

IBM RISC System/6000 Model 380 and 390

The IBM RISC System/6000® Models 380 and 390 dramatically extend the performance range of the RISC System/6000 300-series desktop systems.

The RISC System/6000 Models 380 and 390 offer enhanced performance and introduce POWER2¹ technology in desktop servers. For the first time in the 7012 series, two 5.25-inch half-high removable media bays and the new SCSI-2 Fast/Wide dual-controllers is offered, providing far greater performance and capability on the desktop. Outstanding integer, floating-point and transaction processing levels exceed the performance of previously announced 7012 series models. The new models are a natural for:

- Commercial servers
- Graphic simulation

The Model 390 with a 67MHz processor, establishes a new standard in performance for IBM's high-end desktop systems. The Model 380 features a 59MHz processor. Both models include 32MB of memory, 2GB of SCSI-2 internal disk, a CD-ROM-2 drive, and one available 5.25-inch half-high removable media bay.

The Model 380/390 standard features include an 80MB/second Micro Channel® with four expansion slots, one dual-ported integrated SCSI-2 Fast/Wide Controllers (one port for internal and one for external devices) and an integrated Ethernet interface to provide additional function capabilities.

Memory capacity of up to 512MB, internal disk capacity of up to 4GB, coupled with the current wide variety of input/output devices and communications features allow these systems to be configured as powerful servers.

256MB Memory Card is now supported on the RISC System/6000 Models 34H, 355, 365, 375, 36T, 37T, 360 and 370. This allows a total of 256MB of memory on Models 355, 365 and 375 and a total of 512MB of memory on Models 34H, 360, 370, 36T and 37T. In addition, the 256MB Memory Card can be ordered in place of the standard base memory card on the initial plant order of these models.

Purchase Prices:

RISC System/6000 7012 Model 380	\$ 22,900
RISC System/6000 7012 Model 390	26,900

Planned Availability Dates:

Systems and 256MB memory features	June 10, 1994
MES features and MES model conversions	July 19, 1994
Model 390 with L2 cache (includes MES)	August 12, 1994

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¹ Performance optimization with enhanced RISC

IN BRIEF . . .

- ◆ Desktop models with vertical or horizontal orientation
- ◆ 59MHz POWER2 technology processor Model 380
- ◆ 67MHz POWER2 technology processor Model 390
- ◆ .5MB and 1MB L2 Cache available on the Model 390
- ◆ Memory capacity of up to 512MB, 32MB standard
- ◆ One integrated SCSI-2 Fast/Wide Controller (dual ported)
- ◆ Two 5.25-inch half-high removable media bays (one available)
- ◆ Internal CD-ROM-2 drive standard (occupying one media bay)
- ◆ Integrated Ethernet interface
- ◆ Four Micro Channel expansion slots
- ◆ Internal disk capacity up to 4GB, 2GB (8-bit) standard
- ◆ LAN-dependent IPL capability
- ◆ Model conversion capability
- ◆ Optional non-locking switch

Higher Levels of Performance and Expandability for Desktop Systems

The Model 380 and 390 systems contain processors capable of higher levels of performance and expandability than previously available RISC System/6000 300-series systems.

These new processors perform at:

- 59MHz in the Model 380
- 67MHz in the Model 390

The Models 380 and 390 systems are designed to grow with the customer's needs. The standard memory of 32MB on these models can be increased to 512MB utilizing two 256MB memory cards and .5MB or 1MB of L2 Cache is available on the Model 390. The standard internal 2GB SCSI-2 8-bit disk drives can be increased to 4GB.

The Models 380 and 390 also contain an integrated SCSI-2 dual-ported fast/wide controllers and one integrated Ethernet interface as standard features. These features are integrated into the I/O board and do not occupy any of the four Micro Channel expansion slots available for additional features such as SCSI controllers, communication adapters and graphics adapters.

Customers can select from the standard 8-bit disk drives to 16-bit SCSI-2 Fast/Wide drive and from CD-ROM to tape.

Level 2 (L2) Cache

The introduction of a secondary L2 cache on the Model 390, in addition to the already resident L1 cache, provides significant performance improvements to many applications. The optional .5MB L2 cache, or optional 1MB L2 cache, being much larger than the L1 cache, accommodates large programs and increases the probability that the next instruction of data can be found in the cache, avoiding the access of main memory. The L2 cache, in conjunction with the L1 cache and main memory, provides a three-level hierarchy of memory, which provides the best balance of cost and performance efficiency for most commercial and technical customers.

Summary of 380/390 Standard Features:

- 32MB of memory
- 32KB 2-way set associative instruction cache
- 64KB 4-way set associative instruction cache
- One 1.44MB 3.5-inch diskette drive
- Two 5.25-inch half-high removable media bays, one with a CD-ROM-2 drive
- Two 1GB 3.5-inch SCSI-2 8-bit disk drive or one 2GB 3.5-inch SCSI-2 8-bit disk drive
- One integrated SCSI-2 fast/wide controller, support up to eight devices, four internal and four external
- One integrated Ethernet interface
- Four Micro Channel expansion slots are available for expansion
- Standard device ports/connectors:
 - Keyboard/speaker
 - Mouse
 - Tablet
 - Two serial ports
 - Parallel printer port
- May be installed in either a horizontal or vertical position.

