



## Digital Equipment DECSYSTEM-20

	12 hours	16 hours	24 hours
▶ Daily/no weekends	13%	26%	43%
Sat. & Sun.	10%	13%	17%

**EDUCATION:** Each DECSYSTEM-20 user is entitled to 10 man-weeks of training. On-site training, including course materials, is provided for specialized customer requirements at individually arranged rates.

Currently available courses include DECSYSTEM 20 User Course, Administration Course, Assembly Language Programming, Programming, Operating System, COBOL, and Operator Course.

**UPGRADE POLICY:** DEC offers a trade-in policy giving credits toward the purchase of more advanced DECSYSTEM devices. Older PDP-10 equipment or slower DECSYSTEM equipment may be upgraded to higher-performance devices. Traded-in equipment must be in generally good condition (i.e., DEC-maintained by Field Service) or is subject to a re-furnishing charge. Allowances depend upon device type and vary widely from about 20 to 50 percent of the original purchase prices.

**EQUIPMENT:** The following systems are representative of the types of DECSYSTEM-20 configurations that are normally used and supported by the TOPS-20 operating system. All necessary controllers, processor features, and interfaces are included in the indicated prices.

**MINIMUM DECSYSTEM 2020:** Consists of KS10-A CPU with 256K words of MS10 Error Correcting MOS memory;

a 14.89 megaword (67 megabyte) RM03 Disk Drive; a TU45 Magnetic Tape Subsystem; an LA36 DECwriter II Console Terminal; an LP20-A Line Printer; 16 asynchronous lines; the TOPS-20 operating system including the GALAXY batch system, link loader, editor, and utilities; the macro assembler; installation and 90-day warranty; and 50 days of application software consulting. Purchase price is \$181,100 and monthly hardware maintenance charge is \$1,547.

**MINIMUM DECSYSTEM 2040:** Consists of KL10-E CPU with 256K words of memory; an RP06-B 39.6 megaword Disk Drive; a TU45 9-track, 800/1600 bpi tape subsystem; an LP20-A Line Printer; an LA36 DECwriter II console terminal; 16 asynchronous communications lines, asynchronous multiplexer; the TOPS-20 operating system including the GALAXY batch system, linking loader, editor, and utilities; the macro assembler; installation and 90-day warranty; and 50 days of application software consulting. Purchase price is \$439,800 and monthly hardware maintenance charge is \$3,113.

**MINIMUM DECSYSTEM 2060:** Consists of a KL-10-EE CPU with 2048 words of 160-nanosecond cache memory and 256K words of memory; a RP06-B 39.6 million-word disk drive; a TU45 9-track, 800/1600 bpi tape subsystem; an LP20-A Line Printer; an LA36 DECwriter II console terminal; 16 asynchronous communications lines; the TOPS-20 operating system including the GALAXY batch system, linking loader, editor, and utilities; the macro assembler; installation and 90-day warranty; and 50 days of application software consulting. Purchase price is \$513,700 and monthly hardware maintenance charge is \$3,113.■

