IBM 4300 Series

MANAGEMENT SUMMARY

IBM has revamped the 4300 Series product line by withdrawing the 4321 and 4331 systems, taking the 4341 processors out of new production, introducing the entry-level 4361 Model Group 3, and adding several new features to all 4361 models. The SSX/VSE operating system has also been enhanced.

The 4321 and 4331 processors will be withdrawn from marketing effective December 31, 1984. Thus, the 4361 processors now represent the low end of the 4300 Series product line. The new 4361 Model Group 3 is available with 2 or 4 megabytes of main memory and up to 3 I/O channels. It is field upgradable to a 4361-4 or 4361-5. In engineering/scientific environments, the 4341-3 provides up to 2.2 times the performance of a 4331-2, according to IBM. In commercial environments, the 4361-3 is about equal to a 4331-2.

The new features for all 4361 models include the Work Station Adapter (WSA) and the Serial OEM Interface (SOEMI), both of which increase the flexibility of 4361 configurations. The WSA, which is optional on all models, provides for the direct attachment of up to 32 peripheral devices and intelligent workstations via the 3299 Terminal Multiplexer. The SOEMI, which is standard on all 4361 Display/Printer Adapters and Work Station Adapters, permits the connection of OEM devices from various manufacturers, including equipment for such applications as robotics, process control, and voice response/recognition. An Auto Start feature and a Programmable Power-Off feature were also introduced for the 4361 processors. In addition, a new release of SSX/VSE, Release 4, was added to provide support for the new hardware.

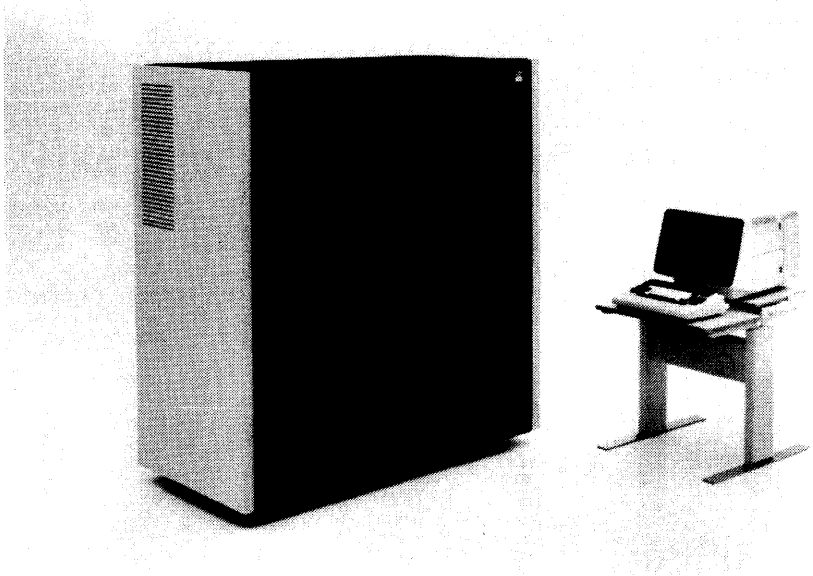
The IBM 4300 Series is a family of medium- to large-scale processors that can perform well as standalone systems, as distributed processing systems, or as nodes in a communications network.

MODELS: 4361 Model Groups 3, 4, and 5; 4341 Model Groups 9, 10, 1, 11, 2, and 12; 4381 Model Groups 1 and 2.
CONFIGURATION: Uniprocessor systems with 1 to 16 megabytes of main memory, 2K to 32K bytes of buffer storage, and up to 12 I/O channels.
COMPETITION: Burroughs A 3, A 9, B 4900, and B 5900; DEC VAX; Honeywell DPS 8; IPL 4400 Series; NAS 6600 Series; NCR V-8600 Series; Prime 9950; Sperry 1100/70.
PRICE: Purchase prices for CPUs plus main memory range from $56,500 to $620,000.

CHARACTERISTICS

MANUFACTURER: International Business Machines Corporation, Old Orchard Road, Armonk, New York 10504. Contact your local IBM representative. In Canada, 1150 Eglinton Avenue, Don Mills, Ontario. Telephone (416) 443-2111.

MODELS: 4341 Model Group 9 (Models J9, K9, and L9); 4341 Model Group 10 (Models K10 and L10); 4341 Model Group 1 (Models K1 and L1); 4341 Model Group 11 (Models K11, L11, and M11); 4341 Model Group 2 (Models K2, L2, M2, N2, and P2); 4341 Model Group 12 (Models K12, L12, M12, N12, and P12); 4361 Model Group 3 (Models K3



At the left is a picture of the 4381 processor and console which features from 4 to 16 megabytes of main memory, 4K to 32K bytes of buffer storage, and up to 12 I/O channels. It can utilize virtually all of the System/370 communications and peripheral equipment, including the high-performance 3380 Direct Access Storage Device. The 4381 supports the MVS/XA operating system as well as OS/VS1 and DOS/VSE.

