IBM 4300 Series

Product Enhancement

IBM has introduced the IBM 4381 Model Group 3 dual processor system, which extends the growth path for IBM 4300 users. This new high-end member of the 4381 family has been designed for use in both commercial and scientific environments as an end-user productivity aid, a multidepartmental machine, a distributed processing system, or a data center system. The new system is field-upgradable from the Model Group 2 and offers up to 1.7 times the performance for commercial workloads and up to 1.9 times the performance of the Model Group 2 for scientific workloads. IBM also announced new memory options for the 4381 Model Group 2.

4381 MODEL GROUP 3: The 4381 Model Group 3 consists of two integrated central processors operating under a single control program. Each processor has its own channels and high-speed buffer while storage is shared by both processors. The basic 4381 Model Group 3 system, Model M3, includes 8 megabytes of shared processor storage. The system may also be purchased with 16, 24, or 32 megabytes of main memory on models P3, Q3, and R3, respectively. Two 32K-byte high-speed buffers which support only 4K pages are included. The 24- and 32-megabyte models use the recently introduced 256K-bit high-density memory chip with a relatively small amount of this storage required for IBM microcode. Field installations are available for main storage upgrades. Each processing unit has a 68-nanosecond internal processor cycle time.

Twelve channels are included with the basic system and an optional six additional channels are available. On each processor in the 4381 Model Group 3 (with a total of 18 channels), an instantaneous aggregate data rate of 16 megabytes per second is provided. An aggregate data transfer rate of up to 32 megabytes per second is provided in data streaming mode with the maximum channel configuration. Concurrent operation of many low-speed devices such as card readers and printers is provided by two byte multiplexer channels which are standard on the new model. Two of the standard block multiplexer channels may be configured as byte multiplexer channels for a total of four byte multiplexers. Up to eight data streaming channels can be configured to allow the attachment of advanced peripherals. The remaining block multiplexer channels have a data transfer rate of one or two megabytes per second.

Like the 4381 Model Groups 1 and 2, the new dual processor system has an upright design to minimize floor space requirements and uses impingement air cooling to ensure adequate cooling of the high-density modules using room temperature air as the cooling medium.

Each 4381 processor requires one IBM 3278 Display Console Model 2A, 3279 Color Display Console Model 2C, or 3205 Display Console equipped with an operator console keyboard and an operator control panel. If a second console is added, IBM recommends that it be attached to the second 4381 Model Group 3 processor. The new 3205 Color Display Console cannot be mixed with models 3278 or 3279.

The 4381 Model Group 3 system uses System/370 Architecture and System/370 Extended Architecture modes of operation. Support is provided by MVS/370 and VM/SP with or without the High Performance Option in System/370 mode. In System/370-XA mode, support is provided by MVS/XA and the VM/XA Migration Aid. Support is also provided by DOS/VSE and OS/VS1 when running as guest operating systems under VM/SP with or without the VM/SP High Performance Option. In addition, support is provided by the VM/XA Migration Aid. Support is not provided, however, by the ACP/TPF Program Product.

A maintenance subsystem includes the support processor, the Remote Support Facility, and an interactive customer Problem Analysis capability. The Remote Operator Console Facility allows personnel at a host location to dial-up and control a remote 4381.

One advantage of using a dual processor system is that, in many cases, if one processor fails, the system can continue to run. Performance will be degraded, but processing can continue, which is a clear advantage over a uniprocessor system. A drawback characteristic of this dual processor system is that it cannot be partitioned into two distinct uniprocessor systems. The 4381 Model Group 3 does not have a system controller or an external data controller. Channels are attached directly to each processor and channel set switching is not provided.

