

# Honeywell DPS 7 Series

## PRODUCT DESCRIPTION

Honeywell's latest addition to its growing stable of distributed processing-based systems is the medium-range DPS 7, a four-model product line that can support local or remote batch processing, interactive timesharing, and transaction processing. Honeywell also unveiled a full range of peripheral equipment for the DPS 7, including three high-speed printers and a 1.2-billion-byte mass storage device. The DPS 7 is based on a similar product developed by Cii Honeywell Bull in France.

**RELATION TO CURRENT PRODUCT LINE:** Honeywell has positioned the DPS 7 to provide an upward-compatible growth path for its Level 62, Level 64, and Series 200/2000 users. The use of current mode logic (CML) technology and an improved packaging technique called micropackaging is said to double the DPS 7's performance over the current Level 64/DPS-330 while reducing the space it requires by one-third. While it is uncertain what Honeywell's plans are for the Level 64 product, the DPS 7 appears destined to fill the gap between the firm's DPS 6 family of 16- and 32-bit systems and its large-scale DPS 8 processors, a niche traditionally occupied by the Level 64. Honeywell has made certain that the transition from Levels 62 and 64, and Series 200/2000, to the DPS 7 is as easy as possible. Level 64 applications can move directly to the DPS 7 without modification. Level 62 and Series 200/2000 users have several transition aids available to make the change easier.

The four DPS 7 models, the DPS 7/35, 7/45, 7/55, and 7/65, feature a single central processor with substantial use of microcoding to implement system functions. Performance is said to be comparable to IBM's 4331-1 up through its 4341-1. The three smaller systems have a ▶

**PRODUCT ANNOUNCED:** The Honeywell DPS 7 Series is a family of four medium-range distributed processing systems that can have from one to four megabytes of memory, up to 20.8 billion bytes of disk storage, and up to 16 tape drives, 10 unit record devices, and 271 communications lines. Honeywell also announced a 1.2-billion byte dual-disk subsystem, and three high-speed printers for the DPS 7.

**COMPETITION:** Burroughs B 2900, B 3900, and B 5900; Digital Equipment DECSYSTEM-20; IBM 4331-1, 4331-2, and 4341-1; NCR V-8455, and V-8555-M through V-8575-M; Univac System 80, Series 90, and 1100/60 Series.

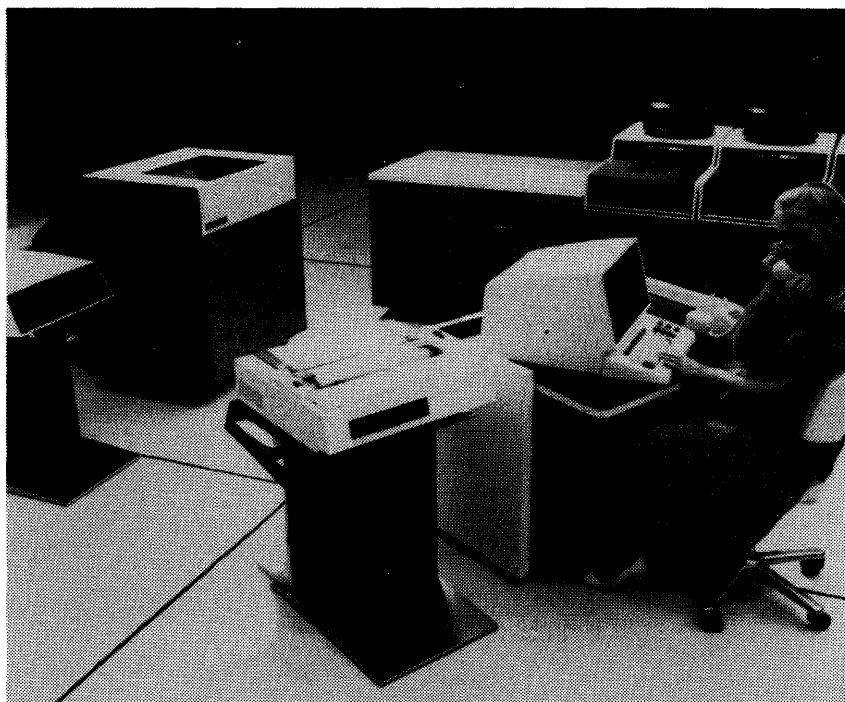
**DATE ANNOUNCED:** October 14, 1981.