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TABLE 1. SYSTEM COMPARISON

	4361 Model Group 3	4361 Model Group 4	4361 Model Group 5	4341 Model Group 9
SYSTEM CHARACTERISTICS				
Date of introduction	September 1984	September 1983	September 1983	October 1982
Date of first delivery	December 1984	2nd quarter 1984	1st quarter 1984	March 1983
Relative Performance*	—	49	66	24
Principal operating systems	DOS/VSE, SSX/VSE, and VM/370	DOS/VSE, SSX/VSE, and VM/370	DOS/VSE, SSX/VSE, VM/370, and MVS/370	MVS/370, DOS/VSE, SSX/VSE, and VM/370
Purchase price of CPU with min. main storage capacity	$56,500	$135,000	$180,000	$81,000
Upgradable to	4361-4 or -5	4361-5	—	4341-10
MAIN STORAGE				
Storage type	MOS	MOS	MOS	MOS
Bytes fetched per cycle				
Minimum capacity, bytes	2,097,152	2,097,152	2,097,152	1,048,576
Maximum capacity, bytes	4,194,304	12,852,912	12,852,912	4,194,304
Increment size, bytes	12,097,152	2,097,152 or 4,194,304	2,097,152 or 4,194,304	1,048,576 or 2,097,152
BUFFER STORAGE				
Capacity, bytes	8,192	8,192	16,384	2,048
Cycle time, nanoseconds	—	—	—	225
Bytes fetched per cycle	—	—	—	8
CENTRAL PROCESSOR				
Cycle time, nanoseconds	100	100	100	150 to 300
Operating modes	ECPS:VSE, System/370	ECPS:VSE, System/370	ECPS:VSE, System/370	ECPS:VSE, System/370
System/370 model options	Basic Control, Extended Control, ECPS:VM/370	Basic Control, Extended Control, ECPS:VM/370	Basic Control, Extended Control, ECPS:MVS, ECPS:VM/370	ECPS:VS1, ECPS-VM/370, ECPS:MVS
Control storage capacity, bytes	—	16,384	16,384	—
Data path width, bytes	—	4 and 8	4 and 8	8
I/O CHANNELS & ADAPTERS				
No. of byte multiplexer channels	1 optional	1 optional	1 standard	1 Std. 1 opt.
No. of block multiplexer channels	1 optional	1 standard	2 standard	2 std., 3 opt.
No. of high-speed block multiplexer channels	1 optional	2 optional	3 optional	0
Maximum total no. of channels	3	6	6	6
Maximum channel data rates bytes/second:				
Byte multiplexer (byte mode)	36K	36K	36K	16K or 22K
Byte multiplexer (burst mode)	500K	500K	500K	1.0M or 2.0M
Block multiplexer	1.25M	1.25M	1.25M	1.0M, 2.0M, or 3.0M
High-speed block multiplexer	1.86M	1.86M or 3.0M	1.86M or 3.0M	No
Display/Printer Adapter	Standard	Standard	Standard	No
DASD/8809 Adapter	1 or 2 optional	1 or 2 optional	1, 2, 3, or 4 optional	No
Work Station Adapter	Optional	Optional	Optional	No
Integrated Communications Adapter	8 lines opt.	8 lines opt.	8 lines opt.	No
Channel-to-Channel Adapter	No	No	No	Optional

**Relative Performance Ratings are based on an IBM 370/158-3 equaling 45. Data for these figures was gathered by CW Communications, Inc.*

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4381, System/360, or System/370. Only one of the interconnected processors needs to be equipped with this feature.

The 3088 Multisystem Channel Communication Unit is a standalone I/O Control Unit that provides channel-to-channel communication facilities for multiple IBM 303X, 308X, 4361, 4341, or 4381 processors. The 3088 provides the capability of interconnecting from 4 to 8 processor channels. The channel interfaces can be configured with 32 or 64 contiguous unit addresses that provide the function of a Channel-to-Channel Adapter. From 126 to 252 logical Channel-to-Channel Adapter links are provided. The 3088 requires one control unit position on each processor channel to which it is attached. One unshared subchannel is required on each attached channel for each unit address.

SIMULTANEOUS OPERATIONS: Concurrently with computing, a 4361, 4341, or 4381 can control one high-speed I/O data transfer operation per block multiplexer channel and one low speed I/O operation on each subchannel of a byte multiplexer channel. Alternatively, a byte multiplexer channel can operate in burst mode and handle a single higher speed I/O operation.

CONFIGURATION RULES

The 4361 is a highly integrated system, with a number of peripheral adapters housed in the processor cabinet. These include the Display/Printer Adapter (DPA), the Work Station Adapter (WSA), the DASD/8809 Adapters, and the Communications Adapter. The DPA is standard on all 4361 systems, while the WSA and DASD/8809 Adapters are optional on all models. The Communications Adapter is optional on the 4361 Model Group 3 and standard on the Model Groups 4 and 5. With both the DPA and WSA installed, a 4361 processor can support up to 40 peripheral devices and workstations without additional control units. Intelligent workstations can also be attached to a 4361 system through the 4994 or 7171 ASCII Device Attachment Control Unit.

