

PDP-8
Digital Software News

August - September 1979

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PDP-8 DIGITAL SOFTWARE NEWS

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The **PDP-8 Digital Software News** (a bi-monthly publication) complements Software Reviews for COS-310, OS/8, and OS/78. New and revised Software Product Descriptions, programming notes, software problems and solutions, and documentation corrections are published here. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance notebook (established by the Software Review).

PRODUCTS SUPPORTED in the PDP-8 DIGITAL SOFTWARE NEWS

COS-310 V8	OS/8 Extension Kit V3D	OS/8 MACREL/LINKER V2A
COS-310/2780 RDCP V6.05, V7	OS/8 FORTRAN IV V3D	OS/78 V2, V3
OS/8 V3D		RTS-8 V3.0
OS/8 V3D Device Extensions		

DISTRIBUTION

The Digital Software News is directed to one software contact for each software product. No Mailing will be made to addresses without a software contact name. Address change requests should be sent to the nearest DIGITAL field office. Include the new address and mailing label from the most recently received publication.

Software binary and sources are provided under licenses only. The standard Terms and Conditions, OEM Agreement, and/or Quantity Discount Agreement contain the licenses for all binaries other than DECsystem-10.

Eleanor F. Hunter, Editor
Ann Owens, Associate Editor

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TRADEMARKS of DIGITAL EQUIPMENT CORPORATION Maynard, Massachusetts

DEC	EDUsystem	RSTS
DECsystem-10	IAS	RSX
DECSYSTEM-20	MASSBUS	UNIBUS
DECUS	OMNIBUS	VAX
DIBOL	OS/8	VMS
DIGITAL	PDP	

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REVISED SPR USER LETTER

Submitted by Sheila Hatchell, 8/11 SPR Administration

The Dispatch SPR User Letter has been revised to reflect the new SPR form which is now available. These forms can be obtained from your local Digital Office or SPR Center, or by requesting them from SPR Administration.

How to Make the Best Use of the SPR Form

What We Can Do For You:

1. Blank SPR forms are available upon request in the desired quantities Through the SPR Administration (P.O. Box F) and your local office/ SPR Center.
2. Copies of the SPR acknowledgement and answer are sent to the appropriate DIGITAL Office/SPR Center for their information.
3. STATUS FOR SUBMITTED SPRs IS PROVIDED UPON REQUEST.
4. SPRs marked PROBLEM/Error will have a response for supported Category A and B products. These SPRs should refer to suspected deficiencies in the software.
5. SPRs marked SUGGESTION are forwarded to the pertinent software group for information purposes, and are responded to at their discretion.

What You can Do For Us:

1. Fill out the form completely either by typing or printing clearly.
2. Limit only one problem per SPR form. Several problems on an SPR can greatly lengthen the turnaround time.
3. WHENEVER POSSIBLE, SUBMIT AN SPR WITH ATTACHMENTS, SUCH AS MACHINE READABLE DATA DETAILED INSTRUCTIONS ON HOW TO REPRODUCE THE PROBLEM, PROGRAM AND/OR DATA FILES, LISTINGS, AND CONSOLE LOG.
4. It would be most helpful to all concerned if problems with patches are reported as soon as possible.
5. For security SPRs, it is imperative that the DO NOT PUBLISH box be marked.
6. It would be helpful if tapes submitted with SPRs are labeled (track and density), and have a directory attached.
7. Complete the questionnaire that is supplied with each SPR answer. Your feedback is very essential in monitoring the quality of our responses.
8. SPRs should not be used for problems concerning software policy, software distribution, or hardware. The local office should be contacted in these cases.

NEW SPR FORM

A new SPR form is being distributed (see following). The Key areas of change are:

1. Reversal of order of priorities, 1 through 5 instead of 5 through 1.
2. Capsulized definitions of the priorities on the form.
3. Typewriter compatibility to include boxes to be Xed.
4. SPR Centers updated.
- * 5. Use of Customer Number as part of customer's address. (Customer number is located on Software Dispatch label, top left-hand corner).
6. Administrative fields (shaded area) used in processing SPRs have been added.



SOFTWARE PERFORMANCE REPORT

FIELD NO.: _____ CORPORATE SPR NO.: _____

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PAGE ____ OF ____

TO SET UP FOR PROPER ALIGNMENT, START AT MARK BELOW.

OPERATING SYSTEM	VERSION	SYSTEM PROGRAM OR DOCUMENT TITLE	VERSION OR DOCUMENT PART NO.	DATE
NAME: FIRM:		DEC OFFICE	DO YOU HAVE SOURCES? YES <input type="checkbox"/> NO <input type="checkbox"/>	
ADDRESS:		REPORT TYPE/PRIORITY <input type="checkbox"/> PROBLEM/ERROR <input type="checkbox"/> SUGGESTED ENHANCEMENT <input type="checkbox"/> OTHER	1. <input type="checkbox"/> HEAVY SYSTEM IMPACT 2. <input type="checkbox"/> MODERATE SYSTEM IMPACT 3. <input type="checkbox"/> MINOR SYSTEM IMPACT 4. <input type="checkbox"/> NO SIGNIFICANT IMPACT 5. <input type="checkbox"/> DOCUMENTATION/SUGGESTION	
CUST. NO.:			SUBMITTED BY: _____ PHONE: _____	
ATTACHMENTS: MAG TAPE <input type="checkbox"/> FLOPPY DISKS <input type="checkbox"/> LISTING <input type="checkbox"/> DECTAPE <input type="checkbox"/>		CAN THE PROBLEM BE REPRODUCED AT WILL? YES <input type="checkbox"/> NO <input type="checkbox"/>		
OTHER:		COULD THIS SPR HAVE BEEN PREVENTED BY BETTER OR MORE DOCUMENTATION? YES <input type="checkbox"/> NO <input type="checkbox"/> PLEASE EXPLAIN IN PROVIDED SPACE BELOW.		
CPU TYPE	SERIAL NO.	MEMORY SIZE	DISTRIBUTION MEDIUM	SYSTEM DEVICE
				DO NOT PUBLISH <input type="checkbox"/>

ALL SUBMISSIONS BECOME THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION.

SHORT NAME	MNT. CAT.	MNT. GRP.	XFER GRP.	PL.	PRG. TYPE
DATE RECEIVED (MAIL)	DATE TO MAINTAINER	XFER DATE	LOGGED ON		
DATE RECEIVED (ASG)	DATE RECEIVED FROM MAINTAINER	DATE ANSWERED	LOGGED OFF		

EN 1044H-07-R479 (35C)

ADMINISTRATIVE SERVICES GROUP, SWS

DIRECTIONS FOR COMPLETING SPR FORM

258203

The SPR form must be filled out completely and **MUST BE TYPEWRITTEN** in order to ensure proper processing. The shaded areas on the form should be left blank, they will be used by DIGITAL in processing the SPR.

The following is a brief summary of the information required:

OPERATING SYSTEM/MONITOR (SOFTWARE PRODUCT)

Monitor (software product) the system program runs under and its version number (e.g. RSX-11M V3, TOPS-10 V6.03). Document Title such as OS/8 Handbook.

SYSTEM PROGRAM & VERSION (OR DOCUMENT PART NUMBER)

The program in which the problem resides, e.g. FORTRAN V5A, BASIC V1B. If a monitor, write MONITOR (module). If a documentation error is being reported, the DEC order number of the manual should be entered here (e.g. DEC-11-ORSUB-A-D).

DATE:

Date of submittal using a three character abbreviation for month (e.g. 4-APR-79)

NAME AND ADDRESS:

Fill out the name of your installation's responsible software contact and complete mailing address. The information in this block will be used to return the acknowledgment copy.

CUST. NO.:

A permanent reference number which is assigned by DIGITAL. Customers will be informed of their number.

SUBMITTED BY AND PHONE:

Enter name and phone number of the author of the SPR.

DEC OFFICE:

Enter local DEC office (or SPR Center if European or Australian).

REPRODUCIBLE AT WILL, SOURCE AND DOCUMENTATION QUESTIONS

Check appropriate boxes.

REPORT TYPE/PRIORITY

Check appropriate box for Report Type and Priority.

Priority Definitions are as follows:

1. Most production work cannot be run, e.g. functions/jobs which are not usable are a major use of system, e.g. system won't boot, necessary peripherals cannot be used as intended.
2. Some production work cannot be run, e.g. certain jobs/functions are not usable, performance degradation, installation has insufficient excess capacity.
3. All production work can be run with some impact on user, e.g. significant manual intervention required, extra procedures, performance degradation but installation has excess capacity.
4. All production work can be run with no significant impact on user, e.g., problem can be easily patched, simple bypass procedure exists.
5. No system modifications needed to return to normal production, e.g., suggestion, consultation, documentation error.

ATTACHMENTS:

If attachments are included with SPR, describe materials sent and insure that the number from the top of this form appears on them. Printed examples must be dark. If magtape, include track and density.

CPU TYPE:

Enter model number of the processor (e.g. 1080, 8/A, 11/70, 2040).

SERIAL #:

Enter serial # of central processor. If there are two processors, enter serial number of first.

SYSTEM DEVICE:

The device on which the monitor resides (e.g. DOS/BATCH on RK05 where RK05 is system device).

DISTRIBUTION MEDIUM:

Indicate the medium on which you receive software (e.g. 9TR Magtape, DEC Tape, RX02, RK05).

PROBLEM DESCRIPTION:

A concise description of the problem in the form of PROBLEM:, DIAGNOSIS:, CURE: (if known), with references to circumstances surrounding its occurrence should be included. **Only one problem should be stated per SPR form.** Attempt to reduce the problem to a simple test case. If you cannot, include all programs and data in machine readable form. If a patch or interim solution exists, include it.

DO NOT PUBLISH:

Check this box if you do not want your SPR published in its original form. This does not guarantee that the solution will not be published if of universal value.

SPR SUBMISSION:

Upon completion of the SPR form **remove last copy** and send remainder to the nearest SPR center. Refer to the reverse side of this instruction sheet for a listing of SPR centers.

