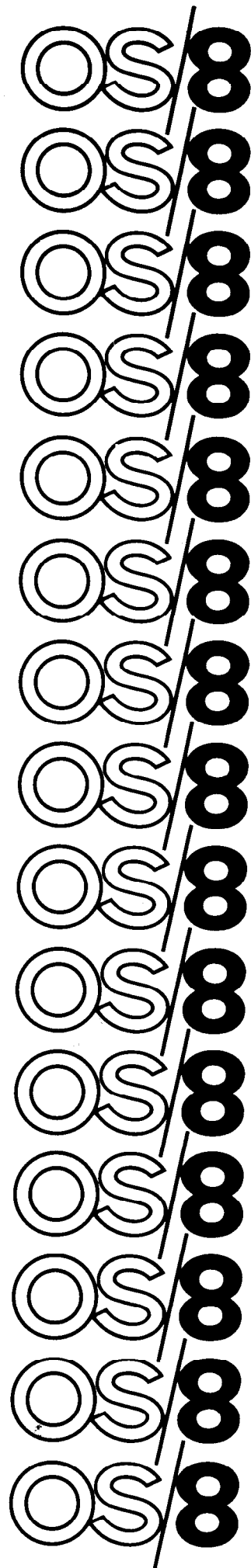


digital

getting on the air

digital equipment corporation



GETTING ON THE AIR

DEC-S8-OSGAB-A-D

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digital equipment corporation • maynard, massachusetts

First Printing June, 1974

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DECCOMM	GLC-8	OS/8	RT-11
DECTAPE	IDAC	PDP	SABR
DIBOL	IDACS	PHA	TYPESET 8
			UNIBUS

PREFACE

Welcome to the growing number of OS/8 users!

We would like to take this opportunity to introduce our product and services and offer suggestions for using your OS/8 Computer System. An overview of the current Software Package (Chapter 1) and Software Services (Chapter 2) is provided in this document.

Immediately upon receipt of your PDP-8 Family Computer, you should read this complete document and the OS/8 HANDBOOK (DEC-8-OSHBA-A-D).

This system may include a Software Performance Summary (S.P.S.) if one exists. This summary lists known software problems and solutions when available. If this document is included in your kit, we recommend that it be read carefully and your system modified accordingly.

CHAPTER 1

OVERVIEW OF OS/8 SOFTWARE KIT

The basic PDP-8/PDP-12 OS/8 Software Kit consists of DECTapes, LINCTapes, cassettes, or paper tapes and a user handbook containing program documentation(1). Besides the basic OS/8 kit, other software "kits" may be provided if this is a new computer installation. These kits usually contain diagnostic (maintenance) software, which consists of programs designed to test the operation of the hardware and its peripherals. Also included in some of these kits are programs which allow you to format your DECTapes or DECdisks. The components of each package are inventoried on checklists attached to the outside of the kit. It is recommended that the Software Package contents be verified with the checklist. Any discrepancies should be reported to Digital's Software Distribution Center in Maynard.

OS/8 software kits can be classified into two categories: DECTape and paper tape/cassette. Included in the DECTape kit are two DECTapes: one (the System tape) contains all the system programs necessary to operate OS/8; the second tape contains the TD8-E DECTape initializer (used only for TD8-E systems) and other utilities.

The paper tape/cassette kit includes all of the same programs as the DECTape kit except that all of the files supplied on the DECTape are provided in paper tape form or on cassette files for building a disk image.

The main user documentation is included in the OS/8 HANDBOOK. This document contains all the necessary information to generate your OS/8 system (Getting On Line) and most of the user documentation for the various OS/8 support programs. Also included in the kit is the OS/8 SOFTWARE SUPPORT MANUAL which contains advanced programming information.

(1) Throughout the remainder of this Chapter the term DECTape refers to either DECTape or LINCTape.

CHAPTER 2

SERVICES

2.1 TRAINING

A variety of hardware and software courses are offered by Digital's Educational Services Groups. (Course schedules can be obtained by writing this group in Maynard.) These courses are excellent means for learning about basic PDP-8 programming and the use of the OS/8 system. "Hands on" training, using the PDP-8 Family systems, is a particularly valuable feature of most courses and seminars.

2.2 THE SOFTWARE PERFORMANCE REPORT SYSTEM

What can you do when you spot software problems, have suggestions for new features, discover errors or inadequacies in Digital's software or documentation?

First, make sure you have a reproducible problem and that this problem is not already documented (S.P.S.).

Then, you can fill out a Software Performance Report (SPR) form and send it to Digital's Software Communications Services in Maynard, and you are on the way to getting an individual answer, directing maintenance attention, and possibly initiating a software revision or document rewrite. Your input is recorded by Digital receipt is acknowledged, and the SPR is sent to the appropriate maintainer to answer. Periodic reports are given to maintainers and management on the status of SPR activity.

All of this means your input is not lost or ignored, and you furnish valuable information for planning maintenance and development efforts. Other groups, such as Software Marketing and Software Services, use SPR records to learn what users need and want.

SPR forms are appropriate to most DEC software systems or their documentation, including all diagnostic (MAINDEC) software as well as system programs. You may obtain blank forms in your software kits and blank forms are sent with each answer. This service is guaranteed for at least one year after you receive your system.

You can help by sending in fully-documented problem reports or well-described suggestions. Be sure to give the full configuration and software version number, and send any examples, tapes, listings, etc. to back up your report. Think of what you would need as a maintainer to investigate the problem or evaluate a suggested change.

2.3 DIGITAL SOFTWARE NEWS FOR THE PDP-8 AND PDP-12

Announcements of new and revised software as well as programming notes, software problems and proposed solutions, and documentation corrections are published monthly in the Digital Software News.

2.4 SOFTWARE DISTRIBUTION CENTER

The PDP-8 Software Price List contains a complete list of programs and manuals currently available. You may receive this price list by contacting the Software Distribution Center in Maynard.

2.5 SOFTWARE CONSULTING SERVICES

Digital provides software consulting at rates published in the standard Digital price list. Digital consultants are readily available and skilled in the most efficient use of Digital equipment and software. Digital consultants have reduced customer development costs and have helped to provide more efficient applications programs.

We offer consulting, programming, or systems design in many areas including process control, data communications, data analysis, information retrieval, numerical control, direct digital control, typesetting, simulation, business data processing and special purpose timesharing. Please refer to the enclosed brochure or contact your local Digital office for further information.

2.6 DECUS

Digital Equipment Computer Users' Society (DECUS) was established in March of 1961 to advance the effective use of Digital Equipment Corporation's computers and their peripheral equipment. It is a voluntary, non-profit users' group supported by Digital whose objectives are to:

Advance the art of computation through mutual education and interchange of ideas and information,

Establish standards and provide channels to facilitate the free exchange of computer programs among members, and

Provide feedback to the manufacturer on equipment and programming needs.

For more information about this worthwhile organization, fill out the enclosed flyer and mail it to the DECUS office in Maynard.

CHAPTER 3

OS/8 SOFTWARE SYSTEMS

The OS/8 system is distributed in either DECTape, cassette, or paper tape form. The OS/8 software kit contains all the programs necessary for loading the OS/8 Monitor into core memory and creating and running system and user programs.

This Chapter provides all the information needed to exercise several areas of your OS/8 system. The exercise is intended to demonstrate use of the system and assure that your copy of the system is valid.

The system DECTapes required for this exercise are DEC-S8-OSYSB-A-UC1 and UC2. Always be sure to use the latest revision available from the Software Distribution Center.