The 4341 and 4381 are more traditional mainframes, with only the Support Processor, the byte and block multiplexer channels, and the optional Channel-to-Channel Adapter feature integrated into the processor cabinet. Up to four 3278-2A Consoles, 3279-2C Consoles, 3268 Printers, Model 2, or 3287 Printers, Models 1, 2, 1C, and 2C, can be attached to the Support Processor on the 4341 or the Maintenance Subsystem on the 4381.

For information on channel configurability, see the Input/Output Control and Communications Control sections of this report.

MASS STORAGE

For information on mass storage devices available on the 4300 Series, refer to Table 2.

INPUT/OUTPUT DEVICES

For information on magnetic tape units, impact printers, and card equipment supported on the 4300 Series, refer to Table 3.

4250 PRINTER: Available for the 4361 only, the 4250 is a high-resolution, nonimpact printer with a printing density of 600 by 600 dots per square inch. The printing time for an 8½-by-11 inch page ranges from 1½ to 2½ minutes. The 4250 provides the capability of printing and merging text and graphics. The printer uses electroerosion technology and produces a typeset quality camera-ready masterpage directly from the host computer system.

3814 SWITCHING MANAGEMENT SYSTEM: This facility is designed to aid in the management of complex EDP configurations by providing centralized control of control-unit switching. The 3814 uses an integrated microcode-driven processor and features password authorization, stored configurations, and extensive self-diagnostic functions. As compared to the earlier IBM 2914 Model 1 Switching Unit, the 3814 provides increased capacity, extended functions, and improved reliability. The system is covered in greater detail in Volume 2.

MICR/OCR EQUIPMENT: MICR devices supported on the 4300 Series include models 1255, 1419, and 3890. Each model has an E13B type font. Their speed in documents per minute ranges from 500 to 2400, and the number of stackers ranges from 6 to 36. Document size ranges from 2.5 to 4.17 inches in width and from 4.85 to 8.75 inches in length. Options include a 51-column sort, self-checking numbers, batch numbering, item numbering, and microfilming. Optical reading devices supported include Models 1287, 3881, and 3886. Readable fonts include: OCR-A, OCR-B, and OCR-C; 1428; marks; and handprint numeric. Speed in documents per minute range from 96 to 665 and each reader can accommodate from 2 to 3 stackers. Document size ranges from 2.25 to 9 inches in width and from 3 to 14 inches in length. Options include serial numbering, expanded symbols, and document counters.

TERMINALS: Numerous IBM display terminals, batch terminals, and typewriter terminals can be connected to a 4300 system in remote and/or local configurations. For details, please refer to Sections 70D1, 70D2, and 70D3 in Volume 2 of DATAPRO 70.

COMMUNICATIONS CONTROL

The principal communications control unit for the 4361 is the Integrated Communications Adapter, described below. The programmable 3704 and 3705 Communications Controllers, also described below, are the prime communications devices for the 4341 and 4381. They can also serve as alternatives to the Communications Adapter when more than 8 lines must be connected to a 4361. Loop Adapters are also available for the 4361.

4361 COMMUNICATIONS ADAPTER: This feature is optional on all 4361 Model Groups. It provides for the direct attachment of up to 8 BSC, start/stop, or SDLC communications lines in any combination. (At any given time, the "any combination" may be 2 of the 3 available types.) The aggregate data rate capacity may not exceed 64,000 bits per second. For 7 of the 8 lines, the data rate per line may not exceed 9600 bps. The eighth line may be a BSC or SDLC high-speed line with data rate of up to 56,000 bps, operating concurrently with other lines provided that the data rate limitations are not exceeded. The adapter operates with start/stop and BSC lines in 2703 compatibility mode. SDLC is supported only by ACF/VTAME operating under DOS/VSE or by ACF/VTAME operating under VM/370 Release 6 with DOS/VSE running as a guest. The communications adapter provides auto answer, auto poll operation, multipoint station functions, EBCDIC transparent mode for BSC only, and EBCDIC/ASCII code for BSC only.

The 8 lines attached to the communications adapter may have these optional features in addition to the high-speed line feature (4720) already mentioned: up to 8 line features without internal clock for attachment to external modems with (4695) or without (4696) clock (data circuit-terminating equipment); up to 8 line features with integrated 1200 bps modems; up to 8 line features with local attachments (4801); up to 8 line features wth digital data service adapters (5650); and autocall unit interfaces for up to 2 of the installed lines (1020).

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Certain configuration parameters for each line may be specified from the display console keyboard. These parameters include select stand-by, half-speed operation for synchronous lines only (for both clocked and nonclocked modems which have this capability), NRZI mode in SDLC mode, write interrupt (start/stop line), read interrupt (start/stop line), unit exception suppression (start/stop line), error index byte mode (BSC line), and ASCII code instead of EBCDIC (BSC line).