**PDP-8 Digital Software News
PRODUCT/COMPONENT SEQUENCE NUMBERS**

1.0 -- 20.0 RESERVED

21.0 OS/8 V3D

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21.1 Notes & Documentation
21.2 Monitor
21.3 CCL
21.4 CCL Overlay
21.5 Command Decoder
21.6 ODT
21.7 USR

UTILITIES

21.10 Notes & Documentation
21.11 BITMAP
21.12 BOOT
21.13 BUILD
21.14 CAMP
21.15 CREF
21.16 DIRECT
21.17 EDIT
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21.41 BAT
21.42 CR8E
21.43 CSA, CSB, CSC, CSD
21.44 DF32NS, DF32SY
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21.51 L645
21.52 PT8E
21.53 RF08NS, RF08SY
21.54 RK8ENS, RK8ESY
21.55 RK08NS, RK08SY
21.56 ROMMSY
21.57 RX01NS, RX01SY
21.58 RX78B
21.59 TC08NS, TC08SY
21.60 TD8EA, TD8EB, TD8EC, TD8ED, TD8ESY
21.61 TM8E
21.62 VR12
21.63 VT50
21.64 Notes & Documentation

FORMATTERS & COPIERS

21.80 Notes & Documentation
21.81 DTFRMT
21.82 RKL FMT
21.83 RXCOPY
21.84 TDCOPY
21.85 TDFRMT
21.86 DTCOPY

FORTRAN II & SABR

21.90 Notes & Documentation
21.91 SABR
21.92 LIB8
21.93 LIBSET
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21.95 FORT

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31.0 OS/8 EXTENSION KIT V3D

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- 31.2 BASIC.AF
- 31.3 BASIC.SF
- 31.4 BASIC.FF
- 31.5 BASIC.UF
- 31.6 EABRTS.BN
- 31.7 RESEQ
- 31.8 GENIOX
- 31.9 BCOMP
- 31.10 BLOAD
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TECO & OTHERS

- 31.20 TECO
- 31.21 FUTIL
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- 62.2 **PARAM**
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- 62.18 **CSA**
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71.0 **OS/78 V2**

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- 71.2 **CCL Overlay**
- 71.3 **Command Decoder**
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- 71.7 **KB Monitor**

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FORTRAN

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73.0 - 79.0 RESERVED

80.0 COS-310 V2

81.0 COS-310 V8

82.0 - 89.0 RESERVED

90.0 COS-310/2780

91.0 - 99.0 RESERVED

GENERAL INFORMATION

OS/78 V3.0

OS/78 V3.0 is now shipping from the SDC.

New features include two handlers - one for RL01 disks and one for both RX01 and RX02 floppy diskettes.

The OS/78 BASIC programs utilize up to four concurrent I/O handlers (one of which must be SYS) and up to five open I/O files.

A new SET command has been added to allow the user to select and replace handlers of their choice in the monitor system.

NOTE: The Symbiont program is only supported on the DECstation 78 configurations.

OS/78 software is packaged with DECstation 78 and 88 systems. OS/78 software is also offered separately -- supported or unsupported.

Supported

QF022-AY,AX,AQ Binaries, documentation, service

Unsupported

The unsupported kit is now being offered for those users of PDP-8E/M/F/A systems with 16K words of memory, OS/8 supported console and a mass storage device (RX01, RX02, RK8E, RL01).

QF022-CY,CQ,CX Binaries, documentaiton and no service
QF022-DZ License only

Out-of-Warranty

QF022-HY,HX Binaries, documentation, and no service
QF022-HQ Binaries, documentation
QF022-HZ Update license only

In-Warranty

QF022-WY,WQ,WX Binaries, documentation, service

Upgrade from OS/8 V3D Users

QF023-CY,CQ,CX Binaries, documentation, and no service

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Source

QF022-EY,EQ

Source license, no service

Source Update

QF022-NY,NQ

Source license, update, no service

OS/8 V3D
UTILITIES
PIP

Seq 21.23.2 N

1 of 3

USE OF PIP'S /Y OPTION (RY)

The commonly used system program PIP, has many options, but the one that may prove to be the most useful is the "/Y" option.

The "/Y" option copies the OS/8 or the OS/78 system area (blocks 0, 7-67):

- a. from one storage device to another (of the same type),
- b. from a storage device to a file, or
- c. any combination of files and storage devices.

With a typical system configuration that consists of a dual-drive floppy system with and a single RL01 drive, or a dual-drive floppy system with a single RK05 drive, it would seem to be impossible to back-up your new update kit that you received on an RL01 disk (or RK05) with the proper system area on the backup disk.

Thus, by using PIP with the "/Y" option, you will have your backup disk in less time than you may think.

Procedure for OS/8 System User's

1. Copy the sytem area of the master disk (update kit) to a file on the diskette in Drive 0. Call it HEAD.SY.

```
.R PIP  
*RXAO:HEAD.SY<RLOA:/Y  
CTRL/C
```

2. Use the diskette in Drive 1 to hold all of the files from the master disk. Each diskette should be labelled with the information from which side (of the master disk) that the files came from and in which order. (That is, if more than one diskette is needed to hold one side of RL files.)

```
.COPY RXA1:<RLOA:*.*/F  
.COPY RXA1:<RLOB:*.*/F  
.COPY RXA1:<RLOC:*.*/F
```

The "/F" option is from the cusp, FOTP (File-Oriented Transfer Program). It will allow a new diskette (or any media) to be mounted when the present output device becomes full, or when the present output device does not have enough room to accommodate a large file. If this situation does occur, FOTP will print:

"MOUNT NEXT OUTPUT VOLUME:"

It is important that each new device that is mounted have a good directory, so check all diskettes before starting this step.

3. Remove the master disk and insert the empty backup disk into Drive 0.
4. At this point, it would be a good idea to "FORMAT" the backup disk.
5. Now you can start building your backup disk. Use PIP to put the system area on the new disk from the file, HEAD.SY. The following is for OS/8 user's only.

```
.R PIP
*RLOA:<RXAO:HEAD.SY/Y/Z
CTRL/C
```

Use the "/Z" to zero the disk before any transfer of data.

6. Now you can copy the files from the diskettes onto the new disk (in order and to the proper side).

```
.COPY RLOA:<RXA1:*. *
.COPY RLOB:<RXA1:*. *
.COPY RLOC:<RXA1:*. *
```

7. You now have your backup disk.

One of the drawbacks to this procedure, is that for a single density diskette system, you will need a number of diskettes to hold the files from the RL01 or the RK05. Therefore, you will probably have to make the backup disk in stages. That is, fill all available diskettes from one side of the master disk, dismount the master disk, insert the backup disk, put the system area on it, then copy the first batch of files to the disk. Remount the master disk and reuse the diskettes, starting from where you left off. make sure that you "ZERO" the diskettes after each use.

OS/8 V3D
UTILITIES
PIP

Seq 21.23.2 N

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Procedure for OS/78 User's

1. Put a blank diskette in Drive 1. This will allow you to copy the system area of the master disk to the diskette in Drive 0.

```
.ZERO RXA1:/Y$*RXA0:HEAD.SY<RLOA:/Y  
CTRL/C
```

Note that "\$" is the ESCAPE key (ALTMODE).

2. Now use the same procedures that are outlined for OS/8 user's, but start at Step 2 and substitute the following procedure for Step 5.
5. OS/78 user's must use this method.

```
.ZERO RLOA:/Y$*RLOA:<RXA0:HEAD.SY/Y  
CTRL/C
```

OS/8 MACREL/LINKER V2A
MACREL V2E
NOTES & DOCUMENTATION

Seq 41.1.3 N

1 of 1

MACRO RESTRICTION IN MACREL (DBB)

OS/8 MACREL V2E has a restriction on the use of macros. The MACREL/LINKER User's Manual (AA-5664B-TA) states on page 6-4,

"Each macro definition must precede any use (call) of the macro in the source module. It is usually good practice to group all macro definitions at the start of the source module in which they are used."

Unfortunately, the structure of the MACREL assembler makes it difficult to flag this type of error. This is true because during the first pass all references to macros (before they are defined) are not recognized as such, but instead are interpreted as one-word non-memory reference instructions. However, on subsequent passes these references are treated as macro calls because by then the assembler has encountered the macro definition. This process can cause various "spurious errors" because a macro reference may have correct syntax as a macro call but not as a one-word memory reference instruction. Thus, PASS1 may generate various errors that later passes will not. (See Aug-Sept DSN article 41.1.1.)

OS/8 MACREL/LINKER V2A
MACREL V2E

Seq 41.4.2 N

1 of 1

INCONSISTENCIES IN MACREL ERROR REPORTING (DBB)

OS/8 MACREL V2E may give inconsistent error reports depending on whether a listing file specified to the command decoder.

That is, when a listing file is not specified, error reporting is sent to the user terminal. Each pass reports errors to the error handler that decides whether to print the error. Some errors are serious enough to be reported on every pass and some may be restricted to a single pass to avoid duplicate error messages.

This design causes problems when an error occurs in one pass but not in another (see Aug-Sept article 41.1.1). If an error occurs only on PASS1, a listing will never include the error because the listing is produced on PASS2 (only if no binary file is generated) and on PASS3 (only if a binary file is generated). Thus, an error occurring only on PASS2 (or PASS3) will appear in the listing only if a binary file was not (or was) specified to the command decoder. This problem is also reflected in the "n ERRORS" message that is printed on the user console at the end of the last pass. Any errors occurring on previous passes are not included in the total error sum.

Despite this, errors in MACREL sources are generally flagged adequately. However, if an error is suspected that is not being reported, or, if a more accurate error accounting system is desired, the following patch will force all errors to be listed on the user terminal.

```
.R FUTIL  
  
FILE MACREL.SV  
MACREL.SV SSSS-EEEE 0123 (0083) E.LLL DD-MM-YY  
SSSS.25431/ 3774 7300  
40470/ 7510 7300  
SET MODE SAVE  
0.6412/ 1733 7300  
EXIT
```

For systems lacking a hard copy device for the user console, the following additional patch can be made to force the errors to be printed on a hard copy device, where "XX" is the device number of the device that the errors are to be printed on.

```
.R FUTIL  
  
FILE MACREL.SV  
MACREL.SV SSSS-EEEE 0123 (0083) E.LLL DD-MM-YY  
SSSS.41333. 6046 6XX6; 6XX1  
EXIT
```

OS/8 MACREL/LINKER V2A
MACREL V2D

Seq 41.4.3 M

1 of 1

FORWARD REFERENCE PATCH TO MACREL (DBB)

Problem: MACREL does not flag forward references to forward references as an error and generates incorrect binary code involving them.

Diagnosis: The symbol table is improperly maintained.

Solution: Install the following patch.

Important! Note the four-digit octal number that FUTIL outputs in place of the "SSSS" in the line beginning with "MACREL.SV". This number should be copied exactly in place of the "SSSS" in the line immediately following the one just mentioned.