3.1 GETTING OS/8 ON THE AIR

This section highlights the information contained in the OS/8 HANDBOOK, pages 1-1 to 1-29. If you have purchased TD8E type DECTape, please be sure to read pages 1-4 through 1-9 of the handbook.

BE SURE TO READ THE "GETTING ON LINE" SECTION THOROUGHLY.

Highlights:

- For TD8-E DECTape users, specific information regarding OS/8 startup is contained in the handbook.
- For DECTape users, the DECTape formatter programs are included in the TC08 or TD8E software diagnostic kit.
- For TC01/TC08 DECTape users, specific information regarding OS/8 startup is contained on pages 1-1 through 1-3 of the handbook.
- For DECTape users who want to modify the standard OS/8 System as supplied, please read pages 2-34 through 2-61 for a complete description on using OS/8 BUILD.
- For cassette users, specific information can be found on pages 1-10 to 1-16.
- For PDP-12 users, startup information can be found on page 1-9.

- For LINCtape users, use the MARK12 program under DIAL to format your LINCtapes. Remember to use the P option in MARK12.
- For Paper tape users, startup information is on pages 1-17 through 1-25. Please note that the instructions for loading system programs are incorrect for LIBSET, PIP, MCPIP, BITMAP, CCL, FOTP, RESORC, and DIRECT. When the starting address is included in an ABSLDR command string, the command format must be:

PTR:=

For example, the ABSLDR command to load LIBSET is

PTR:=12600\$

Please make this correction to the ABSLDR commands for the above named programs. OS/8 BUILD should be used whether or not the hardware is equipped with a high-speed papertape reader.

- For Disk users, the information regarding how to load the OS/8 system device handler is included on pages 1-25 through 1-29 of the handbook. In most cases, the disk packs supplied with your machine will require formatting (they do not have timing marks). Supplied in the diagnostic software kit (LIBKIT-08-RK8EA-A-K) is the RK8E Disk Formatter (MAINDEC-08-DHRKD-A-PB) and User Manual (MAINDEC-08-DHRKD-A-D). Format all of your disks before using them with OS/8.

3.2 OS/8 SYSTEM DEMONSTRATION

The following simple examples demonstrate the use of some of the OS/8 System programs. If possible, use one of the relevant copy programs provided by Digital to copy the software programs, i.e., DTCOPY (DECTape copy), TD8-E copy, or Master Tape Duplicator.

In the examples, we will use PIP to print the directory of the system device and initialize a DECTape by zeroing a directory. We will then create an assembly language program using the OS/8 Editor, assemble it using the OS/8 Assembler and then load it into core memory. This program will display a particular light pattern in the accumulator (AC) lights (lower set of lights) and after a few minutes will return to the OS/8 Monitor. We will also use OS/8 CREF to create a cross-reference listing of that program.

It is assumed that you have read and understood both this document and the OS/8 HANDBOOK.

The following example requires only a minimal OS/8 system. The) symbol indicates that a carriage return must be typed.

OS/8 MONITOR

We have just built and bootstrapped the OS/8 system from DECTape and the Monitor has printed a dot on the terminal. Enter the current date by typing:

.DA 4/10/74)

Type the following commands to print a directory of the DECTape on the console terminal (user input is underlined):

.R PIP)
*TTY:←DTA0:/E)

```
4/10/74
CCL .SV 17 1/18/74
ABSLDR.SV 5 1/18/74
DIRECT.SV 7 1/18/74
FOTP .SV 8 1/18/74
PIP .SV 11 1/18/74
EDIT .SV 10 1/18/74
PAL8 .SV 16 1/18/74
CREF .SV 13 1/18/74
BITMAP.SV 5 1/18/74
FORT .SV 25 1/18/74
SABR .SV 24 1/18/74
LOADER.SV 12 1/18/74
SRCCOM.SV 5 1/18/74
BOOT .SV 5 1/18/74
EPIC .SV 14 1/18/74
MCPIP .SV 13 1/18/74
PIP10 .SV 17 1/18/74
RESORC.SV 10 1/18/74
DTCOPY.SV 5 1/18/74
TDCOPY.SV 7 1/18/74
BUILD .SV 33 1/18/74
TDINIT.SV 7 1/18/74
LIBSET.SV 5 1/18/74
CAMP .SV 8 1/18/74
DTFRMT.SV 7 1/18/74
TDFRMT.SV 9 1/18/74
RK8FMT.SV 9 1/18/74
RKEFMT.SV 6 1/18/74
<EMPTY> 195
195 FREE BLOCKS
```

This example includes a directory typical of those produced by PIP.

Since we will need a second DECTape in this demonstration, we must now zero it (write a blank directory). Be sure you have mounted a BLANK DECTape on unit #1. To zero the DECTape, type:

*DTA1:/Z←)

Upon completion of this operation, PIP prints another asterisk (*) on the terminal. Type a CTRL/C to return to the OS/8 Monitor:

*↑C

(hold down the CTRL key
and press the C key)

OS/8 EDITOR

To create the assembly language program mentioned previously, load the OS/8 Editor into core memory. To run the Editor, type:

```
.R EDIT)
```

Since we are going to create a new program we need only specify an output file to the OS/8 Editor. This is done by typing:

```
*DTA1:DEMO.PA<~)
```

The OS/8 Editor prints a pound sign (#) to indicate that it is ready to accept commands. Type the following, a carriage return after each line:

```
#A)
```

```
/AC LIGHT DEMO  
/THIS PROGRAM WILL DISPLAY  
/A LIGHT PATTERN IN THE AC LIGHTS  
/
```

```
                *200  
LLOOP,  TAD LOC  
LOOP,   ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        JMP LOOP  
        CML CMA RAR  
        DCA LOC  
        ISZ TEMP  
        JMP LLOOP  
        JMP I .+1  /RETURN TO THE OS/8 MONITOR  
                7605  
LOC,       2525  
TEMP,     5000  
$
```

After the dollar sign (\$) and carriage return are typed, type a CTRL/L to terminate input.

Type the L key and a carriage return in response to the Editor's # to list the current text buffer and verify that the input was entered correctly. For example:

```
#L )  
/AC LIGHT DEMO  
/THIS PROGRAM WILL DISPLAY  
/A LIGHT PATTERN IN THE AC LIGHTS  
/
```

```
                *200  
LLOOP,  TAD LOC  
LOOP,   ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        ISZ LOC  
        JMP LOOP  
        CML CMA RAR  
        DCA LOC  
        ISZ TEMP  
        JMP LLOOP  
        JMP I .+1  /RETURN TO THE OS/8 MONITOR  
                7605  
LOC,      2525  
TEMP,    5000  
        $
```

When you are sure the input is correct, type an E and a carriage return in response to the Editor's # to exit from the Editor.

```
#E )
```

OS/8 ASSEMBLER (PAL-8)

Now the source program just created must be assembled. Again, all user responses are underlined.

Use the command:

.R PAL8)

PAL-8 requests input, output and listing files by printing an asterisk (*). Type the following

*DTAL:DEMO.BN,TTY:←DTAL:DEMO.PA)

The above command creates a binary file on DECTape unit 1 and produces a listing on the console terminal. Input is from DECTape unit 1. Please note that the following output is not an exact image of the terminal output in that blank lines have been compressed.

