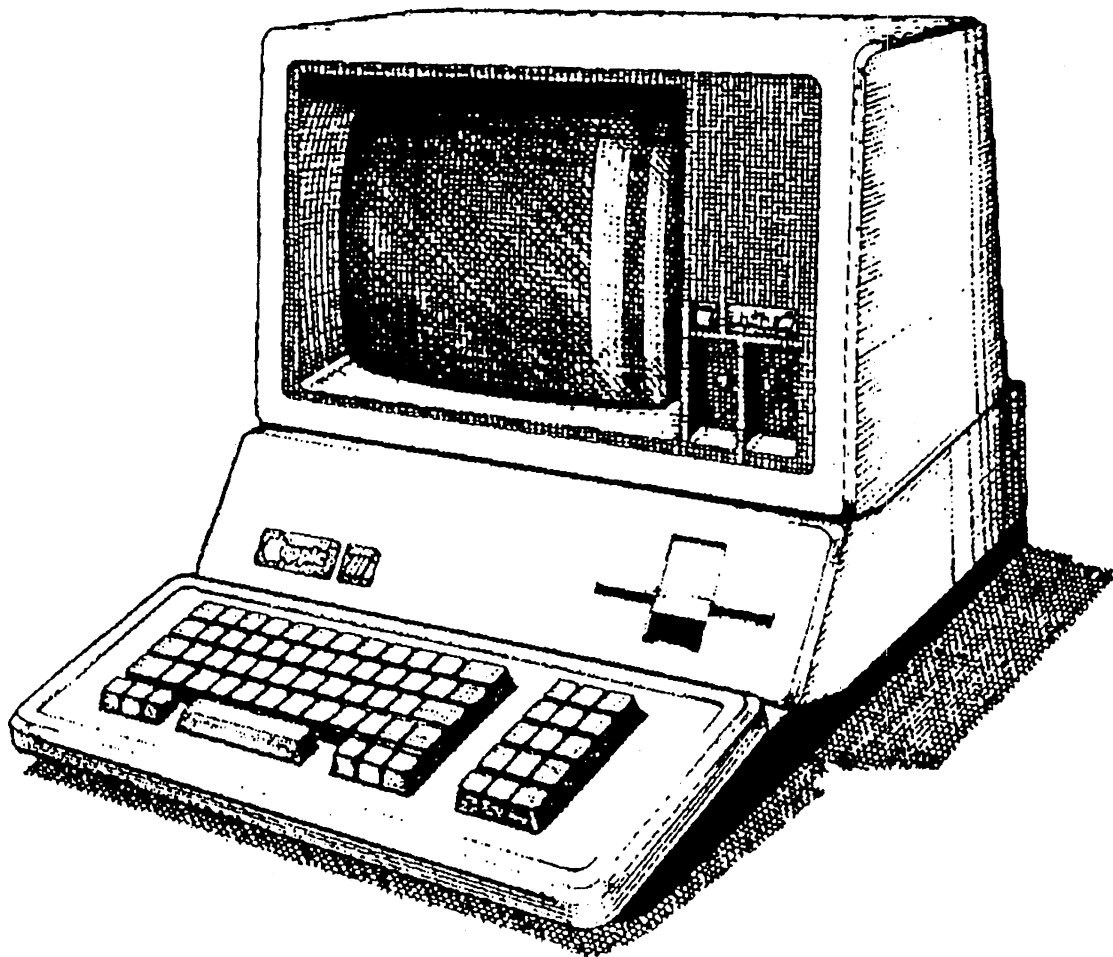




# Apple /// Computer Information



DOCUMENT NAME	#
SPECIFICATION: APPLE III SOPHISTICATED OPERATING SYSTEM (SOS)	5

**Ex Libris David T. Craig**

<b>Apple III Sophisticated Operating System (SOS)</b>										<b>Operating Systems</b>									
Simplicity in System Control																			

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*The Apple III Sophisticated Operating System (SOS) is a powerful software interface that helps you exploit Apple III's advanced system capabilities. With SOS, you don't need to worry about most internal system functions, such as which disk drive contains a file, which bank of memory is being used, or which slot a peripheral interface card occupies. These and other functions are all controlled automatically.*

*Designed for easy expandability as well as operational convenience, SOS enhances and ensures Apple III system flexibility. A simple-to-use SYSTEM CONFIGURATION PROGRAM (supplied on diskette) allows even inexperienced users to custom-configure SOS to meet their specific needs.*

*SOS provides a solid foundation for writing advanced applications on the Apple III. It features a hierarchical file system, device level interrupt capabilities, user level interrupt capability (events), a device-independent file system, and memory management capabilities. And, since all languages on the Apple III use SOS, they all share a common disk format. For instance, a Pascal application program can access a BASIC text file just as easily as it can access a Pascal text file.*

*Apple's Sophisticated Operating System for the Apple III gives you the efficiency, comprehensiveness, and expandability you've always wanted in an operating system, with a degree of convenience you may never have thought possible. SOS is supplied with all Apple III systems and software.*

**Benefits**

**The Apple III Sophisticated Operating System...**

- *improves personal productivity, because it frees you from most system control responsibilities...*
- *simplifies programming, because it provides powerful, standard device and file interfaces for all languages and applications...*
- *maximizes system efficiency by automatically controlling the use and allocation of system resources...*
- *speeds up software development by reducing program size and complexity...*
- *ensures system adaptability, because it's designed for easy expansion and custom configuration.*

**The Apple III Sophisticated Operating System—A Closer Look**

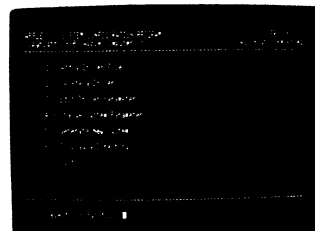
SOS, which consists of five basic components, acts as a buffer between user programs and the Apple III hardware. Using these components, SOS controls Apple III system operation and resource allocation with a minimum of user involvement. As far as the user is concerned, handling the system's input/output (I/O) devices is as easy as handling its data files once SOS has been configured with the proper drivers.