**SCHEDULED DELIVERY:** DPS 7/45, 7/55, and 7/65—Second Quarter of 1982; DPS 7/35—Third Quarter 1982.

## BASIC SPECIFICATIONS

**MANUFACTURER:** Honeywell Information Systems, Inc., 200 Smith Street, Waltham, Massachusetts 02154. Telephone (617) 895-6000.

**CONFIGURATION:** The DPS 7 Series has four single-processor models that use extensive microcoding and improved packaging techniques to provide up to twice the performance of the Level 64/DPS-330 system using about one-third the space. The four ▶



*A typical DPS 7 configuration includes the operator console and printer plus (left to right) a diskette drive, high-speed line printer, the DPS 7/45 central processor, and three disk drives. The DPS 7 has from one to four megabytes of memory, and supports a wide variety of peripheral devices.*

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➤ central processor cycle time of 330 nanoseconds while the top-end DPS 7/65 has a 140-nanosecond cycle time. Main memory sizes range from one to two megabytes in the DPS 7/35, one to four megabytes in the DPS 7/45, and two to four megabytes in the DPS 7/55 and 7/65. The memory read and write cycle times are 355 nanoseconds and 290 nanoseconds, respectively. The systems can have from two to eight high-speed channels, depending on the model. Each model, except for the DPS 7/65, can be field upgraded to the next higher system.

A wide variety of I/O configurations is possible with the DPS 7. Each processor has an integrated Service and Unit Record Processor (SURP) that can handle five unit record devices (with an option for five more) and an optional communications module that provides 15 communications lines. Up to 20.8 billion bytes of on-line storage can be configured using separate mass storage controllers and three different disk subsystems, including a new 1.2-billion byte dual-spindle unit, the MSU0555. As many as 16 tape drives can be connected to the DPS 7. The DATANET 8 front-end processor can be used with the DPS 7 to develop distributed networks that conform to Honeywell's Distributed Systems Architecture (DSA). Up to 256 communications lines can be connected this way.

The DPS 7 uses the GCOS 64 operating system, the same one used on the Level 64/DPS systems. No reprogramming is necessary when migrating from the Level 64 to the DPS 7. Level 62 users have several transition tools available and the DPS 7/65 can run Series 200/2000 emulation simultaneously with GCOS 64. All applications currently available for the Level 64 can run unchanged on the DPS 7.

**COMPETITIVE POSITION:** The DPS 7, according to Honeywell, is comparable in price/performance to the IBM 4300 Series, specifically from the 4331-1 to the 4341-1. Other systems that compare to this performance range are the Burroughs B 2900, B 3900, and B 5900; Digital Equipment's DECSYSTEM-20; the NCR V-8455 and most models in the V-8500 Series; and the Univac System 80, Series 90, and 1100/60 Series. □

➤ systems, the DPS 7/35, 7/45, 7/55, and 7/65 feature from one to four megabytes of main memory, and can accommodate up to 20.8 billion bytes of on-line disk storage, up to 16 tape drives, ten unit record devices, from two to eight input/output channels, and up to 271 communications lines.

### DATA FORMATS

**BASIC UNIT:** 8-bit byte plus one parity bit. The data paths are four bytes (32 bits) wide. All other data format parameters for the DPS 7 are identical to the Level 64/DPS (Report 70C-480-14).

**MAIN STORAGE:** Main memory is implemented in 16K-bit chips using MOS technology. Single-bit errors are corrected automatically and multiple-bit errors are flagged for the appropriate corrective action. A four-level ring structure, similar to the Level 64/DPS, is implemented in system firmware to provide a high level of data security. The DPS 7/35 has one megabyte of memory, expandable to two megabytes. The DPS 7/45 has one megabyte of memory, expandable to four megabytes. Both the DPS 7/55 and 7/65 have

two megabytes of memory, expandable to four megabytes. Memory expansion is in one-megabyte increments. Memory cycle time for all systems are 355 nanoseconds (read) and 290 nanoseconds (write) per four-byte access. The read/write cycle times for the Level 64/DPS, for comparison, are 630 and 730 nanoseconds, respectively.

