

DEC PDP-11 Series

► **ADVANCED REAL-TIME EXECUTIVE:** The real-time multitasking systems available range from RSX-11A, a small core-only or core-disk system that can run in as little as 4K words of memory, to RSX-11D, a high performance disk-based system for the 11/40 or 11/45. Up to 250 levels of software priorities, disk resident tasks, dynamic memory allocation, memory management support, extended FORTRAN IV, and background BATCH processing, are supported under RSX-11D.

INDUSTRIAL DATA ACQUISITION AND CONTROL SYSTEMS: IDACS systems are used either as on-the-floor satellite computers, or as standalone development/process control systems to provide hierarchical configurations with computer-process or computer-communication capability. IDACS Systems operate under RSX.

PROGRAMMING: The most widely used language on the PDP-11 family is Assembler, with applicability for all environments. FORTRAN IV is a powerful scientific language, and BASIC or BASIC-PLUS are most often used in educational environments with good applicability for scientific use also.

APPLICATIONS: Several hundred scientific routines are available through DECUS (Digital Equipment Computer User's Society), as well as a small number of business packages.

PRICING

POLICY: DEC generally provides the PDP-11 mini-computers on a purchase basis with separately priced maintenance agreements. Packaged configurations (EduSystems, etc.) are also available on lease. Depending upon the package, certain system control programming and/or applications programs may be either included at no additional charge or might be separately charged for.

On an OEM basis, DOS is \$3,000; batch operating system enhancement for DOS is \$1,700; RSTS is \$2,500 on all but the 11/35 and 11/45 (on these RSTS is \$4,000); the Real-Time operating system is \$5,000 and runs on only the 11/35 and 11/45.

On-site installation and basic education are included in most system prices. One-time installation charges are generally made to install add-on equipment. Separately priced training is available.

EQUIPMENT: The following typical systems purchase prices include all required control units, adapters, and software.

TYPICAL 11/05 OEM CONFIGURATION: Includes PDP-11/05 processor with 8K words of core memory, TA11 dual magnetic tape cassette, bootstrap loader, and LA30 DECwriter data terminal (30 cps). Purchase price is \$13,030.

TYPICAL PDP-11/40 BATCH CONFIGURATION: Includes 11/40 processor with 16K words of core memory, a bootstrap ROM loader, real-time clock, TC11 dual DECTape drive, CR11 card reader (300 cpm), one RK11 DEC disk system (1.2 million words), and a DECwriter terminal (30 cps). Purchase price is \$45,640.

TYPICAL PDP-11/40 RSTS (Resource Time Sharing System for expansion up to 16 simultaneous users) using BASIC-PLUS: Includes 11/40 Processor with 24K words of core memory, real-time clock, a bootstrap ROM loader, TM11 magnetic tape subsystem, RK11 DECpack removable disk cartridge subsystem (1.2 million words per drive), and LA30 DECwriter. Purchase price is \$51,290.

TYPICAL DECcomm 11D26 (IBM 2780 Data Transmission Terminal capability for RJE): Includes KA11 processor with 8K words of 0.9-microsecond core memory, teletypewriter programmer's console, real-time clock, synchronous line interface, communications arithmetic element, and COMTEX-11 software. Purchase price is \$17,550.

TYPICAL LARGE-SCALE 11/45 CONFIGURATION: Includes KB11 Processor with 92K words of 0.9-microsecond core memory and 4K words of 0.3-microsecond bipolar memory, bulk storage bootstrap loader, floating-point processor, 40 million words of removable RP03 disk storage, two TU56 DECTape transports, one industry compatible 9-track tape drive, 300-cpm card reader, DECwriter, (30 cps), and 1200-lpm printer. Purchase price is \$224,210. ■

EQUIPMENT PRICES

		Purchase Price	Monthly Maint.
PROCESSORS			
PDP-11/05	Basic System 1 (includes 4K words of 900 nanosec. memory, console, power fail/restart, line frequency clock, power supply)	\$ 4,795	\$ 50
PDP-11/05	Basic System 2 (same as above with 8K words)	6,495	65
PDP-11/05	Packaged System (16K words of 980 nanosec. memory plus above features, DECPack disk, cassette tape, 30 cps terminal)	21,000	210
PDP-11/10	Basic System (includes 8K words of 900 nanosec. memory, console, power fail/restart, real-time clock, power supply)	6,995	65
PDP-11/15	Central Processor only	3,240	40
PDP-11/15	Central Processor plus cabinet	3,940	40
PDP-11/20-AA	Basic System (includes 4K words of 950 nanosec. memory and console)	10,800	110
PDP-11/20-CE	Same as above except replacement of console with PC11 and LA30	15,650	124