Configuring SOS is a quick and easy process, even for the most inexperienced user. Simply follow the directions in the SYSTEM CONFIGURATION PROGRAM, one of the programs contained on the System Master diskette supplied with your Apple III.

Suppose, for example, that you've added an Apple III Silentype Printer to your system. To configure SOS so it will automatically control the printer, execute the SYSTEM CONFIGURATION PROGRAM and select the first option on the menu, ADD A DRIVER FILE. Then simply follow the directions displayed on the screen.

Once you've configured SOS to control your Silentype, you need never concern yourself again with its system operational requirements. SOS handles them for you—automatically—whenever you use the printer. Configuring SOS for other printers and peripherals is just as easy.

You don't have to be a system architect to get complete access to the Apple III's advanced capabilities. Apple's Sophisticated



## Apple III Sophisticated Operating System (SOS)

Operating System helps you control and configure your Apple III, maximizing its benefits and power in every configuration and application.

### Technical Specifications

#### The Structure of SOS

At the core of SOS is the "Kernel," a set of programs and subroutines that control the flow of information around and through SOS. The Kernel is divided into five main areas: the File Manager, the Device Manager, the Memory Manager, the Interrupt Manager, and the Utility Manager.

**The File Manager** controls the logical storage, transfer and routing of information within the Apple. All information is stored in units called files. The File Manager can create and destroy files, read their contents, write new information into them, change their names, or move them from place to place.

**The Device Manager** controls the physical storage and flow of information into and out of the Apple III. Together with its associated device drivers, it controls the operation of the console (the screen and keyboard), the serial port, the printer port, the disk drives, and all other peripheral devices connected to the Apple.

**The Memory Manager** in SOS allows programs and languages to use all the memory you have in your Apple quickly and efficiently. It keeps track of "banks" and "pages" of memory, and allocates their use to different programs and languages.

**The Interrupt Manager** works with the Device Manager to allow devices such as the keyboard or the serial port to interrupt the Apple in the middle of an operation. The Apple can then attend to the interrupting device, and resume its previous operation as if nothing had happened. The operation of the Interrupt Manager, like that of the Memory Manager, is normally invisible to you.

**The Utility Manager** lets programs access the built-in joystick interfaces. Most languages and applications that use the joysticks will have more convenient, higher-level commands to read the status of those devices. These high-level commands simply request the information from the Utility Manager through SOS.

Besides those components of SOS making up the Kernel, there are two other components. One is System Utilities, which provides high-level routines for performing more complicated system tasks with a minimum of user interaction. Another is the System Configuration Program, which allows custom configuration of SOS and the I/O device drivers, in order to match the user's specific needs.

#### File Management System Calls

CREATE (pathname,create\_\_list,length)  
 DESTROY (pathname)  
 RENAME (pathname,new\_\_pathname)  
 SET\_\_FILE\_\_INFO (pathname,file\_\_list,length)  
 GET\_\_FILE\_\_INFO (pathname,file\_\_list,length)  
 VOLUME (dev\_\_name,vol\_\_name,free\_\_blocks) -----  
 SET\_\_PREFIX (prefix\_\_path)  
 GET\_\_PREFIX (prefix\_\_path,length)  
 OPEN (pathname,ref\_\_num,open\_\_list,length)  
 NEW\_\_LINE (ref\_\_num,is\_\_newline,newline\_\_char)  
 READ (ref\_\_num,buf,bytes,bytes\_\_read)  
 WRITE (ref\_\_num,buf,bytes)  
 CLOSE (ref\_\_num)  
 FLUSH (ref\_\_num)  
 SET\_\_MARK (ref\_\_num,base,displacement)  
 GET\_\_MARK (ref\_\_num,mark)  
 SET\_\_EOF (ref\_\_num,base,displacement)  
 GET\_\_EOF (ref\_\_num,eof)

## Apple III Sophisticated Operating System (SOS)

### Device Management System Calls

D\_\_CONTROL (dev\_\_num,control\_\_code,control\_\_list)

D\_\_STATUS (dev\_\_num,status\_\_code,status\_\_list)

GET\_\_DEV\_\_NUM (dev\_\_name,dev\_\_num)

D\_\_INFO (dev\_\_num,dev\_\_name,dev\_\_list,length)

### Utility Management System Calls

SET\_\_FENCE (priority)

GET\_\_FENCE (priority)

JOYSTICK (j\_\_mode,j\_\_value)

### Memory Management System Calls

REQUEST\_\_SEG (base,limit,seg\_\_id,seg\_\_num)

FIND\_\_SEG (srch\_\_mode,seg\_\_id,pages,base,limit,seg\_\_num)

CHANGE\_\_SEG (seg\_\_num,chg\_\_mode,pages)

GET\_\_SEG\_\_INFO (seg\_\_num,base,limit,pages,seg\_\_id)

GET\_\_SEG\_\_NUM (bankpage,seg\_\_num)

RELEASE\_\_SEG (seg\_\_num)