/AC LIGHT DEMO PAL8-V9B 4/10/74 PAGE 1

```

                                /AC LIGHT DEMO
                                /THIS PROGRAM WILL DISPLAY
                                /A LIGHT PATTERN IN THE AC LIGHTS
                                /
00200      0200      *200
00200      1217  LLOOP,  TAD LOC
00201      2217  LOOP,   ISZ LOC
00202      2217      ISZ LOC
00203      2217      ISZ LOC
00204      2217      ISZ LOC
00205      2217      ISZ LOC
00206      2217      ISZ LOC
00207      2217      ISZ LOC
00210      5201      JMP LOOP
00211      7070      CML CMA RAR
00212      3217      DCA LOC
00213      2220      ISZ TEMP
00214      5200      JMP LLOOP
00215      5616      JMP I .+1 /RETURN TO THE OS/8 MONITOR
00216      7605      7605
00217      2525  LOC,   2525
00220      5000  TEMP,   5000
```

/AC LIGHT DEMO PAL8-V9B 4/10/74 PAGE 1-1

```

LLOOP      0200
LOC         0217
LOOP       0201
TEMP       0220
```

Now, to run the program you just created, type:

```
.R ABSLDR)  
*DTAL:DEMO.BN$  
.ST 200)
```

Where \$ represents the ALTMODE key.

Make sure the rotary switch is pointing to AC; notice the pattern in the AC lights. After approximately one minute, the program returns to the OS/8 Monitor.

OS/8 CREF

The cross reference (CREF) listing is a valuable tool to most programmers as it indicates where each user symbol was defined and referenced in the program. To CREF a program, it is necessary to store the assembly listing on a mass storage device; therefore, PAL-8 must be rerun and the listing output to DECTape rather than to the console terminal.

Note that no binary file is produced this time. Again, blank lines have been compressed.

```
.R PAL8)  
*,DTAL:DEMO.LS←DTAL:DEMO.PA)  
  
.R CREF  
*TTY:←DTAL:DEMO.LS)
```

```

1          /AC LIGHT DEMO
2          /THIS PROGRAM WILL DISPLAY
3          /A LIGHT PATTERN IN THE AC LIGHTS
4          /
5          0200          *200
6          00200 1217 LLOOP, TAD LOC
7          00201 2217 LOOP, ISZ LOC
8          00202 2217 ISZ LOC
9          00203 2217 ISZ LOC
10         00204 2217 ISZ LOC
11         00205 2217 ISZ LOC
12         00206 2217 ISZ LOC
13         00207 2217 ISZ LOC
14         00210 5201 JMP LOOP
15         00211 7070 CML CMA RAR
16         00212 3217 DCA LOC
17         00213 2220 ISZ TEMP
18         00214 5200 JMP LLOOP
19         00215 5616 JMP I .+1 /RETURN TO THE OS/8
                MONITOR
20         00216 7605 7605
21         00217 2525 LOC, 2525
22         00220 5000 TEMP, 5000
23         $

```

```

LLOOP      0200
LOC        0217
LOOP       0201
TEMP       0220

```

```

LLOOP      6# 18
LOC        6 7 8 9 10 11 12 13 16 21#
LOOP       7# 14
TEMP       17 22#

```

HOW TO OBTAIN SOFTWARE INFORMATION

SOFTWARE NEWSLETTERS, MAILING LIST

The Software Communications Group, located at corporate headquarters in Maynard, publishes newsletters and Software Performance Summaries (SPS) for the various Digital products. Newsletters are published monthly, and contain announcements of new and revised software, programming notes, software problems and solutions, and documentation corrections. Software Performance Summaries are a collection of existing problems and solutions for a given software system, and are published periodically. For information on the distribution of these documents and how to get on the software newsletter mailing list, write to:

Software Communications
P. O. Box F
Maynard, Massachusetts 01754

SOFTWARE PROBLEMS

Questions or problems relating to Digital's software should be reported to a Software Support Specialist. A specialist is located in each Digital Sales Office in the United States. In Europe, software problem reporting centers are in the following cities.

Reading, England	Milan, Italy
Paris, France	Solna, Sweden
The Hague, Holland	Geneva, Switzerland
Tel Aviv, Israel	Munich, West Germany

Software Problem Report (SPR) forms are available from the specialists or from the Software Distribution Centers cited below.

PROGRAMS AND MANUALS

Software and manuals should be ordered by title and order number. In the United States, send orders to the nearest distribution center.

Digital Equipment Corporation Software Distribution Center 146 Main Street Maynard, Massachusetts 01754	Digital Equipment Corporation Software Distribution Center 1400 Terra Bella Mountain View, California 94043
--	--

Outside of the United States, orders should be directed to the nearest Digital Field Sales Office or representative.

USERS SOCIETY

DECUS, Digital Equipment Computer Users Society, maintains a user exchange center for user-written programs and technical application information. A catalog of existing programs is available. The society publishes a periodical, DECUSCOPE, and holds technical seminars in the United States, Canada, Europe, and Australia. For information on the society and membership application forms, write to:

DECUS Digital Equipment Corporation 146 Main Street Maynard, Massachusetts 01754	DECUS Digital Equipment, S.A. 81 Route de l'Aire 1211 Geneva 26 Switzerland
---	---

READER'S COMMENTS

NOTE: This form is for document comments only. Problems with software should be reported on a Software Problem Report (SPR) form (see the HOW TO OBTAIN SOFTWARE INFORMATION page).

Did you find errors in this manual? If so, specify by page.

Did you find this manual understandable, usable, and well-organized? Please make suggestions for improvement.

Is there sufficient documentation on associated system programs required for use of the software described in this manual? If not, what material is missing and where should it be placed?

Please indicate the type of user/reader that you most nearly represent.

- ☐ Assembly language programmer
- ☐ Higher-level language programmer
- ☐ Occasional programmer (experienced)
- ☐ User with little programming experience
- ☐ Student programmer
- ☐ Non-programmer interested in computer concepts and capabilities

Name _____ Date _____

Organization _____

Street _____

City _____ State _____ Zip Code _____

or
Country

If you do not require a written reply, please check here. ☐

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-----**Do Not Tear - Fold Here and Staple**-----

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OS/8 VERSION III SOFTWARE ANNOUNCEMENT

OS/8 Version III is now available from Digital Equipment Corporation's Software Distribution Center. Registered customers are entitled to purchase this new release on DECTape, LINCTape or paper tape for \$100. The normal selling price is \$300. Besides the new software features described below, the OS/8 system (binaries only) is also available on DECcassettes. The upgrade handling price for this kit is also \$100.

NEW OS/8 VERSION III FEATURES

New OS/8 Handbook: One book containing all documentation for the OS/8 system, utilities, Extension kit and OS/8 FORTRAN IV.

CCL: Concise Command Language provides the user an extensive set of terminal commands. Typical commands available include, COPY, DIRECTORY, HELP, RENAME, LIST, TYPE, DELETE, CORE, etc.

FOTP: File Oriented Transfer Program allows the user to transfer groups of files between two OS/8 file structured devices with minimal terminal interaction and device overhead; i.e., all ASCII files can be transferred between a DECTape and disk with one terminal command.

DIRECT: Allows the OS/8 user to print extended directory listings.

BOOT: Loads the standard hardware bootstraps into core.

CAMP: Cassette and Magtape positioning program which allows the user to manipulate these devices.

PIP10: Allows the user to transfer ASCII files between DECsystem-10 DECTapes and OS/8 devices. This utility will only run on a PDP-8, 8/I, 8/L, 8/E, 8/M equipped with either TC08 or TD8E DECTape.

MCPIP: Files transfer program to be used with Cassettes and Magtape (replaces PIP-C).

RESORC: Integrates system monitor tables and prints out listing of active device handlers.

Enclosed are several lists detailing the make-up of each kit, new individual source prices, and new source and listing kit prices. When purchasing sources or listings, please remember your company or corporation must sign a "License Agreement for DEC Software Program Sources" contained in this publication. Also, described in the attached lists are the contents of the OS/8 Version III Extension kit. Upgrade price for the DECTape, LINCTape, Cassette, or Paper Tape is \$50.