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PROCESSORS (Continued)			
PDP-11/21-CA	Same as Basic 11/20-AA with 8K words of 900 nanosec. memory	\$13,650	\$120
PDP-11/21-CE	Same as above except replacement of console with PC11 and LA30	17,850	134
PDP-11 R20	Ruggedized version of Basic 11/20-AA	13,900	110
PDP-11/35	Basic System (includes 8K words of 900 nanosec. memory, console, power fail/restart, power supply)	9,495	94
PDP-11/40	Basic System (includes 8K words of 900 nanosec. memory, console, TTY and control, power supply, power fail/restart)	12,995	130
PDP-11/45*	Basic System (includes 16K words of 900 nanosec. memory, console, hardware multiply/divide, power fail/restart, power supply, cabinet)	23,900	180
	*With 16K words of MOS memory, this becomes the PDP-11/50 for \$32,000 purchase.		
PROCESSOR FEATURES AND MEMORY			
ME11-L	8K 0.9 microsec. core memory	5,200	35
MF11-L	8K 0.9 microsec. core memory (11/35, 11/45)	4,700	35
MF11-LP	8K 0.9 microsec. core memory, parity (11/35, 11/45)	5,700	35
MF11-M	8K 1.05 microsec. core memory (11/35, 11/40)	9,180	55
MF11-MP	8K 1.05 microsec. core memory, parity (11/35, 11/40)	10,180	55
MF11-R	16K 1.05 microsec. core memory (11/35, 11/40)	12,580	90
MF11-RP	16K 1.05 microsec. core memory, parity (11/35, 11/40)	14,580	90
MF11-S	24K 1.05 microsec. core memory, (11/35, 11/40)	15,980	125
MF11-SP	24K 1.05 microsec. core memory, parity (11/35, 11/40)	18,980	125
MF11-U	16K 0.980 microsec. sense memory (11/35, 11/45)	4,900	-
MM11-E	4K 1.2 microsec. core memory	3,240	25
MM11-EX	8K 0.9 microsec. interleaved core	6,480	40
MM11-F	4K .950 microsec. core memory	3,780	25
MM11-FX	8K .800 microsec. interleaved core	7,560	40
MM11-LK	12K 0.9 microsec. core memory	7,100	55
MM11-L	8K 0.9 microsec. core memory	4,400	35
MM11-LP	8K 0.9 microsec. core (parity) memory	5,400	35
MM11-S	8K 0.9 core memory controller	4,700	36
MMR-11-E	4K 1.2 microsec. (ruggedized) core memory	4,500	25
MMR-11-EX	8K 0.9 microsec. interleaved (ruggedized) core memory	9,000	40
MM11-U	16K 0.980 microsec. sense	4,500	25
MR11-DB	64-word Bulk Storage Bootstrap Loader	540	5
MS11-BC	First MOS Memory Control (4 MS 11-BMs or -BP's)	1,950	12
MS11-BD	Second MOS Memory Control (4 MS 11-BM's or -BP's)	1,500	12
MS11-BR	4K 495-nsec. MOS Memory (11/45)	3,000	40
MS11-BT	4K 495-nsec. MOS Memory (byte parity 11/45)	3,400	40
MS11-BM	4K 450-nsec. MOS Memory (11/45)	4,500	40
MS11-BP	4K 450-nsec. MOS Memory (byte-parity 11/45)	5,200	44
MS11-CC	Bipolar Memory Control (11/45)	1,950	12
MS11-CM	1K 300-nsec. Bipolar Memory (byte parity-11/45)	1,950	15
MS11-CP	1K 300-nsec. Bipolar Memory (byte parity-11/45)	2,500	19
M792	32-word ROM Diode Memory Bootstrap loader	320	3
DA11-F	Multiprocessor Interlink Window (11/45)	5,950	-
DR11-C	Direct interface	430	5
FP11-B	Floating Point Processor (11/45, 11/50)	5,290	42
KE11-A	Hardware Multiply, Divide	1,940	10
KE11-E	Extended Instruction Set (11/35, 11/40)	1,295	10
KE11-F	Floating Point Unit (11/35, 11/40)	1,400	10
KF11-A	3-line priority interrupt (11/15)	430	3
KG11-A	Communications Arithmetic Hardware	810	6
KJ11-A	Programmable Stack Limit (11/35, 11/40)	320	5
KP11-A	Power Fail/Restart (11/15)	430	3
KT11-C	Memory Segmentation (11/45 with more than 28K)	3,900	30
KW11-L	Real Time Clock; 16.6 ms (not for 11/05)	270	3
KWR11-L	Ruggedized KW11-L Clock	300	3
KW11-P	Programmable Real Time Clock	645	3
KY11-F	Ruggedized Programmer's Console	2,500	-
KY11-C	Programmer's Console (11/15)	215	5