Interoperability

The Models 380 and 390 and the AIX® for RISC System/6000 operating system offer interoperability with other IBM and other vendor systems, protecting your data processing investment.

The Models 380/390 are binary compatible with previously-announced RISC System/6000 systems to further protect your investments in software and hardware.

A system installation and management facility is provided as part of the operating system. The System Management Interface Tool (SMIT) facilitates the performance of system management tasks, such as software installation and configuration, device configuration and management, problem determination and storage management.

Non-Locking Switch (#1101): An optional non-locking switch is available on the initial plant order in place of the standard keylock. The non-locking, three-position MODE switch provides logic security without a key.

Model Conversions

Model conversions to the new processors are available.

Model conversions will be available to upgrade the 340, 34H, 350, 360, 370, and 380 models as follows:

From	To
340	380
340	390
34H	380
34H	390
350	380
350	390
360	380
360	390
370	390
380	390

Product Positioning

The RISC System/6000 Models 380 and 390 are the most powerful RISC System/6000 desktop models. The POWER2 processor is the industry's most advanced generation of super scalar design with the ability to execute up to six instructions and eight operations in a single CPU cycle.

The redesigned RISC System/6000 desktop packaging includes two 5.25-inch half-high removable media bays, allowing for removable media device such as CD-ROM and tape drives.

The server models are the 380 and 390. The server models include the following standard features:

- 59MHz POWER2 technology processor in the 380
- 67MHz POWER2 technology processor in the 390
- 512K L2 Cache
- Memory capacity of up to 512MB, 32MB standard
- Integrated SCSI-2 fast/wide controllers
- Integrated Ethernet interface
- Four Micro Channel expansion slots
- Internal disk capacity up to 4GB, 1GB (8-bit) standard
- Two 5.25-inch half-high removable media bays (one available)
- Internal CD-ROM-2
- LAN-dependent IPL capability
- Model conversion capability

Publications

The following publications are shipped with the product. Additional copies are available for a fee.

Title	Order Number
7012 POWERstation™ and POWERserver™ Operator Guide	SA23-2623
7012 POWERstation and POWERserver Installation and Service Guide	SA23-2624
7012 Models 380, 390 Hardware Setup Guide	SA23-2731
Documentation Overview	SC23-2456
System Unit Safety Information	SA23-2652

The following publications have been updated and are available for a fee. To order, contact your IBM representative.

Title	Order Number
7012 POWERstation and POWERserver Operator Guide	SA23-2623
7012 POWERstation and POWERserver Installation and Service Guide	SA23-2624
7012 Models 380, 390 Hardware Setup Guide	SA23-2731
Documentation Overview	SC23-2456
System Unit Safety Information	SA23-2652
IBM RISC System/6000 System Overview	GC23-2406
IBM RISC System/6000 Planning for Your System Installation	GC23-2407
POWERstation and POWERserver Common Diagnostics and Service Guide	SA23-2687
Customer Support Information	SA23-2690
CD-ROM Hypertext Information Base Library for AIX Version 3.2	SC23-2163
Problem Solving Guide and Reference Quick Reference	SC23-2204
AIX Version 3.2 Diskless Workstation Management Guide	SC23-2433
Getting Started	GC23-2521
IBM POWERdisplay 17 and 20 Setup and Operator Guide	GA23-2076
IBM POWERdisplay 17 and 20 Service Guide	SY66-0225

SLSS is available by order number only. Customers currently subscribing to SLSS will receive publication updates automatically.

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Education Support

Call Skill Dynamics™ at 800-IBM-TEACH (426-8322) for schedules and enrollments.

Technical Information

Physical Specifications:

Horizontal	Vertical
Width: 442 mm (17.4 in.)	280 mm (11 in.) at pedestal
Depth: 478 mm (18.8 in.)	478 mm (18.8 in.)
Height: 162 mm (6.4 in.)	452 mm (17.8 in.)
Weight: 18.1-21.8 kg (40-48 lbs.)	with pedestal

Operating Environment: General requirement: Compliance with IBM Corporate Standard C-B 0-2594-000 Statement of Conformity of IBM Products to External Standards (Suppliers Declaration).

- Temperature: 16° — 32°C (60° — 90° F)
- Relative Humidity: 8% — 80%
- Maximum Wet Bulb: 23° C (73° F)
- Noise level (average at 1 meter position — typical machine):
 - Desktop position: 41 dBa operating, 41 dBa idle
 - Floor-standing position: 38 dBa operating, 38 dBa idle
- Voltage:
 - 100 to 125 V AC, 200 to 240 V AC Nominal
 - Auto Ranging; 50/60 Hz
- Power Supply: 275 Watts output (peak)
- Thermal output: 360 joules/sec (1200 Btus per hour)
- Power Source loading: 0.34 KVA

EMC Conformance Classification: This equipment is subject to FCC rules and it will comply with the appropriate FCC rules before final delivery to the buyer or centers of distribution.