OS/8 Version II will remain software support category B until September 1, 1974, at which time it will be reclassified as software support category C (no support from Digital) and be removed from the PDP-8 price list.

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Software Product Description

PRODUCT NAME: OS/8 Operating System

DESCRIPTION:

OS/8 is a comprehensive library of system programs operating under the supervision of an integrated executive. The OS/8 operating system represents a major advance in small computer software development, with capabilities that were formerly available only on such powerful machines as the DECsystem-10. This breakthrough in software technology makes all the features of a sophisticated operating system available to PDP-8/E users. OS/8 was specifically designed to shorten the time required for program development, increase throughput at dedicated data processing installations, and facilitate system management.

Programmers can take advantage of OS/8 features by storing data files or executable programs in a system library where they may be accessed for loading, modification or execution by means of simple keyboard commands entered at the console terminal. OS/8 provides for convenient program chaining, so that a problem may be divided into a set of smaller programs. In the same manner, very large programs may be coded in small segments that can be overlaid during execution, to conserve memory storage.

Programs written under OS/8 may be coded in a manner that allows I/O device independence. Program I/O is performed by standardized calls to system device handlers and a comprehensive I/O supervisor called the User Service Routine. This feature permits programs to be written without regard for the characteristics of a particular I/O device. When a device independent program is executed, the user enters a run-time I/O specification command selecting the I/O devices to be employed during program execution, thus tailoring the I/O to a specific application or system configuration. When a system is expanded, programs use the new I/O capabilities to full advantage immediately, with no rewriting or reassembly.

Every OS/8 system is easily expanded to include virtually any peripheral devices. Fully supported I/O device options include high- or low-speed paper tape equipment, card readers,

line printers, and a selection of hardcopy or CRT console terminals, as well as a wide variety of disk and magnetic tape bulk storage devices. Nonstandard devices may be added to any system by coding a 1- or 2-page device handler and appending it to the standard device handlers supplied with the system. Device independence is maintained, even for nonstandard devices.

OS/8 Monitor Support Cusps include:

CCL (Concise Command Language) provides the user an extensive set of terminal commands. The OS/8 version of CCL has been patterned after the TOPS-10, DECsystem-10 Monitor. Typical commands available in CCL include: COPY, DIRECTORY, HELP, RENAME, LIST, DELETE, etc.

The OS/8 version of EDIT incorporates all features of the stand-alone package and provides I/O device independence under the OS/8 Operating System. Files may be read from or routed to any device in the system.

PAL8 is an extended assembler that runs under the OS/8 Operating System. It includes some of the best features of both PAL III and MACRO-8, plus such additional features as conditional assembly, expanded symbol table allowing up to 1800 entries on a 12K system, rapid binary symbol table search, extended pseudo-operations and paginated listings with page headings and numbered pages. PAL8 communicates with the user via the device-independent OS/8 Command Decoder. Thus, it may operate with any I/O devices that are present in the system.

ABSLDR is the OS/8 absolute loader program used to read a binary program into memory and create a resident core image suitable for addition to the system library or immediate execution. Input files may originate from any supported binary I/O device.

ODT (Octal Debugging Technique) is an integral part of the OS/8 Operating System that facilitates running prototype programs under carefully controlled conditions, modifying programs during execution, or monitoring the state of main-frame memory and the major registers. The OS/8 version of ODT does not require any memory aside from certain areas of the 256 location resident monitor; it is swapped into memory from the system device whenever required, while overlaid portions of the running program are saved on the device for later restoration.

PIP (Peripheral Interchange Program) is a versatile file

manipulation routine. OS/8 PIP may be used to transfer ASCII, core image, or binary files from one device to another. PIP can also merge or delete files and list, zero, or compress file directories. All communications between PIP and the user is accomplished by means of standard OS/8 command decoder specification strings typed at the console terminal.

FOTP (File Oriented Transfer Program) allows the user to transfer groups of files between two OS/8 file structured devices with minimum terminal interaction and device overhead, i.e., all ASCII files can be transferred between a DEctape and a disk with one terminal command.

OS/8 FORTRAN II is a complete FORTRAN II programming system consisting of FORT, the FORTRAN compiler; SABR, a symbolic assembler for binary relocatable programs; and LOADER, the linking loader that accepts an open-ended list of relocatable binary files and generates intersubroutine linkages, address modifications, and a core image suitable for saving or execution.

The FORTRAN II system includes such features as Hollerith constants, implied DO loops, program chaining and mixed FORTRAN or assembly language statements. It runs on any OS/8 hardware configuration.

BUILD, the system generation program for OS/8, allows fast, convenient generation or reconfiguration of any OS/8 system. BUILD is most frequently employed to insert or delete system I/O device handlers, permitting the system I/O structure to be custom tailored to a particular application easily and quickly.

CREF (Cross Reference Utility Program) aids the development programmer in writing, debugging and maintaining assembly language programs by providing the ability to pinpoint all references to a particular symbol. Input is supplied to the OS/8 version of CREF in the form of an ASCII listing file produced by either PAL8, RALF or the SABR assembler.

SRCCOM (Source Compare) is an OS/8 utility program that compares two source files line by line and creates a third file listing all differences between the two sources.

PIP10 allows the user to transfer ASCII files between DECsystem-10 DEctapes and OS/8 devices. This utility will only run on a PDP-8, 8/I, 8/L, 8/E, 8/M equipped with either TC08 or TD8E DEctape.

MINIMUM HARDWARE REQUIRED:

8K PDP-8 with at least 64K mass storage
VT05 terminal (up to 300 baud), LA30-PA, or Teletype

OPTIONAL HARDWARE SUPPORTED:

TM8E Magtape
TA8E DECcassette
RK8-E, RK08, DF32, RF08 Disk
TC08 or TD8-E with MR8-E ROM DECTape
LS8-E, LE8-e, LV8 Line Printer
CR8-E, DF8-E Card Reader
PT8-E High-Speed Paper Tape Reader
Additional Memory to a total of 32K
VT05 terminal up to 2400 baud with KL8-JA

PREREQUISITE SOFTWARE:

None

ORDERING INFORMATION:

QF015-AB Single-user license*; binaries on Paper Tape
and manual
QF015-AC Single-user license*; binaries on DECTape
and manual
QF015-AN Single-user license*; binaries on cassette
and manual
QK015-AA Single-user license*; binaries on LINCTape
and manual

Customers must first purchase an OS/8 Operating System binary
package, then may order:

QF015-EC Sources on DECTape; (requires license*)
QK015-EA Sources on LINCTape; (requires license*)
QF015-FZ Listings; (requires license*)
QF015-EE Sources on DECplatter; (requires license*)

SUPPORT CLASSIFICATION: B, with SPR service for one year after
delivery.

UPDATE POLICY: Any future updates will be available at the
prevailing handling and service charges.

* This software is furnished under a license for use in a single
system and can be copied (with the inclusion of DIGITAL's copyright
notice) only for use in such system except as may otherwise be
provided in writing by DIGITAL.

Detailed Content of OS/8 Version III System Software Kits

The following information is intended to detail the contents of OS/8 Version III software parts.

All prices shown in parenthesis are replacement prices only. Once the initial kit is purchased, individual items may be purchased at these prices.

The information shown here, will include the DECTape #'s and LINCTape #'s and a directory listing of what is contained on each.

