

**digital**

INTEROFFIC

KEN OLSEN

MAR 28 1973

1261

TO: Engineering Managers  
Marketing Managers  
Operations Committee  
Product Line Managers  
Software Engineering and  
Services Managers

DATE: March 2, 1973  
FROM: Software Engineering Managers  
DEPT: Software Engineering  
EXT : 4067

SUBJ: PDP-11 Operating Systems Characteristics

Attached are five tables of characteristics for the major PDP-11 operating systems as they exist now -- and as they are currently planned over the next year. Of particular interest is an exhaustive list of PDP-11 peripherals with an indication of which systems support them. It is hoped that this information will be valuable in Fiscal 1974 product planning. Additional copies are available from David Stone's office.

jwab

Attachment

## PDP-11 SYSTEM SUPPORT TABLES

Key:	X	Supported now
	Rn	Supported with Release n (see Release Definitions below)
	Dash (-)	No support planned
	Want	No support planned at present, but desirable
	Possible	Could be supported by specified system
	N.A.	Not applicable

Named systems within tables indicate that the feature is supported by the specified system only.

### Release Definitions

#### CAPS-11

Cassette programming system for an 8K PDP-11 with dual cassette drives. This small operating system includes a monitor, editor, relocatable assembler, linker, and PIP.

- R1 - May 1973
- R2 - Q2FY74 (includes BASIC)
- R3 - Not scheduled, likely Q3FY74 (includes FORTRAN)

#### RSX-11A

Small-scale, real-time, multi-tasking executive designed for core-only and core/disk systems and the papertape environment.

- R1 - March 1973

#### RSX-11B

Medium-scale, real-time executive with disk support.

- R1 - Pre-release #1, October 1971
- R2 - Pre-release #2, December 1971
- R3 - February 1972
- R4 - April 1972
- R5 - August 1972
- R6 - May 1973

#### RSX-11C

Medium-scale, real-time executive with core-only capabilities.

- Release dates same as for RSX-11B

RSX-11D

Large-scale, real-time executive with emphasis on process control.

- R1 - May 1973
- R2 - Not scheduled, likely December 1973
- R3 - Not scheduled

RSTS

11/20-based, BASIC-only, time-sharing system with up to 12 users.

- R1 - August 1971
- R2 - November 1971
- R3 - March 1972 (V3C-32)
- R4 - October 1972 (V4A-12)
- R5 - Not scheduled (V4B)

RSTS/E

11/40/45-based, BASIC-only, time-sharing system with up to 32 users.

- R1 - May 1973

MUMPS

Stand-alone operating system supporting a language and a data base structure designed to provide a basis for building multi-user, time-sharing applications systems oriented towards commercial and medical markets. The string processing capabilities of the MUMPS structure are best realized in order entry and retrieval, inventory control, personnel and medical record, and scheduling system.

- R1 - January 1973
- R2 - September 1973

RT-11

Small, single-user operating system that will run on an 8K PDP-11 with mass storage. The system will contain device-independent, interrupt-driven I/O and will allow users to effectively program the PDP-11 in the real-time (and non real-time) environments. The command language will be compatible with TOPS-10; source level and file compatibility with RSX-11D programs is a goal.

