NCR 8400 and 8500 Systems

New Product Announcement

The strikingly improved price/performance characteristics of IBM's new 4300 Series computers triggered a swift response from NCR in the form of new, more cost-effective central processors in both the V-8400 and V-8500 computer families. The V-8400 family was augmented by one processor, the V-8455, while the V-8500 family was enhanced with four new processors, the V-8555M, the V-8565M, the V-8575M, and the V-8585M. Several new peripherals using the bit serial link I/O method were also introduced.

THE V-8455: This new processor is available with 512K to 1024K bytes of main memory and operates under VRX. The V-8455 has an internal bus architecture and features extensive use of emitter-coupled logic. Like the V-8500 systems described below, the V-8455 makes use of the bit serial link I/O method.

The V-8455 has an internal bus speed of 36 megabytes per second and a processor cycle time of 112 nanoseconds. It is said to fall 10 percent below the IBM 4331 in performance and 27 percent lower in price.

THE V-8555M, V-8565M, V-8575M, AND V-8585M: These new systems offer up to 67 percent more performance at up to 37 percent lower cost than the previous V-8500 systems. NCR indicates that the new systems conform to the "migration path engineering" design philosophy of its 8000 Series product line. This philosophy specifies that programs, files, and most peripheral equipment now in use on NCR 8400 and 8500 Series computers can be moved directly to the new systems without conversion effort. All peripherals available with the new systems use the bit serial link (BSL) I/O method. The new systems feature an internal bus architecture, extensive use of emitter-coupled logic, memory composed of 16K-bit MOS chips with a 370-nanosecond read and 440-nanosecond write cycle, an I/O subsystem capable of transferring data in a serial bit stream at 16 megabits per second, and multiprocessing capabilities.

Multiprocessing versions of the new systems can include up to four tightly coupled processors which share all system resources and operate under VRX-MP, the new multiprocessing version of NCR's VRX operating system. Under VRX-MP, the four processors may be the same or different V-8500 models. In MP configurations, the maximum number of internal buses is four, and the maximum number of processors on a single bus is two.

For the new systems, VRX has been enhanced with improved transaction processing features, including the use of parallel multi-tasking techniques in order to meet peak volume demands. Any program now operating under VRX will operate under VRX-MP. New features incorporated in VRX-MP include concurrent on-line diagnostics, multiple (concurrent) remote job entry, elimination of procedural details of network management and communications through the use of the Telecommunications Access Method, and the ability to access and change or correct programs in operation.

The V-8585M offers 65 percent more power than the earlier V-8580 at approximately a 20 percent lower price. This mainframe, the largest in the V-8500 line, has a processor cycle time of 56 nanoseconds, an internal bus transfer rate of 72 megabytes per second, and two to four megabytes of main memory. According to NCR, the V-8585M ranks 39 percent higher in performance than the IBM 4341 at a 27 percent higher price. The V-8585MP (multiprocessor configuration) includes two V-8585M systems with MP firmware in a tightly coupled configuration and offers about 1.7 times the throughput of the V-8585M, according to NCR.

The V-8575M is available with two to four megabytes of main memory and, like the V-8585M, has a processor cycle time of 56 nanoseconds and an internal bus transfer rate of 72 megabytes per second. When compared with the earlier V-8570, the V-8575M offers about 24 percent more processing power at a 37 percent lower price. NCR says the V-8575M provides 17 percent less performance than the IBM 4341 at a 24 percent lower price. The V-8575MP consists of two V-8575M processors with MP firmware in a tightly coupled configuration and offers about 70 percent more processing power than the V-8575M alone.

The V-8565M, when compared with the older V-8560, offers a 45 percent boost in performance at a 37 percent lower purchase price. It features a processor cycle time of 56 nanoseconds and an internal bus transfer rate of 72 megabytes per second. The basic V-8565M comes with one megabyte of memory, expandable to three megabytes. The V-8565MP consists of two tightly coupled V-8565M processors with MP firmware and two megabytes of memory, expandable to six megabytes.

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▷ The smallest V-8500, the V-8555M, is said to provide approximately 47 percent more processing power than the IBM 4331 at about 28 percent higher cost. The V-8555M has a processor cycle time of 84 nanoseconds, an internal bus transfer rate of 48 megabytes per second, and a maximum main memory capacity of from one-half to two megabytes. It offers 30 percent better performance than the earlier V-8550 at a 36 percent lower price. The dual-processor V-8555MP system consists of two tightly coupled V-8555M processors, each with MP firmware.

