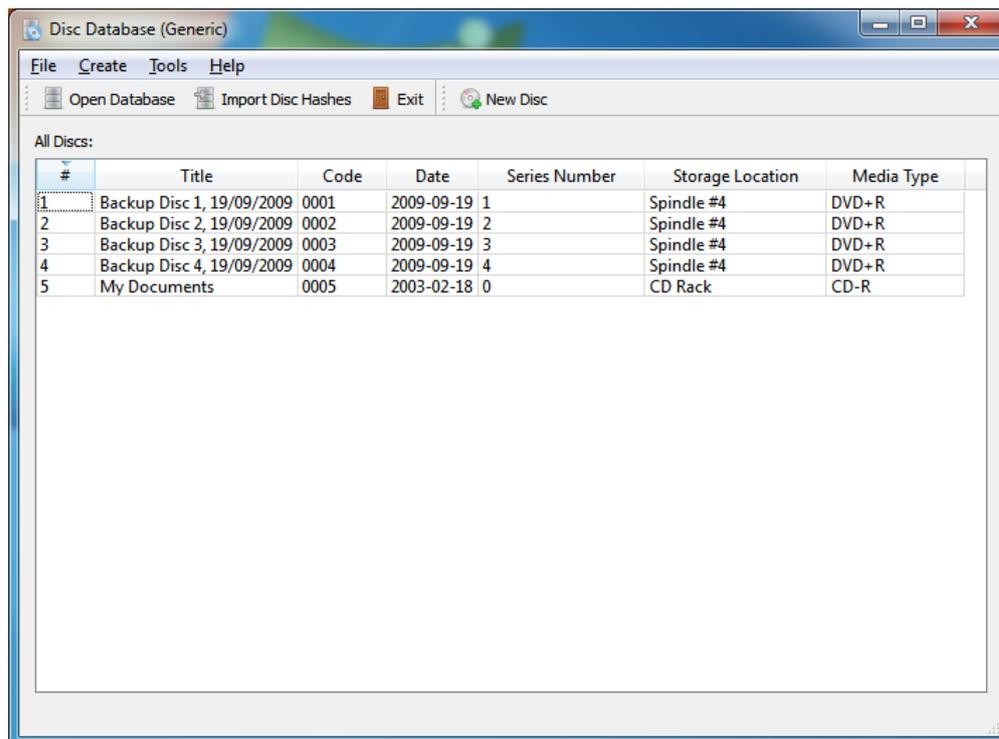

Figure 2.1: The Main Window with a database open

Double clicking on an Disc in the table will bring up more information about that disc (See section 4.2).

2.1   Menu Items

All of the programs functionality can be accessed through the menu bar at the top of the main window. Some of these options are also available on the toolbar.

This section gives an overview of all the available menu items and what they do.

2.1.1   File Menu

	New Database...	Creates a new CDRDB Database file.
	Open Database...	Opens an existing CDRDB Database file.
	Import Disc Hashes...	Imports Disc Hashes. See Section 3.1.
	Exit	Exits CDRDB.

2.1.2   Create Menu

	New Disc...	Creates a new Disc entry. See Section 4.1.

2.1.3   Tools Menu

	Database Properties...	Allows database properties to be viewed/edited. See Section 5.1.
	Maintain Media Types...	Allows the list of available Media Types to be edited. See Section 5.2.
	Edit Data	Allows disc entries to be edited. See Section 4.3.

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Disc Image Handling

CDRDB was originally designed to store detailed information about disc images (.iso files). To link records in the database up to the actual disc images, CDRDB uses hashes (MD5, SHA-1, whatever) based on the contents of the image file instead of file names. This provides the following advantages:

- Files can be renamed without manually changing filenames in the database

- If there is more than one copy of a CD in the database they will share the same image file automatically. Both entries in the database will show the same image file(s).

- If duplicate image files are discovered later they can be removed without affecting the database. The database will just end up showing one image file instead of two or three identical ones for those entries.

3.1 Importing Hashes

Whenever new discs are added or image files are renamed you need to import a new set of hashes into the database so that the hashes in the disc records can be used to look up filenames.

