IBM RISC System/6000 Model 40P Entry Workstation

The RISC System/6000® Model 40P entry workstation offers RISC System/6000 performance at a new, low workstation price. The Model 40P is designed to become the desktop computer of choice for running today's advanced technical or business applications. Built on the PowerPC 601™ microprocessor, the system delivers the performance required to effectively run today's AIX® applications. The exceptional performance is complemented by:

- Support for Industry Standard Architecture (ISA) and Peripheral Component Interconnect (PCI)

- Support for processor upgrades to provide growth and investment protection

- The capability to expand the memory from 16MB to 192MB and the internal hard disk storage from 360MB to 4GB

- A standard business audio sound system that enables stereo in/out, stereo headphone and microphone

All of this in a desktop proves the maxim, "the whole is greater than the sum of the parts," by creating a computing platform that can handle the demanding applications of today and the challenging applications of tomorrow.

In addition, IBM offers a special entry configuration at a non-discountable price. This model (7020SPE) includes:

- 16MB memory
- 360MB disk drive
- IBM E15 Graphics Adapter
- Ethernet Local Area Network (LAN) Adapter
- 1.44MB diskette drive
- AIX® Version 4.1.1 (preinstalled)
- Ultimedia® Services Version 2.1 for AIX CD-ROM
- Keyboard, mouse and publications
- IBM 14V Color Monitor (6324-001), maximum viewable screen size measured diagonally — 13.0-inch (330 mm)

Note: No changes or substitutions may be made in the configuration of this specially priced model.

Purchase Price: Prices start at $3,995 for the 7020SPE model.

Planned Availability Date: October 28, 1994

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IN BRIEF . . .

♦ Newest RISC System/6000 entry workstation

♦ Introduction of new affordable price point

♦ Rich desktop workstation function:

- Exploits the 66MHz PowerPC 601
- AIX Version 4.1.1 for Clients operating system included
- Entry, mid-range 2D PCI graphics options
- Standard business audio with speaker
- Audio, SCSI-2, parallel, and two serial ports

♦ Superior expansion capability:

- Performance slot for:
    - – 256KB Level 2 (L2) Cache option
    - – Future PowerPC 604 Upgrade
- Two PCI slots (one used for graphics)
- Three ISA slots (one used for communications)
- 16MB to 192MB system memory
- Up to 4GB capacity via 360MB, 540MB, 720MB, 1GB, and 2GB disk drives
- Four bays for diskette, CD-ROM, disk drives, and tape

Description

The RISC System/6000 Model 40P entry workstation is a full-size desktop member of the RISC System/6000 family, based on the PowerPC microprocessor.

The Model 40P delivers the advanced technology of the PowerPC processor, with its processing power, in a remarkable open system. Designed from the ground up to adhere to industry standards like ISA, PCI, and SCSI-2, the Model 40P allows users to exploit the large number of PC components that adhere to these formats. Model 40P provides an open and powerful system for solving today's and tomorrow's most complex problems.

Direct Response Ordering

Base Machine:

Description	Machine	Model
RISC System/6000 40P	7020	0U0

Note: Part number 7020SPE is a special pre-configured model available at a non-discountable prices.

Required Components: The initial system order must contain the following components from the list of Selectable Required Components:

- Memory
- Keyboard
- Graphics Adapter
- Diskette Drive
- Hard Disk Drive
- Mouse
- Operating System
- Power Cord

Note: A monitor is required and may be ordered separately.