**CENTRAL PROCESSORS:** The four processors are micro-programmed units built around a multiprocessor configuration involving the CPU, peripheral processors, and network processor. The workload is distributed among these three elements to provide simultaneous processing and data transfer. Current mode logic (CML) technology is used extensively in CPU logic circuits and is said to provide faster gate speeds and less power consumption than comparable emitter-coupled logic (ECL) or transistor-transistor logic (TTL) circuits. A manufacturing process called micropackaging is used to build the chips. This technique, according to Honeywell, reduces the length of the electrical connections between the chips and the packaging substrate and between the chips themselves, thus further increasing processing speed while reducing the size of the chips. The result is a system with up to twice the power of a Level 64/DPS-330 using about one-third the floor space.

High-speed channels are provided with each DPS 7 processor. Channel throughput is rated at 1.25 million bytes per second. The DPS 7/35 has two channels, the DPS 7/45 and 7/55 both have three channels, expandable to six, and the DPS 7/65 has four channels, expandable to eight.

**COMMUNICATIONS:** Up to 15 synchronous or asynchronous communications lines can be connected to the DPS 7 systems via the DCC 4370 Data Communications Controller. The lines can support speeds up to 19,200 bits per second. The DATANET 8 communications processor (DCU8010) handles up to 128 lines with a wide variety of characteristics, and is a key element in Honeywell's Distributed Systems Architecture. Up to two DATANET 8s can be configured to larger DPS 7 systems for a total of 256 lines available.

**SOFTWARE:** The DPS 7 operates under GCOS 64, the same monitor used on the Level 64/DPS-330, which supports batch, transaction, and distributed processing environments in addition to interactive timesharing. Components of GCOS 64 are virtually identical on both the DPS 7 and Level 64/DPS systems, therefore, Level 64 users can migrate to the DPS 7 with no reprogramming or modifications required. The DPS 7/65 can also run Series 200/2000 emulation simultaneously with GCOS 64. Level 62 users have several transition tools available, including file transcription facilities and an automated transmission assist when migrating from the Level 62 Transaction Processing System to the DPS 7 Transaction Driven System. All applications developed by Honeywell for the Level 64/DPS can run unchanged on the DPS 7.

**SERVICE AND SUPPORT:** Maintenance and other support facilities for the DPS 7 are similar to those available on the Level 64/DPS. Remote diagnostics, in particular, are handled by the system's Remote Maintenance System (RMS/64) module, which ties into Honeywell's Technical Assistance Center. Software support is the same for both the DPS 7 and the Level 64/DPS.

### PRICING

According to Honeywell, a one-megabyte DPS 7/35 configuration costs approximately \$279,877 and leases over 5 years for \$8,471 per month. Comparable two-megabyte versions of the DPS 7/45 and 7/55 cost \$448,466 and \$728,751, respectively, and lease for \$13,447 and \$22,064 per month, respectively. A three-megabyte DPS 7/65 with a full complement of I/O and communications hardware costs approximately \$920,382, and leases for \$27,972 per month. ➤