To do this you first need to run a utility like md5sum (included in most linux distros) or MD5Summer (a GPL graphical utility for Windows - `http://www.md5summer.org`) over your directory of disc images. This will produce a .md5 file which looks like the following:

```
803dfa09e126d9b10b890be3317c4585 *DISC3.iso
8d0e39d6c924945a8e3f2621a687a8ea *DISC2.iso
fb955a3db083723cc6a255357f89c569 *DISC1.iso
```

This .md5 file is then imported into the database using the 🖳 *Import Disc Hashes* option under the *File* menu.

When you select this option you will will be asked if you want to remove all existing hashes from the database first. Your choices are:

1. **Yes** - you want to *replace* **all** existing hash/filename mappings in the database with the ones you are about to import. This deletes all existing hash/filename entries first and then imports what ever is in the supplied .md5 file. This is a fresh start so you will have to run md5sum over your entire directory of disc images, not just the ones that have changed.

2. **No** - you only want to *add* the new hashes. This just appends the contents of the .md5 file to the database. The .md5 file should only contain the hashes for the new discs to avoid duplicate filename entries.

Next a file open dialog will appear where you can select your .md5 file. Select the file and click OK. A progress dialog will appear while the data is imported into the database.

Once it has completed you will be returned to the main window. Open up a few discs and check that filenames appear correctly.
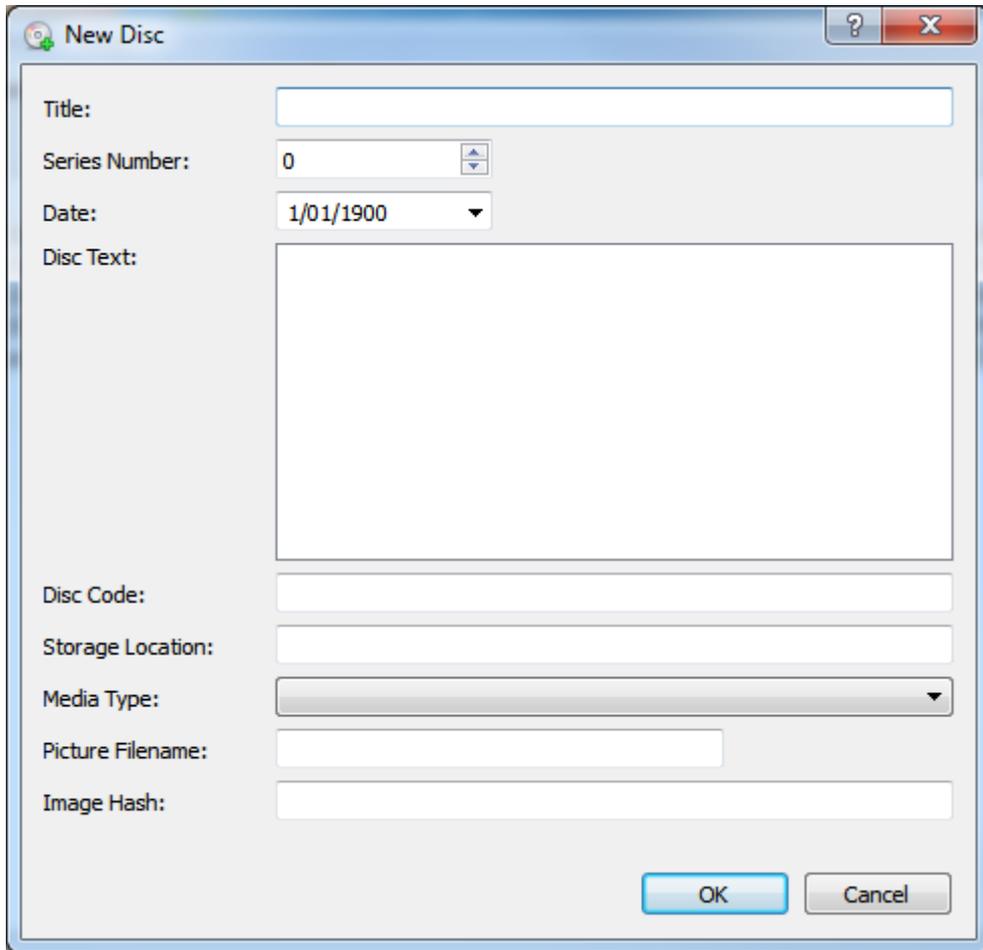
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Discs

CDRDB stores the following information about a disc:

1. Title

2. Series Number (eg, Disc 1, Disc 2, etc)

3. Date

4. Disc Text (any useful information written on the discs label)

5. Disc code (For assigning a unique number to discs - eg, CD#0042)

6. Storage Location (eg, CD Rack 3)

7. Media Type (CD-R, CD-RW, DVD-ROM, etc)

8. Picture Filename (if pictures are taken of the discs with something like a scanner)

9. Image Hash (an MD5 sum of the disc image .iso file)

4.1   Creating Disc Entries

New Disc entries in the database can be created by selecting the *New Disc...* option from the *Create* menu. This will bring up the *New Disc* window (Figure 4.1)

The only special fields here are *Media Type*, *Picture Filename* and *Image Hash*. You can put what ever you like in any of the other fields.

Figure 4.1: The New Disc window

To edit the Media Type options, see Section 5.2.

The Picture Filename field is for entering the name of a picture of the discs label. If you want to scan in a copy of the discs label this is where you can attach the resulting picture file. The disc information window has a view button to bring up the picture file.

The Image Hash field should contain an MD5 (or other) hash of the disc image (.iso) file. This is used to match database entries up to filenames later. To compute this value run a utility like md5sum or MD5Summer (`http://www.md5summer.org` over the .iso file and enter the value it gives you in this field.

For more details on how hashes are used to identify files, see chapter 3.

4.2   Viewing Discs

To view information a disc, find its entry in the table on the Main Window and double click on it. This will bring up the *Disc Information* window (figure 4.2). This window looks mostly the same as the *Add Disc* window except:

1. All of the fields are read-only (you can't edit discs here).

2. There is a View button next to the Picture Filename field.

3. The Image Hash box has been replaced with an Image Files table.

4. There is a Close button instead of OK/Cancel.

If there is a picture filename for this disc, clicking the *View* button will open it in your default image editor. By default CDRDB looks in the current directory for image files. To change this, see section 5.3.1.
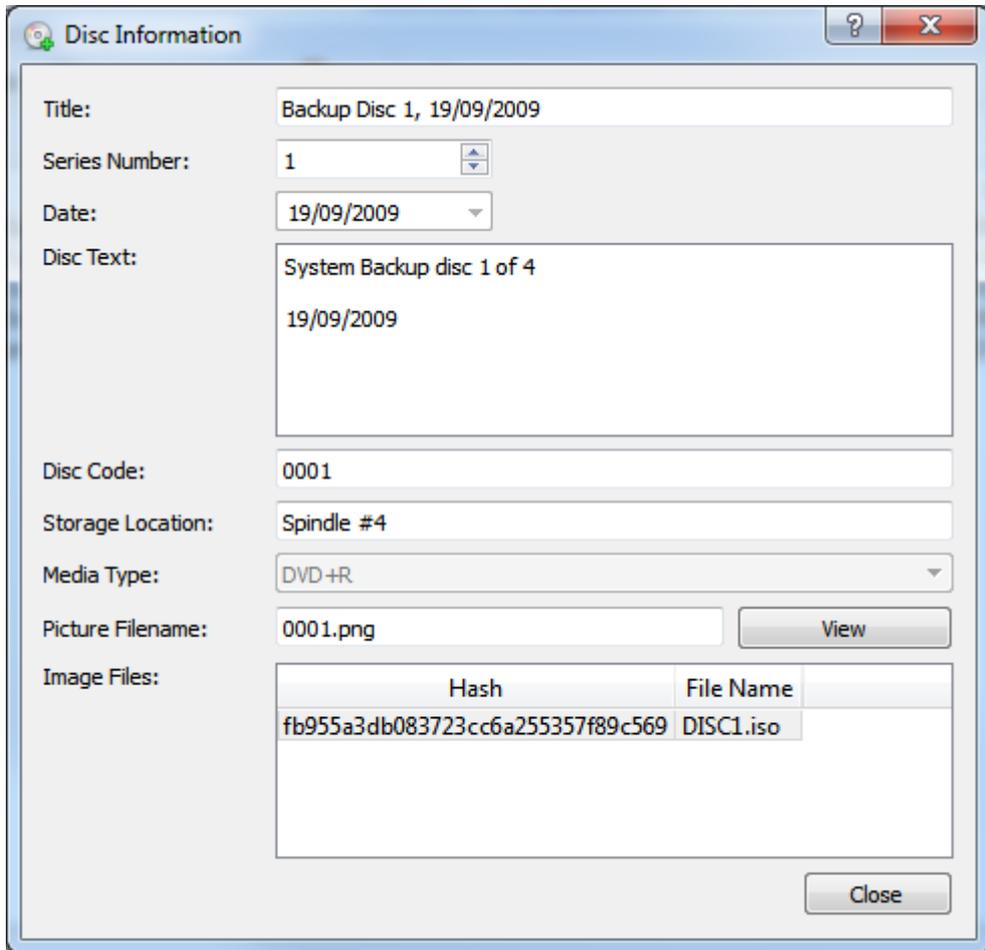
The Image Files table down the bottom of the window should display two columns; Hash and Filename. The values in the Hash column should all be the same and will match the Image Hash you entered when creating the database entry. If there is more than one file listed here then you probably have multiple identical copies of the disc which were entered in the database or you imaged the disc more than once.