- U.S.A. — FCC Class A
- Germany — IOP
- Europe — CISPR 22
- Japan — VCCI-1

Environmental Impact Assessment: Number 617P-3

The RISC System/6000 processors were developed in compliance with IBM corporate policy letter number 139 (Environmental Affairs).

Compliance with IBM Corporate Standard C-S 3-0527-002 (1991-06) Control of Chemicals in IBM Facilities, Requirements and Responsibilities.

Product Safety/Country Testing/Certification:

- U.S.A. — UL
- Canada — CSA
- Europe — EN60-950.
- Germany — GS Mark (Safety, TUV)

Telecom Environmental Testing (Safety and EMC): IBM RISC System/6000 processors and applicable features meet the environmental testing requirements of the country TELECOM. The testing and approval process is ongoing.

Country	Environmental Safety	Test EMC
Canada	CSA	
Chile	Telecom	
Finland	EIF	
France	LCIE	LCIE
Hong Kong	Telecom	
Ireland	Telecom	
Italy	Telecom	
Japan	Telecom	
Korea	Telecom	
Malaysia	SIRIM	
Mexico	Telecom	
Netherlands	Telecom	
New Zealand	Telecom	Telecom
Spain	Ministry of Industry	
Switzerland	SEV	
United Kingdom	BABT	

ISO 9000 Certification, IBM Locations:

- Santa Palomba
- Italy
- Havant
- England
- Austin
- Texas
- USA

Supported IBM Monitors Complying to ISO 9241 Part 3.

- 6091 Model 016
- 6091 Model 19i
- RISC System/6000 POWERdisplay 16
- RISC System/6000 POWERdisplay 17
- RISC System/6000 POWERdisplay 19
- RISC System/6000 POWERdisplay 20

The 6091-016 display (featuring a Trinitron** CRT) has a fixed image size of 14.8 inches/375mm, measured diagonally.

The 6091-019i display (featuring a Trinitron CRT) has a fixed image size of 17.3 inches/439mm, measured diagonally.

The POWERdisplay 16 (featuring a Trinitron CRT) has a fixed image size of 14.8 inches/375mm, measured diagonally.

The POWERdisplay 17 (featuring a Trinitron CRT) has a maximum viewable image size of 16.1 inches/409mm, measured diagonally.

The POWERdisplay 19 (featuring a Trinitron CRT) has a maximum viewable image size of 17.3 inches/439mm, measured diagonally.

The POWERdisplay 20 (featuring a Trinitron CRT) has a fixed image size of 19.1 inches/486mm, measured diagonally.

** Product or company name is a trademark or registered trademark of its respective holder.

High Availability Cluster Multi Processing(HACMP)/6000 Test Compliance

HACMP/6000 Releases 1.2 and 2.1 have been tested for compliance with AIX/6000™ and the 7012 Model 380/390 processors and associated I/O devices. Refer to Software Announcement 293-168 for HACMP 1.2, and 293-490 for HACMP 2.1 for details regarding these HACMP/6000 releases.

Hardware Requirements: IBM supported ASCII terminal or IBM supported display, display adapter and keyboard.

Software Requirements: AIX Version 3.2.5 for RISC System/6000 with additional PTFs. These PTFs are included on all Version 3.2.5 orders shipped after June 3, 1994 (labeled AIX/6000 Version 3.2.5 3250-01-04). Refer to memo to users on installing these PTFs or call the IBM support center and request the PTFs referenced in APAR number IX42623.

AIX/6000 applications written for POWER-based RISC System/6000s will run on the new POWER2-based models without recompilation, and will run significantly faster. Additional performance improvements can be achieved by recompiling with the latest versions of the IBM XL compilers to further exploit the POWER2 technology.

Applications compiled using a compiler option that exploits POWER2 technology may not function properly on systems that do not employ the new POWER2 technology. Customers with any combination of POWER-

PowerPC™ 601™- and POWER2-based systems may continue to run their applications unmodified. New applications and recompilation of existing applications for use in a mixed processor environment should be compiled using the POWER or common mode options available in the XL compilers or any other compilers that support those options.

Refer to Software Announcements 293-488 and 293-493 for more information.

Compatibility: The RISC System/6000 Model 380/390 uses a new SCSI-2 fast/wide interface. All other external interfaces are the same as on the Model 340, 34H, 350, 360, and 370. The following cables will be required for externally attached devices after the model conversion:

Feature Number	Description
2439	8-bit IBM SCSI-2 Fast/Wide Adapter/A to Single Ported Device
2437	8-bit IBM SCSI-2 Fast/Wide Adapter/A to Dual Ported Device
2435	16-bit IBM SCSI-2 Fast/Wide Adapter/A to Dual Ported Device

All Micro Channel cards, external and internal devices currently supported by the RISC System/6000 Model 380/390 and announced later as supported by the RISC System/6000 Model 380/390 will also be supported by the newly converted 380/390.