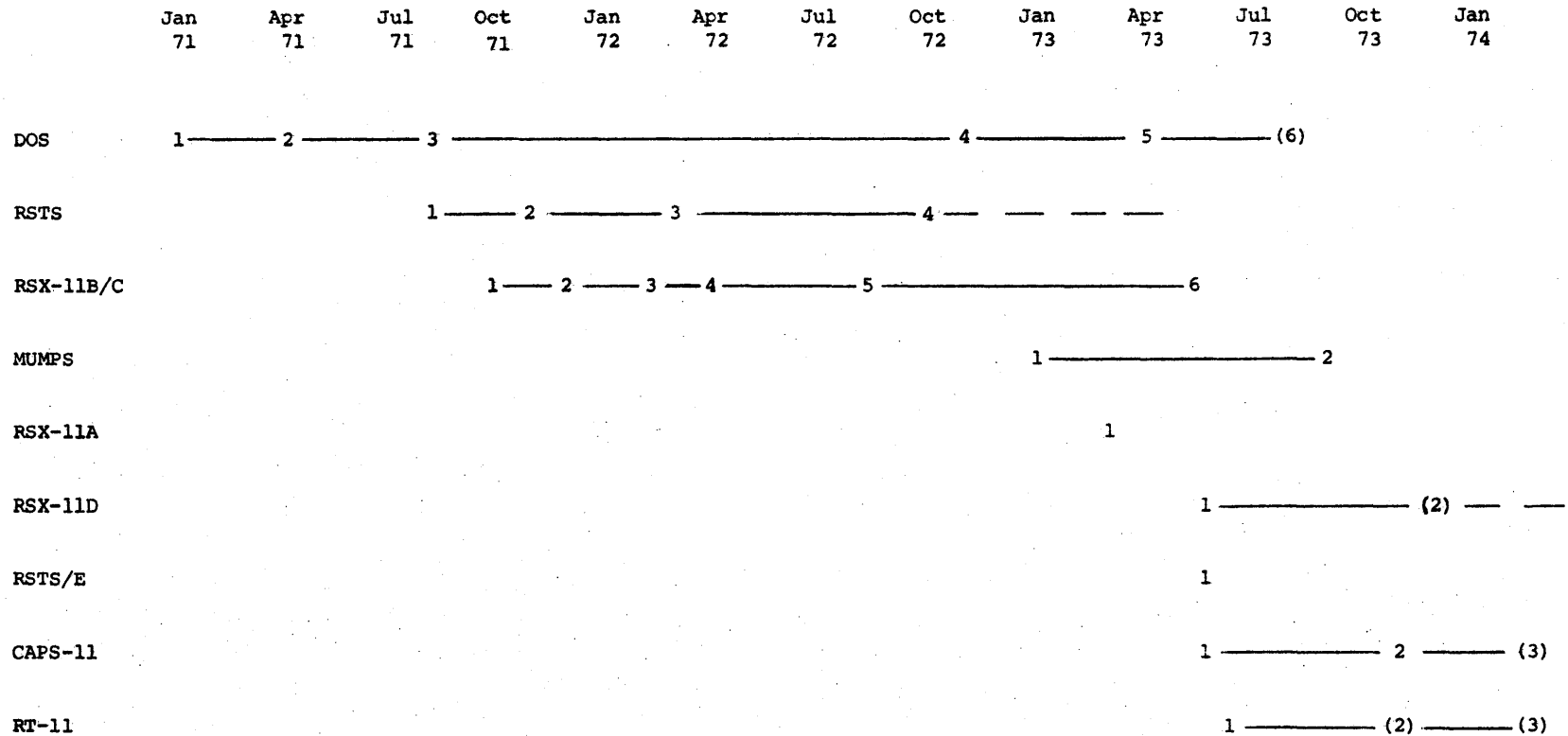
- R1 - June 1973
- R2 - Not scheduled, likely Q2FY74
- R3 - Not scheduled, likely Q3FY74 (includes FORTRAN)

DOS

Single-user, disk operating system designed for program development.

- R1 - January 1971
- R2 - April 1971
- R3 - August 1971 (V4A)
- R4 - November 1972 (V08-02)
- R5 - April 1973 (V08-08)
- R6 - Not scheduled, likely Q1FY74

PDP-11 Operating System Release Plan



Release numbers in parentheses are tentative only.

Dotted lines indicate that additional, but unscheduled, releases are planned.