4.3   Editing Discs

There is no proper way of editing existing records in the database as it is not normal for discs to be changed once they have been created. However, if a mistake was made when entering a disc into the database it is possible to correct it but it is not as easy.

To edit data in the database, choose the 📝 *Edit Data* option under the *Tools* menu. This will bring up the *Edit Raw Data* window (Figure 4.3).

This window allows you to edit any entry in the database. Just double click on a cell to edit its contents. Any changes you make will be saved to the database when you click OK or discarded when you click Cancel.

Figure 4.2: The Disc Information window

You can actually create new Disc entries in the database using this window by clicking on the ▥ *Insert Record* button at the top of the window. It will normally be easier to use the New Disc dialog though.
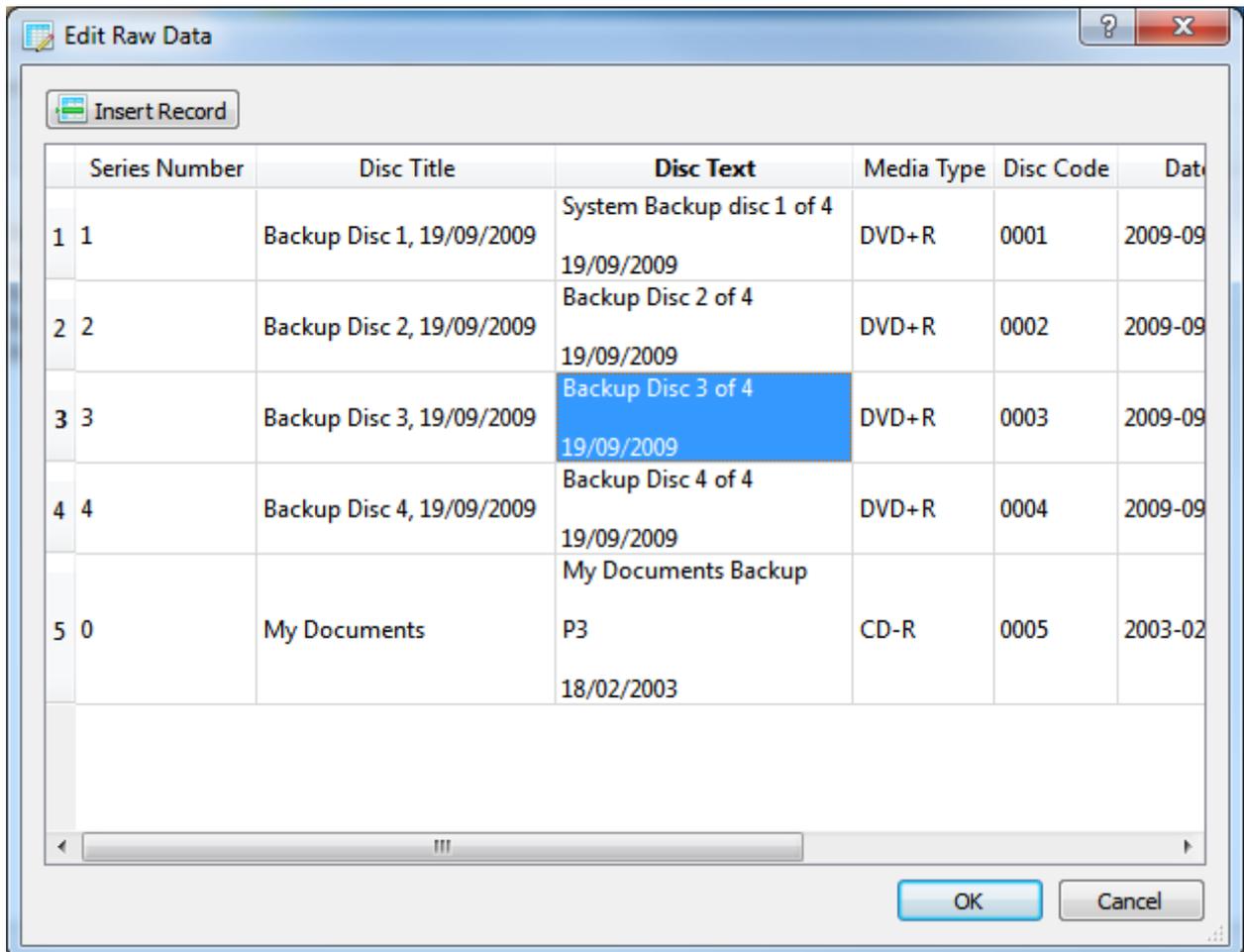
Figure 4.3: The Edit Raw Data window

