RS/6000

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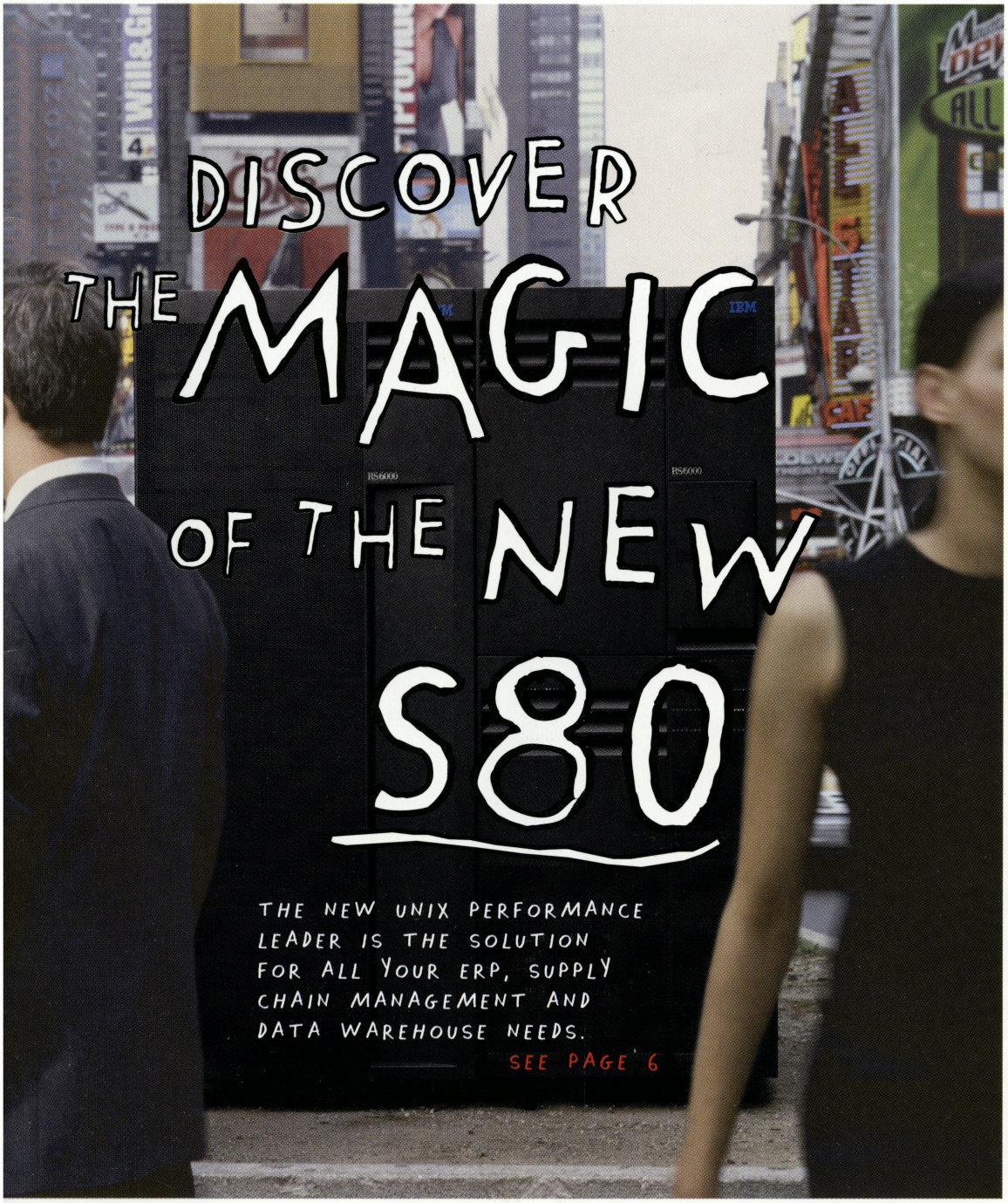

NEW!



Page 7
The new HA-S80: Unmatched power with the ultimate in high availability.

NEW!



Page 16
The new Model B50: The compact, low-cost server of choice for Internet and Application Service Providers.

NEW!



Page 36
Enterprise Storage Server: Fast, intelligent, universal data access – anywhere, anytime.