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MASS STORAGE			
RJS03	Fixed-Head Disk System; controller plus RS03 drive, 256K words	\$14,000	\$ 65
RJS04	Fixed-Head Disk System; controller plus RS04 drive, 512K words	18,000	150
RS64	DECdisk Fixed-Head Driver, 64K words	4,860	15
RC11-A	RS64 and Controller	7,505	35
RS11	Fixed-Head Disc Drive, 256K words	9,720	40
RF11-AA	RS11 and Controller	15,120	65
RK11-DE	RK05 and Controller, 1.2 million words	11,000	100
RK05	DECpack Removable Disc System	5,100	60
RK05-KA	Disc Cartridge for RK05's	99	-
RP03	Removable Disk Drive, 20 million words	20,000	150
RP11	RP03 and Controller	31,880	220
MAGNETIC TAPE EQUIPMENT			
TU56	Dual DECTape Transport, 5.0K words/sec.	4,700	30
TC11	TU56 and controller for up to 4 TU56's	8,700	42
TU10-E/F	Industry-Compatible Tape, 36KBS	7,505	70
TM11	TU10 and control unit	10,745	95
TA11	Dual DECcassette Transport and control, 487 bytes/sec.	2,990	36
PUNCHED CARD EQUIPMENT			
CM11	Mark-Sense Card Reader (not 11/45), 300 cpm	5,290	50
CR11	Card Reader, 300 cpm	4,860	50
CD11-A	Card Reader, 1000 cpm	10,800	70
CD11-EA	Card Reader, 1200 cpm	15,120	90
PRINTERS			
LP11-F	Line Printer, 80 column, 64 character, 300 lpm	12,000	60
LP11-H	Line Printer, 80 column, 96 characters, 300 lpm	13,500	65
LP11-R	Line Printer, 132 column, 64 characters, 1200 lpm	30,000	135
LP11-S	Line Printer, 132 column, 96 character, 800 lpm	33,000	135
LP11-J	Line Printer, 132 column, 64 characters, 300 lpm	17,500	75
LP11-K	Line Printer, 132 column, 96 characters, 300 lpm	19,000	80
LS11	Line Printer, 132 column, 64 characters, 60 lpm	5,615	48
LV11-B	Electrostatic Printer-Plotter, 132 column, 96 characters, 500 lpm, 10-bit resolution	11,770	50
MISCELLANEOUS INPUT/OUTPUT UNITS			
PC11	High Speed Paper Tape Reader/Punch, 300/500 cps	3,900	30
PR11	High-Speed Paper Tape Reader, 300 cps	2,400	15
COMMUNICATIONS EQUIPMENT			
LA30	Serial DECwriter Data Terminal, 30 cps	3,195	30
LA30	Parallel DECwriter Data Terminal, 30 cps	2,795	30
LC11	Controller for LA30	430	6
LT33-C	KSR-33 Teletypewriter	1,275	25
LT33-D	ASR-33 Teletypewriter with paper tape I/O	1,620	30
LT35-C	KSR-35 Teletypewriter	3,240	22
LT35-D	ASR-35 Teletypewriter with paper tape I/O	4,860	25
VT05B	A/N CRT Display, 20 lines x 72 characters, 64 or 96 char. keyboard	2,795	2
AA11-A,B,C,	Control for 611 Scope, RM503, or VR14	600	4
VT01-A	Tektronix 611 Storage Tube Display	3,240	75
VR01-A	Tektronix RM503 Oscilloscope Display	1,080	14
VR14	Point Plot Display, 7- x 9-inch	3,240	18
AA11-DA	Digital to Analog Display Control	1,080	6
DC11-AA	Dual Asynchronous Serial Line System Unit; 110, 134.5, 150, or 300 bps	290	3
DM11-AA	Asynchronous 16-line Single Speed Multiplexor	3,200	30
DC08-CS	Telegraph Line Interfaces (not for 11/45)	2,160	4