The following models are pre-configured, Build-to-Backlog models available through the General Entry Management System (GEMS):

Description	Model/Type	GEMS Order Number

RISC System/6000 40P
  16MB memory (2-8MB SIMMS)
  360MB Hard Disk Drive
  IBM E15 Graphics Adapter
  1.44MB, 3.5-inch Diskette Drive
  AIX Mouse (3-Button)
  101-key Enhanced Keyboard
  Operating System, AIX Version 4.1.1
    (preinstalled)
  AIX and IBM Ultimedia Services
    Version 2.1 for AIX CD-ROMs
  Documentation and other ship
    group items
	7020/B1B	7020B1B

RISC System/6000 40P
  32MB memory (4-8MB SIMMS)
  720MB Hard Disk Drive
  IBM S15 Graphics Adapter
  CD-ROM Drive
  1.44MB, 3.5-inch Diskette Drive
  AIX Mouse (3-Button)
  101-key Enhanced Keyboard
  Operating System, AIX Version 4.1.1
    (preinstalled)
  AIX and IBM Ultimedia Services
    Version 2.1 for AIX CD-ROMs
  Documentation and other
    ship group items
	7020/D1D	7020D1D

Description	Model/Type	GEMS Order Number

RISC System/6000 40P
  16MB memory (2-8MB SIMMS)
  540MB Hard Disk Drive
  IBM S15 Graphics Adapter
  Ethernet Adapter
  1.44MB, 3.5-inch Diskette Drive
  AIX Mouse (3-Button)
  101-key Enhanced Keyboard
  Operating System, AIX Version 4.1.1
    (preinstalled)
  AIX and IBM Ultimedia Services
    Version 2.1 for AIX CD-ROMs
  Documentation and other ship
    group publications
	7020/B1C	7020B1C

RISC System/6000 40P
  32MB memory (4-8MB SIMMS)
  720MB Hard Disk Drive
  IBM S15 Graphics Adapter
  Ethernet Adapter
  1.44MB, 3.5-inch Diskette Drive
  AIX Mouse (3-Button)
  101-key Enhanced Keyboard
  Operating System, AIX Version 4.1.1
    (preinstalled)
  AIX and IBM Ultimedia Services
    Version 2.1 for AIX CD-ROMs
  Documentation and other
    ship group items
	7020/D2D	7020D2D

Model 40P Software

The Model 40P offers a low-priced platform for a set of AIX Solutions. This extension of the RISC System/6000 family into the entry technical and commercial client opportunity continues the RISC System/6000 leadership in open systems. The Model 40P includes:

- AIX Version 4.1.1 for Clients and IBM Ultimedia Services Version 2.1 for AIX, included with all systems

- An evaluation copy of Insignia SoftWindows** is preinstalled on the system

- Support for remote IPL and LAN install and management

- Software backup and features delivered on two CD-ROMs in system package

- A lightweight subset of AIX/Client preinstalled on all systems

AIX Version 4.1.1 for Clients and IBM Ultimedia Services Version 2.1 for AIX are included with each system. A selected subset of AIX Version 4.1.1 for Clients is preinstalled on the hard disk. Insignia SoftWindows requires an additional 50MB, but is easily removed if desired. The optional installable items from AIX/Client and the Ultimedia Services are included on CD-ROM disks included in the system package.

Investment Protection: The Model 40P can grow as needs grow. The system is designed for easy user installation of L2 cache and additional memory, disk, tape, and network communications. New and additional features from IBM, such as processor upgrades, will also be designed for easy customer installation to protect the initial investment.

L2 Cache

Performance can be enhanced by the optional IBM L2 Cache.

Modern RISC processors like the PowerPC 601 in the Model 40P process data at a prodigious rate — for example, the 601 processor in the Model 40P can execute a maximum of five operations every 15 nanoseconds. A significant challenge in computer system design is to keep the processor filled with enough new instructions and data so it can operate at maximum capacity.

A typical technique is the use of a cache, a small amount of very fast memory holding the next few thousand instructions and data for the processor. Given the sequential nature of the instruction stream of most customers' programs, very often the next instruction and data to be processed will be found in the cache, and can be quickly executed by the processor, without requiring the access of the slower main memory.

Performance of many programs is dramatically improved by the introduction of a secondary L2 cache, in addition to the on-chip 32K L1 cache. The optional 256KB of L2 cache can be accessed by the processor quicker than conventional memory. This provides an additional cache for larger programs, thus increasing the probability that the next instruction or data can be found in the cache, and avoiding the access of main memory.

