

CDEMU2: an MSCDEX emulator for networked CD-ROM drives

User's Guide

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Overview

On MS-DOS based computers, CD-ROM drives that are directly connected are normally made 'known' to the system using a program called MSCDEX, the Microsoft CD-ROM Extensions. The purpose of this program is firstly to make the files of the CD-ROM appear like an MS-DOS disk drive (which is very large, and read-only); and secondly to allow access to CD-ROM specific functions (such as the playing of audio tracks) in a hardware-independent manner.

Several commercial solutions now exist for sharing CD-ROMS within a local-area network (LAN); most, however, are expensive and only cost-effective on large (and therefore expensive) networks. For small networks, a cheaper option is to use a peer-to-peer networking package such as NetWare Lite to share the drive letter assigned to the CD-ROM drive by MSCDEX across the network. The pitfall with this scheme is that a number of CD-ROM access packages do not simply access the CD-ROM as if it were an MS-DOS disk drive; instead they make special calls to MSCDEX, which fail since MSCDEX is not loaded on the machines accessing the drive across the network. Happily, most only make a few calls, principally to determine that MSCDEX is loaded and to determine which drives on the system are in fact CD-ROMs

The function of CDEMU2, therefore, is to emulate MSCDEX in a limited fashion in order to fool CD-ROM applications into working across a network. It must be noted that not all CD-ROM applications will work in this fashion: applications that rely on playing of audio tracks will obviously not be usable in a network environment. Others, such as the Harrap Multilingual Dictionary, ignore the disk drive set up by MSCDEX and access the sectors of the CD-ROM directly; this and other applications that do this cannot be shared in this fashion. It should also be noted that using a CD-ROM application across a network legally requires that it be licensed for use on multiple machines concurrently.

Installation

The package consists of this document file and two programs, CDEMU2.COM and CDINFO.EXE. These may be placed in any convenient directory, though it is suggested that they be stored in a single directory on a file server which is accessible to all prospective clients of the networked CD-ROM drive and that this directory be included in the DOS PATH on all such machines.

Usage of CDEMU2

The command line format for CDEMU2 is as follows:

```
CDEMU2 d[:] [=vtoc-file] [...] or  
CDEMU2 /U to unload from memory
```

where

d[:] is the MS-DOS disk drive letter which will be used to access the CD-ROM drive across the network. It is not necessary that this disk drive actually exist or have been created at the time CDEMU2 is loaded, though of course it must when the CD-ROM application is started.

vtoc-file is the name of a file created by the CDINFO utility. This is used when it is necessary to emulate the "Get VTOC" function in MSCDEX (see below for further details).

... indicates that the above can be repeated as often as necessary up to the length limit of an MS-DOS command line (127 characters)

Usage of CDINFO

Certain CD-ROM packages, such as "Le Robert Electronique", not only check that MSCDEX is loaded, but read the "VTOC" or "Volume Table of Contents" as well (presumably in order to check that the CDROM is the correct one). As the VTOC is not accessed as an MS-DOS file, this function cannot be directly handled by the emulator. There is, however, a solution: the VTOC can be read from the CD-ROM into an MS-DOS file, and CDEMU2 can emulate the "Read VTOC" function by reading this file instead. This is what the CDINFO utility is for.

The command line format for CDINFO is

```
CDINFO d: vtoc-file
```

where

d: is the drive letter assigned to the CD-ROM drive. **Note that you must run CDINFO on the system that the physical CD-ROM drive is connected to!**

vtoc-file is the name of the file to store the VTOC information in. It is suggested that this be stored on the system acting as a fileservers and made available to the client PCs.

Examples

Suppose that the CDEMU stuff (together with the VTOC emulation files) live in the directory C:\CDEMU2 on the machine acting as the CD-ROM server and the CD-ROM product to be shared is "Le Robert Electronique" which appears to the server as drive E:. The steps to be followed are then:

On the server:

1. Make C:\CDEMU2 and E:\ available to the network (this assumes that the network software is already set up).
2. Ensure that the CD-ROM is mounted in its drive. Change directory to C:\CDEMU2 and issue the command

```
CDINFO E: LEROBERT.CDI
```

On the client:

1. Access the CD emulation software and the CD-ROM drive on the server using the network software. It will be assumed that these will be accessed as drives G: and H: on the client (i.e. G:\ on the client corresponds to C:\CDEMU2 on the server and H:\ on the client corresponds to E:\ on the server).
2. Add the directory G:\ to the PATH statement on the client. If the

network software provides no other way to do this, write a batch file that contains the line

```
PATH G:\;%PATH%
```

and execute it.

3. Load CDEMU2 on the client with the following command line:

```
CDEMU2 H:=G:\LEROBERT.CDI
```

4. Run the "Le Robert" access program

5. Unload the emulator from memory, if required, using the command

```
CDEMU2 /U
```

Special notes

1. Most CD-ROM packages have a piece of software (usually called a "search engine" for database type applications) which needs to be installed on a hard disk. This software may or may not be sharable via the network, depending on how it is written.

2. If the application makes a call to MSCDEX that is not supported by the emulator, the screen will be cleared and an error message will be reported, together with the parameters to the call (i.e. the CPU register values at the time). This will normally be an indication that the application cannot be shared over a network using this emulator. The user should press a key, and then quit the application, since its screen contents will have been destroyed.

3. It should be noted that an application must be licensed for multiple users on a network even if this emulator is capable of making it sharable.

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