Table 1 (Cont.)  
System Support of Hardware

HARDWARE ITEM	SUPPORTING SYSTEMS									
	CAPS-11	RSX-11A	RSX-11B	RSX-11C	RSX-11D	RSTS	RSTS/E	MUMPS	RT-11	DOS
DL11-A Current Loop Serial Line Interface	-	-	X	X	R1	X	R1	X	-	X
DL11-B EIA RS232C Serial Line Interface	-	-	-	-	-	X	R1	X	-	-
DL11-C Current Loop Serial Line Interface	-	-	-	-	-	-	-	X	-	-
DL11-D EIA RS232C Serial Line Interface	-	-	-	-	-	-	-	X	-	-
DL11-E Modem Controlling EIA RS232C Serial Line Interface	-	-	-	-	-	X	R1	X <sup>1</sup>	-	-
DM11-Ax Asynchronous 16-line Single-Speed Multiplexer	-	-	-	-	-	-	-	-	-	-
DM11-BB Modem Control Multiplexer	-	-	-	-	-	-	R1	-	-	-
DM11-DA Line Adapter for four local terminals	-	-	-	-	-	-	R1	-	-	-
DM11-DB Line Adapter for four EIA lines	-	-	-	-	-	-	R1	-	-	-
DM11-DC Line Conditioning for four EIA RS232C compatible lines	-	-	-	-	-	-	R1	-	-	-
DN11-AA System Unit Mounting	-	-	-	-	-	-	-	-	-	-
DN11-DA Module Set Interface	-	-	-	-	-	-	-	-	-	-
DP11-CA Data/Sync Register Extender	-	-	-	-	-	-	-	-	-	-
DP11-DA Full/Half-Duplex Synchronous Interface	-	-	-	-	-	-	-	-	-	-
DP11-KA Internal Clock	-	-	-	-	-	-	-	-	-	-
FP11-B Floating-Point Processor (11/45)	R2	-	-	-	R1	R5	R1	R2	R1	X
KD11-B 11/10 Central Processor	R1	R1	X	X	-	-	-	X <sup>3</sup>	R1	X
KA11-B 11/15 Central Processor	R1	R1	X	X	-	X	-	X <sup>3</sup>	R1	X
KA11 11/20 Central Processor	R1	R1	X	X	-	X	-	X <sup>3</sup>	R1	X
KD11-A 11/40 Central Processor	R1	R1	X	X	R1	X	R1	X <sup>3</sup>	R1	X
KB11 11/45 Central Processor	R1	R1	X	X	R1	X	R1	X <sup>3</sup>	R1	X
Memory Limitations	8-28	4-28	16-28	16-28	24-124 <sup>2</sup>	24-28	40-124	28-124 (R2)	8-28	8-28

<sup>1</sup>Modem control supported in Release 2.

<sup>2</sup>For Release 2 with BATCH, core limitations are 32 - 128.

For Release 2 with BATCH and Real-Time Processing, core limitations are 40 - 128.

<sup>3</sup>Release 1 requires EAE; Release 2 supports EIS.