## EQUIPMENT PRICES

		Purchase Price	Monthly Hardware Maint.*
<b>PACKAGED SYSTEMS**</b>			
DECSYSTEM 2020 Systems include the KS10-A CPU with 256 word virtual address cache memory, 256K words of 1.05-microsecond MS10 MOS Memory, and one integral data channel; an LA36-C DECwriter II Console Terminal; 16 asynchronous communications lines; 10 training credits; hardware installation and 90-day warranty; software installation and 90-day warranty; one set software notebooks and 90-day software update service; five sets of manuals; 25-day consulting services package; utilities; and macro assembler:			
2020-PE/F	DECSYSTEM 2020 with one RM03 Disk Drive and TOPS-20 Operating System	\$129,800	\$845
2020-PG/H	DECSYSTEM 2020 with one RM03 Disk Drive and TOPS-10 Operating System plus sources	129,800	845
2020-SE/F	DECSYSTEM 2020 with one RP06 Disk Drive and TOPS-20 Operating System	144,800	845
2020-SG/H	DECSYSTEM 2020 with one RP06 Disk Drive and TOPS-10 Operating System plus sources	144,800	845
2020-JE/JF	DECSYSTEM 2020 with two RM03 Disk Drives, one TU45-Tape Drive, five Software Units, and TOPS-20 Operating System	168,500	1,020
2020-JG/JH	DECSYSTEM 2020 with two RM03 Disk Drives, one TU45-Tape Drive, five Software Units, and TOPS-10 Operating System plus sources	168,500	1,020
2020-KE/KF	DECSYSTEM 2020 with two RP06 Disk Drives, one TU45-Tape Drive, five Software Units, and TOPS-20 Operating System	198,500	1,095
2020-KG/KH	DECSYSTEM 2020 with two RP06 Disk Drives, one TU45-Tape Drive, five Software Units, and TOPS-10 Operating System plus sources	198,500	1,095
DECSYSTEM 2040 Systems include the KL10-E CPU with 256K words of 1.05-microsecond MF20 MOS Memory, and two integral data channels, an LA36-C DECwriter II Console Terminal; 16 asynchronous communications lines; TOPS-20 Operating System plus utilities and macro assembler; 10 training credits; hardware installation and 90-day warranty, software installation with 90-day warranty; one set software notebooks and 90-day software updating service; five sets of manuals; and 50-day consulting services package:			
2040-SC/SD	DECSYSTEM 2040 with one RP06-B Disk Drive	357,100	2,157
DECSYSTEM 2060 Systems include the KL10-E CPU with 160 nanosecond cache memory, 256K words of 1.05-microsecond MF20 MOS Memory, and two integral data channels; an LA36-C DECwriter II Console Terminal; 16 asynchronous communications lines; TOPS-20 Operating System plus utilities and macro assembler; 10 training credits; hardware installation and 90-day warranty, software installation with 90-day warranty; one set software notebooks and 90-day software updating service; five sets of manuals; and 50-day consulting services package:			
2060-PE/PF	DECSYSTEM 2060 with one RP06-B Disk Drive	431,000	2,157

\*Monthly maintenance is 5-day, 12 hours per day DECservice except for 2020 packages and terminal products; MS10-BA, MS10-HA, MS10-LA, RM03-A, TAU45-EC/ED, DZ11-AA, DZ11-BA, DF01-A, LA36-C, LA36-H, LA37-C, LA37-P, LA38-G, LA38-H, LA120-BA, LA180-EA/ED, LA180-P, VT61-A, VT62-A, VT100-A and VT1XX-A. For 2020 products, the quoted figure is DECservice for an eight hour day, 5 day week. For terminal products the quoted figure is the eight hour Basic maintenance.

\*\*All minimum systems require a magnetic tape subsystem and a line printer in addition to the basic package.