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## EQUIPMENT PRICES

		Purchase Price	Monthly Maint.	Monthly Lease 1-year	Monthly Lease 3-year	Monthly Lease 5-year
<b>▶ PROCESSORS</b>						
CPS4935	DPS 7/35 Central Processor; includes CPU with one megabyte of main memory, integrated service and unit record processor, integrated 15-line communications processor, two I/O channels, and console	\$ 94,200	\$ 385	\$3,327	\$3,103	\$2,767
CPS4945	DPS 7/45 Central Processor; includes CPU with one megabyte of main memory, integrated service and unit record processor, integrated 15-line communications processor, three I/O channels, and console	128,700	405	4,426	4,119	3,660
CPS4955	DPS 7/55 Central Processor; includes CPU with two megabytes of main memory, integrated service and unit record processor, integrated 15-line communications processor, three I/O channels, and console	202,400	527	6,850	6,368	5,646
CPS4965	DPS 7/65 Central Processor, includes CPU and two megabytes of main memory, integrated service and unit record processor, integrated 15-line communications processor, four I/O channels, and console	256,700	692	8,711	8,100	7,184
<b>PROCESSOR OPTIONS</b>						
CMM4700	1-megabyte Memory Module	15,700	26	518	480	424
CPF4702	Peripheral Expansion Cabinet	13,808	47	478	446	397
CDF4703	H200/2000 Emulator for CPS4965	9,400	28	322	299	266
CPF4707	I/O Channel Expansion (over 4 channels)	5,200	5	168	155	137
CPF4708	I/O Channel	4,600	2	145	135	118
CPK4971	Upgrade Kit, CPS4935 to CPS4945	34,500	20	1,099	1,016	893
CPK4972	Upgrade Kit, CPS4945 to CPS4955	73,700	122	2,424	2,249	1,986
CPK4973	Upgrade Kit, CPS4955 to CPS4965	54,300	165	1,861	1,732	1,538
CPK4977	Upgrade Kit, CPS4935 to CPS4955	108,200	142	3,523	3,265	2,879
CPK4978	Upgrade Kit, CPS4935 to CPS4965	162,500	307	5,384	4,997	4,417
CPK4979	Upgrade Kit, CPS4945 to CPS4965	128,000	287	4,285	3,981	3,524
CSF4104	Hardcopy Printer (mandatory)	7,750	70	312	294	266
CSF4102	Pedestal for CSF4104 (sit)	200	NC	—	—	—
CSF4103	Pedestal for CSF4104 (stand)	200	NC	—	—	—
CSF4107	Sit-Down Console Table for CPS4955 and CPS4965	1,200	NC	—	—	—
CSF4108	Stand-Up Console Table for CPS4955 and CPS4965	1,200	NC	—	—	—
CSF4112	Adjustable Console Table for CPS4935 and CPS4945	1,200	NC	—	—	—
<b>MASS STORAGE</b>						
MSP4570	Single-Channel Mass Storage Processor; includes one group of 3 device addresses	1,098	1,021	906	32,275	90
MSA4570	Group of 3 Additional Device Addresses	118	111	100	3,075	22
MSF4506	Series 200/2000 Read/Write Mode	80	74	66	2,352	6
MSU0402	100-megabyte Mass Storage Unit	815	763	701	20,805	113
MSU0452	200-megabyte Mass Storage Unit	937	862	815	27,047	113
MSU0555	1200-megabyte Mass Storage Unit	1,827	1,703	1,517	52,183	197
MSF0006	Dual Access Feature; for MSU0402/0452	82	77	70	2,070	13
MSF0014	Dual Access Feature; for MSU0555	163	152	136	4,140	23
<b>DISKETTE STORAGE</b>						
DDF4051	Second Drive for Integrated Diskette Unit (factory option)	3,695	24	140	131	118
DDU4055	Single Diskette Drive; 492K bytes; requires pedestal	2,336	21	95	89	81
DDU4056	Dual Diskette Drive; 985K bytes; requires pedestal	3,833	32	152	144	130
DDF4052	Pedestal for DDU4055 or DDU4056; low for sitting	184	2	8	7	6
DDF4053	Pedestal for DDU4055 or DDU4056; high for standing	184	2	8	7	6
URA4342	Addressing for DDU4055 or DDU4056 (URP4370 only)	2,620	11	93	87	77
URA4343	Addressing for DDU4055 or DDU4056 (Integrated URP only)	2,620	11	93	87	77
<b>MAGNETIC TAPE EQUIPMENT</b>						
MTP4270	Magnetic Tape Processor, single-access; addressing for 8 devices	24,850	120	937	837	748
MTF4207	Translator Option	2,783	8	95	88	78
MTF4208	Pack/Depack Option	2,783	8	95	88	78
MTF4209	NRZI Option	3,728	22	139	130	117