The performance benefits of the L2 cache are achieved without modification to the application software.

Graphics Adapters

The Model 40P uses PCI-based graphics adapters and offers high performance for graphics-intensive applications. The adapter choices depend on the price/performance the user requirements. The adapters are:

- IBM S15 Graphics Adapter

  A high-performance, VRAM-based PCI graphics adapter with integrated video coprocessor for use as a premium graphics solution for PowerPC Reference Platform systems. The IBM S15 Graphics Adapter comes in a 2MB fixed version.

- IBM E15 Graphics Adapter

  A low-cost, medium-performance, DRAM-based graphics adapter for use as an entry graphics solution for PowerPC Reference Platform systems using a PCI system bus. The adapter uses the 64-bit S3 Vision864 graphical user interface (GUI) accelerator, and the 16-bit 135MHz S3 SDAC. The IBM E15 Graphics Adapter comes standard with a 2MB frame buffer, providing for up to 1600 x 1200 resolution.

Product Positioning

The announcement of the IBM RISC System/6000 Model 40P entry workstation provides a new, low-price point for the RISC System/6000 workstation product line. The 40P balances new features with proven RS/6000 performance and reliability. The 40P was developed with superior expansion, delivering a system flexible enough for customers in a range of commercial and technical applications.

The 40P complements the current RS/6000 workstations by providing AIX compatibility and new graphics adapters optimized for application areas that are less demanding than engineering graphics such as retail, insurance, and finance industry applications.

The 40P delivers excellent investment protection through flexible options for visual, storage, and connectivity. Specifically, these options include:

- Two industry standard PCI graphics adapters providing 8-bit color
- Integrated business audio
- Three industry standard ISA slots, two PCI slots
- 16MB to 192MB memory
- Up to 4GB internal storage
- Ethernet, token-ring or X.25 LAN adapters

Customers' investment is further protected by an upgrade in system performance through the optional IBM L2 cache and in the future, a PowerPC 604 upgrade.

The RS/6000 Model 40P entry workstation provides a glimpse into the future with its PowerPC Reference Platform architecture that allows other system providers to develop open and compatible systems based on the PowerPC Architecture™. IBM RS/6000 workstations will continue to provide industry leading system and graphics performance to a wide range of technical and commercial customers with POWER and PowerPC microprocessors and IBM graphics technology.

Statement of General Direction

IBM intends to provide a PowerPC microprocessor upgrade option for the IBM RISC System/6000 Model 40P. This processor upgrade card will include a 604 PowerPC microprocessor and will significantly enhance the system performance of the IBM RISC System/6000 Model 40P product. This 604 processor upgrade represents IBM's current intent, which is subject to change or withdrawal, and represents only goals and objectives.

Publications

The following hardware publications are shipped with the product.

Title	Part Number
System Library	19H1245
System Management Services Diskettes (2)	19H1246

The *Hardware Maintenance Manual* (S83G-7698, 83G7698) is available to Model 40P authorized maintenance providers.

Education Support

No self-study/classroom courses will be available specifically for the Model 40P.

A description of self-study and classroom courses is contained in the IBM education catalogs.

Call IBM Education and Training at 800-IBM-TEACH (426-8322), for schedules, education catalogs, and enrollments.

Technical Information

Specified Operating Environment

Physical Specifications:

IBM RISC System/6000 Model 40P Base Machine:

