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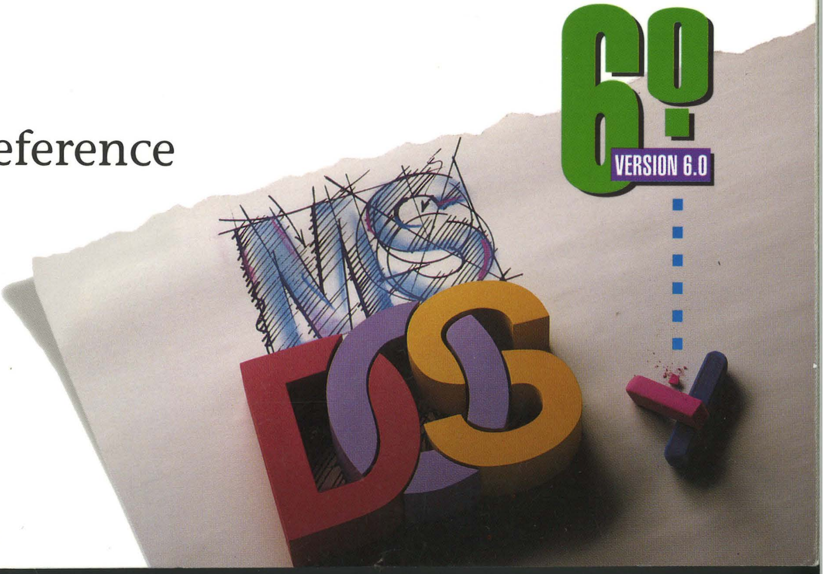
Microsoft® MS-DOS® Programmer's Reference

COVERS THROUGH VERSION 6

The Official
Technical Reference
to MS-DOS



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- Interrupt handling: Programs can install custom interrupt handlers to carry out special processing while they run. For example, a program can install a CTRL+C handler that replaces the default action when the user presses the CTRL+C key combination.
- Task-switcher notifications: Programs can add themselves to the notification chain of the MS-DOS task switcher. Programs that are sensitive to task switches, such as communication programs that must respond immediately to asynchronous input, add themselves to the chain to control when and under what conditions task switching occurs.

2.4 MS-DOS–Based Programs and Device Drivers

MS-DOS supports a broad range of programs—from simple, text-based programs like More to sophisticated, interactive programs like MS-DOS Shell. The MS-DOS system functions provide a comprehensive set of services that satisfy the needs of most programs. Furthermore, programs that require additional features, such as access to custom devices, can enhance MS-DOS by using device drivers. Device drivers extend the capabilities of MS-DOS without requiring changes to the MS-DOS system functions.

2.4.1 MS-DOS–Based Programs

MS-DOS recognizes two program types: .COM and .EXE. A .COM program, sometimes called a "tiny model" program, consists of code, data, and a stack, in a single segment. Such programs typically have a single purpose: carrying out a task and terminating. On the other hand, an .EXE program is usually large and has code and data in separate segments. In fact, an .EXE program can have any number of segments, the combined size of which is limited only by system memory. An .EXE program can be loaded anywhere in memory. MS-DOS adjusts any segment addresses in code and data when it loads the program.

2.4.1.1 A Simple MS-DOS–Based Program

MS-DOS–based programs can use system functions to carry out their work. Programs call the system functions by using the **int** instruction and specifying Interrupt 21h. For this reason, many MS-DOS–based programs are written in assembly language or in a mixture of assembly language and a high-level language such as C.

When a program issues an interrupt, execution control transfers to the MS-DOS routine that handles system-function requests. MS-DOS installs this routine at system startup.