## Digital Equipment DECSYSTEM-20

### EQUIPMENT PRICES

		<u>Purchase Price</u>	<u>Monthly Hardware Maint.*</u>
<b>SYSTEM UPGRADES</b>			
2060-UA/UB	2040 to 2060 Upgrade; includes cache memory (MCA-20) and TOPS-20 with extended features; may also include KLPV	125,000	—
2060-UC/UD	2050 to 2060 Upgrade; TOPS-20 with extended features	12,500	—
<b>MEMORY</b>			
MS10-BA	MOS memory modules for 2020 (error correcting): 64K words	8,000	69
MB20-GC/GD	Memory for 2040: Expansion unit (second backplane)	31,790	178/unit
MB20-E	Core memory modules (3 max. per backplane) 64K words (1 unit)	31,790	137
MF20-LA/LB	Memory for 2040 and 2060: Expansion controller (first backplane) with 256K-word memory module	50,400	588
MF20-LC/LD	Expansion unit (second backplane) with 256K-word memory module	50,400	382/unit
MF20-LH/LJ	External expansion controller (first backplane) with 256K-word external memory module	50,400	588
MF20-LK/LL	External expansion unit (second backplane) with 256K-word external memory module	50,400	382/unit
MF20-E	MOS memory modules (two max. per backplane)		
<b>MASS STORAGE</b>			
RP06-AA/AB	39.6-megaword Add-On Single-Access Disk Drive for use with integrated controllers on 2020 and DH20 Controller on the 2040 or 2060	34,000	260
RP06-BA/BB	39.6-megaword Add-On Disk Drive, dual-access version of RP06-A above; max. 7 per subsystem	39,140	287
RP06-C	Dual-access kit; converts one RPO6-A single-access drive to RPO6-B dual-access drive; not for 2020	5,150	27
RM03-AA/AD	14.89-megaword Disk Drive for 2020; max. 8 per system	20,300	191
RH20	Massbus Controller for disk or tape	15,000	35
RTP20	Disk Drive Subsystem for use with 2040 or 2060; includes controller and one RP20 1.2 gigabyte disk drive	140,000	649
RP20	1.2 gigabyte Add-on Single Access Disk Drive; max. 3 per RTP20 subsystem	49,000	308
<b>MAGNETIC TAPE EQUIPMENT</b>			
TU45A-EC/ED	Magnetic Tape Subsystem with tape controller and TU45 Tape Drive; for 2040 or 2060	31,000	363
TU45A-EH/EJ	Add-On Tape Drive for TAU45-EC/ED and TU45A-EC/ED; 75 ips, 800/1600 bpi, NRZI/PE; maximum of three	18,000	281
TAU45-EC/ED**	Magnetic Tape Subsystem with tape controller and TU45A Tape Drive; for 2020	31,600	369
TAU77-EC/ED**	Magnetic Tape Subsystem with tape controller and TU77 Tape Drive; for 2020	30,000	325
TU77-AF/AJ	Add-On Tape Drive for TAU77-EC/ED and TU77-CB/CD; 125 ips, 800/1600 bpi, NRZI/PE; maximum of three	23,100	239
TU77-CB/CD	Magnetic Tape Subsystem with tape controller and TU77 Tape Drive; for 2040 and 2060	34,800	321
TX02-EE/EF	Magnetic Tape Controller and DX20 Channel for TU72 Series Tape Drives; requires RH20; for 2040 or 2060	96,800	619
TU72-E	Add-On Tape Drive for TX02-E; 125 ips, 1600/6225 bpi, PE/GCR	35,300	205
TX03-A	Two Channel Switch for TX02-EE/EF	7,040	14
TX03-EE/FF	Two channel switch option and DX20 channel for TX02-E	54,600	257
TX03-FB	Two channel switch option for two TX02-E	12,800	27
TX05-EC/ED	Two control unit tape switch option and one TX02-E; requires one TX02-E	74,400	390
TX05-FB	Two control unit tape switch option; requires two TX02-E	25,700	27
<b>PRINTERS</b>			
LP20-AA/AB	Line Printer and Controller; 132 positions; 64-character, EDP or scientific font; 300 lpm	17,700	333
LP20-BA/BB	Line Printer and Controller; 132 positions; 96-character; EDP or scientific font; 240 lpm	18,700	333
LP20-CA/CB	Line Printer and Controller; 132 positions; 64-character; EDP font; 900 lpm	36,500	338
LP20-DA/DB	Line Printer and Controller; 132 positions; 96-character; EDP or scientific font; 660 lpm	37,900	338
LP200-BA/BB	Line Printer and Controller; 132 positions; Charaband-type mechanism; includes software, long line interface, and diagnostics; does not include Charaband; 900/1200 lpm; not for 2020	54,600	525
LP07-Y	Charaband for LP200-B line printer; dual-sided; choice of 64- and 96-character EDP fonts, two 64-character EDP fonts, two 96-character EDP fonts, 64- and 96-character OCR-A fonts, two 96-character scientific fonts, 96-character EDP and scientific fonts, two 96-character Swedish/Finnish fonts, 64- and 96-character British fonts, two 64-character open Gothic fonts, or customer specified character fonts	4,300	—
<b>PUNCHED CARD EQUIPMENT</b>			
CD20-AA/AB	Card Reader and Controller; tabletop mounting; 300 cpm	7,920	122
CD20-CA/CB	Card Reader and Controller; free-standing, 1200 cpm	27,960	209
<b>PUNCHED TAPE EQUIPMENT</b>			
PC20-CL/CM	Paper Tape Reader/Punch; includes cabinet and power supplied; requires external I/O bus interface DIB-20; 300 cpm Reader, 50 cps Punch	17,050	160
DIB-20	External I/O Bus Interface	6,490	52