.R FUTIL

```
FILE MACREL.SV
MACREL.SV SSSS-EEEE 0123 (0083) B.LLL DD-MM-YY
SSSS.24662/4567 5663; 4753
31000/0000 17; 7240; 1777; 7510; 5247; 3257; 1376; 3254; 1375; 3010
/ 3010 ; 1410; 7450; 5244; 4774; 3255; 1255; 1373; 3256; 1656; 7700
/ 7700 ; 5236; 1257; 7650; 5240; 1656; 0372; 7650; 7330; 1656; 3656
/ 3656 ; 1655; 5213; 1656; 0371; 1370; 5235; 6201; 2254; 5212; 7200
/ 7200 ; 4767; 6410; 5653; 6401
311677 0000 401; 400; 7377; 1400; 5; 246; 6177; 7700; 213
SET MODE SAVE
0.210/ 6410 2417
212/ 6400 2401
46357/ 4545 5350
4702/ 4567 5353
4750/ 0000 3057; 4545; 5236; 1057; 7640; 7330; 1035; 3035; 4567; 5765
13136/ 0304 305
WRITE
EXIT
```

Underlined text is computer generated. This patch corrects the problem and upgrades MACREL to Version 2E.

COS-31Ø V8.Ø1A
(PATCH 2)

Seq 81.1.2 M

1 of 4

ACCESSING RXØ1 DRIVES 2 AND 3 (CW)

PROBLEM:

Some RXØ1 drives may have slightly different operating characteristics from the majority of RXØ1 drives that have been shipped. This variation in the hardware prohibits accessing drives 2 and 3 with a standard RXØ1 handler.

SOLUTION:

The attached patch to SYSGEN corrects this problem. It also changes the version number of SYSGEN to V8.01B. SYSGEN/C must be run after the patch has been made to install the modified RX handler in the monitor.

COS-310 V8.01A
(PATCH 2)

Seq 81.1.2 M

2 of 4

1. Create a PATCH command file (PT02) using the following editor commands:

```
.ER
.LN
.0100 SYSGEN
.0110 2
.0120 361
.0130 0346
.0140 375
.0150 3743
.0160 END
.0170 0001
.0180 3
.0190 6
.0200 6745
.0210 27
.0220 6747
.0230 40
.0240 1350
.0250 47
.0260 5342
.0270 53
.0280 7346
.0290 54
.0300 3316
.0310 55
.0320 1337
.0330 56
.0340 7010
.0350 57
.0360 6750
.0370 60
.0380 6755
.0390 61
.0400 7600
.0410 62
.0420 6754
.0430 63
.0440 0050
.0450 107
.0460 5351
.0470 112
```

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COS-31Ø V8.Ø1A
(PATCH 2)

Seq 81.1.2 M

3 of 4

.0480 5746
.0490 END
.0500 0025
.0510 20
.0520 314
.0530 2243
.0540 END
.0550 0001
.0560 END
.0570 /X
.0580 <ctrl/z>
.WR PT02

COS-31Ø V8.Ø1A
(PATCH 2)

Seq 81.1.2 M

4 of 4

2. Check the PT02 command file by running PATCH without the /C option. PATCH simulates the patching operation but does not change the file on the system device. When run without the /C option, PATCH displays CHECKSUM CORRECT—USE OPTION C TO UPDATE rather than NEW BLOCK PATCHED OK. To check the command file enter the following:

```
.R PATCH,PT02
```

PATCH will respond by displaying the PATCH dialogue and returning to the Monitor. If PATCH does not return to the Monitor, check the PT02 command file to insure that it was entered correctly.

3. Install the patch by entering the following command:

```
.R PATCH,PT02/C
```

PATCH will respond by displaying the PATCH dialogue and returning to the Monitor.

NOTEBOOK NOTES

The following sequence numbers have been changed in this printing of the cumulative index:

<u>Sequence</u>		<u>Sequence</u>
31.12.1 M	changed to	31.1.2 N
71.49.1 M	" "	71.44.1 M
71.58.1 M	" "	71.46.1 M
71.70.2 M	" "	71.61.2 M
71.71.1 N	" "	71.62.1 N
71.72.1 M	" "	71.63.1 M
71.72.2 M	" "	71.63.2 M
71.72.3 M	" "	71.63.3 M
71.73.1 N	" "	71.64.1 N
71.73.2 M	" "	71.64.2 M

These numbers have been changed to correspond with the updated PDP-8 Component Listing (page 7).

Please change this information in your notebook.

8 DIGITAL SOFTWARE NEWS
 CUMULATIVE INDEX
 AUGUST/SEPTEMBER 1979

This is a complete listing of all articles for current products supported in the 8 Digital Software News. Missing sequence numbers may pertain to problems unique to other versions of the same product.

IMPORTANT!

Retracted articles are indicated: RETRACTION.

Flags are currently being installed for all articles. The flags and definitions are as follows.

M = Mandatory Patch. These patches correct errors in the software product. All users are required to apply these patches to maintain consistent "user level" unless the accompanying article specifies otherwise.

F = Optional Feature Patch. These patches extend or configure functionality into the product. These functions will be treated as a supported part of the product for the duration of the current release and will be incorporated with any future release, unless otherwise stated.

R = Restriction. These articles discuss areas that will not be patched in the current release because they require major modifications or because of the product. Restrictions, except those described as permanent, are reviewed and modified when possible as part of the normal release cycle.

N = Note. These articles provide explanatory information that supplements the manual set and provide more detailed information about a program or package. They also provide procedural information to make it easier to use a program or package.

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
COS-310 V7.00		
RUNNING SYSGEN/C ON A SYSTEM WITH AN LQP	01 M	Jul 78
ERROR RECOVERY WITH THE RX HANDLER	02 M	Jul 78
EXTRA CHARACTERS PRINTED IN CREF HEADING	03 M	Jul 78
CHAINING DIBOL PROGRAMS	04 M	Jul 78
ERROR RECOVERY	05 M	Aug 78
RXU VS. PIP OPTION C	06 M	Aug 78
USING SOURCE FILES AS INPUT TO A DIBOL PROGRAM	07 M	Apr/May 79
ACCESSING RX01 DRIVES 2 AND 3	08 M	Apr/May 79
COS-310 V8.00		
COMP		
MAXIMUM SIZE OF DATA DIVISION	01 M	Dec 78/Jan 79
COPYING FILES USING SYSGEN/B	02 M	Apr/May 79
HALF-BLOCK TRANSFERS USING RX HANDLER	03 M	Apr/May 79
USING COMMAND FILES WITH PIP	04 M	Apr/May 79
INCORRECT PARSING OF MENU COMMAND FILE	05 M	Jun/Jul 79
MENU BUFFER PROBLEM	06 M	Jun/Jul 79
ACCESSING RX01 DRIVES 2 AND 3	07 M	Jun/Jul 79
COS-310 V8.01A		
MENU BUFFER PROBLEM	01 M	Jun/Jul 79
COS-310/2780 RCDP V6.05		
LOST RECORDS, INCORRECT RECORDS, CRASHES	01 M	Feb 78
INCORRECT SEGMENT LENGTHS	02 M	Feb 78
SOURCE FILE	03 M	Feb 78
SOURCE/DATA FILE OVERFLOW	04 M	Feb 78
TEMPORARY FILE BLOCK	05 M	Feb 78
FATAL ERROR MESSAGES	06 M	Feb 78
POSSIBLE SYSTEM CRASH OR LOOP WHEN EXITING	07 M	May 78

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
OS/8 FORTRAN IV PLOTTER V3C		
FORTRAN IV PLOTTER ROUTINE, PSCALE, HANGS IN ENDLESS LOOP	01	Apr 77
PLOTTER OUTPUT PROBLEM	02	Aug 77
RTS/8 V2/V2B		
EXECUTIVE		
CANNOT FREE PARTITION WITH WAITM	01	Mar 76
RTS-EXEC NON RESIDENT TASK PROBLEM	02	Jun 77
MCR		
SOME TIME-OF-DAY REQUESTS RUN 24 HOURS LATE	01	Mar 76
DATE PROBLEM	02 M	Feb 78
OS/8 SUPPORT TASK		
SOURCE CHANGE FOR EXECUTING BATCH	01	Feb 76
USING OS/I SUPPORT	02	Mar 76
COMMUNICATING BETWEEN OS/8 AND RTS-8	03	Mar 76
EMPTY KEYBOARD INPUT RING BUFFER	04 M	Feb 78
PWRP		
RTS/8 POWER FAIL PROBLEM ON PDP8-A	01	Jun 77
TTY TASK		
DEFICIENCY IN TTY TASK	01	Mar 76
UDCICS		
UDCICS ERROR	01	Feb 78

OS/8 V3D

*Articles dated October 1977 appeared in OS/8 V3D Software Review, October 1977.

DOCUMENTATION		
FAULTY DESCRIPTION FOR ERROR PERFORMANCE	01 N*	Oct 77
HANDLER		
CTRL/Z AND NULL	01 O*	Oct 77
NOTES/PROGRAMMING HINTS		
DATE ALGORITHM	01 N	Dec 77
UTILITIES		
ADDING A NEW CCL COMMAND	01 N*	Oct 77
DEFAULT EXTENSIONS FOR TECO	02 O*	Oct 77
HOW TO COPY LARGE FILES	03 O*	Oct 77

OS/8 EXTENSION KIT V3D

BASIC		
RESTRICTION ON EXTENDED RANGE FOR-NEXT LOOPS	01 R	Oct 77
BATCH		
CANNOT MOVE BATCH INPUT FILE	01 R	Oct 77
RESTARTING BATCH	02 N	Oct 77
RUNNING BATCH IN 32K	03 O	Oct 77
MSBAT		
MARK SENSE BATCH FORTRAN II READS THROUGH DOLLAR SIGNS	01 O	Oct 77
GENIOX		
GENIOX QUESTIONS	01 N	Oct 77-

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
OS/8 FORTRAN IV V3D		
FORLIB.RL V5A PLOT, ADC, AND REALTM MODULES	01 N	Oct 77
F4.SV V4A PASSING ARGUMENTS	01 R	Oct 77
EQUIVALENCE STATEMENT	02 M	Oct 77
COMPILER VERSION NUMBERS	03 N	Oct 77
COMPILER GENERATES WRONG LENGTH	04 O	Oct 77
QUESTIONS CONCERNING ARRAY SIZES	05	Oct 77
FRTS V5A USE OF EAE MODE A	01 R	Oct 77
FORMATTED INPUT RECORDS LONGER THAN 132 CHARACTERS	02 O	Oct 77
RUNNING FORTRAN IV UNDER BATCH IN 32K	03 O	Oct 77
FPP-8A	04 O	Oct 77

IMPORTANT!

Flags are currently being installed for all articles. The flags and definitions are as follows.

M = Mandatory Patch. These are critical patches which each customer is required to install.

O = Optional Patch. These articles are applicable only if the reported problems have occurred at the customer site or if they are unique to his operation.