The SCSI-2 fast/wide interface does NOT support the following devices:

- 7206-001 External 4mm Tape Drive
- 7210-001 External CD-ROM Drive
- 160MB Disk Drive features #2120, #2121, #2123, #9240, #9241 and #9242.

Note: Features displaced remain with the customer.

A minimum of 32MB of memory is required prior to the upgrade. Customers who do not meet the memory minimum must order additional memory features or SIMM kits. This is not included in the price of the model conversion. The upgrade kit will provide a one-for-one replacement of the customer's installed memory cards. The existing memory SIMMs are reused on the replacement cards.

For upgraded machines, it may be necessary for 8MB or 16MB memory to be replaced or for SIMM kits to be installed to meet the above requirements.

A machine being upgraded must have a minimum of 1GB of SCSI-2 disks installed or on order. These can be any one or combination of the following:

Feature Number	Description
2555	1GB SCSI-2 Drive
2556	400MB to 1GB SCSI-2 Drive select
2580	2GB SCSI-2 Drive
2582	400MB to 2GB SCSI-2 Drive select

Current machine configuration (product topology information) will be requested by the plant prior to scheduling the shipment of this upgrade.

Programming RPQs

AIX Version 3.2.5 for RISC System/6000 with additional PTFs. These PTFs are included on all Version 3.2.5 orders shipped after June 3, 1994 (labeled AIX/6000

Version 3.2.5.1). Refer to memo to users on installing these PTFs or call the IBM support center and request the PTFs referenced in APAR number IX42623. This level of AIX/6000 be installed and operational prior to beginning the upgrade. This is not included in the price of the model conversion.

AIX/6000 applications written for POWER-based RISC System/6000s will run on the new POWER2-based models without recompilation and will run significantly faster. Additional performance can be achieved by recompiling with the latest versions of the IBM XL compilers to further exploit the POWER2 technology.

Applications compiled using a compiler option to exploit POWER2 technology may not function properly on systems that do not employ the new POWER2 technology. Customers with any combination of POWER-, PowerPC 601™-, and POWER2-based systems may continue to run their applications unmodified. New applications and recompilation of existing applications for use in a mixed processor environment should be compiled using the POWER or common mode options available in the new XL compilers or any other compilers that support those options.

The 340, 34H, 350, 360, 370 to 380/390 upgrade kit will contain some or all of the following:

- Base Model 380/390 chassis and covers with the serial number of the original machine
- New memory cards without SIMMs
- Maintenance documentation
- CD-ROM
- As-required engineering changes

This upgrade is accomplished by transferring the customer's existing media, disks, adapters, and memory SIMMs to the new chassis. The chassis will contain the same serial number as the customer's existing machine.

Ordering Information

Upgrade Information: All upgrades from a Model 340, 34H, 350, 360, and 370 to a Model 380/390 will be shipped using a new "chassis exchange" process.

The upgrade provides a model conversion for customers with these installed systems who want the RISC System/6000 Model 380/390 processor capability. This field-installable model conversion will help provide increased system performance and contribute to the protection of customers' initial investments in the Model 300-series systems. The resultant model conversion will retain the serial number of the system prior to the upgrade.

Model conversion offers a high degree of flexibility in increasing the performance level of the system and helping customers with computation-intensive applications to take advantage of the performance of the new processor while protecting their investment in disks and features.

When ordering this model conversion, you must specify the model conversion on the MES order.

All 380 to 390 (MES) model conversions will be a processor upgrade: The model conversion MESs contain some or all of the following items and are ordered through the HONE configurator:

- Processor replacement
- As required engineering changes
- Installation instructions
- New publications

Note: Parts removed become the property of IBM.

Supported Features Information: All features announced as supported on the 380/390 are also available on this model conversion.

The following features presently supported on the Model 340, 34H, 350, 360, and 370 will NOT be supported on the newly converted system:

Feature Number	Description
2780	High-Performance 8-bit 3D Color Graphics Processor
2781	High-Performance 24-bit 3D Color Graphics Processor
2782	24-bit Z-Buffer Solid Rendering Option
2783	24-bit Color Graphics Frame Buffer Upgrade

Note: Features displaced remain with the customer.

Supported but not Orderable Features: The following features presently supported on the Model 340, 34H, 350 360 and 370 will be supported but are not orderable on the newly-converted system.