\*Monthly maintenance is 5-day, 12 hours per day DECSERVICE except for 2020 packages and terminal products; MS10-BA, MS10-HA, MS10-LA, RM03-A, TAU45-EC/ED, DZ11-AA, DZ11-BA, DF01-A, LA36-C, LA36-H, LA37-C, LA37-P, LA38-G, LA38-H, LA120-BA, LA180-EA/ED, LA180-P, VT61-A, VT62-A, VT100-A and VT1XX-A. For 2020 products, the quoted figure is DECSERVICE for an eight hour day, 5 day week. For terminal products the quoted figure is the eight hour Basic maintenance.

\*\*No longer marketed by DEC.

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### EQUIPMENT PRICES

		Purchase Price	Monthly Hardware Maint.*
<b>ASYNCHRONOUS COMMUNICATIONS DEVICES</b>			
DC20-AA	Basic Asynchronous Multiplexer; 8 lines, can be expanded to 16 lines with one DEC20-DA expander, max. 7 per system; for 2040 or 2060	6,160	104
DC20-DA	Expansion group for use with DC20-AA above; 8 lines, max. 1 per DC20-AA	1,870	91
DC20-EC/ED	Communications Expansion Cabinet; required for over 64 communications lines, includes one DC20-AA basic 8-line group, max. 1 per system; for 2040 or 2060	12,980	222
DC20-CC	Cables and Distribution Cabinet; for configuration between 32 and 128 lines	2,585	—
DZ11-AA	Asynchronous Line Interface and Distributor Panel; for 8 lines; required when more than 16 lines are ordered	2,570	40
DZ11-BA	Asynchronous Line Interface; for 8 lines; required when more than 8 or 24 lines are ordered; requires DZ11-A	2,050	35
<b>SYNCHRONOUS COMMUNICATIONS DEVICES</b>			
DN20-CA/CB	Data Communications Front End; requires DN20-BX synchronous line units and software; for 2040 or 2060	32,220	200
DN20-BA	Synchronous Line Controller; one allowed per DN20-C; includes DN20-BB; for all processors	4,235	39
DN20-BB	Synchronous Line Unit; for expansion of DN20-BA; max. of 3 DN20-BB per DN20-BA	1,650	17
DN21-BA	Synchronous Line Controller and Interface for speeds between 19.2K and 56K bps; for 2040 or 2060	3,200	38
DN22-AA/BB	IBM 2780/3780/HASP Multileaving Emulator/Terminator for 2020	14,740	164
<b>TERMINALS</b>			
DF01-A	Acoustic Telephone Coupler	345	16
LA36-CE/CJ	DECwriter II Hard Copy Terminal; 30 cps; KSR; 132 positions, 20 mA current loop, 14 position keypad	2,970	26
LA36-HE/HF	With EIA Interface	3,080	26
LA37-CE/CJ	LA36-C with dual APL/ASCII character set and 20 mA current loop	3,960	31
LA37-PE/PJ	With EIA Interface	4,070	31
LAXX-LG	EIA Interface with modem control	130	—
LA38-GA	DECwriter IV Hard Copy Table-Top Terminal; 30 cps; KSR; 132 positions, EIA interface, 14 position keypad	1,750	23
LA38-HA	With Universal power supply	1,850	23
LAX34-CL	20 mA Current Loop Interface for LA38	120	4
LA120-DA	DECwriter III; 180 cps, numeric pad, EIA interface	2,800	42
LA12X-AL	20 mA Current Loop Interface for LA120	140	—
LA180-EA/ED	DECprinter; 180 cps, serial, EIA interface	4,455	75
LA180-PA/PD	DECprinter for hardcopy use with VT61; parallel interface	3,795	69
VT62-AA/AB	Microprocessor Driven Video Display Terminal; designed for transaction processing; 20 mA current loop or EIA interface	3,350	69
VT100-AA/AB	CRT Terminal with detached keyboard, EIA keyboard, EIA interface supported in the VT52 compatible mode only	2,150	23
VT1XX-AA	20 mA Current Loop Interface for VT100	140	5
<b>HARDWARE</b>			
DNHXX-AA/AB	Expansion Cabinet for 2020	9,600	—
H956	Option Cabinet	1,575	—
844	Power Control for H956 cabinet	665	—

