Preface

OS-9 was written over a decade ago, at a time when the IBM PC did not exist, and CP/M was considered the last word in operating systems for microcomputers. Quietly but relentlessly it has grown to become one of the most popular operating systems world-wide, particularly in industrial applications and home computers. Yet, despite the fact that OS-9 is now a venerable grandfather in the time scale of microcomputer software, it is surging ahead even more strongly, and - with the advent of Compact Disc Interactive - is set to throw off its veil of shyness and take the software world by storm.

This amazing longevity in the most rapidly changing market of all is a tribute to the foresight and imagination of the creators of OS-9 - Ken Kaplan, Larry Crane, and Bob Doggett. They designed into OS-9 innovative features that gave it a broader applicability and a longer technical life than any other operating system. The result is an operating system that has achieved widespread popularity despite not being backed by any high volume manufacturer, a feat only matched by UNIX, which had the advantage of being widely used in universities before being commercially launched.

Although OS-9 is very widely used, it does not yet have a high press profile - the worlds of industry and home computing don't seem to excite the press in the same way that business computing does. So to date very few books have been written about OS-9, and many users have had the uneasy feeling that they are not getting the best out of this powerful programming environment.

This book - the first of a series covering all aspects of OS-9 - was written to fill this gap. It is aimed at a wide audience, from novice computer users, through experienced applications programmers, up to systems programmers seeking to adapt or extend OS-9. This is not a "chatty" book. It is intended as a readable reference work, to give the reader the facts about OS-9. Nor does it repeat information that is readily available from the Microware OS-9 User's and Technical Manuals. This book gives the inside information about

how the operating system works, in complete and authoritative detail. And it describes how the features of the operating system should be used in applications programs.

The aim of the book - to dispel the mystique of OS-9; to blow away the grey fog that clouds the programmer's view of the operating system, and give him the information and the confidence to use this powerful tool to the full.

Paul S. Dayan

Author's note: human beings are both male and female, but the English language does not have a common pronoun to cover both. So, for brevity, masculine pronouns have been used throughout this book, but are to be read as both masculine and feminine. PSD

About this book

The OS-9 Guru is aimed at a broad spectrum of readers, from naïve computer users, through applications programmers, to systems programmers. It forms an introduction and technical reference for the OS-9 operating system. The OS-9 Guru is not intended as a replacement for the Microware OS-9 manuals. Indeed, throughout the book it is assumed that you also have the OS-9 User's Manual, the OS-9 Technical Manual, and the OS-9 C Compiler Manual, so information readily available from these manuals is not repeated here. Instead, **The OS-9 Guru** aims to clarify all of the important aspects of the use of OS-9, and to give every technical detail about the operating system that an applications or systems programmer might find useful.

Chapters 1 to 5 are an introduction to OS-9 (and to operating systems in general), and contain information that will be useful to any user of OS-9.

Chapters 6 to 11 contain more detailed information about how OS-9 works, and describe the facilities of OS-9 that are available to the applications programmer, including multi-tasking and inter-process communications.

Chapters 12 to 14 are intended primarily for systems programmers, and describe the detailed internal workings of OS-9, with particular emphasis on the I/O system. However, these chapters will also be of interest to advanced applications programmers.

Chapter 15 covers the special features of the Microware C compiler, including how to use C with assembly language, and how to write operating system components in C. This chapter also contains some useful tips for all C programmers.

The Glossary at the end of the book defines some common computing terms, and their particular meaning in the context of the OS-9 operating system.

Conventions used in this book

I have tried to keep to a constant format throughout the book, particularly with regard to technical terms. The important conventions are described below:

hexadecimal numbers	Prefixed by a '$' character. For example: $4AFC.
file names and pathlists	Enclosed in single quotes. For example: '/dd/startup'.
command line options	Enclosed in single quotes. For example: '-rv=disk'.
keys	Shown in brackets, such as [CR] for the carriage return (ENTER or RETURN) key. [^A] refers to Control-A - that is, hold down [CTRL] and press [A].
utility names	In bold text. For example: **dir**.
module names	In bold text. For example: **init**.
program symbols	In bold text. For example: **D_Proc**.
error numbers	Shown either using the assembly language symbols defined in the file '/dd/DEFS/funcs.a', for example **E$BusErr**, or the C language symbols defined in the file '/dd/DEFS/errno.h', for example **E_BUSERR**.
error handling in examples	For clarity, many of the example code fragments omit the handling of errors. In practice, error handling statements should be used with any statement that could generate an error.

There is also a brief glossary at the end of the book explaining many of the technical terms used.