OS/8 Version III System DECTape Kit - QF015-AC
LINCTape Kit - QF015-AA

- I. { System DECTape #1
DEC-S8-OSYSB-A-UC1 (\$35)*
System LINCTape #1
DEC-12-OSYSB-A-AC1 (\$35)*

ABSLDR.SV	LIB8.RL
PIP.SV	EDIT.SV
PAL8.SV	FORT.SV
SABR.SV	LOADER.SV
CREF.SV	BITMAP.SV
BUILD.SV	SRCCOM.SV
EPIC.SV	CCL.SV
FOTP.SV	RESORC.SV
DIRECT.SV	PIP10.SV
CAMP.SV	MCPIP.SV
BOOT.SV	DTCOPY.SV
TDCOPY.SV	RK8FMT.SV
RKEFMT.SV	PTFRMT.SV
TDFRMT.SV	

- II. { System DECTape #2
 DEC-S8-OSYSB-A-UC2 (\$35) *
 System LINCtape #2
 DEC-12-OSYSB-A-AC2 (\$35) *

TDINIT.SV	TDROM .SY
TD12K .SV	TCØ8SY.BN
TD8ESY.BN	LINC SY.BN
DF32SY.BN	RFØ8SY.BN
RKØ8SY.BN	RK8ESY.BN
ROMMSY.BN	LINCNS.BN
TCØ8NS.BN	RK8ENS.BN
PT8E .BN	LSPT .BN
L645 .BN	ASR33 .BN
RKØ8NS.BN	CR8E .BN
BAT .BN	TD8EA .BN
TD8EB .BN	TD8EC .BN
TD8ED .BN	VR12 .BN
RFØ8NS.BN	DF32NS.BN
KL8E .BN	LPSV .BN
CSA .BN	CSB .BN
CSC .BN	CSD .BN
TM8E .BN	DIRECT.HL
BATCH .HL	SABR .HL
PIP .HL	FOTP .HL
ABSLDR.HL	PIPlØ .HL
BOOT .HL	LOADER.HL
BITMAP.HL	EDIT .HL
CREF .HL	BUILD .HL
PAL8 .HL	ODT .HL
SRCCOM.HL	CCL .HL
TECO .HL	FORT .HL
LOAD .HL	LIBRA .HL
EPIC .HL	LIB8 .RL
GENIOX.RL	IOH .RL
FLOAT .RL	INTEGR.RL
UTILITY.RL	POWERS.RL
IPOWRS.RL	SQRT .RL
TRIG .RL	ATAN .RL
RWTAPE.RL	IOPEN .RL
CCL .PA	KL8E .PA

III. OS/8 Version III Handbook

DEC-S8-OSHBA-A-D (\$10) *

IV. OS/8 Version III Software Support Manual

DEC-S8-OSSMB-A-D (\$10) *

I. OS/8 System Binary Paper Tapes (\$5.00 each)*

DEC-S8-OSYSB-A-PB1	BUILD
DEC-S8-OSYSB-A-PB2	BUILD Handlers Tape #1 (FILE STRUCTURED HANDLERS)
DEC-S8-OSYSB-A-PB3	BUILD Handlers Tape #2 (CHARACTERS ORIENTED HANDLERS)
DEC-S8-OSYSB-A-PB4	MONITOR (OS/8)
DEC-S8-OSYSB-A-PB5	COMMAND DECODER
DEC-S8-OSYSB-A-PB6	FORT
DEC-S8-OSYSB-A-PB7	SABR
DEC-S8-OSYSB-A-PB8	LINKING LOADER
DEC-S8-OSYSB-A-PB9	LIBSET
DEC-S8-OSYSB-A-PB10	CREF
DEC-S8-OSYSB-A-PB11	EDIT
DEC-S8-OSYSB-A-PB12	PAL8
DEC-S8-OSYSB-A-PB13	PIP
DEC-S8-OSYSB-A-PB14	MCPIP
DEC-S8-OSYSB-A-PB15	BITMAP
DEC-S8-OSYSB-A-PB16	EPIC
DEC-S8-OSYSB-A-PB17	SRCCOM
DEC-S8-OSYSB-A-PB18	CCL
DEC-S8-OSYSB-A-PB19	FOTP
DEC-S8-OSYSB-A-PB20	RESORC
DEC-S8-OSYSB-A-PB21	DIRECT
DEC-S8-OSYSB-A-PB22	PIP10
DEC-S8-OSYSB-A-PB23	CAMP
DEC-S8-OSYSB-A-PB24	BOOT
DEC-S8-OSYSB-A-PA	OS/8 Version III Help files
DEC-S8-OSYSB-A-PR	LIB8 (OS/8 FORTRAN II Library)

II. OS/8 Version III Handbook

DEC-S8-OSHBA-A-D (\$10)*

III. OS/8 Version III Software Support Manual

DEC-S8-OSSMB-A-D (\$10)*

OS/8 Version III System Cassette Kit - QF015-AN

I. System Cassette #1

DEC-S8-OSYSB-A-TC1 (\$25) *

C2BOOT.BN	C3BOOT.BN
BUILD.BN	OS/8.BN
CD.BN	MCPIP.BN

II. System Cassette #2

DEC-S8-OSYSB-A-TC2 (\$25) *

CCL.SV	PAL8.SV
DIRECT.SV	CREF.SV
FOTP.SV	BITMAP.SV
PIP.SV	BOOT.SV
LIB8.RL	CAMP.SV
EDIT.SV	RK8FMT.SV
RKEFMT.SV	

III. System Cassette #3

DEC-S8-OSYSB-A-TC3 (\$25) *

FORT.SV	PIPlø.SV
SABR.SV	RESORC.SV
LOADER.SV	DTCOPY.SV
SRCCOM.SV	TDCOPY.SV
EPIC.SV	TDFRMT.SV
DTFRMT.SV	

*replacement prices only

IV. System Cassette #4

DEC-S8-OSYSB-A-TC4

(\$25)*

TCØ8SY.BN	TM8E.BN
TD8ESY.BN	CSA.BN
LINCSY.BN	CSB.BN
DF32SY.BN	CSC.BN
RFØ8SY.BN	CSD.BN
RKØ8SY.BN	DIRECT.HL
RK8ESY.BN	BATCH.HL
ROMMSY.BN	SABR.HL
LINCNS.BN	PIP.HL
TCØ8NS.BN	FOTP.HL
RK8ENS.BN	ABSLDR.HL
PT8E.BN	PIP1Ø.HL
LSPT.BN	BOOT.HL
L645.BN	LOADER.HL
ASR33.BN	BITMAP.HL
RKØ8NS.BN	EDIT.HL
CR8E.BN	CREF.HL
BAT.BN	BUILD.HL
TD8EA.BN	PAL8.HL
TD8EB.BN	ODT.HL
TD8EC.BN	SRCCOM.HL
TD8ED.BN	CCL.HL
VR12.BN	TECO.HL
RFØ8NS.BN	FORT.HL
DF32NS.BN	LOAD.HL
KL8E.BN	LIBRA.HL
LPSV.BN	EPIC.HL

V. System Cassette #5

DEC-S8-OSYSB-A-TC5

(\$25)*

LIB8.RL	SQRT.RL
GENIOX.RL	TRIG.RL
IOH.RL	ATAN.RL
FLOAT.RL	RWTAPE.RL
INTEGR.RL	IOPEN.RL
UTILTY.RL	LIBSET.SV
POWERS.RL	KL8E.PA
IPOWRS.RL	

VI. System Cassette #6

DEC-S8-OSYSB-A-TC6

(\$25)*

CCL.PA

VII. OS/8 Version III Handbook

DEC-S8-OSHBA-A-D

(\$10)*

VIII. OS/8 Version III Software Support manual

DEC-S8-OSSMB-A-D

(\$10)*

OS/8 Version III System Order Form

License to use* OS/8 Version III operating system.