The 4381 Model Group 3 competes against the newly announced Digital Equipment Corporation VAX 8600 uniprocessor system in terms of main memory capacity and processor performance. Both systems have a main memory capacity of 32 megabytes and use the new 256K-bit memory chip. The new VAX uniprocessor has a MIPS rating of 4.45. The new IBM 4381 Model Group 3 dual processor has a MIPS rating ranging between 4.5 and 5.1, depending on whether the workload is commercial or scientific. The VAX 8600 has a CPU ▷

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▷ cycle time of 80 nanoseconds, while the IBM dual processor has a 68-nanosecond CPU cycle time. The IBM model offers two 32K-byte high-speed buffers, but the new DEC model offers a 16K-byte "write back" cache which provides higher efficiency, according to the vendor. The cost of one megabyte of main memory is lower on the new VAX machine than on the new IBM model. Depending on the amount of memory increments purchased, the price per megabyte on the VAX 8600 is as low as $5,000. IBM charges $10,000 per megabyte no matter how much is purchased.

The new IBM 4381 Model Group 3 also competes against the NCR four-processor V-8675 system with regard to main memory capacity; however, there is a sharp difference in the price of the two machines. The buyer will pay over $1.5 million for the NCR system, while the 4381 Model Group 3 costs $1,065,000 for the 32-megabyte system. The IBM machine requires some additional hardware; however, the price difference is still quite dramatic. Another machine that will compete against the new IBM model is the Sperry 1100/70 Series.

The IBM 4381 Model Group 3 will become available during the second quarter of 1985. Main storage upgrades for the 4381 Model Group 2 will be available in June 1985.

Volume discounts are available for purchases of five or more systems. The discount for purchasing from 5 to 9 systems is 8 percent; from 10 to 14 systems is 12 percent; from 15 to 19 systems is 14 percent; and for purchase of 20 or more systems, the discount is 16 percent. The settlement charge per machine is $5,000.

4381 MODEL GROUP 2: IBM has also announced new 24- and 32-megabyte main memory capacities for the existing 4381 Model Group 2. These memory capacities are available on new Model Group 2 orders or as field upgrades to installed Model Group 2 processors.

Support is provided by MVS/370 and VM/SP with the High Performance Option in System/370 mode, and MVS/XA and VM/XA Migration Aid in System/370-XA mode. The new memory capacities and MES field upgrades are scheduled for availability during June 1985.

		Purchase Price ($)	Monthly Maint. ($)	Monthly Rental Charge ($)
PROCESSORS				
4381 M3	Dual processor system with 8 megabytes of main memory and two 32K-byte buffers	825,000	860.00	55,000
4381 P3	Dual processor system with 16 megabytes of main memory and two 32K-byte buffers	905,000	960.00	60,330
4381 Q3	Dual processor system with 24 megabytes of main memory and two 32K-byte buffers	985,000	1,060.00	65,660
4381 R3	Dual processor system with 32 megabytes of main memory and two 32K-byte buffers	1,065,000	1,160.00	70,990
4381 Q2	Processor with 24 megabytes of main memory and 32K-byte buffer	700,000	922.00	46,655
4381 R2	Processor with 32 megabytes of main memory and 32K-byte buffer	780,000	1,022.00	51,985
1871	Additional Block Multiplexer Channels (for Model Group 3)	35,580	12.00	2,372
SYSTEM UPGRADES (with feature 1870)				
	4381 L2 to 4381 Q2	200,000	—	—
	4381 L2 to 4381 R2	280,000	—	—
	4381 L2 to 4381 M3	289,420	—	—
	4381 L2 to 4381 P3	369,420	—	—
	4381 L2 to 4381 Q3	449,420	—	—
	4381 L2 to 4381 R3	529,420	—	—
	4381 M2 to 4381 Q2	160,000	—	—
	4381 M2 to 4381 R2	240,000	—	—
	4381 M2 to 4381 M3	249,420	—	—
	4381 M2 to 4381 P3	329,420	—	—
	4381 M2 to 4381 Q3	409,420	—	—
	4381 M2 to 4381 R3	489,420	—	— ▷