R = Restriction. These problems are not patchable in released software. Restrictions are reviewed and corrected when possible as part of the normal release cycle.

N = Note. This information may be helpful to the user.

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
OS/8 V3D		
<u>MONITOR</u> NOTES & DOCUMENTATION USING THE PDP-8/A PARALLEL PORT FOR A LINEPRINTER	21.1.1 N	Mar 78
SOFTWARE REVIEW CORRECTION	21.1.2 N	May 78
PROBLEM WHEN YOU DESTROY BATCH	21.1.3 N	Aug/Sep 78
<u>CCL</u> DEFAULT EXTENSIONS TO TECO	21.3.1 O	May 78
<u>UTILITIES</u> NOTES & DOCUMENTATION DOCUMENTATION EXAMPLE FOR SET BLOCK	21.10.1 N	Jun/Jul 79
<u>CREF</u> BUG WITH FIXTAB	21.15.1 M	May 78
<u>EDIT</u> EDIT PROBLEM WITH NO FORMFEED AT END OF THE INPUT FILE	21.17.1 M	Mar 78
EDIT Q COMMAND AFTER L COMMAND	21.17.2 M	Jun/Jul 79
EDIT Q COMMAND PATCH	21.17.3 M	Jun/Jul 79
<u>FOTP</u> INCORRECT DIRECTORY VALIDATION	21.19.1 M	Jun/Jul 79
<u>MCPIP</u> DATE-78 PATCH FOR MCPIP	21.21.1 M	Mar 78
<u>PAL8</u> INCORRECT CORE SIZE ROUTINE	21.22.1 M	Aug/Sep 78
ERRONEOUS LINK GENERATION NOTED ON PAGE DIRECTIVE	21.22.2 M	Aug/Sep 78

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
PIP		
PIP /Y OPTION DOES NOT WORK PROPERLY WHEN TRANSFERRING A SYSTEM HEAD FROM A DEVICE WHICH IS NOT CO-RESIDENT WITH SYS.	21.23.1 M	Aug/Sep 78
USE OF PIP'S /Y OPTION	21.23.2 N	Aug/Sep 79
PIP10		
DATE '78 PATCH TO PIP10	21.24.1 M	Jun/Jul 79
SET		
USING SET WITH TWO-PAGE SYSTEM HANDLERS	21.26.1 M	May 78
SCOPE RUBOUTS FAIL IN SET	21.26.2 M	May 78
PARSING OF = IN TTY WIDTH OPTION	21.26.3 M	Aug/Sep 78
<u>HANDLERS</u>		
ASR33		
HOW TO WRITE TWO-PAGE SYSTEM HANDLERS	21.40.1 N	May 78
LPQ		
LDP01 HANDLER FAILS TO RECOGNIZE TABS	21.49.1 M	Mar 78
OS/8 EXTENSION KIT V3C		
<u>BASIC</u>		
BRTS		
BASIC FAILS TO OUTPUT 132 CHARACTERS TO LA-36	30.11.1 O	Mar 78
MSBAT		
DIM STATEMENT NOT WORKING IN MSBAT	30.22.1 M	Dec 78/Jan 79
OS/8 EXTENSION KIT V3D		
<u>BASIC</u>		
GOOD RANDOM NUMBERS FOR OS/8 BASIC	31.1.1 N	May 78
BASIC EDITOR HAS A FIELD BOUNDARY BUG	31.1.2 N	Aug/Sep 79
<u>BASIC.UF</u>		
BASIC.UF INCOMPATIBLE FROM OS/8 V3C	31.5.1 M	Aug/Sep 78
BRTS		
IOTABLE OVERFLOW	31.11.1 M	Mar 78
BASIC PNT FUNCTION	31.11.2 M	Jul 78
LINE SIZE ON OUTPUT OF BASIC	31.11.3 O	Jul 78
<u>TECO & OTHERS</u>		
<u>TECO</u>		
CHANGING THE DEFAULT EU VALUE	31.20.1 O	Mar 78
CHANGING THE DEFAULT EH VALUE	31.20.2 O	Mar 78
REMOVING YANK PROTECTION	31.20.3 O	Mar 78
SCOPE SUPPORT FOR VT05 USERS	31.20.4 O	Mar 78
PROBLEM WITH AY COMMAND	31.20.5 M	Mar 78
CONDITIONALS INSIDE ITERATIONS	31.20.6 M	Mar 78
ECHOING OF WARNING BELLS	31.20.7 M	Mar 78
CTRL/U SOMETIMES FAILS AFTER *	31.20.8 M	May 78
MULTIPLYING BY 0 IN TECO	31.20.10 M	May 78
Q-REGISTERS DON'T WORK IN 8K	31.20.11 M	MAY 78
CAN'T SKIP OVER A "W"	31.20.12 M	May 78
UNSPECIFIED ITERATIONS AFTER INSERTS	31.20.13 M	Jul 78
NEW FEATURES IN TECO V5	31.20.14 N	Aug/Sep 78
<u>FUTIL</u>		
FUTIL PATCH	31.21.1 M	May 78
PATCH TO FIX 'SHOW CCB' AND MAPPING OF 'CD' MODULES	31.21.2 M	Aug/Sep 78
-237 PATCH	31.21.3 O	Aug/Sep 78
FUTIL PATCH TO MACREL/LINK OVERLAYS	31.21.4 N	Jun/Jul 79
MSBAT		
DIM STATEMENT NOT WORKING IN MSBAT	31.22.1 M	Dec 78/Jan 79
<u>BATCH</u>		
MANUAL INTERVENTION REQUIRED ERRONEOUSLY	31.23.1 M	Aug/Sep 78

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
OS/8 V3D DEVICE EXTENSIONS		
<u>MONITOR</u>		
NOTES & DOCUMENTATION		
NOTES ON VERSION NUMBERS	35.1.1 N	Apr/May 79
NOTES ABOUT OS/8 V3D DEVICE EXTENSIONS	35.1.2 N	Apr/May 79
FRTS PATCH	35.1.3 M	Apr/May 79
BUILD DOCUMENTATION	35.1.4 N	Apr/May 79
<u>MONITOR</u>		
MONITOR V3S PATCH	35.2.1 M	Apr/May 79
<u>UTILITIES</u>		
FUTIL		
FUTIL UNDER BATCH PATCH	35.13.1 M	Apr/May 79
<u>ABSLDR</u>		
ABSLDR PATCH	35.18.1 M	Apr/May 79
<u>BASIC</u>		
NOTES & DOCUMENTATION		
OS/8 DEVICE EXTENSIONS BASIC DOCUMENTATION	35.50.1 N	Apr/May 79
OS/8 MACREL/LINKER V2A		
<u>NOTES & DOCUMENTATION</u>		
EXPUNGE DOCUMENTATION ERROR	41.1.1 N	Jun/Jul 79
MACREL VERSION NUMBERS	41.1.2 N	Jun/Jul 79
MACRO RESTRICTION IN MACREL	41.1.3 N	Aug/Sep 79
<u>MACREL</u>		
EXPUNGE PATCH TO MACREL	41.4.1 F	Jun/Jul 79
INCONSISTENCIES IN MACREL ERROR REPORTING	41.4.2 N	Aug/Sep 79
FORWARD REFERENCE PATCH TO MACREL	41.4.3 M	Aug/Sep 79
OS/8 FORTRAN IV V3C		
<u>F4</u>		
FORTRAN COMPILER FAILS TO RECOGNIZE " AS AN ERROR	50.3.1 M	Mar 78
OS/8 FORTRAN IV V3D		
<u>F4</u>		
FORTRAN COMPILER FAILS TO RECOGNIZE " AS AN ERROR	51.3.1 M	Jul 78
FORTRAN COMPILER NOT RECOGNIZING SYNTAX ERROR	51.3.2 M	Jul 78
FORTRAN RUNTIME SYSTEM 2-PAGE HANDLER	51.3.3 O	Aug/Sep 78
RTS/8 V2B		
<u>PARAM</u>		
INCORRECT CLOCK VALUE IN PARAM FILE	61.2.1 N	Aug/Sep 78
<u>OS8SUP</u>		
OS/8 TASKS HANGS WITH TIME SHARE NOT ENABLED	61.3.2 O	Aug/Sep 78
<u>CLOCK</u>		
PROBLEM WITH DOUBLE PRECISION CLOCK REQUESTS	61.16.1 M	Aug/Sep 78
RTS-8 V3		
<u>SYSGEN</u>		
RTS-8 V3 NUMERICAL COMPARE SKIP FUNCTIONS	62.25.1 F	Jun/Jul 79
OS/78 V2		
<u>NOTES & DOCUMENTATION</u>		
WRITING A SYMBIONT FOR OS/78.V2	71.1.1 N	Feb/Mar 79

<u>Component</u>	<u>Sequence</u>	<u>Mon/Yr</u>
<u>UTILITIES</u>		
<u>BITMAP</u>		
BITMAP FAILS WITH SPOOLER RUNNING	71.12.1 M	Aug/Sep 78
<u>HANDLERS</u>		
<u>LQP</u>		
LQP PROBLEM WHEN USED WITH BASIC	71.44.1 M	Oct/Nov 78
<u>RX78B</u>		
USE OF SECOND FLOPPY DRIVE (RXA2 7 RXA3) SET	71.46.1 M	Oct/Nov 78
<u>BASIC</u>		
<u>BASIC</u>		
COMMERCIAL BASIC NOT CLEARING COMMAND DECODER SWITCHES	71.61.2 M	Oct/Nov 78
<u>BCOMP</u>		
STRING ARRAY CONCATENATION	71.62.1 N	Aug/Sep 78
<u>BLOAD</u>		
LARGE CORE IMAGE SAVE PROBLEM	71.63.1 M	Aug/Sep 78
UNDEFINED LINE NUMBERS IN COMMERCIAL BASIC	71.63.2	Oct/Nov 78
SAVE FILE FOR LARGE BASIC PROGRAMS	71.63.3 M	Jun/Jul 79
<u>BRTS</u>		
BASIC CCL COMMAND USE	71.64.1 N	Oct/Nov 78
LARGE BUFFERS IN COMMERCIAL BASIC	71.64.2 M	Oct/Nov 78
<u>SYMBIONT</u>		
<u>SPOOLR</u>		
SPOOLR RESTRICTIONS	71.82.1 N	Oct/Nov 78
	COS-310 V8	
ACCESSING RX01 DRIVES 2 AND 3	81.1.2 M	Aug/Sep 79



Software Product Description

PRODUCT NAME: **OS/78**, Version 3.0, DECstation Operating System

SPD 4.3.4

DESCRIPTION:

OS/78 is a comprehensive executive designed to support the DECstation 78 and DECstation 88 computer systems. OS/78 provides an extensive collection of application software development tools and an efficient run-time environment for the production use of these application programs. OS/78 is controlled through a Concise Command Language (CCL) that simplifies program development and execution (e.g., COPY, LOAD, HELP, etc.).