Please check what medium you would like your OS/8 Version III kit on:

- | | | | |
|--------------------------|----------|-----------------------------------|-------|
| ☐ | QFØ15-AB | OS/8 Version III on Paper Tape; | \$300 |
| ☐ | QFØ15-AC | OS/8 Version III on DECTape; | \$300 |
| ☐ | QFØ15-AN | OS/8 Version III on DECCassettes; | \$300 |
| ☐ | QKØ15-AA | OS/8 Version III on LINCTape; | \$300 |

Registered users of any previous versions of PS/8 or OS/8 may order the following update kits at the prices shown below.

- | | | | |
|--------------------------|----------|--|-------|
| ☐ | QFØ15-HB | OS/8 Version III update on Paper Tape; | \$100 |
| ☐ | QFØ15-HC | OS/8 Version III update on DECTape; | \$100 |
| ☐ | QFØ15-HN | OS/8 Version III update on DECCassettes; | \$100 |
| ☐ | QKØ15-HA | OS/8 Version III update on LINCTape; | \$100 |

Name: _____

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Dept: _____

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Country: _____ Zip: _____

U.S. Customers mail to:

Digital Equipment Corporation
Software Distribution Center
146 Main Street, Bldg. 1-2
Maynard, MA 01754

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All other customers, mail to your local Digital Sales Office.

* This order for the license to use OS/8 Version III is subject to and governed by Digital's standard terms and conditions (incorporated herein by reference) or other agreement between customer and Digital.

Detailed Content of OS/8 Version III System Source & Listing Kits

The following sources may be purchased as one order using the numbers and prices shown or individually using the order numbers and prices shown below. Again, remember you must have on file with Digital Equipment Corporation a signed "License Agreement for DEC Software Program Sources."

Sources on DECtape	QF015-EC	\$950
Sources on DECplatter (RK05)	QF015-EE	\$950
Sources on LINCtape	QF015-EA	\$950

Detail of Source DECtape Kits - QF015-EC LINCtape Kits - QF015-EA

I.	{	Source DECtape #1	DEC-S8-OSYSB-A-UA1	(\$250)*
		Source LINCtape #1	DEC-12-OSYSB-A-AA1	(\$250)*
		PIP.PA		
		CREF.PA		
		PAL8.PA		
		EDIT.PA		
II.	{	Source DECtape #2	DEC-S8-OSYSB-A-UA2	(\$150)*
		Source LINCtape #2	DEC-12-OSYSB-A-AA2	(\$150)*
		FORTRAN II Library		
		- IOH.SB	FLOAT.SB	
		- INTEGR.SB	UTILITY.SB	
		- POWERS.SB	IPOWRS.SB	
		- SQRT.SB	TRIG.SB	
		- ATAN.SB	RWTAPE.SB	
		- IOPEN.SB		
		LIBSET.PA		
		LOADER.PA		
III.	{	Source DECtape #3	DEC-S8-OSYSB-A-UA3	(\$150)*
		Source LINCtape #3	DEC-12-OSYSB-A-AA3	(\$150)*
		FORTRAN II Compiler (FORT.PA)		
		FORTRAN II Assembler (SABR.PA)		

*Prices apply to registered users only.

IV.	{	Source DECTape #4	DEC-S8-OSYSB-A-UA4	(\$100)*
		Source LINCtape #4	DEC-12-OSYSB-A-AA4	(\$100)*

Sources for all OS/8 Version III device handlers

TD8EA.PA	RFØ8SY.PA
TD8EB.PA	RKØ8SY.PA
TD8EC.PA	ROMMSY.PA
TD8ED.PA	RK8ESY.PA
TCØ8NS.PA	DF32NS.PA
ASR33.PA	KL8E.PA
LSPT.PA	BAT.PA
CS.PA	LPSV.PA
TM8E.PA	L645.PA
CR8E.PA	LINC SY.PA
TCØ8SY.PA	LINCNS.PA
TD8ESY.PA	RFØ8NS.PA
RKØ8NS.PA	VR12.PA
DF32SY.PA	RK8ENS.PA
PT8E.PA	

V.	{	Source DECTape #5	DEC-S8-OSYSB-A-UA5	(\$250)*
		Source LINCtape #5	DEC-12-OSYSB-A-AA5	(\$250)*
		OS/8 MONITOR (OS.PA)		
		OS/8 Command Decoder (CD.PA)		

VI.	{	Source DECTape #6	DEC-S8-OSYSB-A-UA6	(\$250)*
		Source LINCtape #6	DEC-12-OSYSB-A-AA6	(\$250)*
		BUILD.PA		
		TDINIT.PA		
		C2BOOT.PA		
		C3BOOT.PA		

VII.	{	Source DECTape #7	DEC-S8-OSYSB-A-UA7	(\$100)*
		Source LINCtape #7	DEC-12-OSYSB-A-AA7	(\$100)*
		SRCCOM.PA		
		BITMAP.PA		
		EPIC.PA		

*prices apply to registered users only.

VIII.	{	Source DEctape #8	DEC-S8-OSYSB-A-UA8	(\$100)*
		Source LINctape #8	DEC-12-OSYSB-A-AA8	(\$100)*

FOTP.PA
 DIRECT.PA
 RESORC.PA
 PIP10.PA
 MCPIP.PA
 CAMP.PA
 BOOT.PA

*prices apply to registered users only.

Detailed Contents of OS/8 Version III System Listing Kit

The following listings may be purchased as one order using the numbers and prices shown or individually using the order numbers and prices shown below. You must have on file with Digital Equipment Corporation a signed "License Agreement for Digital Software Program Sources".

Listing Package	QF015-FZ	\$950
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DEC-S8-OSYSB-A-LA1	BUILD	\$100 *
DEC-S8-OSYSB-A-LA2	All Device Handlers	\$100
DEC-S8-OSYSB-A-LA4	MONITOR	\$100
DEC-S8-OSYSB-A-LA5	Command Decoder	\$75
DEC-S8-OSYSB-A-LA6	FORTRAN II Compiler	\$80
DEC-S8-OSYSB-A-LA7	SABR	\$80
DEC-S8-OSYSB-A-LA8	Linking Loader	\$60
DEC-S8-OSYSB-A-LA9	LIBSET	\$60
DEC-S8-OSYSB-A-LA10	CREF	\$75
DEC-S8-OSYSB-A-LA11	EDIT	\$40
DEC-S8-OSYSB-A-LA12	PAL 8	\$75
DEC-S8-OSYSB-A-LA13	PIP	\$80
DEC-S8-OSYSB-A-LA14	MCPIP	\$50
DEC-S8-OSYSB-A-LA15	BITMAP	\$25
DEC-S8-OSYSB-A-LA16	EPIC	\$20
DEC-S8-OSYSB-A-LA17	SRCCOM	\$50
DEC-S8-OSYSB-A-LA18	CCL	\$35
DEC-S8-OSYSB-A-LA19	FOTP	\$35
DEC-S8-OSYSB-A-LA20	RESORC	\$20
DEC-S8-OSYSB-A-LA21	DIRECT	\$20
DEC-S8-OSYSB-A-LA22	PIP10	\$20
DEC-S8-OSYSB-A-LA23	CAMP	\$25
DEC-S8-OSYSB-A-LA24	BOOT	\$10
DEC-S8-OSYSB-A-LA25	C2 BOOT	\$10
DEC-S8-OSYSB-A-LA26	C3 BOOT	\$10
DEC-S8-OSYSB-A-LA27	TDINIT	\$15
DEC-S8-OSYSB-A-LA28	FORTRAN II Library	\$60

*prices apply to registered users only.