Feature Number	Description
2121	160MB SCSI Disk Drive
2390	540MB SCSI-2 Disk Drive
2391	400MB to 540MB SCSI-2 Disk Drive Select
2392	160MB to 540MB SCSI-2 Disk Drive Select
2550	1GB SCSI Disk Drive
2553	160MB to 1GB SCSI Disk Drive Select
2556	400MB to 1GB SCSI-2 Disk Drive Select
2558	160MB to 1GB SCSI-2 Disk Drive Select
2560	400MB SCSI Disk Drive
2563	160MB to 400MB SCSI Disk Drive Select
2581	160MB to 2GB SCSI-2 Disk Drive Select
2582	400MB to 2GB SCSI-2 Disk Drive Select
2720	Fiber Distributed Data Interface Single-Ring Adapter
2722	Fiber Distributed Data Interface Dual-Ring Upgrade Kit
2777	POWER Gt3™
2790	POWER Gt4x™ 8-bit Feature
2791	POWER Gt4x 24-bit Feature
2792	POWER Gt4™ 8-bit to 24-bit Upgrade
2794	POWER Gt4 Performance Upgrade
2795	POWER Gt4 8-bit Feature
2796	POWER Gt4 24-bit Feature
2801	5086 Attachment Adapter
2802	5085 Attachment Adapter
2914	SCSI-2 Passthrough Terminator Cable (50-Pin)
2915	SCSI Controller Passthrough Terminator Cable (60-Pin)
3600	POWERdisplay 16
3601	POWERdisplay 19
4063	8MB HD3 Memory Card
4066	16MB HD3 Memory Card
4068	16MB to 32MB HD3 Memory Select
4074	16MB to 64MB HD3 Memory Select
4091	16MB to 128MB Memory Select
4099	16MB to 256MB Memory Select

Feature Number	Description
6210	High-Performance Disk Drive Subsystem Adapter (40MB/Sec)
6211	High-Performance Disk Drive Subsystem Adapter (80MB/Sec)
6306	IBM Speech Accelerator 1
6307	IBM Speech Accelerator 2
6400	64-Port Asynchronous Controller
9234	16MB HD3 Memory Specify
9244	400MB SCSI Disk Drive Specify

Note: The displaced chassis and all associated parts removed become the property of IBM.

All other previously announced features, if installed on the Model 340, 34H, 350, 360 or 370 can be included in the upgrade to the Model 380/390. However, after the upgrade, only those features announced as orderable on the 380/390 will be available with the exception of features 6401, 6402, 9115, 9116, 9117, and 9118, which can be ordered provided that feature 6400 is already installed on the previous 300-series model.

Hardware Prerequisites:

- Model 340, 34H, 350, 360 or 370
- Minimum of 32MB memory
- Minimum of 2GB SCSI-2 disk installed

In order to achieve the improved performance of the SCSI-2 Fast/Wide Disk Drive these should not be mixed with SCSI-2 drives.

Software Prerequisites: AIX Version 3.2.5 for RISC System/6000 with additional PTFs. These PTFs are included on all Version 3.2.5 orders shipped after June 3, 1994 (labeled AIX/6000 Version 3.2.5.1). Refer to memo to users on installing these PTFs or call the IBM support center and request the PTFs referenced in APAR number IX42623. This level of AIX/6000 be installed and operational prior to beginning the upgrade.

Limitations: The RISC System/6000 Model 380/390 uses a new SCSI-2 fast/wide interface. All other external interfaces are the same as on the Models 340, 34H, 350, 360, 370.

- "Target mode" is not supported by the SCSI-2 fast/wide interface.
- The SCSI-2 fast/wide interface DOES NOT support the following devices:
 - 7206-001 External 4 mm Tape Drive
 - 7210-001 External CD-ROM Drive
 - 160MB Disk Drive features #2120, #2121, #2123, #9240, #9241 and #9242.
 - 200MB Disk Drive features #2490, #2491, #2492, #2495 and #2496.

Cables used for attaching existing SCSI devices are NOT compatible with the new SCSI-2 integrated interface. The following cables are required with the integrated SCSI-2 fast/wide interface:

Feature Number	Description
2439	8-bit IBM SCSI-2 Fast/Wide Adapter/A to Single Ported Device
2437	8-bit IBM SCSI-2 Fast/Wide Adapter/A to Dual Ported Device
2435	16-bit IBM SCSI-2 Fast/Wide Adapter/A to Dual Ported Device

Planning Information

Cable Orders: No cables are required.

Problem Determination: For problem analysis, the Model 380 and 390 diagnostic programs, with installed AIX/6000 programs, provide console routines that lead a user through problem determination and provides direction to resolve problems.

Packaging: Shipment Group

- Model 380 or 390 system unit
- Language Group — specified on the order which will include the following publications:
 - Quick reference
 - System user's guide
 - Customer support information
 - Documentation overview
 - 7012 POWERstation and POWERserver operator guide
 - POWERstation and POWERserver common diagnostics and service guide
 - 7012 POWERstation and POWERserver installation and service guide
 - System unit safety information
 - AIX Version 3.2 Diskless Workstation management guide
- Power cords
- Diagnostic diskettes

Accessories and/or Supplies: Supplies can be purchased from LEXMARK International Supplies Dealers.

Security, Auditability and Control

Security and auditability features of the systems are:

- Physical security is provided by a key lock that helps prevent cover removal when locked, unless the optional non-locking switch is ordered
- A three-position MODE switch helps provide logic security for the system
- Security tie-down cable accessory

Otherwise, these products use the security and auditability features of host hardware, software and/or application software.

User management is responsible for evaluation, selection and implementation of security features, administrative procedures and appropriate controls in application systems and communications facilities.

