C

Glossary

application program:

A program that needs an operating system environment to execute. For example, word processing, accounting, or spreadsheet programs.

ASCII:

The standard code of symbols, including alphanumerics, used in a computer environment. ASCII stands for American Standard Code for Information Interchange.

attributes:

A set of status codes that control access to a file for security. Also indicates if a file is a directory or not.

bit:

An abbreviation for binary digit. This is the most basic unit of information used by a computer. It is capable of two values: one and zero.

bit map:

A binary table in which each bit represents a specific location of memory accessable to the central processing unit (CPU).

backup:

A utility provided with OS-9 that allows you to create a duplicate copy of an existing disk. Also, the copied disk.

boot (bootstrap or cold start):

A startup function that initially loads the operating system into memory and starts it after the computer is first turned on or after it is reset.

byte:

Unit of memory consisting of 8 binary on/off switches (bits).

cold start:

see boot.

command:

A request made from the keyboard for the execution of a specific operation. Also, sometimes refers to one of the utilities provided with OS-9.

command interpreter:

Software that translates input commands into machine language commands causing the computer to perform the requested actions. The name of OS-9's command interpreter program is shell.

command line:

A single line of input including a keyword that the operating system can understand and act upon. A command line may also include an object and the parameters of the command.

concurrent execution:

The act of deliberately running a program at the same time as another program; also the effect multitasking has on programs. See also: multi-tasking, sequential execution.

cross-development:

This refers to programs developed on one computer for the purpose of translating instructions for/to another computer.

data directory:

A directory used by OS-9 to locate data files used by programs. You can change which directory is the current data directory. See also: directory.

data module:

A type of module used for shared variable storage by two or more tasks. See also: memory module.

default system device:

This refers to the system device (disk, RAM, etc.) used for information and program storage used by a computer. The OS-9 mnemonic for this device is /dd.

device descriptor module:

A type of module which contains the identification and initialization values for a specific I/O device. The name of the device descriptor module is also the logical name by which the device is referred to by the software.

device driver module:

A program module that contains the software necessary to interface OS-9 to a particular type of I/O device. A single driver module is often shared by many identical types of I/O ports (such as for terminals).

directory:

A special file used by OS-9 which contains the names of other files or directories. A directory allows you to organize your files by placing all files to be grouped together in one place.

DMA:

Abbreviation for Direct Memory Access. This is a procedure or method used to gain direct access to the computer's main storage without involving the central processing unit (CPU).

environment:

The shell environment is a list a variables that may be accessed by the shell and any user applications to be used as *global* variables. Each user's shell maintains a unique environment.

exception:

A special control signal that diverts the attention of the computer from the main program because of a particular event, signal, or set of circumstances.

execution directory:

A directory used by OS-9 to locate files containing programs (utilities). You can change which directory is your current execution directory at will, but usually the system-wide commands directory (CMDS) is used. See also: directory.

execution modifier:

A character in a command line recognized by the shell that changes the default execution of the command. Modifiers are used to change the memory size (#), process priority (^), and standard I/O paths (>, <, >>).

FPCP:

An abbreviation for a Floating Point Co-Processor (for example, 68881, 68882).

file:

An ordered sequence of bytes used for mass storage. A file may contain a program, text, a list of commands, etc.

file pointer:

An indicator of where the next access in a file will occur.

file system:

The logical organization of mass storage and all other I/O devices into a common and compatible system based on paths, files, and directories.

filter:

A special type of utility command program specially designed for use with pipes. A filter typically performs some useful function on the data flowing through it such as sorting, editing, etc. See also: pipe.

format:
>A utility provided in OS-9 to initialize a disk before it is used. New disks must be formatted prior to being used. Also refers to the physical division of a disk into sectors, clusters, etc.

group.user ID:
>This number is used for file system security purposes. Files have owner and public access permissions. If no public access permissions are set, only the owner of a file may access it. There are two types of file ownership: by the *group* and by the *user*. Each file is stored with a *group.user* ID. Any user with the same user ID as the file is considered an owner. Any user with the same group ID as the file is also considered an owner. This allows people who work on the same project to be able to access the same files via their group number.

interrupt:
>A control signal caused by an event, signal, or set of circumstances that cause a break in the normal flow of a system or routine such that the flow can be resumed from that point at a later time.

keyword:
>A program, procedure file, or built-in command that the shell recognizes in a command line.

link:
>An OS-9 function used to request the location of a memory module of a given name prior to its use. Causes the user count of the module to be increased by one. unlink is the opposite function. See also: memory module and module directory.

memory module:
>A named block of program code or data that is or can be loaded into memory. Memory modules use a special standardized format. See also: data module, module directory, and program module.

MMU:
>Abbreviation for Memory Management Unit. MMU is special hardware used to provide logical to physical address translation and to protect system memory from accidental modification. Some MMU hardware also provides virtual memory capabilities. MMU is a super-set of SPU. See SPU.

module directory:
>A list automatically maintained by OS-9 of the name, location, and user count of each memory module which is present in memory. See also: link and memory module.

multi-tasking:
>A feature of the operating system which allows multiple programs to be run at the same time.

multi-user:
>A function of the operating system which allows multiple users to use the system at the same time; provides security for the system and each user's files. Sometimes referred to as timesharing.