OS/8 Version III Source and Listing Order Form

License to use* OS/8 Version III operating system sources and listings.

Pre-requisite: That a customer be a registered
OS/8 Version III operating system
user, having a license to use:
OFØ15-DEctape, QKØ15-LINctape.

Please check on what medium you would like your OS/8 Version III
source kit on:

☐	QFØ15-EC	DEctape	\$950
☐	QFØ15-EE	DECplatter (RKØ5)	\$950
☐	QKØ15-EA	LINctape	\$950
☐	QKØ15-FZ	Listings	\$950

Name: _____

Company: _____

Dept: _____

Address: _____

City: _____ State: _____

Country: _____ Zip: _____

U.S. Customers mail to:

Digital Equipment Corporation
Software Distribution Center
146 Main Street, Bldg. 1-2
Maynard, MA 01754

Enclosed is my check for: _____

Enclosed is my P.O. #: _____

All other customers, mail to your local Digital Sales Office.

* This order for the license to use OS/8 Version III is subject to and governed by Digital's standard terms and conditions (incorporated herein by reference) or other agreement between customer and Digital.

Software Product Description

PRODUCT NAME: OS/8 BATCH

SPD 851

DESCRIPTION:

OS/8 BATCH processing is ideally suited to frequently run production jobs, large and long-running programs, and programs that require little or no interaction with the user. BATCH permits the user to prepare his job on punched cards, high-speed paper tape or the OS/8 system device and leave it for the computer operator to start and run. Output is returned to the user in the form of line printer and/or console terminal listings that include program output as well as a comprehensive summary of all action taken by the user program, the monitor system and the computer operator.

BATCH provides optional spooling of output files. This feature serves to increase throughput on any system but is particularly valuable when a line printer is not available. BATCH also performs extensive command analysis and error diagnosis, as well as detailed interaction with the user/operator to facilitate initializing the system and establishing system parameters.

Almost any program that runs under interactive OS/8 may also be run under BATCH. Since BATCH is called from the keyboard in the same manner as any other system program, interactive users may use BATCH to execute multiple utility routines, even when continuous batch processing is not desired. With a few exceptions, BATCH uses the standard OS/8 command set.

MINIMUM HARDWARE REQUIRED:

OS/8 Configuration with 12K Memory

OPTIONAL HARDWARE SUPPORTED:

Disks (RK8-E, RF08, DF32 (2), RK08)
DEctapes (TD8-E, TC08)
Line Printers (LS8-E, LE8)
Card Readers (CM8-F, CR8-F)
Cassette (TA8-E)
Additional Memory to a total of 32K.

PREREQUISITE SOFTWARE:

OS/8 Operating System (QF015)

ORDERING INFORMATION:

QF006-AB Single user license*, binaries on paper tape, and
manual
QF006-AC Single user license*, binaries on DECTape and
manual
QK006-AA Single user license*, binaries on LINCTape, and
manual

SUPPORT CLASSIFICATION: B, with SPR service for one year
after delivery.

UPDATE POLICY: Any future updates will be available at the
prevailing handling and service charges.

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otherwise be provided in writing by DIGITAL.



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European Headquarters: 81 route de l'Aire, 1211 Geneva 26.
Digital Equipment of Canada Ltd., P.O. Box 11500 Ottawa, Ontario K2H8K8.

Software Product Description

PRODUCT NAME: OS/8 BASIC

SPD 852

DESCRIPTION:

OS/8 BASIC is implemented as a pure compiler and associated run-time system that is exceptionally fast and core efficient. It may be used for interactive programming in much the same manner as the Timeshared-8 version of BASIC. It also accepts terminal format ASCII input files which may be compiled, loaded and executed in response to a single monitor command. Alternatively, program and data files may be prepared under the interactive monitor for subsequent stand-alone processing under BATCH. The run-time system permits dynamic file management and program chaining, while I/O device independence is maintained through the OS/8 Operating System. OS/8 BASIC permits convenient interfacing with functions or software modules written in other languages; assembly language functions are particularly easy to implement.

Additional features include: the creation of source programs with the BASIC editor (i.e., NEW or OLD) or any of the OS/8 editors (i.e., EDIT or TECO); support for up to 32K of memory; and support for increased speed of execution (using KE8-E).

A set of 12 LAB-8/E functions for OS/8 BASIC are also included. These functions enable the user to solve a range of real-time and pseudo real-time problems using BASIC. The following LAB-8/E peripherals are supported: The 10-bit A/D converter, the VC8-E display control, the DK8-EA real-time programmable clock, and up to 3 DR8-EC digital input/output units (12 bits).

MINIMUM HARDWARE REQUIRED:

Any OS/8 Configuration

OPTIONAL HARDWARE SUPPORTED:

DISK (RK8-E, RK08, DF32, RF08)
DECTape (TC08)
Line Printer (LS8-E, LE8-E)
Card Reader (CR8-E, CF8-E)
10-bit A/D Converter (AD8-EA)
Real-Time Programmable Clock (DK8-ES)
7" x 9" Point Plot Display (VR14)
Digital I/O (DR8-EC)
Extended Arithmetic Element (KE8-E)

PREREQUISITE SOFTWARE: One of the following:

QF015-AB OS/8 Operating System on Papertape
QF015-AC OS/8 Operating System on DECTape
QK015-AA OS/8 Operating System on LINCtape

ORDERING INFORMATION:

QF006-AB Single user license*, binaries on paper tape and manual;
QF006-AC Single user license*, binaries on DECTape, and manual;
QK006-AC Single user license*, binaries on LINCtape and manual;
QF006-EC Source on DECTape; requires license
QK006-EA Source on LINCtape; requires license
QF006-FZ Listing; requires license

SUPPORT CLASSIFICATION: B, with SPR service for one year after delivery.

UPDATE POLICY: Any future updates will be available at the prevailing handling and service charges.

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European Headquarters: 81 route de l'Aire, 1211 Geneva 26.
Digital Equipment of Canada Ltd., P.O. Box 11500 Ottawa, Ontario K2H8K8.

Software Product Description

PRODUCT NAME: OS/8 TECO

SPD 853

DESCRIPTION:

TECO (Text Editor and Corrector) is an extremely powerful text editing and correction program that runs under the OS/8 Operating System. TECO may be used to edit any form of ASCII text, including program files or listings, manuscripts, and data files. Since TECO is a character-oriented editor rather than a line editor, text edited with TECO does not have extraneous line numbers associated with it, nor is it necessary to replace an entire line of text in order to change one character.

A selected subset of TECO commands (less than 20) provides easily learned mnemonics which afford full editing capabilities to the novice programmer after only a few hours of instruction. The basic commands are very similar to corresponding Symbolic Editor commands; however, the I/O device independence of OS/8 system programs permits TECO to create or modify ASCII files on any medium. Other TECO capabilities and features include character string search and replacement, 36 variable length temporary storage buffers with associated integer counters, match control characters, choice of decimal or octal radix, and a number of versatile I/O techniques.

TECO commands may be combined in sophisticated command strings which are essentially "editing programs". Once a command string has been written to perform a specified editing task, it may be saved on any convenient medium for subsequent execution whenever the same editing job is required. Advanced TECO commands provide extensive capabilities for conditional execution, branching, program control and multi-file processing. A macro programming feature is included, along with commands that facilitate the creation, maintenance and use of a TECO macro library. The full TECO command set is actually a highly sophisticated programming language which is well suited to such applications as generalized format conversion, text processing and file management.