Certain configuration parameters can be selected at installation time and set by the IBM CE. These parameters include duplex instead of half-duplex connection (2-way alternate data flow transmission), switched network facility instead of nonswitched lines for external modems, new sync for BSC or SDLC in multipoint primary station function only, connect data set to line or data terminal ready procedure, and selection of WE202 or V.23 answer tone frequencies for 1200 bps integrated modems with automatic answering.

The 4361 has an attachment capability for intelligent workstations. The IBM Displaywriter, IBM Personal Computer, and the 3270 Personal Computer Attachment are supported by one of the following: the Integrated Communications Adapter, the 3274 control unit, the Display/Printer Adapter, the Work Station Adapter, or the 4994 or 7171 ASCII Device Attachment Control Unit.

The 4361 Communications Adapter supports communications with virtually all of the current IBM terminals, systems, and communications controllers in one or more of the 3 transmission modes: SDLC, BSC, or start/stop.

4361 LOOP ADAPTERS: Provide the capability to attach certain terminals and control units to a 4361 Model Group 4 or Model Group 5, either directly or via a data link. Loop Adapter 1 (feature 4830) and Loop Adapter 2 (4831) provide for direct attachment. The Data Link Adapter (4840) provides remote attachment capabilities for 3843 Loop Control Units. Each Data Link Adapter can be used as a point-to-point or multipoint connection to attach up to four 3843 Loop Control Units. The Loop Adapters are available on an RPQ basis only.

The following devices can be connected to directly attached loops at 9600 bps or to data link attached loops at 2400, 4800, or 9600 bps: the 3640 Plant Data Communications Terminals, the 8775 Display Terminal Model 1 or 2, the 3287 Printer Model 11 or 12, and the 3274 Control Unit Model 51C and 3276 Control Unit Display Station Models 11 to 14, with their associated terminals (3278 Display Station, 3279 Color Display Station, 3262 Line Printer, 3287 Printer, and 3289 Printer). In addition, the 8775, 3287 Models 11 and 12, and the 3274 control unit and associated terminals can also be attached at 38,400 bps. Up to 80 terminals can be connected to a 4331 Model Group 2 or a 4361 via the Loop or Data Link Adapters.

Cable length for direct attached loops can be up to 1.25 miles (2000 meters) when operating at 38,400 bps or 2 miles (3200 meters) when operating at up to 9600 bps. Data link attached loops can be up to 2 cable miles in length. The 4361 support one Loop Adapter 1, one Loop Adapter 2, and up to two Data Link Adapters.

3705 COMMUNICATIONS CONTROLLER: This programmable front-end network processor can be connected to either a byte or block multiplexer channel on a 4361, 4341, or 4381 processor.

The 3705 consists of a Basic Module and up to 3 Expansion Modules. The Basic Module houses the Central Control Unit and Control Panel. Also contained in these modules are the storage, Channel Adapters, Communications Scanners, Line Interface Bases, and Line Sets required to accommodate up to 352 communication lines. Configuration rules for the 3705 are quite complex. The maximum number of lines that can be connected is a function of the 3705 model, the line speeds and types, and the mode of operation. In the 2701/2/3 Emulation mode, a maximum of 255 lines can be controlled. Line speeds can range from 45.5 to 56,000 bits per second. In the Network Control Program (NCP) mode, data is transferred between the 3705 and the host computer via a single subchannel interface.

The 3705-II offers significant price/performance improvements over the original model, now designated the 3705-I. (The 3705-I is no longer available.) The 3705-II is available in 44 different models depending upon the number of frames and the storage capacity, which ranges from 32K to 512K bytes. Processor cycle time is 1.0 microseconds on Models E1-E8, F1-F8, G1-G8, and H1-H8, and 900 nanoseconds on Models J1-J4, K1-K4, and L1-L4. Other 3705-II features include a high-speed Communications Scanner, an upgraded Channel Adapter that transfers data in blocks of 32 characters, transmission speeds to 9600 bps in synchronous mode, a maximum transmission rate of 56,000 bps, and a Cycle Utilization Counter that accumulates statistical data to assist in measuring machine performance.

The entry-level 3705-80 series consists of Models 81, 82, and 83. The 3705-80 has 256K bytes of storage and supports 4, 10, or 16 communication lines. The 3705-80 can be used as a front-end communications processor or as a remote concentrator linked to a local 3705-II Controller.

When connected to a host IBM processor, a 3705 can use either the Network Control Program (NCP) or the 2701/2/3 Emulation Program. NCP/VS, for virtual environments, includes all of the facilities of the original NCP and also has the partitioned Emulation Programming Extension (PEP) capability which permits operation in the NCP mode and Emulation mode concurrently.