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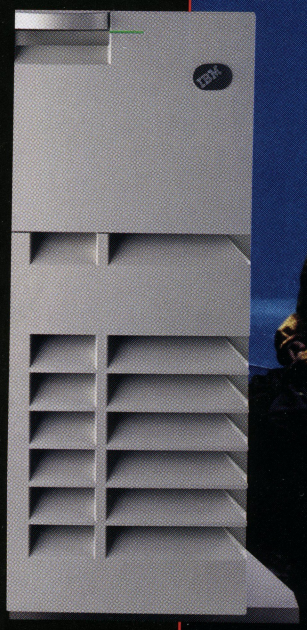

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SEE PAGE 52

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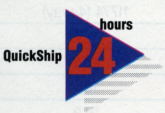

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Special Offering

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What's New

THE MODEL S80: MISSION CRITICAL APPLICATION PERFORMER



RS/6000 ENTERPRISE SERVER MODEL S80

The new 6- to 24-way RS/6000 Enterprise Server Model S80 employs the latest 64-bit copper microprocessor technology to deliver more than three times the performance of its predecessor – performance designed to meet any mission-critical ERP, supply chain management, data warehouse/data mart or e-business application challenge. A 24-way S80 outperforms Sun systems with up to 64 microprocessors, making it the most powerful UNIX server ever. What's more, an entry-level S80 costs less than competing high-end SMP servers from either Sun or Hewlett-Packard.

SEE PAGE 24

RS/6000 HA-S80 CLUSTERED SERVER

New

Your mission-critical applications must always be up and running in top form. The RS/6000 Model HA-S80 Clustered Server combines two specially configured S80s with IBM's high-performance 7133 Serial Disk System and award-winning High Availability Cluster Multi-processing (HACMP) for AIX software to deliver the ultimate in high-availability performance.

SEE PAGE 79

RECORD-SETTING S80 PERFORMANCE BENCHMARKS

No matter what the yardstick, the S80 measures up as the best-performing UNIX server on the market today. It's the world champ for online transaction processing, with a single system surpassing all cluster and SMP results in the TPC-C benchmark. It's clearly the fastest Web server: a 12-way S80 turned in 66 percent better SPECweb 96 benchmark results than an HP 9000 N-Class server.* And when it comes to ERP, 24-way S80 outperforms 64-bit Sun E10000 servers in key Baan and SAP benchmarks. For more information on the S80 performance leadership, visit:

HTTP://WWW.RS6000.IBM.COM/RESOURCE/FEATURES/1999/S80.HTML

*All results as of December 2, 1999, TPC results viewable at www.tpc.org/new_result/ttperf.idc SPECweb96 benchmarks viewable at www.specbench.org

What's New

RS/6000 MODEL B50 SERVER



With outstanding price performance, this compact low-cost server is designed specifically for Internet and Application Service Providers and has a wide range of packaged solutions. Pack up to 20 B50s into a standard 2-meter rack enclosure to handle all of your Web hosting, firewall, caching, messaging, e-commerce and other appliance applications. The B50 is available with either AIX or Linux, provides additional disk expansion via an IBM 2104, and features easy plug-in serviceability.

SEE PAGE 16

ERP PERFORMANCE PROTECTION PLAN

New

Now when you buy an IBM ERP Solution for Baan, Oracle, Peoplesoft or SAP from an IBM Business Partner, you can be sure that it will meet your specified performance expectations during the initial 24 months – or IBM will give you a no-charge performance upgrade. The new 2-year ERP Performance Protection Plan is the first such plan of its kind in the industry.

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POWER3 SMP HIGH NODE

New

The new up to 8-way POWER3 SMP High Node is ideal for the full range of I/O- and memory-intensive scientific, technical and commercial applications. It delivers 4 times more processors and memory capacity and 8 times the peak memory bandwidth of SMP Thin and Wide Nodes. Plus, it can be configured with up to 473.2GB of internal storage and a maximum of 53 I/O slots per node.

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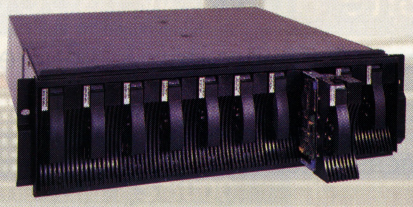
2104 EXPANDABLE STORAGE PLUS



Internet Service Providers (ISPs) and other Model B50 users will appreciate the economy and large capacity of the rack-mountable 2104 Expandable Storage Plus storage drawer (or deskside tower). This low-cost 5.1"-high unit utilizes 80MB/s Ultra2 SCSI (LVD) technology and can house 10 hot-swappable disk drives (9.1GB, 18.2GB or 36.4GB) for a maximum total capacity of 364GB per drawer, or terabytes per rack. Attachment is via supported RS/6000 SCSI adapters with RAID 0, 1 and 5 options.