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Maintenance

A few database maintenance tools are available under the Tools menu. Mostly you wont need to use them although it may be useful to set some information in the *Database Properties* dialog (Section 5.1).

5.1 Properties

The *Database Properties* window (figure 5.1) can be accessed using the ▣ *Database Properties...* option in the *Tools* menu.

At the top of the window there are a few details about the database itself. These are:

Database Type	The sort of database this is. It should always read "CDRIMGDB". CDRDB will refuse to open anything else.
Generator	The name of the program that created the database. This will normally be "CDRDB".
Version	The database format version. This indicates the features available in the database. It will likely affect the Minimum Program Version.
Minimum Program Version	This is the minimum compatible version of CDRDB. Any versions older than this won't be able to open the database.

In addition to this information, there are two fields you can set yourself - Author and Comments. You can write what ever you like here.
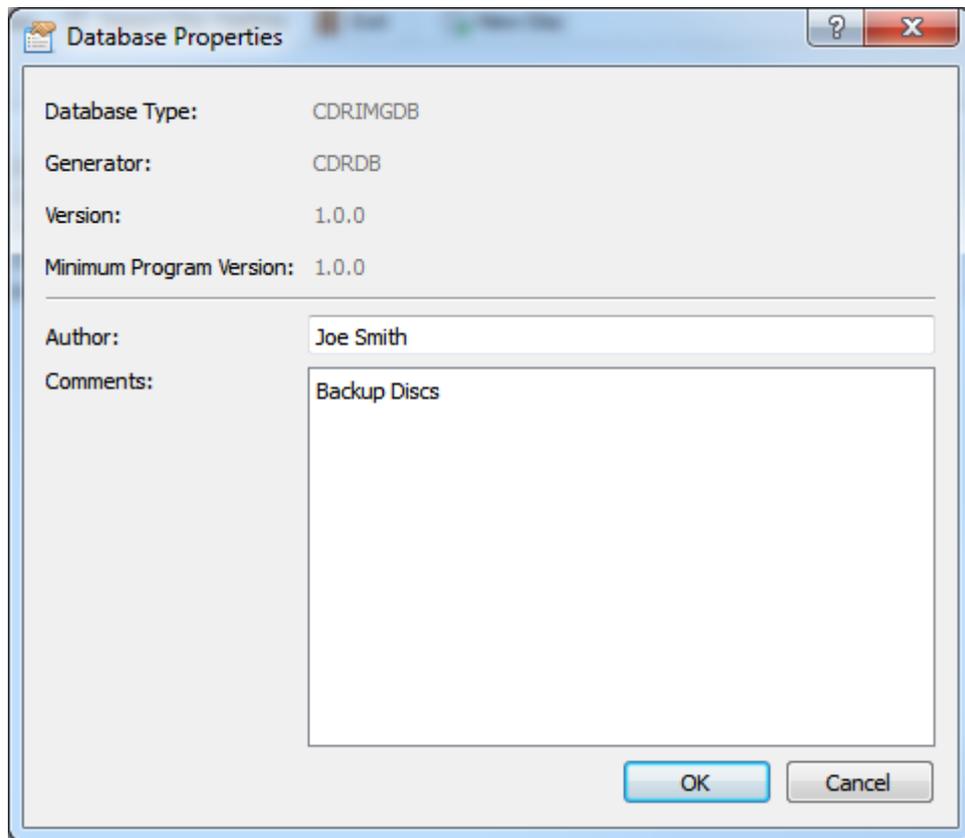
Figure 5.1: The Database Properties window

5.2   Media Types

To configure the options available in the Media Type combo box in the New Disc window, select the ⚕ *Maintain Media Types...* option from the *Tools* menu. This will display the *Media Types Maintenance* window (figure 5.2). Using this window you can edit existing Media Types and insert new ones. There is no delete functionality.