The 3705 Controllers are supported under the VTAM and TCAM access methods. The Advanced Communications Function for NCP, ACF/NCP/VS (and related Systems Support Programs), adds capabilities for multiple-processor environments. An X.25 NCP Packet Switching Interface is now available for use with ACF/NCP/VS. To utilize ACF/NCP/VS, the Advanced Communication Function for VTAM and TCAM is required. ACF/VTAM supports CICS/VS, IMS/VS, Power/VS, JES1/RES, JES2/RJE, TSO, VSPC, SSS, and BTP user programs. ACF/TCAM supports CICS/VS, TSO, SSS, and user programs.

3704 COMMUNICATIONS CONTROLLER: The 3704 is a smaller version of the 3705 that can be connected to a byte multiplexer channel on a 4361, 4341, or 4381 processor. The 3704 is available in only 4 models with a main memory capacity of from 16K to 64K bytes. It can accommodate a maximum of 32 lines, just one-half the capacity of the basic 3705 configuration. The 3704 uses the same software as the 3705, thereby ensuring upward compatibility for economic expansion of a small network into a large one.

3725 COMMUNICATIONS CONTROLLER: The 3725 consists of a central control unit that operates under control of the Advanced Communications Function/Network Control Program, Emulator Program, or Partitioned Emulator Program. Main storage is available in 512K-, 786K-, or 1024K-byte sizes. It can be attached to either byte or block multiplexer or selector channels on the host processor. Up to 6 channel adapters are available. Two adapters are standard in the base frame and 4 can be added via the 3726 Expansion Unit. With the optional 2-processor switch feature, connection can be made to a maximum of 8 processors, 6 of which can operate concurrently. The Maintenance and Operator Subsystem allows for host-independent maintenance. Communication scanners and line interfaces are provided by a

IBM 4300 Series Equipment Prices

		Purchase Price ($)	Monthly Maint. ($)	Monthly Rental Charge* ($)	Monthly 2-Year Lease Charge* ($)
PRINTERS (Continued)					
	5401 Additional Character Generation Storage	4,475	26.50	139	—
	8170 Two-Channel Switch	9,790	20.50	371	—
	1490 Burster-Trimmer-Stacker	50,000	316.00	2,075	1,595
	7810 Tape to Print Subsystem Feature	12,030	51.00	551	424
	1010 Accumulator (Model 3 only)	20,240	122.00	835	—
	1021 Accumulator Expansion (Model 3 only)	5,190	38.00	214	—
	5410 Raster Printer Storage, additional (Model 3 only)	8,245	8.00	340	—
	6148 Remote Switch Attachment (Model 3 only)	NC	NC	NC	—
	8171 Dynamic Two-Channel Switch (Model 3 only)	NC	NC	NC	—
4245	Printer, Model 1; 2000 lpm; 132 print positions (for 4341 and 4381 only)	63,500	650.00	3,750	—
4248	Printer, Model 1; 2200 to 3600 lpm; 132 print positions (for 4341 and 4381 only)	99,000	975.00	5,800	—
	3751 Additional 36 Print Positions (plant installation)	10,000	100.00	575	—
	3753 Additional 36 Print Positions (field installation)	15,000	100.00	575	—
4250	Nonimpact printer, Model 1; 600 x 600 dots per square inch (4361 only)	21,000	155.00	1,205	—
OPTICAL AND MAGNETIC READERS					
1255	Magnetic Character Reader:				
	Model 1; 500 dpm, 6 stackers	41,040	394.00	1,515	—
	Model 2; 750 dpm, 6 stackers	46,970	631.00	1,860	—
	Model 3; 750 dpm, 12 stackers	63,960	—	2,445	—
	3215 Dash Symbol Transmission (for 1255 or 1419)	56	NC	38	—
	4380 51-Column Card Sorting (for 1255 or 1419)	661	NC	18	—
	4520 High-Order Zero and Bank Selection (for 1255 Model 3 only)	1,515	—	54	—
	7060 Self-Checking Numbers (for 1255)	2,465	—	89	—
	6360 System/360/370 Adapter (required on 1255)	22,910	—	856	—
1287	Optical Reader:				
	Model 1; reads documents only	108,450	1,815.00	4,900	—
	Model 3; reads documents only	163,550	2,605.00	7,575	—
	Model 5; reads handprinted digits from documents only	120,650	2,630.00	6,160	—
	3945 Farrington 7B Font	968	3.00	42	—
	4470 1428 and ANSCS OCR Font	968	3.00	42	—
	5300 NCR Optical Type Font	3,885	9.00	171	—
	5370 Numeric Handwriting	31,140	113.00	1,390	—
	5479 Optical Mark Reading	3,885	8.50	171	—
1419	Magnetic Character Reader; 1600 dpm	89,050	1,350.00	4,175	—
	7061 Self-Checking Number, Modulus 10	1,560	6.00	66	—
	7062 Self-Checking Number, Modulus 11	2,410	9.00	108	—
3881	Optical Mark Reader:				
	Model 1; for on-line use	62,420	271.00	2,505	2,130
	Model 2; for off-line use with 3410 Model 1 Magnetic Tape Unit	56,860	215.00	2,274	1,935
	Model 3; on-line use with IBM Diskette Unit	72,800	257.00	2,765	2,350
	1471 BCD Read	2,600	3.50	98	83
	3450 Document Counters	1,030	4.00	31	26
	3550 Dual Density (for Model 2 only)	6,565	2.50	257	219
	3801 Expanded Storage	2,600	2.50	98	83
	6451 Serial Numbering	7,680	48.00	301	256
3886	Optical Character Reader:				
	Model 1; on-line	101,500	536.00	4,342	3,695
	Model 2; off-line	109,200	536.00	4,671	3,975
	3210 Additional Data Storage	1,020	1.00	40	34
	4520 Additional Hopper and Stacker Capacity	8,235	28.00	345	294
	4610 Additional Instruction Storage	5,120	12.00	214	182
	4720 Line Marking	5,680	12.00	234	199
	5340 Numbering/Marking Adapter	1,545	1.00	54	46
	5360 Numeric Handprinting	6,685	32.50	277	236
	6450 Serial Numbering	8,235	28.00	345	294