Table 1 (Cont.)  
System Support of Hardware

HARDWARE ITEM	SUPPORTING SYSTEMS									
	CAPS-11	RSX-11A	RSX-11B	RSX-11C	RSX-11D	RSTS	RSTS/E	MUMPS	RT-11	DOS
KT11 Memory Management Option	-	-	-	-	R1	-	R1	R2	-	-
KE11-A Extended Arithmetic Element (EAE)	-	-	X	X	-	X	-	X	-	X
KE11-E Extended Instruction Set (EIS 11/40)	R2	-	-	-	R1	-	R1	R2	R1	X
KE11-F Floating Point (FIS 11/40)	-	-	-	-	R1	-	R1	R2	-	R5
KG11-A Communications Arithmetic Element	-	-	-	-	-	-	-	-	-	-
KL11-A Full-Duplex Interface - 110 baud	-	-	X	X	R1	X	R1	X	-	X
KL11-B Full-Duplex Interface - 150 baud	-	-	X	X	R1	X	R1	X	-	X
KL11-C Full-Duplex Interface - 300 baud	-	-	X	X	R1	X	R1	X	-	X
KL11-D Full-Duplex Interface - 600 baud	-	-	-	-	R2	X	R1	X	-	-
KL11-E Full-Duplex Interface - 1200 baud	-	-	-	-	R2	X	R1	X	-	-
KL11-F Full-Duplex Interface - 2400 baud	-	-	-	-	R2	X	R1	X	-	-
KW11-L Line Frequency Clock	-	R1	X	X	R1	X	R1	X	-	X
KW11-P Programmable Real-Time Clock	-	-	-	-	R2	X	R1	X	-	X
GT40 Graphic Terminal	-	-	-	-	-	-	-	-	-	-
LA30-P Parallel DECwriter Hard-Copy Terminal	R1	R1	X	X	R1	X	R1	X	R1	X
LA30-S Serial DECwriter Hard-Copy Terminal	R1	-	X	X	R1	X	R1	X	R1	R5
LT33-DC ASR-33 Hard-Copy Terminal with Paper-Tape Reader/Punch (no binary)	R1 <sup>4</sup>	R1	X	X	R2	X	R1	X <sup>4</sup>	R1 <sup>4</sup>	X
LT33-CC KSR-33 Hard-Copy Terminal without Paper-Tape Reader/Punch	R1	R1	X	X	R1	X	R1	X	R1	X
LT35-DC ASR-35 Hard-Copy Terminal with Paper-Tape Reader/Punch (no binary)	R1 <sup>4</sup>	R1	X	X	-	X	R1	X <sup>4</sup>	R1 <sup>4</sup>	X
LT35-CC KSR-35 Hard-Copy Terminal without Paper-Tape Reader/Punch	R1	R1	X	X	R1	X	R1	X	R1	X
LP11-F 300 lpm Printer - 80 columns, 64-characters	R1	R1	X	X	R1	X	R1	X	R1	X
LP11-H 300 lpm Printer - 80-columns, 96-characters	-	-	X	X	R1	X	R1	X	-	X
<sup>4</sup> No reader/punch support										

Table 1 (Cont.)  
System Support of Hardware

HARDWARE ITEM		SUPPORTING SYSTEMS									
		CAPS-11	RSX-11A	RSX-11B	RSX-11C	RSX-11D	RSTS	RSTS/E	MUMPS	RT-11	DOS
LP11-J	300 lpm Printer - 132-columns, 64-characters	-	-	X	X	R1	X	R1	X	-	X
LP11-K	300 lpm Printer - 132-columns, 96-characters	-	-	X	X	R1	X	R1	X	-	X
LP11-R	1200 lpm Printer - 132-columns, 64-characters	-	-	-	-	R2	-	-	X	-	R6
LP11-S	800 lpm Printer - 132-columns, 96-characters	-	-	-	-	R2	-	-	X	-	R6
LS11	Centronix Line Printer	R1	R1	X	X	R2	R5	R1	R2	R1	R6
LPS-11	Lab Peripheral System	-	-	-	-	R2	-	-	-	R1	-
PC11	300 cps Paper-Tape Reader, plus 50 cps Paper-Tape Punch	R1	R1	X	X	-	X	R1	X	-	X
PR11	300 cps Paper-Tape Reader	R1	R1	X	X	-	X	R1	X	-	X
RK05	1.2-million-word Moving-Head DECpack Disk Drive	-	R1	X	X	R1	X	R1	X	R1	X
RP02	10-million 16-bit-word Moving-Head Disk Pack Drive	-	-	-	-	R2	-	-	R2	-	-
RP03	20-million-word Moving-Head Disk Pack Drive	-	-	-	-	R2	-	R1	R2	-	R6
RS11	262K Fixed-Head Disk Drive	-	R1	X	X	R1	X	R1	X	-	X
RS64	64K-word DECdisk Fixed-Head Disk Drive	-	R1	X	X	-	X	-	-	-	X
TA-11	Cassette	R1	-	-	-	-	-	-	-	R1	R6
TU10-EX	9-channel Tape Transport	-	-	-	-	R1	X	R1	X	-	X
TU10-FX	7-channel Tape Transport	-	-	-	-	R1	X	R1	X	-	X
TU56	Dual DECTape Transport	-	-	X	X	R1	X	R1	X	R1	X
VR01-A	Tektronix RM503 Oscilloscope Display	-	-	-	-	R3	-	-	-	-	-
VR14	7" x 9" Point Plot Display	-	-	-	-	-	-	-	-	-	-
VT01-A	Tektronix 611 Storage Tube Display	-	-	-	-	R3	-	-	-	-	-
VT05	Alphanumeric CRT Terminal (300 baud)	R1	R1	X	X	R1	X	R1	X	R1	X