Terms and Conditions

Volume Discount: Volume purchasing is available under the Volume Discounts section of the IBM Customer Agreement (ICA).

Volume Orders: For information regarding volume orders, contact your IBM representative.

IBM Credit Corporation Financing: Term leases and installment payment plans are available for commercial and state and local government customers.

Customer Fulfillment Option Applies: Yes

Warranty Period: One year

The warranty for the original machine (Model 340, 34H, 350, 360, 370) controls the warranty period of the converted machine (Model 380/390) so that any time remaining from the original one year warranty on the model 300 is applied to the Model 380/390 conversion.

Replacement parts assume the remaining warranty of the parts they replaced. Additional new parts, if any, have a one-year warranty.

Warranty Service: IBM On-Site Repair (IOR)

Maintenance Service: IOR

IBM Hourly Service Rate Classification: Two

IBM Warranty Service, Maintenance Service or IBM Hourly Service may be obtained by calling 800 IBM-SERV (426-7378). IBM Hourly Service is available at the applicable rate and terms, including element exchange price if applicable.

Mid-Range System Option: The announced product is an eligible machine for the Mid-Range System Option of the ICA. A revised exhibit will be available at a later date.

Eligible Type	Discount	
	Three-Year	Five-Year
7012	12%	17%

Corporate Service Option: The announced product is an eligible machine for the Corporate Service Option of the IBM Customer Agreement. A revised exhibit will be available at a later date.

	Discount	
	Three-Year	Five-Year
Network	15%	20%
System	12%	17%

Extended Maintenance Option: The announced product is an eligible machine under the Extended Maintenance Option of the ICA.

IBM Software Support Services

The IBM AIX/6000 Support Family offers a number of technical support services designed to meet the varying system support requirements of AIX/6000 and RISC System/6000 customers. These services provide timely, knowledgeable assistance and information from IBM specialists and experts. The various options of the services provide flexibility in defining the scope of services received from IBM.

The AIX/6000 Support Service family includes:

- AIX/6000 SupportLine — provides you with telephone access to a team of IBM specialists.
- AIX/6000 Associate — an analyst is assigned to work remotely with you and become familiar with your specific systems and requirements.
- AIX/6000 ConsultLine — allows you to schedule time with the experts to address highly technical topics such as system design, performance evaluation, in-depth communications.
- AIX/6000 Performance Management — provides automated performance data collection software that continually monitors your system and transmits

results back to the performance experts for evaluation.

- AIX Technical Library/6000 — provides you with library of service and support information on a CDROM that is updated and distributed quarterly.
- AIX/6000 House Call — provides you with on-site assistance with such tasks as installation, problem assistance, software maintenance and updates.

The AIX/6000 Support family also includes packages of services designed to meet the needs of specific customer types:

- AIX/6000 New Customer Support Package
- AIX/6000 Growing Customer Support Package
- AIX/6000 Established Customer Support Package

For complete details on the AIX/6000 Support Family, refer to Services Announcement 693-004, dated March 16, 1993.

Product Availability Status: New product available

Field Installable Features: Yes

Model Conversions: Yes

Customer Setup: Yes

IBM provides customers an installation option on the RISC System/6000 300-series models. Customers can initially install their own machines or choose to have IBM perform this service for an additional fee. IBM will continue to install and service all MES features and model conversions.

Graduated Charges: The announced product is in Processor Group E5 for software with graduated charges.

Licensed Internal Code: Yes

Educational Allowance: A 20% educational allowance is available to qualifying institutions in accordance with the Attachment for Educational Allowance. The educational allowance may not be added to any other discount or allowance.

Charges

Description	Feature Number	Purchase Price	Monthly MMC ²	Removal Charge
IBM RISC System/6000 7012				
Model 380		\$22,900	\$229	
Non-locking Switch (Select)*	1101	0	0	0
2GB SCSI-2 Disk (Select)*	2587	0	0	0
Select from two 9249 or one 9263 Internal CD-ROM-2	2603	695	15	\$116
1.2GB 1/4-inch Internal Tape Drive	2630	1,995	16	116
256MB Memory Card	4095	32,000	0	116
256MB Memory Card (Select)*	4096	28,000	0	116
4.0GB 4 mm Internal Tape Drive	6142	2,695	35	192
8 mm 5/10GB Internal Tape Drive	6147	5,345	50	116
Internal CD-ROM-2 Specify	9218	0	0	116
1GB SCSI-2 Disk Specify	9249	0	0	116
2GB SCSI-2 Disk Specify	9263	0	0	116
1.2GB 1/4-inch Internal Tape Drive (Select)*	2631	1,300	0	116
4.0GB 4 mm Internal Tape Drive (Select)*	6145	2,000	20	192
8 mm 5/10GB Internal Tape Drive (Select)*	6141	4,700	35	116
Model 390		26,900	269	
Non-locking Switch(Select)*	1101	0	0	0
2GB SCSI-2 Disk (Select)*	2587	0	0	0
Select from two 9249 or one Internal CD-ROM-2	2630	695	15	116
1.2GB 1/4-inch Internal Tape Drive	2630	1,995	16	116
256MB Memory Card	4095	32,000	0	116
256MB Memory Card (Select)*	4096	28,000	0	116
4.0GB 4 mm Internal Tape Drive	6142	2,695	35	192
8 mm 5/10GB Internal Tape Drive	6147	5,395	50	116
.5MB L2 Cache	4040	2,000	0	116
1MB L2 Cache	4041	4,000	0	116
Internal CD-ROM-2 Specify	9218	0	0	116
1GB SCSI-2 Disk Specify	9249	0	0	116
2GB SCSI-2 Disk Specify	9263	0	0	116
1.2GB 1/4-inch Internal Tape Drive (Select)*	2631	1,300	0	116
4.0GB 4 mm Internal Tape Drive (Select)*	6145	2,000	20	192
8 mm 5/10GB Internal Tape Drive (Select)*	6141	4,700	35	116