**Rental/lease prices include equipment maintenance.*
***Requires feature 1870 if not already installed.*
****Standard 4361 Model Group 4 or 5 features that are optional on the 4361 Model Group 3 must already be installed.*
NC—No Charge.

IBM 4300 Series Equipment Prices

		Purchase Price ($)	Monthly Maint. ($)	Monthly Rental Charge* ($)	Monthly 2-Year Lease Charge* ($)
OPTICAL AND MAGNETIC READERS (Continued)					
3890	Document Processor; Model A has 13K bytes, Model B has 29K bytes of memory:				
	Model A1; 6 pockets	280,350	400.00	8,031	6,835
	Model A2; 12 pockets	327,300	481.00	9,312	7,925
	Model A3; 18 pockets	374,250	559.00	10,593	9,015
	Model A4; 24 pockets	421,200	638.00	11,873	10,105
	Model A5; 30 pockets	468,150	714.00	13,154	11,195
	Model A6; 36 pockets	515,100	794.00	14,435	12,285
	Model B1; 6 pockets	302,560	488.00	10,005	8,515
	Model B2; 12 pockets	349,510	569.00	11,286	9,605
	Model B3; 18 pockets	396,460	645.00	12,567	10,695
	Model B4; 24 pockets	443,410	726.00	13,847	11,785
	Model B5; 30 pockets	490,360	803.00	15,128	12,875
	Model B6; 36 pockets	537,310	880.00	16,409	13,965
SYSTEM MANAGEMENT					
3814	Switching Management System (requires one Model A):				
	Model A1; Cotroller; 4 x 4 switch	47,480	136.00	2,281	1,825
	Model A2; Controller; 4 x 8 switch	60,420	177.00	2,906	2,325
	Model A3; Controller; 8 x 4 switch	64,740	173.00	3,119	2,495
	Model A4; Controller; two 4 x 4 switches	69,570	190.00	3,356	2,685
	Model B1; Remote Unit; 4 x 4 switch	39,710	92.00	1,913	1,530
	Model B2; Remote Unit; 4 x 8 switch	52,660	134.00	2,531	2,025
	Model B3; Remote Unit; 8 x 4 switch	56,970	129.00	2,744	2,195
	Model B4; Remote Unit; two 4 x 4 switches	61,800	146.00	2,975	2,380
	Model C1; Expansion Unit; 4 x 4 switch	37,980	89.00	1,825	1,460
	Model C2; Expansion Unit; 4 x 8 switch	50,930	130.00	2,444	1,955
	Model C3; Expansion Unit; 8 x 4 switch	55,240	126.00	2,656	2,125
	Model C4; Expansion Unit; two 4 x 4 switches	60,070	143.00	2,894	2,315
	3604 Keyboard/Display, Model 6, one required	1,745	13.50	116	90
	1520 Channel Expansion Internal—4 Control Unit Interfaces	1,550	1.00	75	60
	1521 Channel Expansion Internal—8 Control Unit Interfaces	3,100	1.00	146	117
	6010 Remote Two-Channel Switch Control—Basic	5,180	18.50	246	197
	6011 Remote Two-Channel Switch Control—Additional	2,415	14.00	116	93
	6350 System Power Sequencing—Additional	207	—	8	6
COMMUNICATIONS EQUIPMENT					
For the 4361:					
	1020 Autocall Unit Interface	330	3.50	15	—
	1601 Communications Adapter, base	2,330	3.00	123	—
	3701 EIA/CCITT Interface	330	3.50	15	—
	4695 Line Attachment Base; for clocked modems	330	2.00	15	—
	4696 Line Attachment Base; for nonclocked modems	390	2.00	19	—
	4720 High-Speed Modem Adapter	1,000	3.50	45	—
	4801 Local Attachment Interface	830	4.50	39	—
	5650 Digital Data Service Adapter	750	4.00	32	—
4717	High-Speed Digital Interface	2,050	6.00	118	—
5655	X.25 Adapter, nonswitched	770	2.50	29	—
4994	ASCII Device Attachment Control Unit:				
	Model A; supports up to 16 devices	16,735	195.00	897	—
	Model B; supports up to 32 devices	25,850	257.00	1,395	—
	Model C; supports up to 48 devices	32,300	313.00	1,745	—
7171	ASCII Device Attachment Control Unit, Model 1; supports up to 64 devices	12,420	229.00	—	—
	4000 8-Line Increment	830	13.00	—	—
	4002 8-Line Increment, additional	1,325	13.00	—	—
	4001 Spare Parts Kit	5,705	—	—	—
3705-II	Communication Controller; for detailed pricing see the IBM 308X Series report in this section				