Table 3

## System Support of Programs

PROGRAMS	SUPPORTING SYSTEMS									
	CAPS-11	RSX-11A	RSX-11B	RSX-11C	RSX-11D	RSTS	RSTS/E	MUMPS	RT-11	DOS
SORT	-	-	-	-	R3	R5	R1	-	-	COS-520
Editors: Batch Editor	-	-	-	-	R1	-	-	-	-	-
Interactive Editor	R1	-	X	X	R3	X	R1	-	R1	X
LINKER	R1	-	X	X	R1	N.A.	-	-	R1	X
OVERLAY	-	-	X	-	R1	X	R1	X	R1	X
CREF	-	-	-	-	R2	N.A.	-	-	R2	X, except 8K versions
SYSGEN	-	R1	-	-	R1	X	R1	X	R1	X
File Manipulation: PIP	R1	-	X	-	R1	X	R1	-	R1	X
BACKUP	-	-	-	-	Want	R5	R1	X	-	-
Librarians	-	-	-	-	R1	N.A.	-	N.A.	R1	X
Debugging: ODT	R1	-	X	X	R1	N.A.	-	-	R1	X
DDT - Assembler & higher level	-	-	-	-	Want	N.A.	-	-	-	-
TRACE	-	-	-	-	-	-	-	X	-	-
File Compare: Source	-	-	-	-	R2	-	-	X	-	R5
Data file	-	-	-	-	R2	-	-	-	-	-
Accounting Routines	-	-	-	-	Want	X	R1	-	-	-
PATCH	-	-	-	-	R1	Minimum available	-	X	R1	Minimum available
Data Editing	-	-	-	-	-	-	-	X	R1	-
Data Acquisition	-	-	X	X	R1	-	-	X	R1	-



Table 5  
System Support of Products

PRODUCTS	SUPPORTING SYSTEMS									
	CAPS-11	RSX-11A	RSX-11B	RSX-11C	RSX-11D	RSTS	RSTS/E	MUMPS	RT-11	DOS
Interactive 1-user Disk System	-	-	X	X	-	-	-	-	R1	DOS-11
Interactive 1-user Disk and/or DTA with Real Time	-	-	X	X	-	-	-	-	R1	-
Interactive 1-user Disk with Communications	-	-	-	-	-	-	-	-	Possible	DOS/COMTEX
1-user Commercial/BATCH	-	-	-	-	R2	-	-	-	-	COS-500
BATCH 1-user	-	-	-	-	R2	-	-	-	Possible	DOS/BATCH
Interactive n-user RPG	-	-	-	-	R3	-	-	-	-	-
Interactive n-user Real-Time	-	R1	-	-	R1	-	-	-	-	-
BASIC - small number of users	-	-	-	-	R3	Mini RSTS	-	-	-	-
BASIC - n-user, medium number of users	-	-	-	-	R3	X	R1	-	-	-
BASIC - n-user, large number of users	-	-	-	-	-	-	R1	-	-	-
Multi-stream high-thruput BATCH	-	-	-	-	R2	-	-	-	-	-
MUMPS low-entry	-	-	-	-	-	-	-	X	-	-
MUMPS high-performance, communications support	-	-	-	-	-	-	-	R2	-	-
High-thruput Communication System, n-user disk	-	-	-	-	R3	-	-	-	-	-
Multi-tasking with BATCH	-	-	-	-	R2	-	-	-	-	-
Multi-tasking without BATCH	-	R1	X	X	R2	-	-	-	-	-
Limited time-sharing with BATCH	-	-	-	-	R3	-	-	-	-	-
Limited time-sharing without BATCH	-	-	X	X	R3	-	-	X	-	-
General purpose time-sharing with BATCH	-	-	-	-	-	-	-	-	-	-
General purpose time-sharing without BATCH	-	-	-	-	-	-	-	X	-	-
Lab Application Support	-	-	X	X	-	-	-	-	R2	-