Programs stored on diskettes can be accessed for loading, modification, or execution by simple keyboard commands. OS/78 also allows program chaining, so that a complex program can be divided into a series of smaller modules.

The CCL (Concise Command Language) allows the user to operate the system through terminal commands. Three classes of functions are available through CCL: system functions, language functions, and utility functions.

System Functions:

Batch Processing

The SUBMIT instruction calls in a batch processor to execute a sequence of commands that have been stored in a file. This feature permits the user to execute a series of pre-determined operations using a single command. SUBMIT also provides an optional method for redirecting line printer output to diskette files when there is no line printer in the system.

I/O Handlers

The following handlers are provided with OS/78:

- RX01/RX02 — System handler provided on RX01 or RX02 media
- RL01 — System handler on RL01 media
- RX01/02 — Non-system handler (not permanently resident in memory) for Drive 1 of RX subsystem
- RX01/02 — Non-system handler (no permanently resident in memory) for Drive 2 & 3 of RX subsystems
(Supplied in two versions—one for RX28, one for RX78)
- RL01 — Non-System handler (not permanently resident in memory) for RL01 disks
One version for Drive 0 logical, regions A & B
One version for Drive 1 logical, regions A & B

One version for section C on Drives 0 and 1

NOTE:

Each RL01 Drive is logically segmented into three independent file structured regions.

Section:

A is 4095 blocks

B is 4095 blocks

C is 2018 blocks

- TTY — is a non-system, non-file structured handler for the console terminal
- LPT — is a non-system, non-file structured handler for an LA78 or LA8/A line printer
- SLU2 — is a non-system, non-file structured printer handler for a serial printer attached to the SLU2 port of a VT78. Supported printers are LA34, LA36, LA38, LA120, and LA180-S
- SLU3 — is equivalent to SLU2 for the SLU3 port of the VT78
- VLU2 — is a non-system, non-file structured handler for SLU2 port of the VT78. It allows bi-directional, half duplex transmission but does not provide XON-XOFF terminal synchronization and therefore, does not fully support the operation of the VT100, LA34, LA38, or LA120. It does support the requirement of the VT52 and LA36.
- VLU3 — is similar to VLU2 for the SLU3 part of the VT78.
- LQP — is a non-system, non-file structured handler for the LQP78 or LQP8/E parallel letter quality printers. It allows operation only as a standard line printer equivalent (the special features of the LQP printer are not accessible to the user).

Only 9 handlers are allowed to be simultaneously resident in the monitor system. Of these, 7 are selected by the user while 2 (SYS and TTY) are permanently installed. The user may specify their choice of these 7 handlers by use of the .SET HANDLER command.

System Configuration

The SET command enables the user to set TTY handler options. (Examples: print-line length, read-only device, etc.)

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Concurrent Processing (Symbiont)

A symbiont is a user-written, interrupt-driven assembly language program that uses the upper 4K words of memory. The symbiont is supported only on DECstation 78 computers. The OS/78 symbiont facility allows such a symbiont task to run in parallel with OS/78 while OS/78 operates normally in 12K words of memory. The symbiont task may run communications, print, monitor real-time jobs, etc.

Simple keyboard commands can be used to start the symbiont or to return OS/78 to single-task operation with 16K words of memory (on 78/nn models only).

OS/78 includes an LA78 printer-spooler symbiont (on 78/nn models only).

File Management

The system provides standard routines for the creation, modification, renaming, and deletion of files. CCL commands invoke these routines.

Language Functions:**BASIC**

OS/78 BASIC is implemented as a compiler language. It consists of an editor, compiler, and a run-time system, all three supporting BASIC's dual functions as an interactive program development tool and a system for both interactive and batch-mode program execution.

OS/78 BASIC includes features oriented to the commercial user:

- Multiple Data Formats — The system supports three types of data format: floating point numeric, alphanumeric string, and commercial decimal (numeric string) data.
- Commercial Decimal Arithmetic to 15-digit precision, including data format conversion.
- PRINT USING statement for formatted printing of numeric strings; especially useful for columns and tables.
- Full upper/lower case capability.
- Cursor control function to facilitate data entry.
- Random-access record oriented I/O for rapid storing and retrieval of individual records.
- OS/78 BASIC programs may utilize up to 4 concurrent I/O handlers (one of which must be SYS) and up to 5 open I/O files.

Assembler

The PAL command calls a three-pass assembler. The optional third pass creates a side-by-side octal and symbolic listing and symbol table. This assembler accepts input generated by the EDIT function and generates output acceptable to the LOAD (absolute loader) and CREF (Cross Reference Utility) functions.

FORTRAN

OS/78 FORTRAN IV permits generalized array subscripting and 1- to 7-dimension arrays. Large amounts of data can be easily stored and accessed. FORTRAN IV also offers direct access I/O. With this feature, the user can directly reference any record in a data file.

OS/78 FORTRAN IV supports mixed-mode arithmetic, octal constants, logical IF statements, and general integer expressions in IF statements. In addition, OS/78 FORTRAN IV allows initial values in operators, including EQU and XOR.

Text manipulation is aided by Hollerith field specifications for text as well as literals and constants. DATA statements, BLOCK statements and BLOCK DATA statements are supported.

OS/78 FORTRAN IV has a library of mathematical functions for calculating logarithms, absolute values, and trigonometric functions. Other functions manipulate character strings.

Utility Functions:

The HELP utility can display on the screen instructions for use of OS/78 utilities and languages.

EDIT calls a symbolic editor which is used to create and modify ASCII source files so that these files can be used as input to BASIC, the PAL 8 assembler, or the FORTRAN IV compiler.

LOAD calls an absolute loader which reads a binary program into memory and creates a resident memory image suitable for addition to the system library or for immediate execution.

ODT (Octal Debugging Technique) allows the user to run programs under carefully controlled conditions, modify programs during execution, or monitor the state of main memory and processor registers.

CREF (Cross Reference Utility Program) aids the development programmer in writing, debugging, and maintaining assembly language programs by providing the ability to locate all references to a particular symbol. Input is supplied to CREF in the form of an ASCII listing file produced by the PAL assembler.

The MAP command runs a utility program that constructs a table showing the memory locations used by a particular binary file. This feature assists the programmer in allocating memory.

DIRECT produces a listing of the file directory for any OS/78 storage medium.

DUPLICATE allows the copying of an entire diskette with a single command.

The COPY command transfers one or more selected files between storage medium and I/O devices. The method of specifying files is flexible and allows users to move selected groups of files with simple commands.

The FORMAT command allows a user to initially structure an RL01 disk pack to be consistent with the operator of the OS/78 I/O handlers.

RXCOPY has been modified to include a single/dual density switch.

MINIMUM HARDWARE REQUIRED:

DECstation 78/40, 78/50, 78/60, 78/70
 DECstation 88/50, 88/70, 88/80, 88/90, 88/92, 88/97
 RX01 — Dual Drive (RX08 subsystem, RX78 subsystem)

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RX02 — Dual Drive (RX28 subsystem, RX78 subsystem)

RL8/A — Dual Drive or single drive plus RX02 dual drive

OPTIONAL HARDWARE:

LQP 78 Letter Quality Printer

LA78-P Line Printer

Additional RX78 Dual Floppy Disk Drive

LA8/A, LA78, LQP8/E, parallel printers

LA34, LA36, LA120, LA180/S serial printers

PREREQUISITE SOFTWARE:

If the user wishes to generate the OS/78 monitor from the OS/78 source kit, the user is required to use OS/8 Version 3D with the OS/8 Device Extension Kit. Also, MACREL/LINKER is required to generate some of the modules of OS/78 from the OS/78 source kit.

OPTIONAL SOFTWARE:

OS/8, Version 3D

MACREL/LINKER, Version 2A

OS/8 Extensions, Version 3D

OS/8, Version 3D Device Extensions

TRAINING CREDITS:

None

SUPPORT CATEGORY:

B — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources License Agreement between Purchaser and DIGITAL.

Options with no support services are only available after the purchase of one supported license. When a software license is ordered without support services, the category of support applicable to such software is Category C.

A single-use license only option is a license to copy the software previously obtained under license, and use such software in accordance with DIGITAL's Standard Terms and Conditions of Sale. The category of support applicable to such copied software is Category C.

Source and/or listing options are only available after the purchase of at least one supported license and after a source license agreement is in effect.

The following key (Q, X, Y) represents the distribution media for the product and must be specified at the

end of the order number, e.g., QF022-AY = binaries on Floppy diskette.

Q = RL01 Disk cartridge

X = RX02 Double density diskette

Y = RX01 Floppy diskette

This software is available with a valid DECstation 78A or 88A configuration that includes support services, binaries and documentation.

QF022 -A— Single-use license, binaries, documentation, support services (media: Q, X, Y)

Users of one of the PDP-8E/M/F/A systems with 16K words of memory, OS/8 supported console and mass storage device (RX01, RX02, RK8E, RL01) may order without services:

QF022 -C— Single-use license, binaries, documentation, no support services (media: Q, X, Y)

QF022 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

Source/Listing Options:

QF022 -E— All sources (media: Q, Y)

Upgrade Options

The following option is available as an upgrade kit from OS/8, Version 3D, for use on the same single CPU on which OS/8, Version 3D, is licensed. The license previously granted for OS/8, Version 3D, shall be extended to cover this upgrade.

QF023 -C— OS/78 Version 2 single-use license, binaries, documentation, no support services (media: Q, X, Y)

Update Options

Users of OS/78, Version 2, whose specified Support Category warranty has expired may order under license the following software update at the then current charge for such update. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated.

QF022 -H— Binaries, documentation (media: Q, X, Y)

QF022 -H— Right to copy for single-use (under existing license), no binaries, no documentation, no support services (media: Z)

QF022 -N— Source update, no service (media: Q, Y)

Users of OS/78, Version 2, whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated.

QF022 -W— Binaries, documentation (media: Q, X, Y)

ADDITIONAL SERVICES:

None



Software Product Description

PRODUCT NAME: OS/8 FORTRAN IV Plotter, Version 3C,

SPD 4.15.4

DESCRIPTION:

The OS/8 FORTRAN IV Plotter is a set of routines that drive an incremental plotter (Calcomp 563, 565 or equivalent) under control of OS/8 FORTRAN IV. They can be added to the system library to enable the user to request any subset of the available functions and reduce memory usage.