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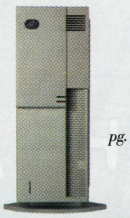

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RS/6000 servers Machine type	43P Model 140[1] 7043	43P Model 150[1] 7043	43P Mod 704
WORKSTATION/SERVER	**workstation/server**	**workstation/server**	**workstatio**
PACKAGING	**tower**	**tower**	**desks**
MICROPROCESSOR TYPE	PowerPC 604e	PowerPC 604e	POWE
# processors/system	1	1	1 or
Clock rates available *(standard/option)*	233/332MHz	375MHz	200M
SYSTEM MEMORY *(STANDARD/MAXIMUM)*	64MB/768MB	128MB/1GB	256MB/
Memory type	64-bit ECC DIMM	64-bit ECC DIMM	64-bit ECC
Data/instruction (L1) cache	32KB/32KB	32KB/32KB	64KB/3
Level 2 (L2) cache	1MB	1MB	4MB
Memory slots	6	4	2
RELIABILITY, AVAILABILITY, SERVICEABILITY			
Service processor	No	No	Yes
Hot-swappable disks (internal)	No	No	No
CAPACITY			
Slots available	3PCI (32-bit) + 2 PCI/ISA (32-bit)	5 PCI (32-bit)	3 PCI (32-bit) +
PCI bus speed	33MHz	33MHz	33/50M
Disk/media bays	5	5	5
Minimum/maximum internal disk	9.1GB/54.6GB	9.1GB/54.6GB	9.1GB/54
STORAGE INTERFACES			
SCSI-2 F/W RAID-5	No	No	No
Ultra SCSI SE and Ultra SCSI Differential	**Yes**	**Yes**	**Yes**
SSA 8-way JBOD/2-way RAID EL	**Yes[h]**	**Yes[c]**	**Yes**
PCI 3-channel Ultra SCSI RAID	No	**Yes[c]**	**Yes**
Gigabit Fibre Channel	No	No	No
PCI 2-Channel Ultra 2 SCSI	–	**Yes**	**Yes**
COMMUNICATIONS AND CONNECTIVITY			
EIA RS232D/EIA RS422A	**Yes**	**Yes**	**Yes**
Token-Ring 4/16Mbps	**Yes**	**Yes**	**Yes**
Ethernet* 10Mbps	**Yes**	**Yes**	**Yes**
Ethernet 10/100Mbps	**Yes**	**Yes**	**Yes**
Gigabit Ethernet	No	No	**Yes**
FDDI 100Mbps	**Yes**	**Yes**	**Yes**
ATM 155Mbps	**Yes**	**Yes**	**Yes**
ISDN	**Yes**	**Yes**	**Yes**
X.25	**Yes**	**Yes**	**Yes**
SDLC	**Yes**	**Yes**	**Yes**
BSC	**Yes**	No	**Yes**
SP System Attachment	No	No	N
ESCON* Control Unit (Host Attach)	No	No	N
ESCON Emulation (Tape Attach)	–	–	
HIPPI	No	No	N
Direct Talk	**Yes**	**Yes**	**Ye**
GRAPHICS ACCELERATORS AVAILABLE	GXT 130P, 2000P	GXT130P, 2000P, 3000P	GXT130P, 2
Benchmarks *(see page 13)*			(1, 2-
SPEC*web96	– / –	–	2654
SPECint_base95	8.29*/12.2	14.5	1
SPECfp_base95	5.48*/5.99	9.76	2
SPECint95	9.24*/12.9	15.1	1
SPECfp95	5.75*/6.21	10.1	2
SPECint_base_rate95	–	–	104
SPECfp_base_rate95	–	–	225
TPC-C*:tpmC: $/tpmC	–	–	
TPC-H*:QppH.QthH (@ 300GB)	–	–	
TPC-H:$/QphD (@ 300GB)	–	–	
Relative OLTP performance	3.9*/5.3	6.0	10.
BASE PRICE	**$5,250/$7,295**	**$9,995**	**$1**

N/A=Not Applicable [§]=Statement of Direction #=Dual buses *Shared memory [b]Per processor [c]MES only [d]May not be achievable with upgraded 233MHz sy
[g] Up to 512 available via special order [h]Via microcode driver download



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New



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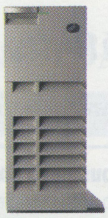

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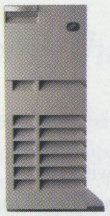