**Rental/lease prices include equipment maintenance.*
***Requires feature 1870 if not already installed.*
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NC—No Charge.

IBM 4300 Series Equipment Prices

		Purchase Price ($)	Monthly Maint. ($)	Monthly Rental Charge* ($)	Monthly 2-Year Lease Charge* ($)
PRINTERS (Continued)					
	5401 Additional Character Generation Storage	4,475	26.50	139	—
	8170 Two-Channel Switch	9,790	20.50	371	—
	1490 Burster-Trimmer-Stacker	50,000	316.00	2,075	1,595
	7810 Tape to Print Subsystem Feature	12,030	51.00	551	424
	1010 Accumulator (Model 3 only)	20,240	122.00	835	—
	1021 Accumulator Expansion (Model 3 only)	5,190	38.00	214	—
	5410 Raster Printer Storage, additional (Model 3 only)	8,245	8.00	340	—
	6148 Remote Switch Attachment (Model 3 only)	NC	NC	NC	—
	8171 Dynamic Two-Channel Switch (Model 3 only)	NC	NC	NC	—
4245	Printer, Model 1; 2000 lpm; 132 print positions (for 4341 and 4381 only)	63,500	650.00	3,750	—
4248	Printer, Model 1; 2200 to 3600 lpm; 132 print positions (for 4341 and 4381 only)	99,000	975.00	5,800	—
	3751 Additional 36 Print Positions (plant installation)	10,000	100.00	575	—
	3753 Additional 36 Print Positions (field installation)	15,000	100.00	575	—
4250	Nonimpact printer, Model 1; 600 x 600 dots per square inch (4361 only)	21,000	155.00	1,205	—
OPTICAL AND MAGNETIC READERS					
1255	Magnetic Character Reader:				
	Model 1; 500 dpm, 6 stackers	41,040	394.00	1,515	—
	Model 2; 750 dpm, 6 stackers	46,970	631.00	1,860	—
	Model 3; 750 dpm, 12 stackers	63,960	—	2,445	—
	3215 Dash Symbol Transmission (for 1255 or 1419)	56	NC	38	—
	4380 51-Column Card Sorting (for 1255 or 1419)	661	NC	18	—
	4520 High-Order Zero and Bank Selection (for 1255 Model 3 only)	1,515	—	54	—
	7060 Self-Checking Numbers (for 1255)	2,465	—	89	—
	6360 System/360/370 Adapter (required on 1255)	22,910	—	856	—
1287	Optical Reader:				
	Model 1; reads documents only	108,450	1,815.00	4,900	—
	Model 3; reads documents only	163,550	2,605.00	7,575	—
	Model 5; reads handprinted digits from documents only	120,650	2,630.00	6,160	—
	3945 Farrington 7B Font	968	3.00	42	—
	4470 1428 and ANSCS OCR Font	968	3.00	42	—
	5300 NCR Optical Type Font	3,885	9.00	171	—
	5370 Numeric Handwriting	31,140	113.00	1,390	—
	5479 Optical Mark Reading	3,885	8.50	171	—
1419	Magnetic Character Reader; 1600 dpm	89,050	1,350.00	4,175	—
	7061 Self-Checking Number, Modulus 10	1,560	6.00	66	—
	7062 Self-Checking Number, Modulus 11	2,410	9.00	108	—
3881	Optical Mark Reader:				
	Model 1; for on-line use	62,420	271.00	2,505	2,130
	Model 2; for off-line use with 3410 Model 1 Magnetic Tape Unit	56,860	215.00	2,274	1,935
	Model 3; on-line use with IBM Diskette Unit	72,800	257.00	2,765	2,350
	1471 BCD Read	2,600	3.50	98	83
	3450 Document Counters	1,030	4.00	31	26
	3550 Dual Density (for Model 2 only)	6,565	2.50	257	219
	3801 Expanded Storage	2,600	2.50	98	83
	6451 Serial Numbering	7,680	48.00	301	256
3886	Optical Character Reader:				
	Model 1; on-line	101,500	536.00	4,342	3,695
	Model 2; off-line	109,200	536.00	4,671	3,975
	3210 Additional Data Storage	1,020	1.00	40	34
	4520 Additional Hopper and Stacker Capacity	8,235	28.00	345	294
	4610 Additional Instruction Storage	5,120	12.00	214	182
	4720 Line Marking	5,680	12.00	234	199
	5340 Numbering/Marking Adapter	1,545	1.00	54	46
	5360 Numeric Handprinting	6,685	32.50	277	236
	6450 Serial Numbering	8,235	28.00	345	294