The user can request any of the following functions using a CALL statement:

- PLOT — Move pen in an up/down position to a specified coordinate
- FACTOR — Enlarge or reduce all subsequent plotting
- WHERE — Return current pen coordinate and factor
- SYMBOL — Print alphanumeric text or special character at specified angle and size
- NUMBER — Print a floating point number (e.g., a variable) with specified number of digits, angle, and size
- SCALE — Scale a data array (generally in preparation for drawing an axis)
- AXIS — Draw an axis with title and labeled tic marks at an angle
- LINE — Draw a graph of X-data array versus Y-data array, marking each junction with specified symbol
- PLOTS — Initialize plotting to machine configuration and plotter increment

The user has complete control over pen state (up/down), angle of plotting and overall size of plot during all operations. The plotter package also permits running of background jobs under OS/8 FORTRAN control when the system includes a Floating Point Processor.

MINIMUM HARDWARE REQUIRED:

Any valid OS/8 configuration with 24K bytes of memory and at least 256K bytes of mass storage and an X/Y incremental plotter (Calcomp 563, 565 or equivalent)

OPTIONAL HARDWARE:

Any mass storage, unit record, or terminal device supported by OS/8 with the following additions:

KE8-E Extended Arithmetic Element
FPP12-AB, -AN, -AP Floating Point Processor

PREREQUISITE SOFTWARE:

OS/8 Operating System, Version 3 or later
OS/8 FORTRAN IV, Version 3 or later

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

C — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources License Agreement between Purchaser and DIGITAL.

The following key (B, C, E, N, R, Y) represents the distribution media for the product and must be specified at the end of the order number, e.g., QF014-CC = binaries on DECTape.

B = Paper Tape
C = DECTape
E = RK05 Disk cartridge
N = TU60 Cassette
R = Microfiche
Y = RX01 Floppy diskette

QF014 -C— Single-use license, binaries, documentation, no support services (media: B, C, N, Y)

Update Options

Users of OS/8 FORTRAN IV Plotter whose specified Support Category warranty has expired may order under license the following software update at the then current charge for such update. The update is

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distributed in source or binary form on the appropriate medium and includes no installation or other services unless specifically stated.

QF014 -H— Binaries, documentation (media: B, C, N, Y)

QF014 -N— Sources update (media: C, E, Y)

QF014 -N— Sources update (media: R)

ADDITIONAL SERVICES:

None



Software Product Description

PRODUCT NAME: **RTS/8, Version 3.0, Real Time Operating System**

SPD 4.20.7

DESCRIPTION:

RTS-8 is a highly flexible, event-driven, multitasking, multiprogramming real-time operating system, which runs on all PDP-8 family computers except PDP-8/S. The RTS/8 system allows up to 127 tasks to run concurrently. Tasks compete for resources on a fixed-priority basis, RTS/8 may be entirely memory resident or it may include non-resident modules. Each system is custom-configured by the user, with the aid of an English language question/answer System Generating Program, running under the OS/8 operating system.

OS/8 can also run in RTS/8 background and may be used for development work, in larger configurations. The RTS/8 Executive Module is entirely memory resident. Its size can range from 640 to 2,000 words of memory, depending on the number of tasks included in the system.

MACREL/LINKER, the assembly language programming system is now included in RTS/8 Version 3.0. It contains the functions of the OS/8 PAL8 Assembler and Absolute Loader (ABS.LDR) programs with major enhancements. MACREL is a macro assembler producing relocatable modules. LINKER is a linking loader.

To create RTS/8 system you must now use MACREL/LINKER Version 2A rather than PAL8 and ABS.LDR. The manual linking and loading of an RTS/8 system to create partitions for non-resident tasks is automatically performed by LINK.

Some other RTS/8 features are:

- Maximum of 126 foreground tasks and one background (the OS/8 module) task.
- Fixed task priority.
- Tasks can be scheduled by themselves, by another task or by the operator.
- Tasks can be scheduled for immediate execution, at a fixed interval from the time requested, or a specific time of day.
- Tasks can be swapped into and out of memory as required.
- The RTS/8 executive provides facilities for tasks to communicate with other tasks.

The following modules (tasks) are provided by DIGITAL in source form. The sysgen procedure is used to create parameter and batch files. The batch files are run to create a specialized RTS/8 system.

RTS/8 Executive (monitor)

- Controls task execution
- Schedules events (if a clock is available on the system)
- Sends messages to system tasks
- Suspends task execution

Memory Management Swap Module

This module swaps tasks into and out of memory as required. SWAP determines whether a task is already in memory, or whether a task must be swapped out to make room for a new task.

Monitor Console Routine (MCR) Module

The Monitor Console Routine provides the operator/programmer with functions to control, inspect, debug, suspend, schedule, and print the status of tasks within the system.

Mass Storage Modules

This group of drivers accepts the same request message format to read or write blocks on the following storage devices:

- RX8 Floppy Diskette
- RX28 Floppy Diskette
- RK8-E Cartridge Disk
- TC08 DECtape
- RL8-A Cartridge Disk

OS/8 File Modules

This module provides the user the ability to look up, create and delete files in OS/8 directories from a foreground task. This module, when used in conjunction with one or more of the previously mentioned mass storage modules, allows the programmer the capability to read or write OS/8 files onto the previously mentioned storage device.

OS/8 Background Module

The combination of the previously mentioned device drivers and the OS/8 background module allows the execution of any of the OS/8 operating system utilities (i.e., PAL8, EDITOR, TECO, BATCH, BASIC, but excluding Industrial BASIC, BUILD, BOOT, RXCOPY) to run under the RTS/8 executive. OS/8 can be run in the top two or more memory fields under control of the KM8-E, (standard on PDP-8/E, F, M with 8K words or more memory) or time shared PDP-8 (KT08) hardware option. Alternately, OS/8 backgrounds up to 32K in size may be run under the KT8-A Memory

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Expansion Control. The OS/8 background terminal may be shared with the foreground or be on a separate terminal.

Clock Module

This accepts requests (in the form of RTS/8 messages) to perform actions after a specified time has elapsed.

Console Terminal Module; Non-console Terminal Module

These drivers handle a single terminal in either line or character mode. Input in line mode is terminated by a carriage return or an ALTMODE character, and may be edited with a RUBOUT or CTRL/U character. In character mode, input is not echoed and is terminated by overflow of a specified character count. One terminal per system may be shared with the OS/8 background. One terminal per system may be designated to support emergency message breakthrough. Systems with a clock may support message timeout on all terminals.

Line Printer Module

The RTS/8 line printer supports an LE-8, LS8-F or LV-8 Line Printer. The structure of the calling sequence is identical to the line mode calling sequence of the terminal module.

Power Fail/Auto-restart Module

This module provides the mechanism by which the system can recover from a power failure. If a power low condition occurs, the processor state is saved and the processor is halted. When power is restored, the processor state is restored and control is transferred to the power fail module. This module is not supported with MOS Memory.

KL8-A Support Module

This module allows the use of one to three KL8-A serial 4-line handlers under RTS/8 control.

NULL8A Module

This module is a special null job for the PDP-8A which uses the LED lights to count in decimal at a rate of approximately one increment per second. (Null job is an idle mode indicator.)

Exit Module

This module, if present, allows tasks to perform special actions before an RTS/8 exit to OS/8 is completed.

NOTE:

KT8-A Memory Expansion to 128K words is provided in all DIGITAL supported RTS/8 modules.

NOTE:

Driver modules are included but not supported for LINCtape, RK08, DF32, RF08, CASSETTE.

NOTE:

Simultaneous RL8-A and RK8-E DMA transfers are not allowed by the hardware. The software drivers are interlocked so that one at a time is in action.

MINIMUM HARDWARE REQUIRED:

Minimum RTS/8 configuration for a run-time system is as follows:

Without OS/8 background support:

- Any PDP-8 family processor (except a PDP-8/S) with a least 12K words of memory
- Console Terminal

With OS/8 background support:

- Any PDP-8 family processor (except a PDP-8/S or VT78) with at least 16K words of memory
- One terminal
- RX8, RX28, TC08, RK8-E, RL8-A

Minimum RTS/8 development configuration is a 16K OS/8 operating system configuration (which requires a PDP-8 with mass storage and an OS/8 supported terminal).

OPTIONAL HARDWARE:

Additional memory (up to 128K words system total)
 DK8-EA, DK8-EC, DK8-EP Clocks
 LA30-PA, VT05 Terminals (up to 2400 baud with KL8- JA)
 VT50, VT52, VT100 Video Terminal (teletype level support)
 LT33, LT35 Teletypewriters
 TC08 DECTape (not TD8-E)
 RK8-E Disk
 RX8 Dual Diskette System (single density)
 RX28 Dual Diskette System (double density)
 DP8-E power fail/auto-restart
 LE-8, LS8-F, LV-8 Line Printer
 LA30, LA36 Serial DECwriters
 KL8-A 4 Channel Interface
 RTS/8, Version 3 does not support the FPP8/A, FPP8/E, or FPP12 nor does it support use of these devices by the OS/8 monitor running in background.

PREREQUISITE SOFTWARE:

OS/8, Version 3D or later

OPTIONAL SOFTWARE:

OS/8 Device Extension is required for RL8-A, RX28 or KT8-A.

TRAINING CREDITS:

None

SUPPORT CATEGORY:

B — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

ORDERING INFORMATION:

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Source options are only available after the purchase of at least one supported license and after a source license agreement is in effect. A separate binary license is not available for this software product.

The following key (C, E, Q, Y) represents the distribution media for the product and must be specified at the end of the order number, e.g., QF028-XC = sources on DECTape.

C = DECTape
 E = RK05 Disk cartridge
 Q = RL01 Disk cartridge
 Y = RX01 Floppy diskette

Source/Listing Options

QF028 -X— Single-use license, source license sources for RTS/8; binaries for MACREL/LINKER, no support services (media: C, E, Q, Y)

Update Options

Users of RTS/8 whose specified Support Category warranty has expired may order under license the following software update at the then current charge for such update. The update is distributed in source form on the appropriate medium and includes no installation or other services unless specifically stated.

QF028 -N— RTS/8 Update Kit, updates Version 2B to Version 3 (media: C, E, Q, Y)

Users of RTS/8, Version 2B, whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in source form on the appropriate medium and includes no installation or other services unless specifically stated.