- PowerPC 601 66MHz Microprocessor

- L1 cache of 32KB
- Upgrade socket, L2 cache
- Six memory connectors (accepts 8MB or 32MB memory modules)
- 5 X 4 cabinet (approximately 17.9 x 17.6 x 4.9 inches)
- Slots (five):
  - Three ISA Adapter slots, two full-size and one short
  - Two PCI Adapter slots, two half-size (one occupied by the graphics adapter)
- Bays (four):
  - 3.5-inch diskette drive bay
  - 3.5-inch hard disk drive bay
  - 5.25-inch CD-ROM drive bay
  - 5.25-inch media bay (accepts full-high or half-high media device)
- Input/Output Ports:
  - Keyboard port
  - Mouse port
  - 9-pin serial ports (two)
  - 25-pin parallel port
  - SCSI-2 port
  - Display port (13W3)
  - Microphone port (stereo)
  - Headphone port (stereo)
  - Audio input/audio output stereo ports (two)
- Internal speaker
- 200-Watt power supply

All possible configurations are shown in the following chart:

Bay 1 (3.5–inch) Diskette Drive 1.44MB	Bay 3 (Slimline 5.25–inch) CD–ROM only
Bay 2 (3.5–inch) Hard Disk Drive 360MB to 2GB	Bay 4 (5.25–inch) Tape Drive, 5.25–inch or SCSI device, 3.5–inch

Mechanical Specifications:

	Horizontal Orientation	**Vertical Orientation**
Depth:	447 mm (17.6 in.)	Same
Height:	124 mm (4.9 in.)	477 mm (18.8 in.)
Width:	454 mm (17.9 in.)	215 mm (8.5 in.)

Weight:

Minimum configuration: 12 kg (26 lb)
Maximum configuration: 14.5 kg (32 lb)

System Unit Carton:

- Single Pack Dimensions: 25.62 x 21.50 x 12.50 inches
- Single Pack Weight: 42 pounds
- Quantity per Pallet: 6 pounds
- Multipack Dimensions: Multipack does not apply
- Multipack Quantity: Multipack does not apply
- Multipacks/Pallet: Multipack does not apply
- Pallet Load Dimensions: 48 x 40 x 32 inches
- Pallet Load Weight: 275 pounds*
- Estimated Safe Stacking Height: 4 high

*   40 pounds added for pallet

Electrical Power Specifications:

- 200-Watt power supply; dual voltage, controlled by a switch on the unit

- 100-125 V AC (nominal); 50-60Hz; 4 Amp (maximum)
- 200-245 V AC (nominal); 50-60Hz; 4 Amp (maximum)

Environmental Specifications:

- Air Temperature:
  - System on: 16° to 32° C (61° to 90° F)
  - System off: 10° to 43° C (50° to 109° F)
- Humidity:
  - 8% to 80%; maximum altitude 2134 m (7000 ft)

Acoustic Noise Emission Values:

- Average sound-pressure levels:
  - At operator position: 39 dBa operating, 38 dBa idle
  - At bystander position (1 meter): 35 dBa operating, 34 dBa idle

Note: The noise emission level stated is declared (upper limit) A-weighted sound power level (in Bels) for a random sample of machines, typically configured for operating and idle modes. These levels were measured in controlled acoustical environments according to procedures specified by the American National Standards Institute (ANSI) S12.10 and ISO 779, and are reported in conformance with ISO 9296.

Hard Disk Specifications:

Formatted Capacity	364MB	540MB	728MB	1GB	2GB
Average Media data Mb/sec	44.6	44.6	44.6	48.0	94
Rate MB/sec	10	10	10	10	10
Average Seek Time ms	13	13	13	8.8	9.3
Average Latency ms	6.67	6.67	6.67	5.56	4.17
Sector Interleave	1:1	1:1	1:1	1:1	1:1
Interface	SCSI–2	SCSI–2	SCSI–2	SCSI–2	SCSI–2
Write Cache	Yes	Yes	Yes	Yes	Yes

MB = Million bytes
Mb = Million bits
ms = Milliseconds

Actual user-accessible capacity may vary slightly, based on different operating environments.