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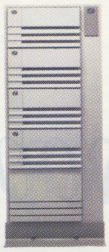
P Model 260[f] 7043	Model B50[f] 7046	Model F40[f] 7025	Model F50[f] 7025	Model H50[f] 7026	Model H70[f] 7026	Model R 7015
orkstation/server	**server**	**workstation/server**	**server**	**server**	**server**	**server**
deskside	**rack drawer**	**tower**	**tower**	**rack drawer**	**rack drawer**	**rack draw**
POWER3	POWERPC 604e	PowerPC 604e	PowerPC 604e	PowerPC 604e	PowerPC RS64-II	Dual PowerPC
1 or 2	1	1 or 2	1, 2, 3 or 4	1, 2, 3 or 4	1, 2, 3 or 4	2, 4, 6 or 8
200MHz	375MHz	233MHz	166/332MHz	332MHz	340MHz	200MHz
256MB/8GB[a]	128MB/1GB	64MB/1GB[a]	128MB/3GB[a]	128MB/3GB[a]	128MB/8GB[a]	256MB/4G
64-bit ECC DIMM	64-bit ECC DIMM	64-bit ECC DIMM	64-bit ECC DIMM	64-bit ECC DIMM	64-bit ECC DIMM	72-bit JEDEC
64KB/32KB[b]	32KB/32KB	32KB/32KB[b]	32KB/32KB[b]	32KB/32KB[b]	64KB/64KB[b]	32KB/32K
4MB[b]	1MB	1MB[b]	256KB[b]	256KB[b]	4MB[b]	2MB[b]
2	4	8	2	2	2	4
Yes	No	**Yes** (option)	**Yes**	**Yes**	**Yes**	**Yes**
No	No	**Yes**	**Yes**	**Yes**	**Yes**	No
(32-bit) + 2 PCI (64-bit)	2 PCI (32-bit)	7 PCI (5 32-bit + 2 64-bit) + 2 PCI/ISA (32-bit)	7 PCI (5 32-bit + 2 64-bit) + 2 PCI/ISA (32-bit)	7 PCI (5 32-bit + 2 64-bit) + 2 PCI/ISA (32-bit)	8 PCI (4 32-bit + 4 64-bit)	15 Micro Cha
33/50MHz	33MHz	33/50MHz	33/50MHz	33/50MHz	33/50MHz	N/A
5	2/2	22	18/4	13/3	13/3	4
9.1GB/54.6GB	9.1GB/36.4GB	9.1GB/336.6GB	9.1GB/336.6GB	9.1GB/227.4GB	9.1GB/254.8GB	9.1GB/273
No	No	**Yes**	**Yes**	No	No	No
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	No
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	**Yes**	No	**Yes**	**Yes**	**Yes**	No
No	No	No	**Yes**	**Yes**	**Yes**	No
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	-
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	No	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	No	No	**Yes**	**Yes**	**Yes**	No
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Yes	No	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
No	No	No	No	No	No	No
No	No	No	**Yes**	**Yes**	**Yes**	**Yes**
-	-	-	**Yes**	**Yes**	**Yes**	**Yes**
No	No	No	**Yes**	**Yes**	**Yes**	No
Yes	No	**Yes**	**Yes**	**Yes**	**Yes**	No
T 130P, 2000P, 3000P	GXT 130P	GXT 130P	GXT 130P[f]	GXT 130P	GXT 130P	-
(1, 2-way)		(1, 2-way)	(1, 2, 3 or 4-way)	(1, 2, 3, 4-way)	(1, 2, 3, 4-way)	(2, 4, 6, or 8-
2654 (2-way)	-	-	2148/6716 (4-way)	6716 (4-way)	11774 (4-way)	-
11.5	14.5	7.80	6.79/14.0	14.0	13.7	-
25.1	9.76	5.60	8.11/12.1	12.1	20.2	-
12.5	15.1	8.71	7.52/14.4	14.4	16.0	-
27.0	10.1	5.87	8.52/12.6	12.6	21.2	-
104, 205	No	69.9, 132	61.0, 121, -, 241/124, 245, 365, 485	124, 245, 385, 485	144, 287, 430, 573	121, 244, 343
225, 434	No	50.1, 89.5	72.8, 143, -, 267/109, 206, 292, 364	109, 206, 292, 364	182, 354, 512, 645	90.3, 176, 24
-	No	-	8142.40, 63 (4-way, 166MHz), 9853.13, 65 (4-way, 332MHz)	-	17133.73,79 (4-way)	9165.13; 99 (8
-	No	-	-	-	-	-
-	No	-	-	-	-	-
10.5, 21.0	6.0	3.7, 5.2	8.2, 14.9, 21.0, 27.1/10.0, 17.9, 25.2, 32.8	10.0, 17.9, 25.2, 32.8	16.6, 31.9, 44.2, 57.1	9.3, 17.0, 23.6
$19,000	**$3,995**	**$9,900**	**$13,900/$17,900**	**$22,000**	**$26,900**	**$64,00**

MHz system [a] Via control workstation PSSP Software [f] Node types can be intermixed on system

