

O V E R V I E W

Concurrent DOS software is a single or multiuser, multitasking operating system designed especially for the Motorola 68000 family and Intel 80286 microprocessors. The Concurrent DOS operating system lets you switch back and forth between active programs, much like you switch channels on a television set.

Concurrent DOS features a menu-driven user interface that makes the system easy to operate, even for novice users. System calls, utilities and file functions are a functional superset of those in

PC DOS 2.1. These features offer the application writer a powerful base from which to develop applications.

Special features of Concurrent DOS include the following: extensive protection facilities for shared environments; a real-time kernel for communications or industrial control environments; portability of native applications across dissimilar microprocessor architectures; and, for international markets, the ability to accommodate foreign languages and character sets.

CONCURRENT DOS SOFTWARE FEATURES

- New User Interface
- PC DOS 2.1 Support
- Extensive Protection Facilities
- Multitasking Capability
- Single-user or Multiuser Support
- Communications Support
- Dynamically Loadable Device Drivers
- International Market Compatibility
- DR EDIX

New User Interface

The Concurrent DOS operating system's new menu-driven user interface includes the File Manager for everyday file maintenance (copy, rename, backup, restore, etc.). The menu system also can be used to create customized menus that allow you to assign often complex commands to a single keystroke.

PC DOS 2.1 Support

Concurrent DOS presents a familiar environment for users migrating from PC DOS. The utilities and hierarchical file system are similar to those users already know. The software developer

uses system calls that are a functional superset of PC DOS and of Concurrent™ CP/M. By writing directly to the Concurrent DOS operating system, the software developer will have much more power to utilize in an application.

Extensive Protection Facilities

Concurrent DOS provides extensive protection facilities for single-user, multiuser, multitasking and networking environments. These facilities include:

Protected Mode Support—

Protects user applications and data from corruption due to inadvertent damage caused by other programs. It also protects the

operating system from similar corruption caused by the user environment. This protection feature provides dependable system integrity.

Logon, Logoff, Password Protection— Requires users to enter their name and an optional password to gain access to the system.

Record and File Locking— Prevents two users from accessing a common file and destroying data. This facility allows users to share data effectively. Records and files can be shared, locked or left unlocked.

Multitasking

Concurrent DOS allows simultaneous execution of any number of applications, depending on the amount of memory in your system.

Single-user or Multiuser Support

Concurrent DOS is inherently flexible. It can be configured for either a single or multiuser environment, with one or more displays. This is made possible by its multitasking and user protection features

Communications Support

Concurrent DOS provides a powerful set of real-time primitives for the writers of communications software. Communication software consists of user programs and interrupt handlers. Concurrent DOS supports both of these through a complete set of interface functions making the job of the communications writer easier. Whether it involves 300/1200 baud, 3270, SNA, multiuser, or Local Area Network

(LAN) communications, the Concurrent DOS operating system's real-time kernel is able to respond quickly. This preserves data integrity and provides swift communications.

Dynamically Loadable Device Drivers

With Concurrent DOS Digital Research has now converted to dynamically loadable device drivers. No longer is it necessary to link in the device drivers as with the old XIOS or BIOS schemes. Instead, loadable drivers enable the addition of a new device at boot time (by changing the configuration file) or in a running system (by installing and initializing the new driver). The Concurrent DOS package has sample device drivers for the IBM PC/AT, the CompuPro S-100 bus system and the Motorola VME/10.