QF028 -V— RTS/8 Update Kit, updates Version 2B to Version 3 (media: C, E, Q, Y)

ADDITIONAL SERVICES:

None



Software Product Description

PRODUCT NAME: COS-310, Version 8.01, Commercial Operating System-310

SPD 5.98.8

DESCRIPTION:

COS-310 is one of Digital Equipment Corporation's DATASYSTEM 300 Series Commercial Operating Systems. It is an applications development tool for EDP users who wish to implement data management functions for small- to medium-size business applications. COS-310 is a self-contained single use, disk-resident operating system. It provides an operation control monitor, an easy-to-learn high-level programming language (DIBOL), program preparation and debugging utilities, and production utilities.

COS-310 Monitor — COS-310 provides software operation control through the system monitor. For memory economy, the monitor resides in two segments: one memory-resident and the other on the system device. The monitor includes a comprehensive set of commands which control the editing and execution of programs, and the maintenance of file directories.

The monitor contains all the necessary I/O device handlers for the system. The direct implementation and changing of programs can be controlled and altered through conversational commands designed into the software. The COS-310 monitor device options include line printers and disk storage devices. The monitor size is 8K bytes (16K bytes if an RL01 disk drive and/or an LQP printer is used).

DIBOL Language — Digital Equipment Corporation's Business Oriented Language (DIBOL) is built around procedural statements that permit the programmer to arrange information for desired execution and output. These procedural statements (commands plus data) permit data manipulation, calculation of arithmetic expressions, subscripting, overlaying of records, clearing of memory or buffers, file initialization, branching, tracing, program chaining, and printing overlapped with processing.

The language syntax is divided into two sections: a data definition section and a procedure section. The data definition section stipulates the type and size of the data variables. The procedure section of the language consists of procedural statements, each with comprehensive arguments. These statements are: PROC, XMIT, READ, WRITE, GO TO, IF, CALL, RETURN, FORMS, STOP, CHAIN, ACCEPT, DISPLAY, TRAP, and INCR.

Editor — The system includes a line oriented text editor that is part of the monitor. It is interactive, with commands indicating line numbers followed by the information to be inserted, deleted, or changed. The COS-310 editor provides a means to reorder the file by resequencing line numbers with the use of simple commands. Input to the editor comes from the operator through the console keyboard. Output from the editor can be a listing of a file on the console display or the line printer.

COMP — This utility compiles a DIBOL program created by the system's editor into interpretive code. This program can be stored on disk, listed on the printer, or run immediately. No linking is required to run a program. Without a program listing, program compilation usually takes 10 to 30 seconds. This results in substantial time savings over other products that have much slower compilers and require program linking.

SYSGEN (SYSstem GENeration) — SYSGEN is a conversational utility program that allows the user to change the current device handlers or to create a new system disk. This is done using simple English statements, prompted to the operator from the program. Changing the handlers provides the operator with the ability to specify the disk and line printer I/O handlers that will operate most effectively in the system. In addition to changing the selected handlers in the current system, SYSGEN can copy the system from an RX01/RX02 to an RK05 or to an RL01 and vice versa for installation start-up. RK05 and RL01 cannot be present on the same system.

DFU (Data File Utility) — DFU allows the user to designate and examine logical unit assignments. The use of logical unit assignments for data files provides data file device independence for the programs using COS-310. Logical unit assignments can be input to DFU from the operator's keyboard, from a command file stored on the system device, or from the edit buffer. The current logical unit assignments can be displayed or printed.

FLOW (FLOW chart generator) — FLOW is a utility program designed to assist in the program documentation process. FLOW will generate a printed flowchart from a set of easily understood commands. The FLOW commands can optionally be included in the DIBOL source program.

PATCH — PATCH is used to fix either a system program or the monitor on a COS-310 system. All input information for the PATCH operation is distributed as official patches from Digital Equipment Corporation. The PATCH information is a line-by-line dialogue. The PATCH program has the capability to perform automatic patching of the COS-310 system.

Debugging Aids — COS-310 includes several features that facilitate DIBOL program debugging.

- **CREF** — Cross Reference provides an alphabetical listing of all symbols used in the DIBOL program, the line number where each symbol is defined, and all the line numbers where each symbol is used.
- **DAFT** — The Dump and Fix Technique has the ability to search for, examine, list, change records, and make minor adjustments to a data file.
- **TRACE/NO TRACE** — An integral DIBOL language feature. Each trace enables the DIBOL statement executed to print a line containing the source file line number.
- **DDT** — The DIBOL Debugging Technique features breakpoint, variable examination, subroutine call traceback, and iteration.

SORT — COS-310 SORT is a multiphase sort which can reorder a data file containing fixed length records into a specified sequence. The user can specify up to eight fields (with sub-fields) of a fixed length record as a sort key. A file can be sorted in either the ascending or descending sequence of the contents of the fields in each record. The SORT also has merge file capability. This allows each volume of a multi-volume file to be sorted independently and then merged with the other volumes within the file. Both sort and merge capabilities are parameterized by a sort control file.

PIP (Peripheral Interchange Program) — PIP is a utility program that transfers files from one device to another. It can replace an existing file with a new file and allow data files to be combined. It can accept input from disk and produce output on terminal, disk, or the line printer. PIP includes the capability to enter PIP commands from a predefined command file in addition to the keyboard. This eliminates the need for an operator response to PIP's prompts and, therefore, reduces the possibility of operator error.

PRINT — PRINT is a utility for the creation of report programs. Using a parameter file which describes the report, PRINT will generate a DIBOL program which will produce that report.

MENU — The MENU program allows the operator to select a function to be performed from a set of functions that is displayed on the screen. The function is a batch stream or a series of monitor commands. These are stored in a command file for operator use. The MENU program reduces operator errors in selecting programs to be run.

FILEX (File Conversion Program) — FILEX is a utility program that converts COS-310 formatted files stored on RK05 disks into OS/8 formatted files and vice versa. On RX02 diskettes, FILEX permits conversion of data files on RX02 diskettes to be moved onto an

RX01 diskette loaded into the second RX02 disk drive. Conversion of RX01 disk files to RX02 files is also permitted.

In addition, FILEX can convert a COS-310 file stored on a flexible diskette, an RK05 or an RL01 onto an RX01 flexible diskette in a format directly readable by the IBM 3740 series data entry terminal. IBM files on flexible diskettes can be converted to COS-310 format provided they are single volume and there are no bad tracks on the diskette media.

BATCH — Commands to run DIBOL programs and system utilities may be stored in a BATCH file. These job streams may be run by operator command or by the MENU utility.

START-UP FILE — A start-up file may be optionally specified in SYSGEN which would, if present, automatically start a job after the operator bootstrapped the system and entered a valid date.

Format Programs — DKFMT formats RK05 disks. DLFMT formats RL01 disks. DYFMT converts an RX01 diskette into an RX02 diskette. Except for COS-310 software distributed on an RX02, any diskette used on an RX02 drive must be formatted before being used.

MINIMUM HARDWARE REQUIRED:

One of the following (with a minimum of 16K bytes of memory):

- DATASYSTEM 310
- DATASYSTEM 308
- DECstation 78/50, 78/70, 88/50

One of the following (with a minimum of 64K bytes of memory):

- DECstation 88/80, 88/90, 88/92, or 88/97

OPTIONAL HARDWARE:

D308 or DECstation-78

- Up to four RX01 floppy disk drives¹
- Up to four RX02 floppy disk drives
- One LA8, LQP8², or LA120 printer

D310

- Additional memory up to a system total of 64K bytes
- One VT52 or VT100 console terminal
- Up to four RX01 floppy disk drives
- Up to four RX02 floppy disk drives¹
- Up to four RK05 disk drives (RK05 F counts as 2) and controller
- One LA35, LQP8², LA8A, LA120, LA8, or LP05 printer

DECstation-88

- Up to four RX02 floppy disk drives
- Up to four RL01 disk drives³
- One LA35, LQP8, LA8A, LA120, LA8, or LP05 printer

¹RX01 and RX02 drives are not supported by the same system.

²LQP requires a minimum of 32K bytes of memory of which 8K bytes are used by the LQP handler.

³RK05 and RL01 drives are not supported by the same system.

PREREQUISITE SOFTWARE:

None

OPTIONAL SOFTWARE:

COS-310 2780/3780 Communications Software.

TRAINING CREDITS:

TWO (2) — Applies only to options that include support services. Consult the latest Educational Services Catalog at your local office for the available courses, course requirements, and guidelines.

SUPPORT CATEGORY:

B — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

ORDERING INFORMATION:

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources License Agreement between Purchaser and DIGITAL.

The following key (E, Q, X, Y) represents the distribution media for the product and must be specified at the end of the order number, e.g., QF310-HX = binaries on RX02 Dual density diskette.

- E = RK05 Disk cartridge
- Q = RL01 Disk cartridge
- X = RX02 Double density diskette
- Y = RX01 Floppy diskette

This software is available only for the systems listed in the minimum hardware section of this SPD, and is offered with support services (includes hardware, single-use license, binaries, documentation, and support services). Systems are also available which include a single-use license only (no binaries, no documentation, and no support services).

Update Options

Users of COS-310 whose specified Support Category warrant has expired may order the following software update at the then current charge for such update, for use under the existing license. Except where the medium is designated as Z, the update is distributed in binary form on the appropriate medium. A software update where the medium is designated as Z grants the user of COS-310 the right to copy the previously ordered QF310-H or QF310-W software update for use on an additional single CPU for which a COS-310 license has been obtained.

QF310 -H— Binaries, documentation (media: E, Q, X, Y)

QF310 -H— Right to copy for single use (under existing license), no binaries, no documentation, no support services (media: Z)

Users of COS-310 whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated.

QF310 -W— Binaries, documentation (media: E, Q, X, Y)

Miscellaneous Options:

QF310 -G— Documentation only kit (media: Z)

ADDITIONAL SERVICES:

None

The Digital Equipment Computer Users Society



DECUS, the Digital Equipment Computer Users Society, was established in March of 1961 to advance the effective use of DIGITAL computers. It is a voluntary, not-for-profit users group, supported in part by Digital Equipment Corporation.

OBJECTIVES

The objectives of the Society are to advance the effective utilization of computers, computer peripheral equipment, and software manufactured and marketed by Digital Equipment Corporation, by promoting the interchange of information concerning their uses; advance the art of computation through mutual education and exchange of ideas and information; establish standards and provide channels to facilitate the exchange of computer programs among DECUS members; provide feedback to the computer industry on equipment and software needs; and to reduce the duplication of development efforts.

ACTIVITIES

1. SYMPOSIA

Symposia are held throughout the year in each of the DECUS Chapters. These meetings provide a forum for users of DIGITAL computers to meet with other users and with DIGITAL management, engineers, and Software Services and Field Service representatives. They are an opportunity for users to participate in DIGITAL Product Workshops and Product Planning feedback sessions. The technical papers and presentations from each symposium are published as DECUS Proceedings after each meeting and provide a permanent record of the meetings activities.