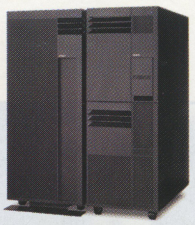


pg. 21



pg. 23

New



pg. 24

Model R50[1] 7015	Model S70 Advanced[1] 7017	Model S80 7017
server	server	server
rack drawer	rack mounted	rack mounted
Dual PowerPC 604e	PowerPC RS64 II	PowerPC RS64 III
2, 4, 6 or 8	4, 8 or 12	6, 12, 18 or 24
200MHz	262MHz	450MHz
256MB/4GB[a]	1GB/32GB[a]	2GB/64GB[a]
72-bit JEDEC SIMM	Card-based ECC SDRAM	Card-based ECC SDRAM
32KB/32KB[b]	64KB/64KB[b]	128KB/128KB[b]
2MB[b]	8MB[b]	8MB[b]
4	20	16
Yes	Yes	Yes
No	Yes	Yes
15 Micro Channel®	53 PCI (33 32-bit + 20 64-bit)	53 PCI (33 32-bit + 20 64-bit)
N/A	33MHz	33MHz
4	48/8	48/8
9.1GB/27.3GB	9.1GB/873.6GB	9.1GB/873.6GB
No	No	No
No	Yes	Yes
Yes	Yes	Yes
No	No	No
No	Yes	Yes
–	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
No	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
No	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
No	No	–
No	Yes	Yes
–	GXT130P	GXT130P
(2, 4, 6, or 8-way)	(4, 8, or 12-way)	(6, 12, 18, 24-way)
–	20200 (12-way)	40, 161 (12-way)
–	–	–
–	–	–
–	–	–
–	–	–
121, 244, 343, 445	–	–
90.3, 176, 248, 320	–	–
9165.13; 99 (8-way)	110, 434.10, 122 (5 node cluster)	–
–	–	–
–	–	–
9.3, 17.0, 23.6, 30.6	46.0, 82.7, 113.8	123.3, 233.3, 326.7, 400.0
$64,000	**$125,000**	**$290,000**

Graphics Accelerators



RS/6000 Workstation performance	140[1] (332MH
GRAPHICS ACCELERATORS	GXT2000P
GPC/XPC Xmark93	35.6
GPC/PLB PLBwire93	169
GPC/PLB PLBsurf93	350
GPC/OPC ProCDRS-02	7.2
GPC/OPC DX-05	8.35
GPC/OPC DRV-06	4.68
SPEC/OPC Light-03	0.92
GPC/OPC AWadvs-02	12.2

Software

RS/6000 Software	140[1]
OPERATING SYSTEM SUPPORT	
AIX® 4.2 (5735-C34)	X
AIX 4.3 (5755-C34)	X
LINUX	–
HACMP (5765-D28)	X

RS/6000 Software	H50
OPERATING SYSTEM SUPPORT	
AIX 4.2	X
AIX 4.3	X
LINUX	–
HACMP	X

RS/6000 Software	SP 332 SMP Thin	SP 332 SMP Wide
OPERATING SYSTEM SUPPORT		
AIX 4.2	X	X
AIX 4.3	4.3.1+	4.3.1+
LINUX	–	–
HACMP	X	X

[1] Multi-threaded graphics API which exploits SMP available [2] Enabled [x] Supported

Visit the RS/60

For Physical Planning V

The IBM RS/6000 Models and AIX V4† offered in this catalog are...

Year 2000 ready††

For additional information on
www.ibm.com/year2000

†Current users of AIX* V4 may require Program Temporary Fixes

††Year 2000 ready means the product, when used in accordance and/or receiving date data within and between the twentieth an

Information provided in this catalog and information contained Information and Readiness Disclosure Act of 1998, a U.S statute icon on IBM's Year 2000 Web site **(www.rs6000.ibm.com/s** they are provided.

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pg. 21



pg. 21



pg. 21

140[1] (332MHz)	150[1]	260[1]
GXT2000P	GXT2000P	GXT3000P (2-way)
35.6	42.6	35.6
169	257	714
350	466	898
7..2	11.2	24.5
8.35	11.0	14.7
4.68	6.19	6.44
0.92	1.12	0.97
12.2	15.4	13.2

140[1]	150[1]	260[1]	B50[1]	F40[1]	F50[1]
X	X	X	-	X	X
X	4.3.2+	4.3.2+	4.3.2+	X	X
-	-	-	X[2]	-	-
X	X	X	-	X	X

H50	H70	R50	S70 Advanced	S80
X	-	X	-	-
X	4.3.2+	X	4.3.2+	4.3.3
-	-	-	-	-
X	X	X	X	X

SP 332 SMP Wide	SP 160 Thin	SP POWER3 SMP Thin	SP POWER3 SMP Wide	SP POWER3 SMP HIGH	T70
X	X	-	-	-	-
4.3.1+	4.3.1+	4.3.2+	4.3.2+	4.3.2+	4.3.2+
-	-	-	-	-	-
X	X	X	X	X	X

RS/6000 Web site at www.rs6000.ibm.com

al Planning Visit http://www.rs6000.ibm.com/resource/hardware_docs/

formation on Year 2000 readiness, refer to the Year 2000 implementation and planning guide at:
ear2000

ire Program Temporary Fixes to be Year 2000 ready.

luct, when used in accordance with its associated documentation and with any applicable program temporary fixes, corrective service deliveries or similar requirements installed, is capable of correctly processing, providing and between the twentieth and twenty-first centuries, provided that all other products (for example, hardware, software and firmware) used with the product properly exchange accurate date data with it.