CD-ROM Specifications:

- Double-speed Toshiba CD-ROM drive ─ 5.25-inch Slimline
- Tray-loading CD-ROM mechanism supports 12 and 8 cm disks
- SCSI-2 interface
- Supports standard and extended XA formats
- Multisession capability supports Photo-CD applications
- Data capacity: 680MB
- Single speed: 150KB
- Double speed: 300KB
- Access time: 385 ms
- Full stroke access time: 650 ms (1X), 1000 ms (2X)
- Buffer memory: 64KB
- Operating environment: 5° to 50° C, 8% to 80% Rh

Model 40P Business Audio Hardware Performance and Specifications:

- Sampling rate: 48KHz per channel maximum
- Channel bandwidth: 20Hz to 20,000Hz (+1/-3 dB)
- Dynamic range: 16-bit resolution
- S/(N+D) (line input): 80 dB minimum
  (f=1 KHz, measured at line out)
- S/(N+D) (microphone Input): 60 dB minimum
  (f=1 KHz, measured at line out)

Line Input:

- Input impedance: 4K ohms (for use with 2K ohm source impedances or lower)
- Signal level: 2 V rms nominal
- Connector ─ stereo 3.5 mm 3-conductor mini-phone jack with:
  - Tip: Left channel
  - Ring: Right channel
  - Sleeve: Ground

Microphone Input:

- Input impedance: 3.8K ohms (for use with 50 to 1000 ohm microphones)
- Phantom power: Stereo .5 ma. for nominal operation at 2 V DC
- Signal level: 10 mV rms nominal up to 50 mV rms maximum
- Connector ─ stereo 3.5 mm 3-conductor mini-phone jack with:
  - Tip: Left channel
  - Ring: Right channel
  - Sleeve: Ground

CD-DA Input (internal):

- Input impedance: 3K ohms
- Signal level: 1 V rms nominal
- Connector: 1 x 4 MOLEX male connector

Line Output:

- Output impedance: 1K ohm (for use with 10K ohm load impedances or higher)
- Signal level: 2 V rms nominal
- Connector ─ stereo 3.5 mm 3-conductor mini-phone jack with:
  - Tip: Left channel
  - Ring: Right channel
  - Sleeve: Ground

Headphone Output:

- Output impedance: 12 ohms
- Signal level: 1.5 V rms nominal
- Connector ─ stereo 3.5 mm 3-conductor mini-phone jack with:
  - Tip: Left channel
  - Ring: Right channel
  - Sleeve: Ground

System Speaker Output:

- Output impedance: 8 ohms (typical)
- Power output: 1 Watt maximum (8 ohm load)
- Connector: Mono two pin Berg type

Operating Environment:

- Temperature: 16° to 32° C (61° to 90° F)
- Relative humidity: 8% to 80%
  (maximum altitude 2134 m (7,000 ft))
- Wet bulb: 29.6
- Heat output:
  - 290 Btu (maximum configuration)
  - 185 Btu (minimum configuration)
- Electrical power:
  - .52 KVA Maximum 90 to 137 V AC
  - .52 KVA Maximum 180 to 265 V AC

- Capacity of exhaust: 8.5 cubic meter/minimum 20 CFM
- Noise Level:
  - 4.9 dB idle
  - 5.1 dB operating (with 44 dB operating sound pressure)
- Leakage current: 70 mA
- Starting current: 23 amperes

Agency Approvals:

EMC Conformance Classification:

- USA: FCC Class B
- Japan: VCCI Class 2
- Europe: CISPR 22 Class B, CE94
- Korea: MOC

Product Safety/Country Testing/Certification:

- USA: UL
- Canada: CNL (CSA or CUL)
- Germany: Safety, TUV
- Europe: EN60-950

Environmental Impact Assessment: Model 40P was developed in compliance with corporate policy letter number 139 (Environmental Affairs).

The Environmental Impact Assessment Number is 818P.

Model 40P complies with Corporate Standard C-S 3-0527-002 (1991-06) Control of Chemicals in IBM Facilities, Requirements and Responsibilities.

Homologation:

Telecom Environmental Testing (Safety and EMC): The Model 40P and applicable components meet the environmental testing requirements of the country Telecom. The testing and approval process is ongoing.

