

CDemu Manual

CD emulation for Linux

The CDemu project @ <http://cdemu.sourceforge.net>

This is the manual for CDemu version 0.8.

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1 About CDemu

1.1 About

CDemu is a kernel module for Linux. It is designed to simulate a CD drive + CD with just simple CD image files, which are pretty common in the Windows world. It includes an user space program to control the kernel module. You can use it to watch an SVCD or mount the data track of a CD image file. Currently CDemu supports BIN/CUE (CDRWin), MDF/MDS (Alcohol 120%), CCD/IMG (CloneCD), NRG (Nero Burning ROM) and ISO CD image files, but support for more formats is expected in the future. The CDemu project is licensed under the GNU General Public License version 2 or later!

1.2 Status

Using CDemu on multi user systems should be safe now. Any user can mount an image in an empty CDemu slot while only the user (and root) can unmount a slot that is already in use.

Many users have reported SMP issues (varying from lock ups to very poor performance). We've had an user send us a threading patch to avoid locking issues, but it is 2.4-centric. So, before it can be added to CVS, it needs to be generalized to support 2.4 and 2.6. Unfortunately, none of the CDemu developers have access to SMP systems so the best testing we can do involves 'it looks good' :). CDemu-0.6 final should resolve these issues.

Looking ahead: CDemu was first created to support bin/cue images. Ideally, we'd like to be able to support Easy CD Creator (.ecd), Disc Juggler (.cdi), etc. Anyone with spare time and spare patches would be appreciated.

1.3 History

It all started like this: I got some movies from friends on a firewire disk which where bin/cue files. They told me I would need to burn them or use Daemon Tools under Windows in order to watch them. That was to much for me, booting Windows just to watch a movie? So a friend (Justus Schwartz) and I decided that we should make a patch for our favored video player MPlayer. After one night we had a proof of concept; 2 weeks later we had a good patch and we submitted it. It was accepted by the MPlayer team and starting with 0.9rc3, our patch is included. The syntax is as follows:

```
$ mplayer cue://<cue file>[:track] [options]
```

After that was done, I thought, hey it's not that hard, so I resolved to make something like Daemon Tools, but for Linux. And so I started to write my first kernel module and after 1 week it worked; some bug fixes later we had my first public version.

I changed the name to CDemu because the company which owns the rights to the name Virtual CD asked me to do so.

1.4 Develop

The user space program is written in our beloved language Python. If you would like to make a GUI program for it, you should take a look at 'libcdemu.py'. All important user

space code is there. If you've made a GUI program to control the CDemu Kernel Module, please contact us. We would love to include the code here on our site.

Ideally, we'd like to be able to support Easy CD Creator (.ecd), Disc Juggler (.cdi), etc. Anyone with spare time and spare patches would be appreciated. Additional tasks can be found in the TODO file.

2 Installing

The install should be quite simple, at least in theory. I guess you have already downloaded this awesome software from internet and you are waiting to try it out. The first thing you need to do is to extract the contents of the archive to a place of your preference on your harddrive. You can do so by typing the following at the command line.:

```
$ tar -jxvf cdemu-<VER>.tar.bz2
```

You need to have the source of your current running kernel available and in the right place. Take a look in `/lib/modules/$(shell uname -r)/build/include`, it should contain the header files of your kernel. The next thing we want to do is to build and install the kernel module and some user space utilities.:

```
$ make
```

```
$ make docs
```

```
$ sudo make install install-docs
```

Now you should have everything you need installed on the computer. But in order to use CDemu you first need to load the kernel module. Please note that you should not get any messages after running `modprobe`.:

```
$ sudo modprobe cdemu
```

That's it, CDemu is up and running. You can now use the `cdemu` utility to mount or unmount CD-images and show usage information and status. You may also use the Linux `mount` command to mount a filesystem that is on the CD-image. Both UDF and ISO9660 filesystems should be recognized by recent kernels. Here are some example command lines:

```
$ cdemu -h
```

```
$ cdemu 0 image.cue
```

```
$ mount -t iso9660 /dev/cdemu/0 /mnt/cdrom
```

If you run into any warning or error messages during installation you should read the `INSTALL` file that comes with this package. It contains many notes on any problems you can run into while making and installing CDemu. More information on usage can be found in the Chapter 3 [Usage], page 4 section of this manual.

3 Usage

CDemu is a user space utility for mounting and unmounting CD-images on a virtual CD device. To achieve this it has to communicate with the CDemu kernel module.

Usage: `cdemu [options] [<drive number>] [<cd-image description file>]`

Options:

- `-d, --device`
use the given device
- `-h, --help`
show this screen
- `-s, --status`
shows the status of all virtual drives
- `-u, --unload`
unloads the given device
- `-v, --verbose`
be verbose
- `-V, --version`
show version and copyright notice

CD-image description files:

- `'foobar.cue'`
(CDRWin)
- `'foobar.iso'`
(ISO9660)
- `'foobar.mds'`
(Alchol 120%)
- `'foobar.ccd'`
(CloneCD)
- `'foobar.nrg'`
(Nero Burning ROM)

Examples:

```
cdemu 0 foobar.cue
    load cd

cdemu -u 0
    unload cd

cdemu -s
    status
```

4 F.A.Q.

Please check to see if the answer to your question is in the F.A.Q. before posting a message to the mailinglist.

Q: Why should I use the CDemu Kernel Module when i can just mount the ISO9660 filesystem over a loopback device? ("`mount -o loop mymovie.iso /mnt/mymovie`" for example)

A: That only works with ISO images. In other words, only one data track. Many bin/cue images contain more than one track and often times are in the raw format (that means the image also contains the error correction codes from the cd ... an exact binary image). You can't mount these types of images directly.

Q: I am trying to mount an [S]VCD but the mount command keeps failing!

A: Of course it does not work ! An [S]VCD contains no real filesystem. You need to read it in raw mode. e.g. use MPlayer or xine to watch the movie. Just point the player to the virtual device (i.e. `'/dev/cdemu/0'`) But Windows does you say !? Windows lies to you ;-) Windows has the problem that it can't read cds in raw mode, so the ATAPI driver creates a virtual file system, so Windows programs can read it. This layer is not needed in Linux since we can just handle the raw format with our media players. ;-)

Q: Whenever I try to mount an image I get an error like "mount: you must specify the filesystem type".

A: Usually when you run mount you don't have to specify the filesystem type, but sometimes you do. Just add another option to the mount command, `"-t iso9660"` like so:
`"mount -t iso9660 /dev/cdemu/0 /mnt/cdrom"`

5 Mailing lists

If you have any bug reports, questions, patches etc. you can send a message to the mailinglist. If you are reporting a bug please supply the following information in the mail: What Linux distribution you have, what kernel version (`uname -r`) you are using and if possible verbose output from the `cdemu` command (`cdemu -v`) that led to the error message.

CDemu Development List cdemu-devel@lists.sourceforge.net

6 Authors

6.1 Main developers

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