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		Purchase Price	Monthly Maint.	Monthly Lease 1-year	Monthly Lease 3-year	Monthly Lease 5-year
<b>MAGNETIC TAPE EQUIPMENT (Continued)</b>						
MTU0500	Magnetic Tape Unit, 125 ips	17,441	127	671	630	568
MTF0011	9-track, 1600 bpi	3,213	27	121	110	104
MTF0012	9-track, 800/1600 bpi	4,137	54	183	173	158
MTF0013	7-track, 200/556/800 bpi	6,300	88	282	266	241
MTF0015	7-track, 200/556 bpi	3,213	32	129	117	111
MTF0016	7-track, 556/800 bpi	3,213	32	129	117	111
MTF0018	Cartridge Load	735	2	24	23	20
<b>UNIT RECORD EQUIPMENT</b>						
URP4370	Additional Unit Record Processor	18,270	52	623	579	514
<b>PRINTERS</b>						
PRU1600	Belt Printer, 1600 lpm, 136 positions	64,940	538	2,694	2,532	2,289
PRF0022	24 Additional Print Positions for PRU1600	2,610	15	96	90	80
PRU1205	Belt Printer, 1200 lpm, 136 positions	42,700	428	1,762	1,660	1,508
PRU0906	Belt Printer, 900 lpm, 136 positions	37,200	381	1,543	1,454	1,322
URA4332	Addressing for PRU0906/1205/1600	6,000	3	191	176	155
PRU0615	Band Printer, 600 lpm, 136 positions	16,500	180	696	656	598
PRM4001	Adapter for PRU0615	500	2	18	17	15
URA4331	Addressing for PRU0615	400	2	15	14	13
PRB0703	Belt for PRU0906/1205/1600, 64 characters, OCR-B font, Series 200/2000	2,460	90	—	—	—
PRB0501	63-character, EBCDIC, OCR-B font belt	2,460	90	—	—	—
PRB0500	63-character, OCR-B font belt, Series 100	2,460	90	—	—	—
PRB0513	63-character, ASCII, OCR-B font belt	2,460	90	—	—	—
PRB0524	63-character, OCR-A numeric belt	2,460	90	—	—	—
PRB0549	63-character, OCR-A alphanumeric belt	2,460	90	—	—	—
PRB0600	94-character, uppercase/lowercase belt, OCR-B font	2,567	90	—	—	—
PRB3703	Belt for PRU0906/1205, 64 characters, OCR-B font Series 200/2000	NC	NC	—	—	—
PRB3501	63-character, EBCDIC, OCR-B font belt	NC	NC	—	—	—
PRB2501	Band for PRU0615, 63 characters, EBCDIC, OCR-B font	NC	NC	—	—	—
PRB2502	63-character, OCR-B font band, Series 200/2000	NC	NC	—	—	—
<b>PUNCHED CARD EQUIPMENT</b>						
CRU0301	Card Reader, 300 cpm	9,513	71	352	319	304
CRU0501	Card Reader, 500 cpm	19,500	104	684	638	568
CRF0006	(IBM) Mark Sense Option for CRU0301/0501	4,520	38	168	156	142
CRF0007	(HIS) Mark Sense Option for CRU0301/0501	4,520	38	168	156	142
CRF0030	Pedestal for CRU0301/0501; high for standing	184	NC	—	—	—
CRF0031	Pedestal for CRU0301/0501; low for sitting	184	NC	—	—	—
URA4334	Addressing for CRU0301/0501 or CRU1050	3,645	12	126	118	104
CRU1050	Card Reader, 1050 cpm	26,555	204	1,052	987	890
CRF0003	51-Column Option for CRU1050	2,079	5	69	64	57
CRF0005	Mark Sense (IBM/HIS) for CRU1050	7,787	48	237	217	205
PCU0120	Card Punch, 120 cpm	20,032	128	756	686	636
URA4335	Addressing for PCU0120	6,878	23	238	221	197
<b>COMMUNICATIONS</b>						
DCU8010	DATANET 8 Front-End Network Processor; includes 256K-byte memory, 256K-byte diskette and up to 16 lines	29,000	135	1,040	971	868
DCM8004	Additional 256K-byte Memory	7,000	70	288	271	247
DCE8002	Additional Lines, up to 64	3,000	5	98	91	80
DCE8004	Additional Lines, up to 128	5,000	10	166	154	136
DCE8005	Additional 256K-byte Diskette	1,785	18	73	69	63
DCE8007	Level 64/DPS Host Connection	8,000	65	315	295	267
DCF8007	Channel Interface Base, includes up to 8 channels (lines)	2,500	14	92	86	77
DCF8008	Console, 30 cps printer	2,520	54	132	126	117
DCF8006	Console, 120 cps printer	2,888	92	182	175	165
DCF8011	Dual Synchronous Channel, 9600 bps	1,500	8	54	51	45
DCF8012	Dual Asynchronous Channel, 9600 bps	1,000	5	36	33	30
DCF8020	HDLC Channel, 9600 bps	1,500	8	54	51	45
DCF8022	HDLC Wideband Channel, 56K bps	3,000	16	109	102	91
DCF8023	HDLC Wideband Channel (V.35), 56K bps	3,000	16	109	102	91
DCC4370	Additional Data Communications Controller	8,600	13	282	261	231
DCF4301	Terminal Support Type 1 (TTY)	53	NC	1	1	1