Environmental Test

Country	Safety	EMC
Canada	CSA	
Chile	Telecom	
Denmark	DEMKO	
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
Norway	NEMKO	
Spain	Ministry of Industry	
Sweden	SEMKO	
Switzerland	SEV	
U.K.	BABT	

ISO 9000 Registered IBM Locations:

Research Triangle Park, North Carolina, USA
  - Manufacturing ISO 9001
Greenock, Scotland
  - Manufacturing ISO 9001
Austin, Texas, USA
  - PC Co. ECAT Manufacturing ISO 9001
  - AIX Software Development ISO 9001

Supported IBM monitors compliant with ISO 9241 Part 3:

Description	Machine Type/Model	Part Number	Maximum Viewable, Screen Size, Measured Diagonally
IBM 14V Color Monitor	6324/001	6324001	13.0 inches
IBM 15V Color Monitor	6325/001	6325001	13.7 inches
IBM 17V Color Monitor	6327/001	6327001	15.8 inches
IBM 21P Color Monitor	9521/001	9521002	19.1 inches
IBM 14P Color Monitor	9524/001	9524004	13.0 inches
IBM 15P Color Monitor	9525/001	9525004	13.7 inches
IBM 17P Color Monitor	9527/011	9527004	15.8 inches

Note: IBM 6314, 6317, and 6319 monitors cannot be used on the Model 40P. Connecting a 631x monitor could result in permanent damage to the monitor.

Hardware Requirements:

Standard Components: The initial order must contain the following required components that you can select:

- Memory
- Graphics adapter
- Keyboard
- Hard disk drive
- Diskette drive
- Mouse
- Operating system

External Supported Devices: For up-to-date information on supported devices, contact your local IBM representative.

Software Requirements: The following operating system is included:

- AIX Version 4.1.1
- IBM Ultimedia Services Version 2.1 for AIX

Compatibility: The Model 40P is designed to maintain compatibility with adapters and devices, which fully support the ISA and PCI interfaces.

AIX Version 4.1.1 for Clients supports the full range of applications on the 40P. The necessary hardware and subsystems are supported. As a general guide, applications requiring 3-D features, server functions, and communication hardware not available with the Model 40P should not be executed, including any applications that exceed the physical limits of available memory and storage. Attachment of external SCSI devices can be used to extend the capability of the Model 40P workstation.

Hardware Compatibility: The IBM RISC System/6000 Model 40P entry workstation is designed to maintain compatibility with adapters and devices, which fully support the ISA and PCI interfaces.

Memory: Model 40P supports 168-pin industry standard 8MB and 32MB memory modules.

- 8MB (70 ns) memory module (64-bit, 168-pin) parity

- 32MB (70 ns) memory module (64-bit, 168-pin) parity

L2 Cache: Model 40P supports 9ns IBM L2 Cache.

Hard Disk Drive: The Model 40P uses SCSI-2 interfaced hard disk drives in varied capacities in the industry standard 3.5-inch format. Internal hard disk drives available are 360MB, 540MB, 720MB, 1GB, and 2GB.

SCSI-2 Devices: SCSI devices may be internal (maximum three) or external (maximum two) for a total maximum of five on the system. SCSI-2 devices are hard disk files and tape drives. A hard disk drive, for example, may be located internally or externally in a SCSI-2 enclosure.

The first external SCSI device requires the following:

- One 3510 SCSI-2 enclosure
- SCSI-2 active terminator
- SCSI-2 external cable (system to option)

Diskette Drive: The Model 40P uses the industry standard "AT®" interface 3.5-inch diskette drive of 1.44MB format.

CD-ROM Drive: The CD-ROM is a 5.25-inch, 660MB, double-speed, SCSI-2 interface CD-ROM with a data rate of 360KB/s supporting CD-ROM XA format.

Business Audio: The Model 40P uses the Crystal 4231 business audio chip.

Mouse/Pointing Device: The Model 40P will support the IBM AIX compatible 3-button mouse.