NFM:

The Network File Manager is the OS-9 network file manager module that supports networking. NFM is responsible for maintaining accurate communication between device drivers across a network.

operating system:

The master control program that manages the operation of the computer and provides commonly-used functions such as I/O for other programs.

owner attributes:

Owner read, owner write, and owner execute. An owner of a file is a user with the same group number or user ID associated with the file. If set, the owner attributes allow access to the file by the owner. See public attributes.

parameters:

A character or symbol recognized by the shell in a command line that specifies additional conditions for the execution of the command.

password:

A user-unique code word used to log on to a timesharing system that validates identity for security.

password file:

A file that contains a list of all valid user names and passwords for users on the system.

path:

The routing of input or output between a program and a file or I/O device.

path descriptor:

A data structure used by file managers and device drivers to perform I/O functions. A path descriptor contains information specific to an open path. Every open path is represented by a path descriptor. Path descriptors are allocated and deallocated as paths are opened and closed.

pathlist:

A list of names that specifies the location of the file or I/O device to be associated with a path. It may in various combinations include a device name, one or more directory names, and a file name.

permission:

Term used to indicate that a certain attribute is set for a file. For example, owner read permission. Also sometimes used for the term attribute.

pipe:

A special type of I/O path that connects and synchronizes the standard output of a program to the standard input of another simultaneously running program. Chains of piped programs are called *pipelines*. See also: filter and standard I/O paths.

pipeline:

See pipe.

position independent code:

Code that does not reference absolute addresses. All OS-9 code must be position independent.

procedure file:

A file that contains a list of commands to be performed by the shell as if they were typed in from a keyboard.

process:

An individual running program; synonymous with task.

process ID:

A unique code number assigned by OS-9 when a new process is created. It identifies the process in subsequent commands or system calls.

program module:

A memory module which contains executable code. All OS-9 programs must be kept in memory module format. See also: memory module.

public attributes:

Public read, public write, public execute. The public is defined as any user not having the same user ID or group number as the file. If set, these attributes allow anyone access to the file. See owner attributes.

RAM disk:

A special device driver module that allows the part of the system's main memory to behave as a disk drive. This permits high speed, but non-permanent, storage for small, commonly used files.

RBF:

The Random Block File manager is the OS-9 file manager module that supports random access, block oriented mass storage devices (disk systems, etc.). RBF can handle any number or type of such systems simultaneously. It is responsible for maintaining the logical and physical file structure for OS-9.

record locking:

A special function built into OS-9's file management system which eliminates problems caused by two or more users trying to update the same part of a file at the same time.

redirection:

A method of changing the normal input and/or output of a program to alternate files or I/O devices. This is done at the time the program is run through the use of modifiers in the command line, as opposed to at the time it is written. See also: standard I/O paths.

re-entrant code:

Code shared by two or more programs. This saves program memory space that would be duplicated in each program. Re-entrant code must not alter itself in any way.

root directory:

The directory entered when the user first logs on to the system. This directory is specified in the password file.

SBF:

The Sequential Block File manager is the OS-9 file manager module that supports sequential access, block oriented mass storage devices (tape systems). SBF can handle any number or type of such systems simultaneously.

SCF:

The Sequential Character File manager is the OS-9 manager module that supports sequential access, character oriented devices (terminals, printers). SCF can handle any number or type of such systems simultaneously.

self-modifying code:

Code that alters itself during execution. OS-9 code must not be self-modifying.

separator:

A special character recognized by shell in the command line that specifies the sequential or concurrent execution of more than one process. The special characters are: a semicolon (;) for sequential execution and an ampersand (&) for concurrent execution.

sequential execution:

The act of deliberately running programs one at a time in the order specified as opposed to concurrently. This is done when it is necessary for one program to be completed before the next one in a sequence is begun. See also: multi-tasking, concurrent execution, and separator.

shell:

OS-9's command interpreter program. This program acts as an interface between your and the operating system. See also: command interpreter.

signal:

A software interrupt that can be sent from one process to another or from OS-9 to a process. For example, the <control>E abort key causes an abort signal to be sent to a program.

single user:

A mode of operation where only one user utilizes the computer. Also, a file attribute that allows only one user at a time to access the file.

SPU:

Abbreviation for System Protection Unit. SPU is special hardware used to protect system memory from accidental modification. If a process tries to access any part of system memory or any other process' memory, the SPU hardware causes a bus error and the system aborts the process.

standard I/O path:

The default I/O path used by a program for routine input and output. Every process has three standard I/O paths: input, output, and error output. See also: path and redirection.

system call:

A request from a programming language that causes OS-9 to perform a specific function such as input/output.

system disk:

A disk which contains the system boot file plus other common system-wide files such as the utility command set.

task:

See process.

timesharing:

See multi-user.

UNIX:

An operating system similar to OS-9.

user name:

A name used externally to identify each user when logging on to the system. Based on the contents of the password file, the system converts this name to the corresponding user ID number for subsequent internal use. See also: user ID and password file.

user ID:

A unique code number used to identify the user's files and processes. See also: user name and password file.

utility:

One of the set of programs supplied with OS-9 that is used to perform housekeeping, maintenance, customization, and convenience functions.

End of Appendix C

NOTES