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SPECIAL INTERFACES			
AD01	Analog to Digital Subsystem for 72 channels	\$ 2,400	\$ 20
A124	Multiplexer Module (4 channels) for AD01	60	2
AH04	Sample and Hold for AD01	320	3
AH05	Sign Bit for AD01	430	6
BA614	Digital to Analog Converter	375	5
DC08-CM	1 Dual Telegraph Terminal Line Adapter	230	2
DC08-EB	Telegraph Line Current Adjustment Panel	2,160	2
DC08-D	Distribution Panel	1,080	2
H793	DC08 Power Supply	546	7
893	DC08 Fuse Panel	1,080	—
DB11-A	Unibus Repeater for 18 unit loads	1,080	5
M783	Unibus Transmitter Module for 12 devices	32	—
M785	Unibus Transceiver Module (8 receivers 8 drivers)	37	—
DC11-AA	Dual clock for 110, 134.5, 150, 300 bps	270	3
DC11-AB	DC11-AA for 110, 300, 1,200 or 1,800 bps	270	3
DC11-AC	DC11-AA for 110, 150, 600, or 1,200 bps	270	3
DC11-AD	DC11-AA for 50, 110, 134.5, 150 bps	375	3
DC11-AE	Same as DC11-AA for 75, 110, 134.5, 150 bps	375	3
DC11-AG	Same as DC11-AA for 134.5, 150, 300, 1,200 bps	270	3
DC11-AH	DC11-AA for 110, 134.5, 600, 1,200 bps	270	3
DC11-AX	DC11-AA for 110, 134.5, 150 bps	375	3
DCR11	DC11 for 11R20	495	3
DC11-DA	Full Duplex Serial Module Set	645	7
DE11-A	EIA Level RS232C Line Adapter	100	2
DM11-B	Modem Control Multiplexer (16 line)	1,295	18
DM11-DA	Line Adapter (4 teletype lines)	170	5
DM11-DB	Line Adapter (4ETA lines)	485	10
DM11-DC	Line conditioning	860	5
DN11-AA	Prewired System Unit	320	5
DN11-DA	Module Set for DN11-AA	320	3
DP11-DA	Synchronous Line Module Set	1,510	18
DP11-DC	DP11-DA for use with Bell System 303 modem	1,940	18
DP11-CA	Extender to handle 10-, 11-, and 12-bit characters	320	3
DP11-KA	Internal Clock	215	3
DR11-A	General-Purpose Digital Interface	400	12
DRR11-A	DRLL-A for 11/R20	1,000	5
DR11-B	General-Purpose Direct Memory Access Interface	1,290	12
H312A	Asynchronous Null Model	65	2
M786	General-Purpose Interface Module	220	—
M105	Address Selector Module (4 addresses)	70	—
M782	Interrupt Control Module (for 2 interrupts)	108	—
M920	Unibus Connector Module	45	—
ASYNCHRONOUS INTERFACES			
DL11-A	Asynchronous Line, 20 ma. Loop	430	6
DL11-B	Asynchronous Line, EIA data only	450	6
DL11-C	Asynchronous Line, 20 ma. Loop	430	6
DL11-D	Asynchronous Line, EIA data only	450	6
DL11-E	Asynchronous Line, Data Set Control	500	6
DJ11-AA	Asynchronous 16-Line Multiplexer for terminals	3,400	30
DJ11-AB	Asynchronous 16-Line Multiplexer for external signal conditioning	3,100	25
DJ11-AC	Asynchronous 16-Line Multiplexer for 20 ma conversion	3,200	30
DH11-AA	Programmable Asynchronous 16-Line Multiplexer	4,400	30