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## EQUIPMENT PRICES

		Purchase Price	Monthly Maint.	Monthly Lease 1-year	Monthly Lease 3-year	Monthly Lease 5-year
► <b>COMMUNICATIONS (Continued)</b>						
DCF4302	Terminal Support Type 2 (VIP)	53	NC	1	1	1
DCF4303	Terminal Support Type 3 (BSC)	53	NC	1	1	1
DCF4304	Terminal Support Type 4 (BSC), with transparency	945	4	34	31	27
DCF4308	Terminal Support Type 8 (3270)	1,665	8	61	57	51
DCA4371	Asynch. Line Attachment (up to 19.2K bps)	1,000	5	37	34	31
DCA4372	Synch. Line Attachment (up to 19.2K bps)	925	5	34	31	28
DCF4340	Polling Extension for DCA4372	546	1	18	17	15
DCF4370	Performance Expansion	4,284	8	142	131	116

## SOFTWARE PRICES

## Current System Software

		Monthly License Fee	Monthly Software Support
SCS1300	GCOS 64 Basic Operating System	NC	*
SCS1301	GCOS 64 Basic System Extension	200	61
SCS1302	GCOS 64 Access System Extension	165	40
SCS1601	GCOS 64 Coupled Systems Support	80	25
SCS1602	GCOS 64 Dynamic Status Display	64	17
SCS1603	GCOS 64 Multivolume Backing Store	55	15
SCS1605	GCOS 64 System Access Rights	127	35
SCS1607	GCOS 64 General Access Control	98	26
SCU1613	GCOS 64 System Behavior Reporter	165	25
SCU1616	GCOS 64 System Behavior Reporter Extension	118	18
SCL1601	COBOL-74	89	11
SCL1603	COBOL-74 Data Communications Extension	94	12
SCL1606	FORTRAN	87	8
SCL1607	Mathematical Library	113	16
SCL1608	COBOL Report Writer	40	5
SCL1611	PRG	131	6
SCL1614	Interactive BASIC	165	6
SCS1606	GCOS 64 Interactive Resource Manager	149	40
SCL1617	Query Processor	220	70
SCL1620	Query Processor Update Option	80	25
SCP1601	Interactive Library Maintenance (LIBMAINT)	91	27
SCP1602	Interactive Text Editor	61	18
SCP1605	Immediate Step Activation	91	27
SCP1606	Interactive Program Checkout Facility	61	18
SCC1617	Data Entry (DE/64—VIP7700 Mode)	158	64
SCD1611	Integrated Data Store II (I-D-S/II) Entry	275	19
SCD1615	Multiple Logic Data Store (MLDS)	42	18
SCU1603	Sort/Merge	67	12
SCU1604	Data Base Administrator Aids Set (Batch Utilities)	81	5
SCU1617	Data Base Administrative Aids Extension	30	5
SCC1200	DATANET 8 Support (FNPS). Requires SCC8020	329	65
SCC8020	Distributed Network Supervisor (DNS). Requires SCC1200	67	13
SCC8027	HDL System Support (ISO Std.)	112	11
SCC8028	X.25 Public Data Network Connection. Requires SCC8027.	91	17
SCC8030	Asynchronous Terminal Support	114	20
SCC8031	Synchronous Terminal Support	NSC	NSC
SCU8025	Node Administrator (NAD). Required with each copy of SCC8020.	13	5