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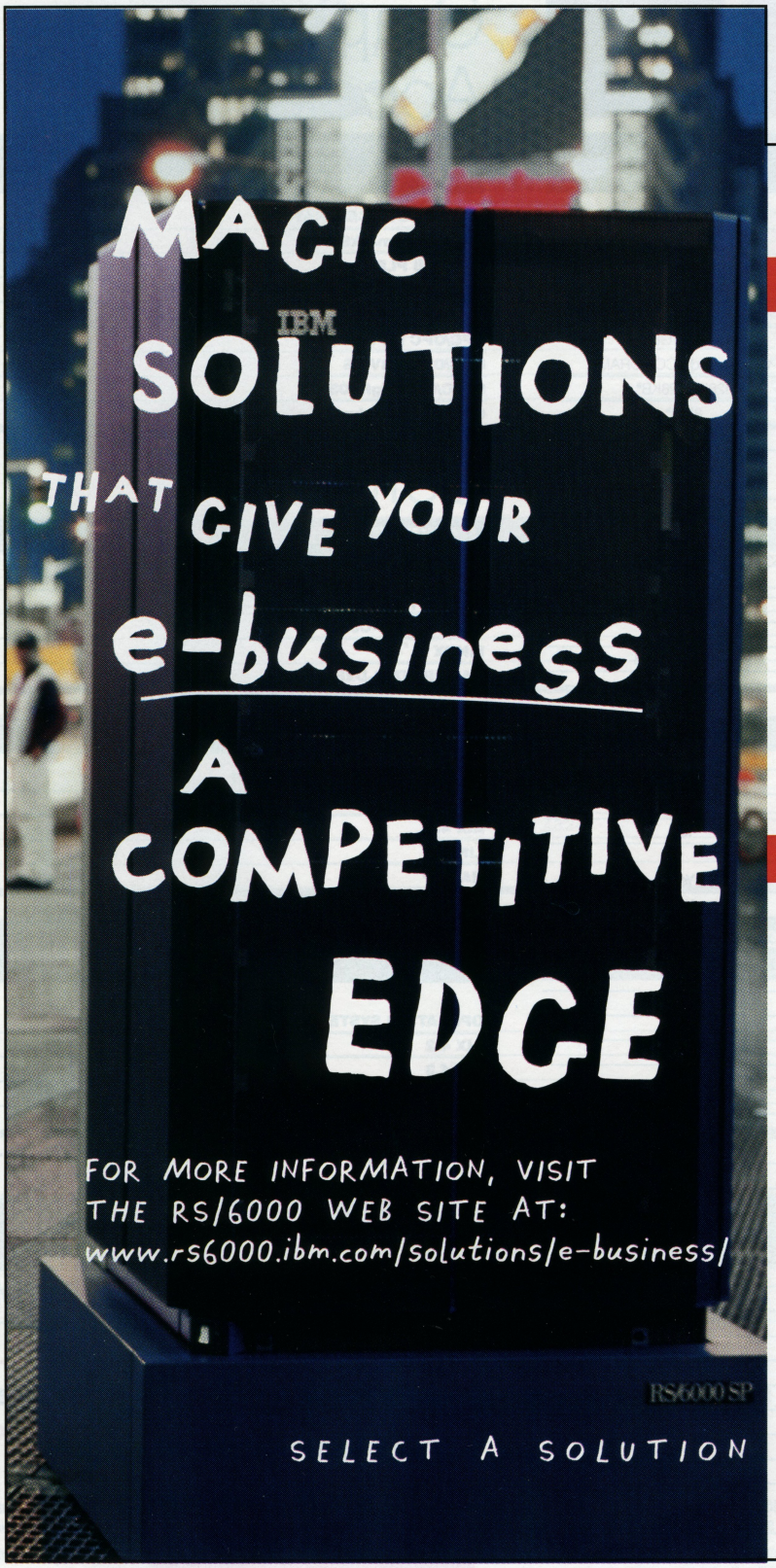
e-business



The RS/6000

RS/6000 e-business Solutions

From Web servers to commercial applications to Internet service providers, to security, IBM offers a full menu of RS/6000 Solution Series for e-business offerings to start you fast, with confidence.

RS/6000 Solution Series for e-business provides ease of entry into the various aspects of e-business, with world-class software integrated with the full line of RS/6000 hardware products, backed by IBM service and support.

How do you get started?