² Minimum Maintenance Charge

The following features have been previously announced and are available on the Model 380 and 390:

Description	Feature Number	Description	Feature Number
SCSI-2 Fast/Wide Adapter/A	2415	Ethernet High-Performance LAN Adapter	2980
SCSI-2 Fast/Wide Differential Adapter/A	2416	Ethernet Thick/Thin Connector Interface	4221
SCSI-2 Fast/Wide Differential System to System Cable (.6M)	2424	Ethernet Twisted-Pair Connector Interface	4222
SCSI-2 Fast/Wide Differential System to System Cable (2.5M)	2425	Ethernet 10BaseT Transceiver	4224
SCSI-2 Fast/Wide Differential Y-Cable	2426	X.25 Interface Co-Processor/2	2960
SCSI-2 Differential Y-Cable	2427	X.25 Attachment Cable —X.21 —3 meter	2965
IBM Network Terminal Accelerator —256 Session	2402	X.25 Attachment Cable —V.24 —3 meter	2966
IBM Network Terminal Accelerator —2048 Session	2403	X.25 Attachment Cable —V.35 —3 meter	2967
S/390® ESCON® Channel Emulator	2754	X.25 Attachment Cable —X.21 —6 meter	2976
Fibre Channel/266 Adapter	1906	X.25 Attachment Cable —V.24 —6 meter	2977
64 Port to 128 Port Pin-out Converter	8135	X.25 Attachment Cable —V.35 —6 meter	2978
POWER GXT150M™ Graphics Adapter	2650	4-Port Multiprotocol Communications Controller	2700
TURBOWAYS 100 ATM Adapter	2984	4-Port Multiprotocol Interface Cable	2705
TURBOWAYS 100 ATM Adapter Device Drive/6000	5063	Multiprotocol Attachment Cable —X.21	2704
SCSI-2 Differential High-Performance External I/O Controller	2420	Multiprotocol Attachment Cable —V.35	2702
SCSI-2 Differential Y-Cable	2422	Multiprotocol Attachment Cable —EIA-232/V.24	2706
SCSI-2 Differential System-to-System Cable	2423	3270 Connection Adapter	2990
1GB SCSI-2 Disk Drive	2555	FDDI Fiber Single Ring Adapter	2724
2GB SCSI-2 Disk Drive	2580	FDDI Fiber Dual Ring Upgrade	2723
RISC System/6000 ESCON Control Unit	2756	FDDI-STP Single Ring Adapter	2725
S/370™ Block Multiplexer Channel Adapter	2759	FDDI-STP Dual-Ring Upgrade	2726
Digital Trunk Dual Adapter	6305	Block Multiplexer Channel Adapter	2755
High-Performance Subsystem Adapter (40/80 MB/sec)	6212	Block Multiplexer Channel Adapter Cable	2757
Diagnostic Wrap Plugs	3750	Block Multiplexer Channel Cable Assembly	2758
32MB Memory Card	4067	Realtime Interface Co-Processor: Multiport/2 .5MB	7002
64MB Memory Card	4069	Realtime Interface Co-Processor: Multiport/2 1MB	7004
64MB Memory Select	4071	Realtime Interface Co-Processor: Portmaster® 1MB	7006
128MB Memory Card	4090	Realtime Interface Co-Processor: Portmaster Adapter/A (2MB)	7008
128MB Memory Select	4092	Realtime Interface Co-Processor: Multiport/2 Four Port RS-232	7022
Memory SIMMS Upgrade 128MB	5128	Realtime Interface Co-Processor: Multiport/2 Six Port RS-232	7024
Memory SIMMS Upgrade 32MB	5032	Realtime Interface Co-Processor: Multiport/2 Eight Port RS-232	7026
Memory SIMMS Upgrade 64MB	5064	Realtime Interface Co-Processor: Multiport/2 Eight Port RS-422	7028
SCSI-2 External I/O Controller	2410	Realtime Interface Co-Processor: Multiport/2 Four Port RS-232/ Four Port RS-422	7030
SCSI High-Performance External I/O Controller	2835	Realtime Interface Co-Processor: Portmaster Eight Port RS-232	7042
SCSI Controller Cable	2832	Realtime Interface Co-Processor: Portmaster Eight Port RS-422	7044
SCSI-2 Controller Cable	2836	Realtime Interface Co-Processor: Portmaster Six Port V.35	7046
SCSI Device-to-Device Cable	3130	Cable — Multiport/2 Four or Eight Port RS-232 or RS-422	7102
8-Port Async Adapter —EIA-232	2930	Cable — Multiport/2 Six Port RS-232	7104
16-Port Async Adapter —EIA-232	2955	Cable — Portmaster Six Port V.35	7106
Multi-Protocol Communications Adapter	2959	Cable — Portmaster Eight Port RS-232 or RS422	7108
8-Port Async Adapter —EIA-422A	2940	Graphics Input Device Adapter	2810
16-Port Async Adapter —EIA-422A	2957	Graphics Input Device Cable	2811
8-Port Async Adapter —MIL-STD 188	2950	POWER Gt3i™	2768
Multiport Interface Cable	2995	Color Graphics Display Adapter	2770
16-Port Interface Cable —EIA-232	2996	POWER Gt4e™ Graphics Adapter	2776
16-Port Interface Cable —EIA-422A	2997	7235 POWER GTO™ Accelerator Feature	4350
Async Cable EIA-232/V.24	2936	POWERdisplay 17	3607
Printer/Terminal Interposer EIA-232	2937	POWERdisplay 20	3608
Terminal Cable —EIA-422A	2945	19-Inch Equipment Rack Mounting Hardware	6531
PC Parallel Printer Cable	3100	Rack Mount/Environmentally-Hardened Option	6532
128 Port Cluster Controller	8128	M-Video Capture Adapter	2400
16 of 128 Port Cluster Box, RJ45 Connections	8130	Digital Trunk Adapter	6300
Cable, 15-foot for 128 Port Cluster Box	8131	Digital Trunk Dual Adapter	6305
Cable, 9-foot for 128 Port Cluster Box	8132	Audio Capture and Playback Adapter	6301
Interposer, 128 Port Cluster RJ45 to DB25	8133		
Token-Ring High-Performance Network Adapter	2970		