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### SOFTWARE PRICES

TOPS-10	TOPS-20		One-Time License Fee	Monthly Self-Maint. Fee
QH502-XM	QT002-AM	ALGOL-60; binaries and source code supplied	\$11,500	\$66
QH072-AM	QT014-AM	APL; same as APLSF, but without file I/O; binaries only supplied	11,500	79
QH071-AM	QT012-AM	APLSF; binaries only supplied	23,000	132
QH503-XM	—	BASIC-10; binaries and source supplied	6,900	79
—	QT027-AM	BASIC-Plus-2; binaries only supplied	11,500	97
QH099-XM	QT099-AM	COBOL-74 plus QT011-AM; binaries and source supplied	15,000	115
QH060-AM	QT009-AM	CPL (ANS-76 PL/1 subset interpreter; binaries only supplied)	6,900	58
QH500-XM	QT001-AM	FORTRAN-66; binaries and source supplied	11,500	84
QH300-XM	QT007-AM	Sort/Merge; binaries and source supplied	3,450	31
QH101-AM	QT008-AM	DBMS; binaries only supplied	34,500	242
QH045-AM	QT016-AM	IQL extended with DBMS interface, both ISAM and sequential; binaries only supplied	19,600	106
QH074-AM	QT025-AM	APL to APLSF upgrade	17,300	—
—	QT028-AM	BASIC to BASIC-Plus-2 upgrade	5,200	—
QH509-XM	QT024-AM	Sort/Merge to COBOL-68 Sort/Merge	11,500	—

## Digital Equipment DECSYSTEM-20

### SOFTWARE PRICES

<u>TOPS-10</u>	<u>TOPS-20</u>		<u>One-Time License Fee</u>	<u>Monthly Self-Maint. Fee</u>
QH681-XM	—	DECnet-10 Task to Task; binaries and source supplied	17,300	220
—	QT042-XM	2780/3780 Software for 2040, 2050, or 2060 (TOPS-20); binaries and source supplied	8,600	132
—	QTD01-AM	DECnet-20 for 2040, 2050, or 2060; binaries only supplied	5,800	88
—	QTD20-AM	DECnet-20 for 2020; binaries only supplied	5,800	88
—	QT037-AM	Traffic-20; binaries only supplied	6,900	88
ZH008-CM	ZH008-CM	Maintenance Programs for the KL10-E	50,600	—
ZT001-YM	ZT001-YM	Maintenance Programs for the KS10-A	25,300	—
QT046-YM	QT046-YM	KS10 Microcode	50,600	—
—	QT052-XM	2780/3780/HASP Software for TOPS-20	10,000	117
Source Code				
QT029-EK/EL	QT029-EK/EL	TOPS-20 Front End Source Code on RP04 or RP06 Disk	23,000	—
—	QT030-EM	TOPS-20 Monitor Source Code on 9-track tape	28,800	—
—	QT038-EM	TOPS-20 Executive Sources (Command Scanner) on 9-track tape	8,100	—
—	QT040-EL	TOPS-20 Source Package; includes QT030, QT029, QT038; supplied on RP04 or RP06 Disk	46,000	—