A one-megabyte memory increment size is standard for all the new V-8500 systems except the V-8555M. The V-8555M memory increment size is one-half megabyte. Memory is four-way interleaved on the V-8585M and V-8575M, and two-way interleaved on the V-8565M.

The new version of VRX for the V-8500 systems requires a separately leased firmware package. The monthly lease fee for this package varies according to the processor selected. The VRX mode allows NCR Century programs to be run, as well as programs developed specifically to run under VRX. The N mode provides for the use of B-Series software from the Century Series. The MP Option provides firmware to support dual-bus multiprocessing in the VRX mode.

PERIPHERALS/CHANNELS: Peripherals available for use with the new BSL input/output protocol include disk storage units, magnetic tape units, printers, and a card reader. The disk storage subsystems include the 6530 with 81 megabytes of fixed and removable disk capacity, the 6540 with a 540-megabyte capacity, and the one-megabyte 6550 Disk Subsystem; the data transfer rate for all three subsystems is 1.2 megabytes per second. Other BSL-protocol peripherals include the 1200-lpm 646 Printer, the 2000-lpm 647 Printer, a 600-cpm card reader, and magnetic tape units with recording densities of up to 6250 bps and data transfer rates of up to 1.2 megabytes.

I/O Link Controllers handle the new BSL protocol. Each IOLC handles four I/O links (channels) via a four-wire coaxial cable. Each channel has a data-handling capability of up to 2 megabytes. Each IOLC contains two 1K byte buffers, allowing simultaneous read/write operations.

Maximum data rates for the I/O trunks are as follows:

System	Low-Speed Trunk	Medium-Speed Trunk	Very High-Speed Trunk
V-8455	50KB	NA	1.2MB
V-8555	75KB	225KB	1.2MB
V-8565	100KB	315KB	1.2MB
V-8575	100KB	315KB	1.2MB
V-8585	100KB	315KB	1.2MB

A maximum of two low-speed trunks may be ordered for any system. When two low-speed trunks are used, their combined transfer rate may not exceed the transfer rate of a single low-speed trunk. One medium-speed trunk is allowed on the V-8555M, V-8565M, and V-8575M. Very high-speed trunks may be attached in any quantity, as long as the total number of common trunks does not exceed the maximum indicated on the price list. Each IOLC attached reduces the number of available trunks by one.

PRICING AND AVAILABILITY: The V-8455 will be available beginning in June 1979; the V-8555M, V-8565M, and V-8575M, in June 1979; the V-8585M, in September 1979; all multiprocessor systems, in February 1980; and the BSL-protocol peripherals, in February or August 1980.

NCR will pass on an investment tax credit of 6-2/3 percent on extended-term contracts of three years. To earn the full credit, however, the equipment must be in use for five years. Equipment may be leased for up to a three-year period. Monthly pricing for a three-year lease can be obtained by discounting the one-year monthly rental prices in the following price list by 15 percent.□

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EQUIPMENT PRICES

		Purchase Price	Annual Maint.	1-Year Rental**	Monthly License Fee

PROCESSORS

All processors listed below include main memory, floating-point assist (V-8575M/V-8585M), service processor, keyboard, CRT display, and console table.

		Purchase Price	Annual Maint.	1-Year Rental**	Monthly License Fee
BG-8455-G001-0000	V-8455 System with 512K bytes of MOS	$ 50,180	$ 1,644	$ 1,565	—
BG-8555-G001-0000	V-8555M System with 512K bytes of MOS	88,035	2,280	2,780	—
BG-8565-G001-0000	V-8565M System with 1024K bytes of MOS	140,000	3,360	4,060	—
BG-8575-G001-0000	V-8575M System with 2048K bytes of MOS	225,300	6,240	6,922	—
BG-8585-G001-0000	V-8585M System with 2048K bytes of MOS	375,000	10,380	11,520	—