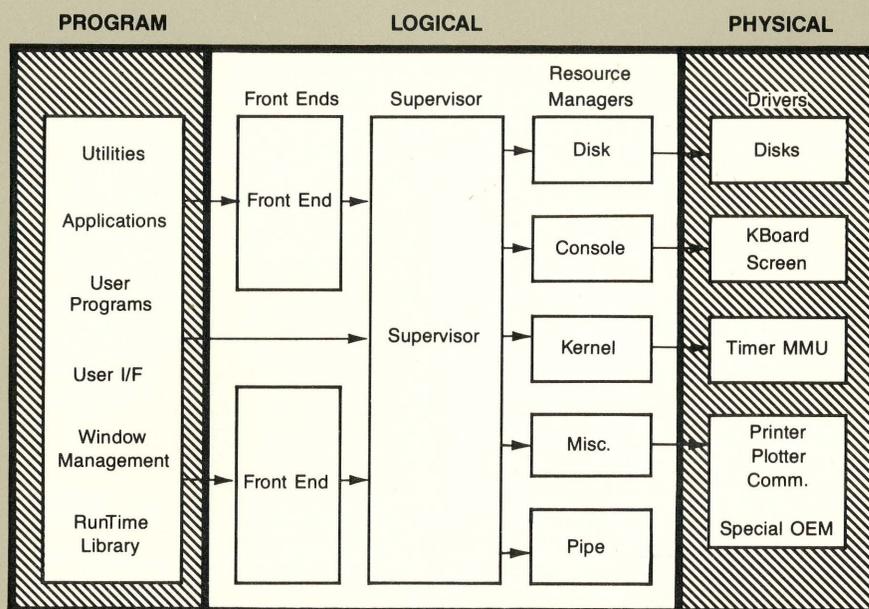
International Market Compatibility

Concurrent DOS is designed to be easily modifiable for the international marketplace. Sixteen bit character I/O enables the support of large character sets such as Kanji. The user can also modify the character set. All system messages are stored in a separate file making the conversion to another language an easy process.

DR EDIX

DR EDIX is a screen oriented editor that is included in the Concurrent DOS package. Online help makes it easy for even novice users to create simple documents, batch files and programs.

Concurrent DOS System Overview



COMPONENTS OF CONCURRENT DOS SOFTWARE

The component nature of Concurrent DOS allows flexibility in total system size. The operating system's size is determined by the number and extent of device drivers, virtual data structures and system components linked into a specific implementation. The Concurrent DOS operating system is fully relocatable and, therefore, can be located anywhere within the chip's address space. The following major components comprise the Concurrent DOS operating system.

Supervisor

The supervisor controls the flow of service requests from applications to the resource managers, whether the requests come from front ends or from 'native' Concurrent DOS applications.

The supervisor determines which resource manager, if any, should receive a function request.

Kernel

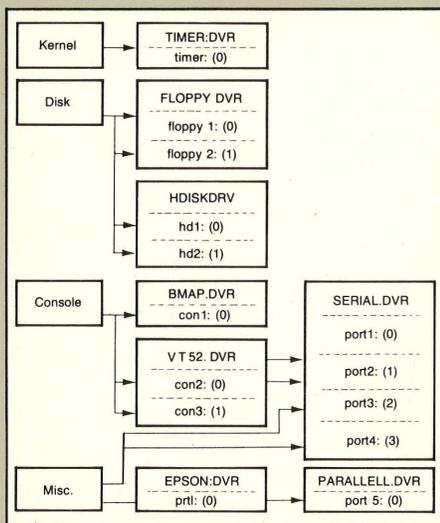
The real-time multitasking kernel performs process, memory and event management. It supports multiuser and multitasking environments that allow both real-time control applications and integrated office environments on the same CPU.

The kernel is based on an event driven dispatcher that schedules tasks on a priority basis (round robin fashion within a given priority) at each real-time clock tick. The kernel also schedules asynchronous service routines for I/O handling.

Disk Resource Manager

The disk resource manager manages the disk file systems. It supports the PC DOS 2.1 hierarchical file system and DOS 2.1 disk media. It also provides a single interface to floppy and hard disks. The file system is designed

Relationship of sub-drivers to drivers



for multiuser and networked microcomputer systems.

Console Resource Manager

The console resource manager manages physical consoles, including the screen and keyboard. The Concurrent DOS console system takes full advantage of the hardware that many of the popular personal computers and work stations have incorporated. The console resource manager is designed to take advantage of new trends in application environments. It supports virtual screens and windows.

Miscellaneous Resource Manager

The miscellaneous resource manager manages all devices not managed by the disk and console resource managers. This makes it possible for OEMs to interface proprietary or special devices with Concurrent DOS. Special devices of the miscellaneous resource

manager include plotters, graphics terminals, ports and communications devices.

Pipe Resource Manager

The pipe resource manager manages intertask communications and synchronization through named memory files called pipes. Semaphores, for instance, are implemented through a high-speed pipe.

Device Drivers

Device drivers contain machine and device specific code in the system. They are managed by the resource managers. Device drivers can be built into a bootable system or dynamically installed at run-time. Each driver is built separately and is independent of other drivers. Concurrent DOS also supports "subdrivers," allowing, for example, several device specific drivers to share a single port driver.

CUSTOMIZATION

Concurrent DOS is portable. The hardware dependent code, used in customization, is confined to the device drivers, certain system utilities and to the configuration module. (The configuration module allows a variable number of devices to be configured into the system; it also allows several other

system variables, such as memory, to be specified.) Concurrent DOS screen handling is adaptable to most any display device.

Keyboards without function keys can implement an escape or control sequence to switch from one screen or window to another.

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