MINIMUM HARDWARE:

Any OS/8 Configuration

OPTIONAL HARDWARE:

Disk (RK8-E, RK08, DF32, RF08)
DEctape (TC08)
Line Printer (LS8-E, LE8-E)
Card Reader (CR8-E, CF8-E)

OS/8 TECO - Continued

PREREQUISITE SOFTWARE:

QF015-AB OS/8 Operating System on Paper tape
QF015-AC OS/8 Operating System on DECTape
QK015-AA OS/8 Operating System on LINCtape

ORDERING INFORMATION:

QF006-AB Single user license,* binaries on paper tape and manual
QF006-AC Single user license,* binaries on DECTape and manual
QK006-AC Single user license,* binaries on LINCtape and manual
QF006-EC Source on DECTape; license required
QK006-EA Source on LINCtape; license required
QF006-FZ Listing; license required

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Details of OS/8 Version III Extension Kits

The following information is intended to detail the contents of OS/8 Version III software parts.

All prices shown in parenthesis are replacement prices only. Once the initial kit is purchased, individual items may be purchased at these prices.

The information shown here, will include the DECTape #'s and LINCTape #'s and a directory listing of what is contained on each.

OS/8 Version III DECTape extension kit - QF006-AC

OS/8 Version III DECCassette extension kit - QF006-AN

OS/8 Version III LINCTape extension kit - QK006-AA

- I. { Extension DECTape
DEC-S8-UEXTB-A-UC (\$35)*
Extension DECCassette
DEC-S8-UEXTB-A-TC (\$25)*
Extension LINCTape
DEC-12-UEXTB-A-AC (\$35)*

BASIC.SV	BASIC.UF
BCOMP.SV	BRTS.BN
BLOAD.SV	EAEOVR.BN
BRTS.SV	RESEQ.BA
BASIC.AF	BATCH.SV
BASIC.SF	TECO.SV
BASIC.FF	MSBAT.SV
GENIOX.RL	

II. OS/8 Version III Handbook

DEC-S8-OSHBA-A-D (\$10)*

III. OS/8 Mark Sense BATCH User Manual

DEC-S8-OBUGA-A-D (\$7.50)*

*For registered users only.

OS/8 Version III Paper Tape Extension Kit - QF006-AB
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I. OS/8 Extension kit Binary Paper tapes (\$5.00 each)*

DEC-S8-UEXTB-A-PB1	BASIC Editor
DEC-S8-UEXTB-A-PB2	BASIC Compiler
DEC-S8-UEXTB-A-PB3	BASIC Loader
DEC-S8-UEXTB-A-PB4	BASIC Runtime system
DEC-S8-UEXTB-A-PB5	BASIC EAE Overlay
DEC-S8-UEXTB-A-PB6	BASIC LAB-8/E Overlay
DEC-S8-UEXTB-A-PB7	BATCH
DEC-S8-UEXTB-A-PB8	TECO
DEC-S8-UEXTB-A-PB9	Mark Sense BATCH
DEC-S8-UEXTB-A-PR	GENIOX.RL

II. OS/8 Version III Handbook

DEC-S8-OSHBA-A-D	(\$10)*
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III. OS/8 Mark Sense BATCH User Manual

DEC-S8-OBUGA-A-D	(\$7.50)*
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*replacement prices.

OS/8 Version III Extension Kit Order Form

License to use* OS/8 Version III Extension Kit.

Pre-requisite: That a customer be a registered OS/8 Version III operating system user, having a license to use:
QF015-OS/8 Version III System Binaries on DECtape, QK015-OS/8 Version III System Binaries on LINtape.

Please check on what medium you would like your OS/8 Version III source kit on:

- | | | | |
|--------------------------|----------|--|-------|
| ☐ | QF006-AB | OS/8 Version III extension on Paper Tape; | \$200 |
| ☐ | QF006-AC | OS/8 Version III extension on DECtape; | \$200 |
| ☐ | QF006-AN | OS/8 Version III extension on DECcassette; | \$200 |
| ☐ | QK006-AA | OS/8 Version III extension on LINtape; | \$200 |

Registered user of any previous version of OS/8 extension kit may order the following update kits at the prices shown below.

- | | | | |
|--------------------------|----------|---|------|
| ☐ | QF006-HB | OS/8 Version III extension update on Paper Tape; | \$50 |
| ☐ | QF006-HC | OS/8 Version III extension update on DECtape; | \$50 |
| ☐ | QF006-HN | OS/8 Version III extension update on DECcassette; | \$50 |
| ☐ | QK006-HA | OS/8 Version III extension update on LINtape; | \$50 |

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Company: _____

Dept: _____

Address: _____

City: _____ State: _____

Country: _____ Zip: _____

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Digital Equipment Corporation
Software Distribution Center
146 Main Street, Bldg. 1-2
Maynard, MA 01754

Enclosed is my check for: _____

Enclosed is my P.O. #: _____

All other customers, mail to your local Digital Sales Office.

* This order for the license to use OS/8 Version III is subject to and governed by Digital's standard terms and conditions (incorporated herein by reference) or other agreement between customer and Digital.

Details of OS/8 Version III Extension Kit Sources and Listings

Sources on DEctape	QF006-EC	\$150
Sources on DECplatter (RK05)	QF006-EE	\$150
Sources on LINctape	QK006-EA	\$150

The following sources may be purchased as one order using the numbers and prices shown above or individually using the order numbers and prices shown below. You must have on file with Digital Equipment Corporation a signed "License Agreement for DEC Software Program Sources".

- I. Source DEctape #1 DEC-S8-UEXTB-A-UA1 (\$75)*
Source LINctape #1 DEC-12-UEXTB-A-AA1 (\$75)*

BASIC Editor	(BASIC.PA)
BASIC Compiler	(BCOMP.PA)
BASIC Loader	(BLOAD.PA)
BATCH	
Mark Sense BATCH	(MSBAT.PA)
GENIOX.SB	(FORTRAN II library routine for MSBATCH)

- II. Source DEctape #2 DEC-S8-UEXTB-A-UA2 (\$75)*
Source LINctape #2 DEC-12-UEXTB-A-AA2 (\$75)*

BASIC Runtime System	(BRTS.PA)
LAB 8/E Overlay for BASIC	(UF.PA)
TECO.PA	

*For registered users only.

OS/8 Version III Extension Kit Listings

Listing Package	QF006-FZ	\$150
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DEC-S8-UEXTB-A-LA1	OS/8 BASIC system complete	(\$75)*
DEC-S8-UEXTB-A-LA7	BATCH	(\$75)*
DEC-S8-UEXTB-A-LA8	TECO	(\$100)*
DEC-S8-UEXTB-A-LA9	Mark Sense BATCH	(\$50)*
DEC-S8-UEXTB-A-LA10	GENIOX	(\$10)*

*For registered users only

OS/8 Version III Source and Listing Order Form

License to use* OS/8 Version III Extension Kit Sources and Listings

Pre-requisite: That a customer be a registered
OS/8 Version III operating system
user, having a license to use:
QF006-OS/8 Version III Extensive-
DECtape, QK006-OS/8 Version III
Extensive-LINCtape

Please check on what medium you would like your OS/8 Version III
source kit on:

☐	QF006-EC	DECtape	\$150
☐	QF006-EE	DECplatter (RK05)	\$150
☐	QK006-EA	LINCtape	\$150
☐	QF006-FZ	Listing	\$150

Name: _____

Company: _____

Dept: _____

Address: _____

City: _____ State: _____

Country: _____ Zip: _____

U.S. Customers mail to:

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Enclosed is my check for: _____

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