Description	Feature Number	Model		Model Conversion Purchase Price*
		From	To	
Keyboard — U.S. 101 Keys	6010	340	380	\$15,000
Keyboard — 102 Keys (Belgian-Dutch/French)	6011	340	390	18,500
Keyboard — 102 Keys (Canadian French)	6012	34H	380	15,000
Keyboard — 102 Keys (Danish)	6013	34H	390	18,500
Keyboard — 102 Keys (Finnish)	6014	350	380	15,000
Keyboard — 102 Keys (German)	6016	350	390	17,500
Keyboard — 102 Keys (French)	6015	360	380	15,000
Keyboard — 102 Keys (Italian)	6017	360	390	17,500
Keyboard — 102 Keys (Norwegian)	6019	370	390	17,000
Keyboard — 102 Keys (Portuguese)	6020	380	390	13,000
Keyboard — 102 Keys (Spanish)	6021			
Keyboard — 102 Keys (Swiss)	6022			
Keyboard — 102 Keys (United Kingdom-English)	6023			
Keyboard — 102 Keys (Icelandic)	6024			
Keyboard — 102 Keys (Turkish)	6025			
Keyboard — 102 Keys (Greek)	6026			
Keyboard — 106 Keys (Japanese-KANJI)	6030			
Keyboard — 106 Keys (Korean)	6031			
Keyboard — 106 Keys (Chinese Traditional-Taiwan)	6033			
Keyboard — Dutch	6034			
Keyboard — Turkish	6035			
3-Button Mouse	6041			
Language Group — U.S. English	9300			
Software Preload	5005			
Power Cord	9800			
Power Cord	9986			
Ethernet Thick/Thin Connector Specify	9000			
Ethernet Twisted-Pair Connector Specify	9001			
3.5-inch Diskette Specify	9221			
32MB Base Memory Specify	9235			
CCS Custom Services Specify	0986			
16-Port Async Concentrator	6401			
RJ-45 to DB-25 Converter Cable	6402			
Transformer — 100 to 110 V AC	9115			
Transformer — 115 to 127 V AC	9116			
Transformer — 200 to 220 V AC	9117			
Transformer — 200 to 240 V AC	9118			

*Parts removed or replaced become the property of IBM and must be returned.

Note: Features #6401, #6402, #9115, #9116, #9117, #9118 only orderable on upgraded machines that have the 64-port Async Controller (feature 6400) installed.

Description	Feature Number	Purchase Price	Monthly MMC ¹	Removal Charge
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256MB Memory Card

Model 34H, 355, 365, 375, 360, 370, 36T, 37T	4095	\$32,000	\$0	\$116
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256MB Memory (Select)* (32MB to 256MB)

Model 375, 36T 37T, 370	4096	28,000	0	116
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256MB Memory (Select)* (16MB to 256MB)

Model 34H, 355, 365, 360	4099	30,560	0	116
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* Select features can only be ordered with the initial system plant order.