Serial Ports: The Model 40P supports two 16550 9-pin connectors with RS232D electrical interface.

Parallel Port: One bidirectional ECP port

Keyboard: The Model 40P will support the IBM Enhanced Keyboard.

Monitors: The Model 40P will support the IBM 6324, 6325, 6327, 9524, 9525, 9527, and 9521 monitors. For non-IBM monitors, the user must determine whether a selected graphics adapter has been tested with the non-IBM monitor.

Note: The 631x monitors will not work with Model 40P.

Software Compatibility: AIX Version 4.1.1 for Clients supports the full range of applications on the Model 40P. As a general guide, applications requiring 3-D features, server functions, and communication hardware not available with the Model 40P should not be executed, including any applications that exceed the physical limits of available memory and storage. Attachment of external SCSI devices can be used to extend the capability of the Model 40P workstation.

Limitations:

- The Model 40P has six memory slots. The minimum memory configuration is 16MB and the maximum memory configuration is 192MB using 8MB or 32MB memory modules in any combination.

- The three ISA slots can accommodate three full ISA cards. If the system contains an L2 cache or 604 upgrade card, one of the ISA slots will be restricted to ISA cards less than 171 mm in length.

- The Model 40P supports two PCI slots. As the graphics adapter occupies one slot, one PCI slot is available to the customer.

- Maximum data transfer rate of the CD-ROM is 300KB/sec.

- Maximum of five SCSI-2 devices can be attached; three internal and two external.

- IBM 6314, 6317, and 6319 monitors **cannot** be used on the Model 40P. Connecting a 631x monitor could result in permanent damage to the monitor. Model 40P will also not support an 85xx set of non-multisync monitors.

- A maximum of one graphics adapter of each type is supported.
- Keyboards are PS/2® -style keyboards.

Software Security Features:

- Security modes may be set in software under password control. A mechanical keylock is provided to secure the cover only.
- The external SCSI port cannot be disabled for C2 security compliance.

Ports:

- Serial ports use the compact 9-pin format in place of the 25-pin format.
- Tablet connections must be made via serial ports.

Diagnostics:

- On-screen diagnostics provide less cryptic messages than LEDs.
- There are no LEDs for failure information or error code readout.
- Diagnostics diskettes are provided with the system unit. Diagnostics cannot be run from the hard disk drive or while the normal operating system is running.

Data Protection and Reliability:

- Parity memory provides data protection. Previously announced RS/6000 models used Error Checking and Correction (ECC) memory.
- A UPS or surge protector can increase data reliability if a power outage occurs. The Emergency Power Off Warning signal (EPOW), which alerts the operating system to power failures, is not provided.

Planning Information

Customer Responsibilities: The Model 40P is designated as a unit for customer setup. Customer setup, service, and programming publications are available. Customer setup allowance is one day. By following the setup instructions, the user attaches the keyboard and peripherals and turns the AC power on to the power supply. The preinstalled operating system will be loaded and operational. If the operating system does not come up, system documentation steps the user through start-up procedures.

Cable Orders: A power cord is provided in the shipment group.

Installability: The Model 40P system requires under an hour for installation. Installation includes unpacking, setting up, and powering on system. Additional time is required to install other memory, other features, and additional software products.

Problem Determination: The Customer Problem Analysis and Resolution (CPAR) guides contain self-test and diagnostic procedures, which assist the customer in isolating a defective machine element. During the warranty period, the failing element will be replaced on-site. An IBM Service Agreement is recommended outside the warranty period.

IBM Support Services: Ongoing technical support services for this product are available for a fee on an hourly or subscription basis from the AIX Support Family of services. These technical support services include operational assistance, remote and on-site consulting, system planning and design, project management, and

implementation. For additional information, contact your IBM representative or authorized remarketer, or call 800-CALLAIX (255-5249). Refer to the Support Family Enhancements and New Technical Support Structure, Services Announcement 694-018, dated July 26, 1994, for further details.