PROCESSOR OPTIONS*

		Purchase Price	Annual Maint.	1-Year Rental**	Monthly License Fee
CW-8211-0101	VRX Mode Firmware for V-8455	—	—	—	$ 215
CW-8211-0301	N (Century) Mode Firmware for V-8455	—	—	—	260
CW-8211-0111	VRX Mode Firmware for V-8555M	—	—	—	345
CW-8211-0311	N Mode Firmware for V-8555M	—	—	—	415
CW-8211-0211	MP Option Firmware for V-8555M	—	—	—	260
CW-8211-0121	VRX Mode Firmware for V-8565M	—	—	—	470
CW-8211-0321	N Mode Firmware for V-8565M	—	—	—	565
CW-8211-0221	MP Option Firmware for V-8565M	—	—	—	330
CW-8211-0131	VRX Mode Firmware for V-8575M	—	—	—	610
CW-8211-0331	N Mode Firmware for V-8575M	—	—	—	735
CW-8211-0231	MP Option Firmware for V-8575M	—	—	—	430
CW-8211-0141	VRX-MP Mode Firmware for V-8585M	—	—	—	1,600
AK-5520-P910-0000	Thermal Hard-Copy Printer for V-8455 Console	3,000	180	85	—
RK-5601-P103-0000	Console Top with 260 Thermal Printer for V-85X5M	3,700	240	100	—
AU-5601-0103-0000	Dual Console Table for V-85X5M	800	—	20	—
AU-5851-0101-0001	CRT Keyboard for Dual Console for V-85X5M	950	60	25	—
RK-5600-P902-0000	Additional Console Channel for V-85X5M	800	36	20	—
AU-6440-0302-0000	70-lpm Matrix Console Printer without interface for V-85X5M	5,250	660	180	—
AA-1001-A567-0001	Additional Auxiliary Stand for V-85X5M	800	—	20	—
AU-7200-0605-0001	CRT for Dual Console	5,600	290	142	—
RK-6440-P004-0000	Processor Attachment for AU-6440-0302-0000	2,200	—	40	—
AK-5XX0-P701-0000	Floating-Point Assist for V-8555M or V-8565M	6,400	120	150	—
AK-5XX0-P740-0000	Low-Speed Common Trunk; maximum of two per system	4,150	120	100	—
AK-5XX0-P741-0000	Medium-Speed Common Trunk; maximum of one on V-85X5M	6,300	180	150	—
AK-5XX0-P742-0000	Very High-Speed Common Trunk; maximum of four on V-8455, six on V-8555M and V-8565M, and eight on V-8575M	9,300	264	225	—
AK-5XX0-P743-0000	I/O Link Control; maximum of four on V-8455, six on V-8555M and V-8565M, and eight on V-8575M	3,500	204	130	—
AK-5XX0-P745-0000	Integrated Disk Control Module; requires either AK-5XX0-P746-000 or AK-5XX0-P747-000	20,700	1,320	560	—
AK-5XX0-P746-000	Integrated Disk Control (IDC), first string of 6590 drives	500	—	13	—
AK-5XX0-P747-000	IDC, first string of 658 drives	5,500	—	150	—
AK-5XX0-P748-0000	IDC, second string of 6590 drives	4,100	120	100	—
AK-5XX0-P749-0000	IDC, second string of 658 drives	4,100	120	100	—
AK-5XX0-P750-0000	IDC, third string of 6590 drives	4,100	120	100	—
AK-5XX0-P751-0000	IDC, third string of 658 drives	4,100	120	100	—
AK-5XX0-P752-0000	IDC, third string of 658 drives if first two strings are 6590 drives	4,100	120	100	—
AK-5XX0-P755-0000	IDC Dual Control; not for V-8455	20,700	1,200	600	—
AK-5XX0-P756-0000	658 Attachment for AK-5XX0-P755-0000; required if 658 drives are employed	1,100	24	25	—
AK-5XX0-P903-0000	Remote Audible Alarm	2,200	24	50	—
AK-5XX0-P950/1/2/3-0000	First through fourth communication line controller (CLC) on V-8555M, V-8565M, or V-8575M; requires ICS light display	2,500	540	100	—
AK-5XX0-P954/5/6/7-0000	First through fourth CLC/MLA (multi-line adapter) on V-8555M, V-8565M, or V-8575M; requires ICS light display	6,000	840	200	—
AK-5XX0-P958-0000	MLA upgrade to AK-5XX0-P950-0000	3,500	300	100	—
AX-5XX0-P959-0000	ICS Light Display	—	—	—	—
AK-5XX0-P960-000	MLA upgrade to AK-5XX0-P951-0000	3,500	300	100	—
AK-5XX0-P961-000	MLA upgrade to AK-5XX0-P952/53-0000	3,500	300	100	—
AK-5XX0-P778-0000	Multiprocessing Kit; allows interconnection of two processors with equivalent memory complements	60,000	1,500	1,830	—

