Networking CD-ROMS

Although it is possible to share CD-ROM drives on a local area network or LAN, it is not as easy as it should be. While MS-DOS provides a single, stable platform to develop a file system driver like the Microsoft CD-ROM Extensions, there are a wide variety of LANs and LAN server implementations that do not. Because each LAN implementation takes a different approach for server support, the approach for CD-ROM support on a server depends on what LAN implementation you are using. This document should help clarify the present situation and help get you started.

At present, there are several CD-ROM products that allow sharing of CD-ROM drives on a LAN. These are:

- Microsoft—MSCDEX (The Microsoft CD-ROM Extensions)
- Meridian Data—CD-NET
- Online—Opti-Net

Choosing which product depends on your LAN and your needs.

Using MSCDEX With an MS-DOS Based LAN

There are some LANs, such as Lantastic by Artisoft, that can share CD-ROM drives using MSCDEX on a server. This is possible because these servers run as an MS-DOS application and use standard MS-DOS INT 21 services for I/O. LAN servers that use standard MS-DOS INT 21 services to access the drive letter, and do not make assumptions about the underlying media or try to bypass MS-DOS, will likely work with all versions of MSCDEX.

Using MSCDEX With an MS-NET Type LAN

There are several LAN products based on MS-NET or a similar LAN server model (for example, Ungermann-Bass or 3COM) that can use MSCDEX Version 2.10 or later to share CD-ROM drives. The MS-NET based products do not access files on the server using standard INT 21 calls and, because of some assumptions MS-DOS makes about non-standard calls from the server, you cannot share CD-ROM drives on MS-NET based servers using earlier versions of MSCDEX. Although the server seems to allow sharing of the CD-ROM drive letter, requests to the server from workstations do not work correctly.

Starting with MSCDEX Version 2.10, the /S command line switch instructs MSCDEX to patch the in-memory image of MS-DOS so that it will work with MS-NET based server

software. With this switch on the MSCDEX command line, load MSCDEX after the network redirector but before the network server software. The CD-ROM drive letters can then be shared by MS-NET based server software, and workstations will see the correct behavior. For this solution, only the server needs to run MSCDEX or load any CD-ROM related device drivers. You do not need to make any software or hardware changes to the workstations. To a workstation, the CD-ROM drivers connected to the server are indistinguishable from other server drives.

Using MSCDEX on LANs With NETBIOS Support

For LAN products that are not MS-NET based and have NETBIOS support (for example, Novell and IBM PC-NET), both Online and Meridian Data have adapted the MSCDEX and CD-ROM Device Driver model to provide LAN CD-ROM support. Each workstation runs MSCDEX and a special CD-ROM device driver. The special device driver accepts normal CD-ROM driver requests from MSCDEX and uses the NETBIOS to transmit the command to a network driver on a server. The network driver submits the request to a true CD-ROM device driver on the server and transmits the results back to the workstation pseudo CD-ROM driver. The psuedo driver in turn responds to MSCDEX. So long as the workstation CD-ROM device driver responds appropriately, MSCDEX is unaware that the command has passed through the network to a server. Contact Meridian Data and Online for information for these networks as they can both describe their products and features best.

Online offers one potential configuration for computer systems that do not wish to dedicate a machine as a server. The workstation operates as above, but instead of communicating the workstations driver request to a dedicated server process, another user's workstation running a special TSR version of their system can field the driver request, submit it to the CD-ROM driver, and respond to the requesting workstation. This allows a network of workstations to share the CD-ROM drives that each computer has connected to it at the same time all workstations are available to the users. This option may work for many users although it does slow performance of the workstation when outside requests come in and uses memory for the TSR system code.

Support for OS/2 and Some Novell LAN Implementations

OS/2 servers (and some Novell LAN implementations) can integrate CD-ROM media into the networks in the same way it does other media. However, access to the device characteristics is abstracted and the INT 2Fh function 15h services are not supported.

Sources For CD-ROM LAN Products Not Based on MS-NET

For more information on CD-ROM LAN products for LANs other than MS-NET, contact:

Meridian Data Inc.
Ms. Candace Brown
5615 Scotts Valley Drive
Scotts Valley, CA 95066
(408) 438-3100

Online Computer Systems
Mr. Mike Romanies
20251 Century Blvd
Germantown, MD 20874
(301) 428-3700

(408) 438-6816 (Fax)

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