To edit a value, just double click on the table cell. To insert a new Media Type, click on the ▦ *Insert New Entry* button. This will insert a new row at the bottom of the table.

The Name column is the value shown in the combo box. The Description column is not used at this time but it may be shown in the user interface at some point in the future.

Clicking on the *OK* button will save your changes, *Cancel* will discard them.
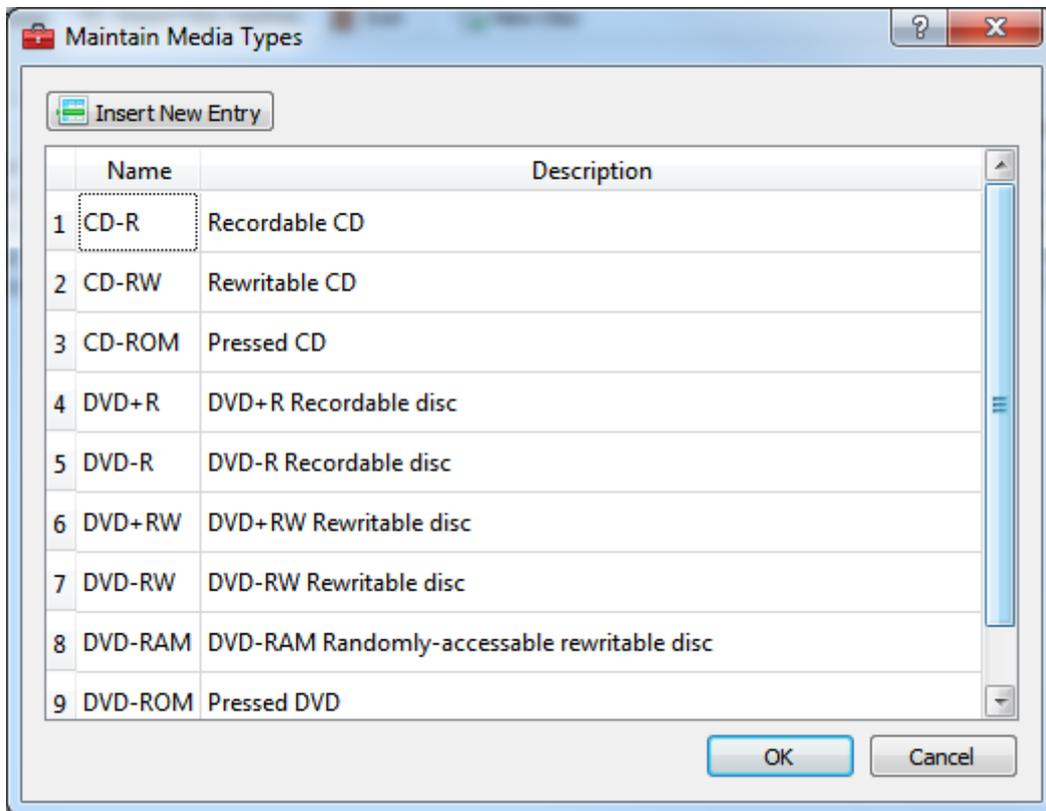
Figure 5.2: The Media Types Maintenance window

5.3 Configuration

At this time CDRDB is still a very basic program and as such there is only one configuration option. There is no graphical interface for setting this value. Instead, open `CDRDB.ini` in the programs directory in notepad to change settings.

5.3.1 Default Image Directory

The `DefaultImageDir` setting controls where CDRDB looks for picture files when you click on the *View* button in the Disc Information window. If no value is set the programs directory will be used instead.

To set this value, insert a line such as the following into CDRDB.ini:

```
DefaultImageDir=C:\disc_images\pics
```