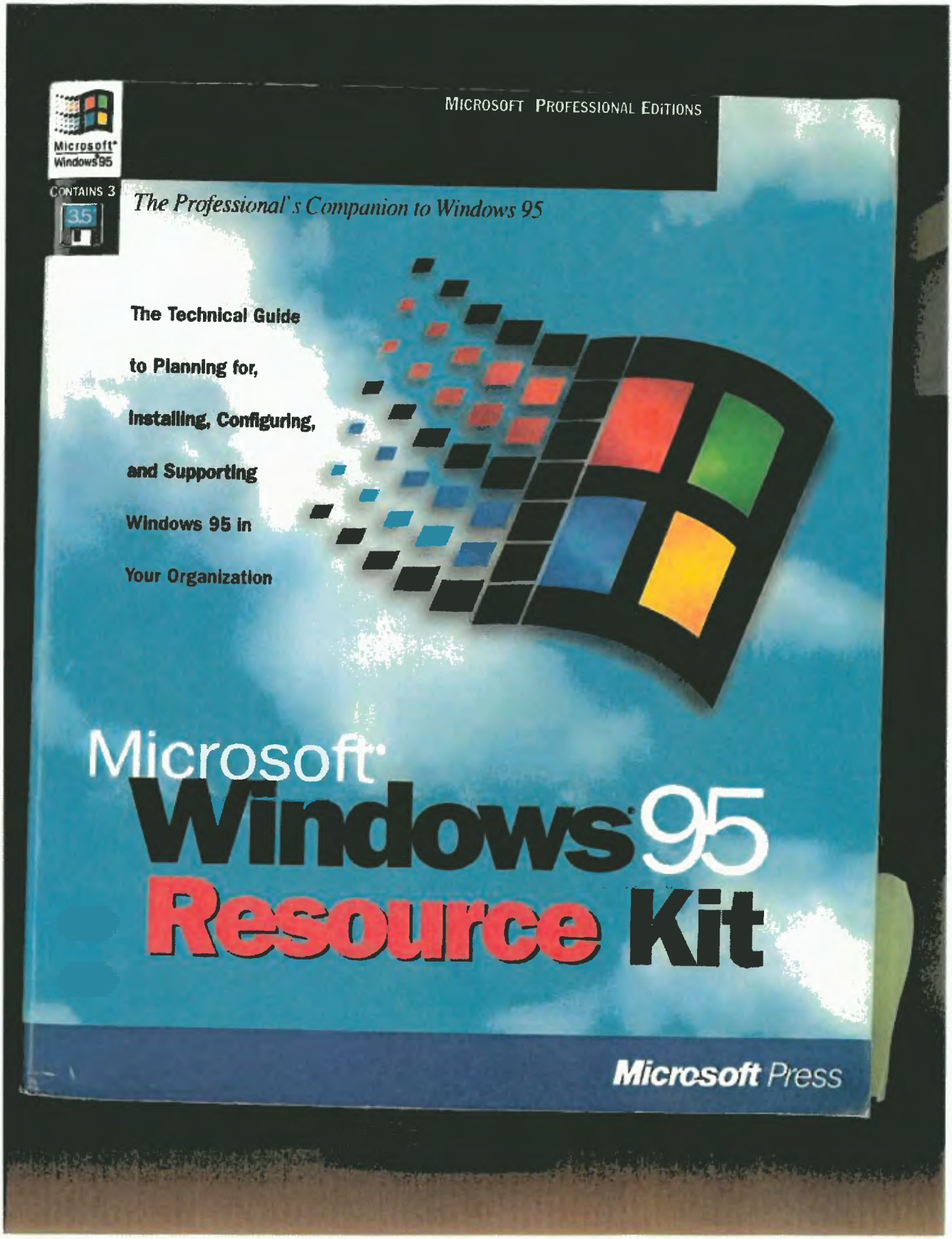
APPENDIX C



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Benefits of the 32-bit file access driver over MS-DOS–based driver solutions include the following:

- Dramatically improved performance and real-mode disk caching software
- No conventional memory used (real-mode SMARTDrive has been replaced)
- Better multitasking when accessing information on disk
- Dynamic cache support

Both MS-DOS and Windows 3.1 used 16-bit real-mode code to manipulate the file allocation table (FAT) and to read to and write from the disk. Being able to manipulate the disk file system from protected mode removes or reduces the need to switch to real mode to write information to the disk through MS-DOS, thus resulting in a performance gain for file I/O access.

The 32-bit VFAT works with a 32-bit, protected-mode cache driver (VCACHE). This driver replaces the 16-bit, real-mode SMARTDrive disk cache software provided with MS-DOS and Windows 3.1. The VCACHE driver features better caching algorithms than SMARTDrive, to cache information read from or written to a disk drive. The VCACHE driver also manages the cache pool for the CD-ROM File System (CDFS) and the 32-bit network redirectors provided with Windows 95.

Another big improvement in VCACHE over SMARTDrive is that the memory pool used for the cache is dynamic and is based on the amount of available free system memory. Users no longer need to allocate a block of memory as a disk cache. The system automatically allocates or deallocates memory used for the cache based on system use.

For example, as you perform a large number of activities on the network, Windows 95 increases the size of the cache. As network activity decreases and more applications are started, Windows 95 decreases the cache size.

CD-ROM File System

The 32-bit, protected-mode CDFS implemented in Windows 95 provides improved CD-ROM access and performance over the real-mode MSCDEX driver in Windows 3.1. (CDFS conforms to the ISO 9660 standard.) The CDFS driver cache is also dynamic, requiring no configuration or static allocation on the part of the user. For information about the CD-ROM cache, see Chapter 17, "Performance Tuning."