Security, Auditability, and Control

The following security features help protect the computer, the hardware inside, and the information stored on the hard disk:

- Cover lock and keys:

  Provide mechanical protection against unauthorized access to the inside of the computer.

- Tie-down feature:

  Provides the capability to secure the computer to a stationary object.

- Power-on Password:

  Helps prevent unauthorized use of the computer.

- Supervisory password:

  Prevents the unauthorized changing of the startup-device sequence and other system configuration information, as well as the unauthorized use of system utility programs. When set, the supervisory password overrides the power-on password.

The AIX Version 4.1.1 operating system provides a system-lockup capability as an additional security measure. Check the operating system documentation for details.

This product uses the security and auditability features of the operating system 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 not available under the volume discounts section of the IBM Customer Agreement (ICA).

Discounts established for other RISC System/6000 systems under previous contracts do not apply.

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

Warranty Period:

- One year IBM On-site Repair (IOR)
- Optional Features:

  The warranty period of IBM Optional Features is the stated warranty period, or the remaining warranty of the IBM system in which the optional feature is installed, if purchased new during the IBM system warranty.
- Media (diskettes and CD-ROMs) — three months

Program Warranty: Central Service will be available until May 2, 1996.

Program services offers a method of reporting code-related problems for AIX Version 4.1.1. The base set of program services is provided as part of the IBM basic software license agreement. Problems may be reported via e-mail, facsimile, or U.S. Mail, and will be responded to by using the same method as submitted. IBM will respond to customer inquiries within two business days of e-mail or facsimile receipt, and seven days of U.S. Mail receipt advising of the problem disposition. If the problem reported is not known to be a code-related problem, the customer will be informed that IBM will continue to work on it for a fee if the customer does not have a support contract. If the problem is determined to be caused by an error in IBM code, the fee will be waived.

Licensing: The program in this announcement is licensed under the terms of the IBM License Agreement for Programs.

- Program Warranted: Yes
- Variable Charges Apply: No
- Distributed Features Apply: No
- Usage Restriction Applies: Yes

  The customer cannot exceed the maximum number of system users.

Hardware Warranty Service: The warranty is 24 hours, 7 days a week — same day service.

Alternative Service: None

Maintenance Service: IOR

IBM Hourly Service Rate Classification: One 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.

Product Availability Status: New product available

Field Installable Features: No

Model Conversions: No

Customer Setup: Yes

Licensed Internal Code: No

National Education Price (NEP): A National Education Price is available under the terms and conditions of the National Education Price List. The NEP price, which represents a 5% discount from the single unit price, is not subject to any further discount or allowance. The machines in this announcement will be included in the National Education Price List.

Charges

Machine Type/Model	Part Number	Purchase Price
Specially Priced Model	7020SPE	$3,995

Machine Type/Model	Part Number	Annual MMC
7020-0U0	70200U0	$600
Specially Priced Model	7020SPE	600

Pre-configured Models (GEMS Products)

RISC System/6000 40P

Machine Type/Model	Part Number	Purchase Price
7020-B1B	7020B1B	$4,165
7020-D1D	7020D1D	6,095
7020-B1C	7020B1C	4,625
7020-D2D	7020D2D	5,995

Machine Type/Model	Part Number	Annual MMC
7020-B1B	7020B1B	$600
7020-D1D	7020D1D	600
7020-B1C	7020B1C	600
7020-D2D	7020D2D	600

MMC = Minimum Maintenance Charge

Options Available for Later Purchase

	Part Number	Single Unit Price
L2 Cache Option:		
IBM L2 Cache (256KB plus bracket)	11H5887	$375
Graphics Option:		
IBM S15 Graphics Adapter	11H5303	800
CD-ROM Drive Option		
CD-ROM 660MB 5.25-inch Slimline	11H6102	300
External SCSI-2 Device Option:		
SCSI-2 External Cable (Card to opt)	8185230	200