2. SPECIAL USER GROUPS

DECUS encourages subgrouping of users with common interests and/or geographical proximity.

Special Interest Groups (SIGs) promote the interchange of specialized information and have no geographical limitations. Specializations may be for application areas, subject areas (such as languages), or specific operating systems. A group of users must petition the Chapter Executive Board for recognition as a Special Interest Group. The group must have a chairman, and its organization must meet the guidelines of the Chapter Executive Board.

Examples of active SIGs are users of RSX-11, RSTS, RT-11 users, business system users, etc. For additional information, contact your Chapter Executive Secretary.

One of the most successful subgroupings are Local Users Groups (LUGs). There are numerous active LUGs in Australia, Canada, Europe, and the U.S. Local User Groups are basically geographic in nature; however, they may be geographic and specific as well.

The largest Special User Group is composed of users of the DECsystem-10 and DECsystem-20.

3. STANDARDS

DECUS promotes user activity in reviewing DIGITAL standards. Users are given the opportunity to comment on DIGITAL standards prior to their finalization.

4. PROGRAM LIBRARY

One of the major activities of the users group is the DECUS Program Library. The Library contains programs written and submitted by users and is maintained and operated separate from the Digital Software Distribution Center. A wide range of software is available, including languages, editors, numerical functions, utilities, display routines, and various other types of application software.

DECUS (continued)

Library catalogs, updated periodically, contain descriptive abstracts and ordering information.

Information and forms for submitting programs to the Library may be obtained from local DECUS offices.

Programs are available to all members on a request basis. Orders for programs are made on DECUS Library Order Forms and directed to the local DECUS Chapter office. Information on the nominal service charge applied to most programs is published in the Library Catalogs.

As of January 1979, the Library contained approximately 1500 active software packages.

MEMBERSHIP

Membership in DECUS is voluntary and is not subject to a membership fee. Members are invited to take an active interest in the Society by contributing to the Program Library, to DECUSCOPE, and by participating in its Special User Groups and symposia. There are two types of membership: Installation Membership and Associate Membership.

INSTALLATION

An organization, institution, or individual that has purchased, leased, or has on order a computer manufactured by Digital Equipment Corporation is eligible for Installation Membership in DECUS. Membership status is acquired by submitting a written application to the appropriate Chapter Executive Secretary for approval by the Chapter Executive Board.

On acceptance of the application for membership, literature covering numerous DECUS services is sent to the Installation Delegate for reference and aid in maintaining active participation in the Society.

ASSOCIATE

Any person, who is not an appointed Installation Delegate, who has a bona fide interest in DECUS is eligible for Associate Membership.

Like Installation Members, Associate Members receive DECUSCOPE, the Society's quarterly newsletter, automatically. They may receive other DECUS material on request. Written application indicating desire to join must be submitted to the appropriate Chapter Executive Secretary for approval by the Chapter Executive Board.

On acceptance of the application for membership, literature covering the numerous DECUS services is sent to the member for reference and to enable active participation in the Society.

To obtain a membership form for DECUS, please return this form to the appropriate Chapter office listed below.

NAME: _____

COMPANY: _____

ADDRESS: _____

CITY: _____

STATE/COUNTRY: _____ ZIP: _____

Membership form Requested (check one):

Installation

Associate

February 1979

I obtained this form from _____

DECUS OFFICES

DECUS Australia
P.O. Box 491
Crows Nest, New South
Wales 2065
Australia

DECUS Canada
P.O. Box 11500
Ottawa, Ontario K2H 8K8
Canada

DECUS Europe
C.P. 510
12, avenue des Morgines
CH-1213 Petit-Lancy 1,
Geneva, Switzerland

DECUS U.S. and
Office of the Executive Director
One Iron Way
Marlboro, Massachusetts 01752
USA

SOFTWARE PROBLEMS OR ENHANCEMENTS

Questions, problems, and enhancements to DIGITAL software should be reported on a Software Performance Report (SPR) form and mailed to the SPR Center at one of the following Digital Offices: (SPR forms are available from the SPR Center).

<u>Areas Covered</u>	<u>SPR Center</u>	<u>Areas Covered</u>	<u>SPR Center</u>
United States; remainder of Far East, Middle East, Africa Latin America	Administrative Services Group, SWS P.O. Box F Maynard, Ma 01754	Japan	Digital Equipment Corp. INTL 3rd Floor Kowa Bldg. 8-7 Sanban Cho Chiyoda Ku Tokyo 102 Japan
Canada	Digital Equipment Canada P.O. Box 11500 Ottawa, Ontario Canada K2H 8K8	New Zealand	Digital Equipment N.Z. LTD P.O. Box 17093 Greenlane, Auckland 5, New Zealand
United Kingdom, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Qatar, Oman, Saudi Arabia, Syria, United Arab Emirates, Yemen, Arab Republic.	Digital Equipment Corp. LTD Fountain House Butts Centre GB - Reading RG17QN England	Belgium, Holland, Luxemburg	Digital Equipment B.V. KAAP Horndreef 38 NL - Utrecht/Overvecht Holland
Australia-Melbourne	Digital Equipment Aust. PTY. LTD 60 Park Street So. Melbourne Victoria Australia 3205	Sweden	Digital Equipment Corp. AB Englundavägen 7 S-171 24 Solna, Sweden
Australia-Sydney	Digital Equipment Aust. PTY. LTD 123 125 Willoughby Rd. P. O. Box 491 Crows Nest NSW Australia 2065	Denmark	Digital Equipment Corp. APS Kristineberg 3 DK-2100 Copenhagen Ø Denmark
Brazil	Digital Equipment Comercio Ind. Rua Batatais 429 Esq AL Campin 01423 Jardim Paulista Sao Paulo 0100 Brazil	Finland	Digital Equipment Corp. OY PL16 SF - 02201 ESPOO 20 Finland
Caribbean	De Latin America P. O. Box 11038 Fernando Juncos Sta. Santurce PR 00910	Norway	Digital Equipment Corp. A/S Pottenmakerveien 8 N - Oslo 5 Norway
France	Digital Equipment France 18, rue Saarinen France Silic 225 F - 94528 Rungis - Cedex France	Austria, East Germany, West Germany, Poland, Hungary, Rumania, Czechoslovakia, Russia, Bulgaria	Digital Equipment Corp. GMBH Wallsteinplatz 2 D - 8 Munich 40 West Germany
Italy	Digital Equipment S.P.A. Viale Fulvio Testi 117 I-20092 Cinisillo Balsamo Milan, Italy	Israël	DECSYS Computers LTD. 4, Yirmiyahou Str. P.O. Box 6359 IL - Tel-Aviv 63505 Israël

Areas Covered

Greece, Portugal,
Spain, Switzerland,
Yugoslavia & Sina
(Morocco, Algeria,
Tunisia, Cyprus,
Turkey, Malta)

SPR Center

Digital Equipment Corp. SA
9, route des Jeunes
1211 Geneva 26
Switzerland

DIGITAL EQUIPMENT CORPORATION, Corporate Headquarters: Maynard, Massachusetts 01754, Telephone: (617)897-5111—SALES AND SERVICE OFFICES: UNITED STATES—ALABAMA, Huntsville • ARIZONA, Phoenix and Tucson • CALIFORNIA, El Segundo, Los Angeles, Oakland, Ridgecrest, San Diego, San Francisco (Mountain View), Santa Ana, Santa Clara, Stanford, Sunnyvale and Woodland Hills • COLORADO, Englewood • CONNECTICUT, Fairfield and Meriden • DISTRICT OF COLUMBIA, Washington (Lanham, MD) • FLORIDA, Ft. Lauderdale and Orlando • GEORGIA, Atlanta • HAWAII, Honolulu • ILLINOIS, Chicago (Rolling Meadows) • INDIANA, Indianapolis • IOWA, Bettendorf • KENTUCKY, Louisville • LOUISIANA, New Orleans (Metairie) • MARYLAND, Odenton • MASSACHUSETTS, Marlborough, Waltham and Westfield • MICHIGAN, Detroit (Farmington Hills) • MINNESOTA, Minneapolis • MISSOURI, Kansas City (Independence) and St. Louis • NEW HAMPSHIRE, Manchester • NEW JERSEY, Cherry Hill, Fairfield, Metuchen and Princeton • NEW MEXICO, Albuquerque • NEW YORK, Albany, Buffalo (Cheektowaga), Long Island (Huntington Station), Manhattan, Rochester and Syracuse • NORTH CAROLINA, Durham/Chapel Hill • OHIO, Cleveland (Euclid), Columbus and Dayton • OKLAHOMA, Tulsa • OREGON, Eugene and Portland • PENNSYLVANIA, Allentown, Philadelphia (Bluebell) and Pittsburgh • SOUTH CAROLINA, Columbia • TENNESSEE, Knoxville and Nashville • TEXAS, Austin, Dallas and Houston • UTAH, Salt Lake City • VIRGINIA, Richmond • WASHINGTON, Bellevue • WISCONSIN, Milwaukee (Brookfield) • INTERNATIONAL—ARGENTINA, Buenos Aires • AUSTRALIA, Adelaide, Brisbane, Canberra, Melbourne, Perth and Sydney • AUSTRIA, Vienna • BELGIUM, Brussels • BOLIVIA, La Paz • BRAZIL, Rio de Janeiro and Sao Paulo • CANADA, Calgary, Edmonton, Halifax, London, Montreal, Ottawa, Toronto, Vancouver and Winnipeg • CHILE, Santiago • DENMARK, Copenhagen • FINLAND, Helsinki • FRANCE, Lyon, Grenoble and Paris • GERMAN FEDERAL REPUBLIC, Cologne, Frankfurt, Hamburg, Hannover, Munich, Nuremburg, Stuttgart and West Berlin • HONG KONG • INDIA, Bombay • INDONESIA, Djakarta • IRELAND, Dublin • ITALY, Milan, Rome and Turin • IRAN, Tehran • JAPAN, Osaka and Tokyo • MALAYSIA, Kuala Lumpur • MEXICO, Mexico City • NETHERLANDS, Utrecht • NEW ZEALAND, Auckland and Christchurch • NORWAY, Oslo • PUERTO RICO, Santurce • SINGAPORE • SPAIN, Madrid • SWEDEN, Gothenburg and Stockholm • SWITZERLAND, Geneva and Zurich • UNITED KINGDOM, Birmingham, Bristol, Epsom, Edinburgh, Leeds, Leicester, London, Manchester and Reading • VENEZUELA, Caracas •