MEMORY

		Purchase Price	Annual Maint.	1-Year Rental**	Monthly License Fee
AK-5XX0-P720-0000	512K-byte increment for V-8455 and V-8555M	10,000	408	330	—
AK-5XX0-P721-0000	512K-byte increment for V-8555M (1024K to 1536K)	10,000	408	330	—
AK-5XX0-P722-0000	512K-byte increment for V-8555M (1536K to 2048K)	10,000	408	330	—
AK-5XX0-P723-0000	1024K-byte increment for V-8565M or V-8555M if AK-5XX0-P720-0000 present	20,000	816	660	—
AK-5XX0-P7414-0000	1024K-byte increment for V-8565M, V-8575M or V-8585M (2048K to 3072K)	20,000	816	660	—
AK-5XX0-P725-0000	1024K-byte increment for V-8575M or V-8585M (3072K to 4096K)	20,000	816	660	—
AK-5XX0-0726-0000	2048K-byte increment for V-8585N only; (4096K to 6144K)	40,000	1,632	1,320	—

MASS STORAGE

		Purchase Price	Annual Maint.	1-Year Rental**	Monthly License Fee
BU-6539-0101-0000	I/O Link Adapter (IOLA)	6,300	228	180	—
AK-6539-K001-0000	Upgrade Kit; permits 6530 and 6540 drives to be intermixed on the same IOLA	3,200	648	95	—

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EQUIPMENT PRICES

		Purchase Price	Annual Maint.	1-Year Rental**	Monthly License Fee
MASS STORAGE (Continued)					
AU-6530-0201-0000	Cartridge Disk Drive; 54 megabytes	14,500	480	440	—
AK-6530-P300-0000	Upgrade Kit; expands AU-6530-0201-0000 to 81 megabytes	1,500	48	45	—
AU-6530-0301-0000	Cartridge Disk Drive; 81 megabytes	16,000	528	485	—
AU-6530-2301-0090	Cartridge Disk Subsystem; includes IOLA and 54- and 81-megabyte disk drives	25,700	1,008	755	—
AK-6530-P301-0000	Upgrade Kit; upgrades AU-6530-2301-0090 to 162 megabytes	1,300	48	45	—
AA-6531-0101-0000	Disk Cartridge, 13.5 megabytes	225	—	—	—
BU-6549-0101-0000	IOLA for 6540	9,500	540	275	—
AU-6540-0201-0000	Fixed Disk Drive; 135 megabytes	14,000	660	455	—
AU-6540-0810-0000	Six drives	49,495	1,740	1,190	—
BU-6559-0101-0000	IOLA for 6550	14,300	456	395	—
RK-6550-P001-0000	String Interface Attachment for first string	1,540	60	45	—
AU-6550-0201-0000	Pack Disk Drive; 1092 megabytes	55,000	1,884	1,000	—
PRINTERS AND CARD READER					
BU-0646-0201-0961	Train Printer with power stacker, 1200 lpm; requires AK-0960	44,250	4,536	1,343	—
AK-0646-P001-0000	Peripheral Controller	2,000	144	70	—
AK-0960-0152-0000	Train, 52 characters	2,950	—	100	—
AK-0960-0157-0000	Train, 57 characters OCR-A	2,950	—	100	—
AK-0960-0164-0000	Train, 64 characters	2,950	—	100	—
AK-0960-0916-0000	Train, 96 characters	2,950	—	100	—
BU-0647-0201-0961	Train Printer with power stacker, 2000 lpm; requires AK-0960-0XXX-0000	69,650	6,216	1,833	—
AK-0647-P001-0000	Peripheral Controller	2,000	144	70	—
AU-6831-0201-0000	System Card Reader; 600 cpm, for V-85X5M	11,500	384	277	—

*XX is 52 for V-8455; 60 for V-8555M, V-8565M, or V-8575M; 64 for V-8585M.
**Includes monthly maintenance.

SOFTWARE PRICES

Basic Monthly Operating System Support Fees:

V-8455	$ 190
V-8555M	300
V-8555MP	510
V-8565M	420
V-8565MP	715
V-8575M	540
V-8575MP-	920
V-8585MP	1,430

	Monthly License Fee	Monthly Maint. Fee
VRX on 8455	—	$190
VRX on 8555	—	300
VRX on 8565	—	420
VRX on 8575	—	540
VRX Symbolic Debug	$ 10	5
VRX COBUG	10	5
VRX Terminal Communications	50	10
Network Definition Language	110	30
VRX CAM	10	5
VRX Transaction Processing	625	160
NCR TOTAL; requires VRX CAM	1,122	138
Data Dictionary	200	50
VRX RJE	60	20
Remote Batch Entry	55	15
VRX COBOL	120	30
Sort/Merge	110	20