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	Purchase Price ($)	Monthly Maint. ($)	Monthly Rental Charge ($)
SYSTEM UPGRADES (with feature 1870)			
4381 P2 to 4381 Q2	80,000	—	—
4381 P2 to 4381 R2	160,000	—	—
4381 P2 to 4381 M3	*	—	—
4381 P2 to 4381 P3	249,420	—	—
4381 P2 to 4381 Q3	329,420	—	—
4381 P2 to 4381 R3	409,420	—	—
4381 Q2 to 4381 R2	80,000	—	—
4381 Q2 to 4381 M3	*	—	—
4381 Q2 to 4381 P3	*	—	—
4381 Q2 to 4381 Q3	249,420	—	—
4381 Q2 to 4381 R3	439,420	—	—
4381 R2 to 4381 Q2	*	—	—
4381 R2 to 4381 M3	*	—	—
4381 R2 to 4381 P3	*	—	—
4381 R2 to 4381 Q3	*	—	—
4381 R2 to 4381 R3	249,420	—	—
SYSTEM UPGRADES (without feature 1870)			
4381 L2 to 4381 Q2	200,000	—	—
4381 L2 to 4381 R2	280,000	—	—
4381 L2 to 4381 M3	325,000	—	—
4381 L2 to 4381 P3	405,000	—	—
4381 L2 to 4381 Q3	485,000	—	—
4381 L2 to 4381 R3	565,000	—	—
4381 M2 to 4381 Q2	160,000	—	—
4381 M2 to 4381 R2	240,000	—	—
4381 M2 to 4381 M3	285,000	—	—
4381 M2 to 4381 P3	365,000	—	—
4381 M2 to 4381 Q3	445,000	—	—
4381 M2 to 4381 R3	525,000	—	—
4381 P2 to 4381 Q2	80,000	—	—
4381 P2 to 4381 R2	160,000	—	—
4381 P2 to 4381 M3	*	—	—
4381 P2 to 4381 P3	285,000	—	—
4381 P2 to 4381 Q3	365,000	—	—
4381 P2 to 4381 R3	445,000	—	—
4381 Q2 to 4381 R2	80,000	—	—
4381 Q2 to 4381 M3	*	—	—
4381 Q2 to 4381 P3	*	—	—
4381 Q2 to 4381 Q3	285,000	—	—
4381 Q2 to 4381 R3	365,000	—	—
4381 R2 to 4381 Q2	*	—	—
4381 R2 to 4381 M3	*	—	—
4381 R2 to 4381 P3	*	—	—
4381 R2 to 4381 Q3	*	—	—
4381 R2 to 4381 R3	285,000	—	—
4381 M3 to 4381 P3	80,000	—	—
4381 M3 to 4381 Q3	160,000	—	—
4381 M3 to 4381 R3	240,000	—	—
4381 P3 to 4381 M3	*	—	—
4381 P3 to 4381 Q3	80,000	—	—
4381 P3 to 4381 R3	160,000	—	—
4381 Q3 to 4381 M3	*	—	—
4381 Q3 to 4381 P3	*	—	—
4381 Q3 to 4381 R3	80,000	—	—
4381 R3 to 4381 M3	*	—	—
4381 R3 to 4381 P3	*	—	—
4381 R3 to 4381 Q3	*	—	—

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	Purchase Price ($)	Monthly Maint. ($)	Monthly Rental Charge ($)
MODEL GROUP 1 UPGRADES			
4381 L1 to 4381 Q2	330,000	—	—
4381 L1 to 4381 R2	410,000	—	—
4381 M1 to 4381 Q2	290,000	—	—
4381 M1 to 4381 R2	370,000	—	—
4381 P1 to 4381 Q2	210,000	—	—
4381 P1 to 4381 R2	290,000	—	—

RPQW required. Not recommended for field installation.

		Monthly Program Support Charge ($)	Monthly Multiple Program Support Charge ($)
SOFTWARE SUPPORT CHARGES			
Category A	4381 Model Group 3	770	1,232
Category B	4381 Model Group 3	1,099	1,758 □