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IBM 4300 Series Equipment Prices

		Purchase Price ($)	Monthly Maint. ($)	Monthly Rental Charge* ($)	Monthly 2-Year Lease Charge* ($)
OPTICAL AND MAGNETIC READERS (Continued)					
3890	Document Processor; Model A has 13K bytes, Model B has 29K bytes of memory:				
	Model A1; 6 pockets	280,350	400.00	8,031	6,835
	Model A2; 12 pockets	327,300	481.00	9,312	7,925
	Model A3; 18 pockets	374,250	559.00	10,593	9,015
	Model A4; 24 pockets	421,200	638.00	11,873	10,105
	Model A5; 30 pockets	468,150	714.00	13,154	11,195
	Model A6; 36 pockets	515,100	794.00	14,435	12,285
	Model B1; 6 pockets	302,560	488.00	10,005	8,515
	Model B2; 12 pockets	349,510	569.00	11,286	9,605
	Model B3; 18 pockets	396,460	645.00	12,567	10,695
	Model B4; 24 pockets	443,410	726.00	13,847	11,785
	Model B5; 30 pockets	490,360	803.00	15,128	12,875
	Model B6; 36 pockets	537,310	880.00	16,409	13,965
SYSTEM MANAGEMENT					
3814	Switching Management System (requires one Model A):				
	Model A1; Cotroller; 4 x 4 switch	47,480	136.00	2,281	1,825
	Model A2; Controller; 4 x 8 switch	60,420	177.00	2,906	2,325
	Model A3; Controller; 8 x 4 switch	64,740	173.00	3,119	2,495
	Model A4; Controller; two 4 x 4 switches	69,570	190.00	3,356	2,685
	Model B1; Remote Unit; 4 x 4 switch	39,710	92.00	1,913	1,530
	Model B2; Remote Unit; 4 x 8 switch	52,660	134.00	2,531	2,025
	Model B3; Remote Unit; 8 x 4 switch	56,970	129.00	2,744	2,195
	Model B4; Remote Unit; two 4 x 4 switches	61,800	146.00	2,975	2,380
	Model C1; Expansion Unit; 4 x 4 switch	37,980	89.00	1,825	1,460
	Model C2; Expansion Unit; 4 x 8 switch	50,930	130.00	2,444	1,955
	Model C3; Expansion Unit; 8 x 4 switch	55,240	126.00	2,656	2,125
	Model C4; Expansion Unit; two 4 x 4 switches	60,070	143.00	2,894	2,315
	3604 Keyboard/Display, Model 6, one required	1,745	13.50	116	90
	1520 Channel Expansion Internal—4 Control Unit Interfaces	1,550	1.00	75	60
	1521 Channel Expansion Internal—8 Control Unit Interfaces	3,100	1.00	146	117
	6010 Remote Two-Channel Switch Control—Basic	5,180	18.50	246	197
	6011 Remote Two-Channel Switch Control—Additional	2,415	14.00	116	93
	6350 System Power Sequencing—Additional	207	—	8	6
COMMUNICATIONS EQUIPMENT					
For the 4361:					
	1020 Autocall Unit Interface	330	3.50	15	—
	1601 Communications Adapter, base	2,330	3.00	123	—
	3701 EIA/CCITT Interface	330	3.50	15	—
	4695 Line Attachment Base; for clocked modems	330	2.00	15	—
	4696 Line Attachment Base; for nonclocked modems	390	2.00	19	—
	4720 High-Speed Modem Adapter	1,000	3.50	45	—
	4801 Local Attachment Interface	830	4.50	39	—
	5650 Digital Data Service Adapter	750	4.00	32	—
4717	High-Speed Digital Interface	2,050	6.00	118	—
5655	X.25 Adapter, nonswitched	770	2.50	29	—
4994	ASCII Device Attachment Control Unit:				
	Model A; supports up to 16 devices	16,735	195.00	897	—
	Model B; supports up to 32 devices	25,850	257.00	1,395	—
	Model C; supports up to 48 devices	32,300	313.00	1,745	—
7171	ASCII Device Attachment Control Unit, Model 1; supports up to 64 devices	12,420	229.00	—	—
	4000 8-Line Increment	830	13.00	—	—
	4002 8-Line Increment, additional	1,325	13.00	—	—
	4001 Spare Parts Kit	5,705	—	—	—
3705-II	Communication Controller; for detailed pricing see the IBM 308X Series report in this section				

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