SCU8026	Network Operator Interface (NOI). One required for each network. (More than one may be ordered.)	13	5
SCC1603	TDS/64 Standard Processor	299	128
SCD1612	Data Management-IV (DM-IV) Entry	580	150
SCC1671	PREFORMS Batch Mode	21	7
SCC1672	PREFORMS Transaction Mode	43	14
SCJ1601	Remote Batch Facility (RBF/6)	26	6
SCU1615	File Transfer Facility/6 (FTF/6)	42	5
SCM1620	Series 200/2000 Integrated Program Mode	NC	15
SCD1607	Series 200/2000 File Access System (HFAS)	NC	10
SCU1606	HFAS File Maintenance Utility Set	8	5
SCU1609	Series 200/2000 Volume Utility Set	8	5
SCU1614	System/3 Sort Adapter	NC	10
SCV1600	Series 200/2000 COBOL to COBOL-74 Translator	NC	10
SCV1605	Series 200/2000 File Translator	NC	10
SCV1611	Series 100 COBOL to COBOL-74 Translator	NC	10
SCV1612	Series 100 File Translator	NC	10
SCV1614	System/3 Volume and File Translator	NC	10
SCV1616	System/3 RPG-II to GCOS 64 RPG Translator	NC	10
SCV1620	360/370 COBOL to COBOL-74 Translator	NC	10
SCV7609	System/3 COBOL to COBOL-74 Translator	NC	10
SCV7613	360 RPG to GCOS 64 RPG Translator	NC	10
SCV7614	370 RPG to GOCS 64 RPG Translator	NC	10
SCV7629	370 File and Volume Translator	NC	10

\*Fee based on power of CPU.

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SOFTWARE PRICES

		Monthly License Fee	Monthly Software Support
<b>▶ Application Software—Native Mode</b>			
ACD0001	PROFIT/64	1,068	25,636
ACD0016	Sales Order Processing (online available on RPQ basis only)	679	24,438
ACF0001	Accounts Receivable System	161	4,030
ACF0002	Accounts Payable System	161	4,030
ACF0003	General Ledger System	161	4,030
ACF0004	Payroll System	161	4,030
ACF6004	Payroll Tax Update (for ACF0004)	*	*
ACF6011	Accounts Receivable Online Module	43	1,795
ACF6012	Accounts Payable Online Module	43	1,795
ACM0010	IMS/64 Inventory Reporting Bill of Material—Extended	161**	6,689**
ACM0011	IMS/64 Material/Resource Requirements Planning	337**	13,841**
ACM0012	IMS/64 Standard Cost—Extended	83**	3,343**
ACM0020	Production Scheduling and Control (PSC/64)	311**	12,847**
ACM0060	HMS Inventory Record Management	100	5,000
ACM0061	HMS Manufacturing Data Control	500	25,000
ACM0062	HMS Material Requirement Planning	400	20,000
ACM0063	HMS Master Production Scheduling	400	20,000
ACM0064	HMS Statistical Forecasting	200	10,000
ACM0065	HMS Capacity Requirement Planning	400	20,000
ACM6011	IMS/64 Material Requirement Planning—Extended	161**	6,689**
ACM6040	IMS/64 Extended Online	146**	6,076**■

\*Available for an annual fee of \$427 to both monthly license fee and initial license fee customers.

\*\*Not available on new orders.