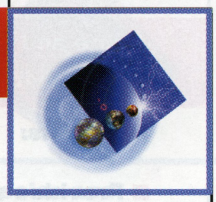
1. Select the RS/6000 e-business software to meet your business needs
   - **IBM WebSphere**
   - **Lotus Domino**
   - **IBM Net.Commerce**
   - **IBM eNetwork FireWall**
   - **Check Point FireWall-1**
2. Select the RS/6000 platform that meets your requirements
3. Select any specific add-on products you may want

FROM PAGES 9-13

Solution Series for e-business

WEB APPLICATION SERVER SOLUTION

IBM WebSphere



e-business

Build and deploy standards-based Web applications for strengthening customer relationships and publishing dynamic, interactive and personalized content

Highlights:

- **Exploits AIX industry-leading Internet server capabilities**
- **Supports Enterprise JavaBeans with the reliability necessary for transactional applications**
- **Includes IBM's security enhancements to the Apache Web server**

Advantages:

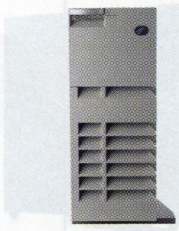
- **Industry-leading Java** performance on an industrial-strength, e-business-ready AIX operating environment**
- **Tight linkage between server capabilities and IBM VisualAge* for Java development environment, to enable easy application-creation testing and deployment of e-business applications**
- **Scalability to meet the performance requirements of any business**

Services Available:

For Web Application Server Solution services from initial installation, configuration and setup through advanced application development, see:
http://www.software.ibm.com/webservers/vaconsul.html#1

For more information, contact:

RS/6000 at our Web site: **www.rs6000.ibm.com/solutions/e-business/** and access the solutions section or contact one of our e-business specialists at **800 426-2255**

Small Configuration	Medium Configuration	Large Configuration	HA Configuration
Supports thousands of Web page views per day	**Supports hundreds of thousands of Web page views per day**	**Supports millions of Web page views per day**	**Supports hundreds of thousands of Web page views per day with no single point of failure**
For moderate workloads requiring legacy integration and application connectivity	For co-location of Web applications and data for moderate to heavy workloads	Advanced clustering technology for virtually infinite scalability and services	
			
43P Model 150	**Model F50**	**Model S80**	**HA50**

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e-business

e-COLLABORATION SERVER SOLUTION

Lotus Domino

Share and distribute information within your organization for better productivity and competitiveness

Highlights:

- **Provides secure and easy access to business applications and processes for employees and customers using industry-standard Internet protocols**
- **Provides reliable, integrated productivity support through e-mail, shared calendaring and collaboration tools and rich document database support**
- **Assists companies in the development and management of their Web presence and image, with functionality to support secure Web publishing to interactive customer support**

Advantages:

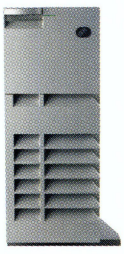
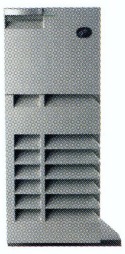
- **Allows deployment of companywide business solutions that support a variety of clients (Web browsers, Lotus Notes and others), delivered using Internet-based technology**
- **Provides integrated tools to support the development and management of interactive Web applications**
- **Start with simple configurations to support a small user community and grow uninterrupted to support hundreds of thousands of users with unmatched reliability**

Services Available:

- **SmoothStart Services for Lotus Domino Server are available. See page 73 for more information.**

For more information, contact:

RS/6000 at our Web site: **www.rs6000.ibm.com/solutions/e-business/** and access the solutions section or contact one of our e-business specialists at **800 426-2255**

Small Configuration	Medium Configuration	Large Configuration	SP Configuration
Supports up to 500 users Requires 512MB memory, 40GB Ultra SCSI disk	**Supports up to 2,000 users** Requires 1GB memory, 100GB Ultra SCSI disk	**Supports up to 5,000 users** Requires 4GB memory, 200GB SSA disk	**Supports over 10,000 users** Requires 1GB memory, 400GB SSA disk per Wide-332 Node, 2,000 users per node
			
Model F40	**Model F50**	**Model S80**	**SP**

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ELECTRONIC COMMERCE SOLUTION

IBM Net.Commerce



Do secure business on the Internet with your customers or suppliers

Highlights:

- **Create a virtual storefront or online catalog and securely process sales transactions and accept electronic payment over the Web from customers around the world**
- **Provide product promotions, identify customer buying patterns and preferences, and customize incentives for each customer or product**
- **Complemented by a range of Partner products for customer service, catalog content creation, online payment authorization and settlement worldwide, ad management, personalization, data mining and others, which can be found at:**

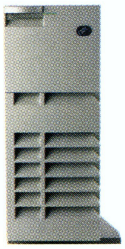
  http://www.software.ibm.com/commerce/net.commerce

Advantages:

- **Helps increase your top-line sales and attract new customers while controlling overhead costs normally associated with bringing on additional salespeople and traditional brick-and-mortar stores**
- **Provides for integration with back-end business management systems like inventory for checking product availability prior to order confirmation and updating order management after processing an online order**
- **High-availability configurations help ensure that your virtual storefront will be online 24 hours a day, 365 days a year, providing a mature, proven solution for protection from unplanned system outages**

For more information, contact:

RS/6000 at our Web site: **www.rs6000.ibm.com/solutions/e-business/** and access the solutions section or contact one of our e-business specialists at **800 426-2255.**

Small Configuration	Medium Configuration	Large Configuration
For mid-sized businesses needing to quickly set up an e-commerce site with Net.Commerce, which includes store creation wizard, three starter stores, Domino Go Webserver, CommercePOINT eTill and DB2*	For more advanced businesses looking to build a highly available, second-generation Web site with advanced cataloging tools and back-end integration with SAP, EDI, MQSeries*, CICS*, IMS through Net.Commerce Pro	For the most scalable, most responsive and most available virtual storefront in the industry when combined with Net.Commerce Pro and Partner product used by many of the industry's leading online retailers
		
Model F50	**HA-H70**	**SP**

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Launch your Net.Commerce Solutions.

IBM RS/6000 Start Now for e-Commerce can help.

See page 3

e-business

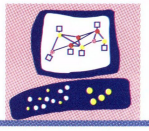
SECURITY SOLUTIONS

Check Point FireWall-1

IBM eNetwork Firewall

Help protect your data and control access with firewall technology that provides a secure connection to the world of e-business

CHECK POINT Software Technologies Ltd.



Highlights:

- **Central management console with distributed security rules enforcement enables consistent policies across the enterprise**
- **Modular architecture offers seamless scalability from a single location to a global enterprise**
- **Wide range of complementary network security applications available to provide content screening, monitoring/reporting, intrusion detection, load balancing and much more**

Advantages:

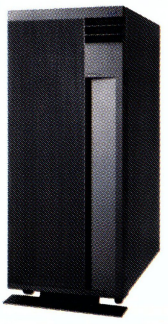
- **Superior security through enhanced IP Security and Virtual Private Network support built into AIX 4.3**
- **IBM-mature, industrial-strength AIX blocks known hacker entry points and is ITSEC C2/E3-certified**
- **RS/6000-proven performance delivers outstanding TCP/IP throughput and scalability**
- **High-availability options help prevent firewall from being single point of failure for e-business network**

Services Available:

- Installation services are available through IBM Business Partners. See **http://solsrc.rs6000.ibm.com/searchbp** and select the firePOWER specialty for a list of qualified partners

For more information, contact:

RS/6000 at our Web site: **www.rs6000.ibm.com/solutions/e-business/** and access the solutions section contact or one of our e-business specialists at **800 426-2255**

Small Configuration	Medium Configuration	HA Configuration
Supports up to 1,000 simultaneous network connections	Supports greater than 1,000 simultaneous network connections	Supports greater than 1,000 simultaneous network connections with no single point of failure
		
Model 43P-150	**Model 43P-260**	**HA50**

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e-business

SERVICE PROVIDER SOLUTIONS

Provide secure, reliable and high-performance Web content, e-commerce and e-mail hosting designed exclusively for Service Providers

Network Appliances:

- **Firewall**
  - **Check Point FireWall-1**
  - **IBM e-Network Firewall**
- **Caching Proxy**
  - **IBM Web Traffic Express***
  - **Squid (Public Domain)**
- **Load Balancing**
  - **IBM e-Network Dispatcher***
  - **Resonate Dispatch**

*Included in Websphere Performance Pack

Web Content Hosting Services:

- **Apache (Public Domain)**
- **IBM WebSphere**
- **Netscape Enterprise Server**
- **Lotus Domino**
- **Chili!Soft ASP V3.0 Developer Edition (5 users)**
- **Microsoft Front Page Server Extensions**

e-mail Hosting Services:

- **Software.com Intermail**
- **Netscape Messaging Server**
- **Lotus Domino**
- **POP3/IMAP4/Sendmail (Included in AIX)**

e-commerce Hosting Services:

- **IBM Net.Commerce**
- **Mercantec SoftCart**
- **Intershop4**

For more information, contact:

RS/6000 at our Web site: **www.rs6000.ibm.com/solutions/e-business/** and access the solutions section or contact one of our e-business specialists at **800 426-2255**

Single Configuration	Multiple Configuration	Multi-Tier Configuration
Single Model B50 server dedicated to an application like Firewall, Caching Proxy, Webserver, or e-mail server	Multiple Model B50 dedicated servers running single application like Firewall, Webserver or e-mail	Dedicated Model B50 front-end Webservers, SMTP Servers or e-Commerce application servers. Network attached to back-end database server
		
Model B50	Model B50	Model B50 and H50/H70

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Outstanding SMP performance for workstation and server applications

43P Model 260

Custom QuickShip 7 days

QuickShip 24 hours



The Model 260 Workstation/Server shown. Monitor, keyboard and mouse not included. See page 33 for information on P Series Monitors.

- **256MB to 8GB of ECC SDRAM system memory**
- **9.1-54.6GB Ultra SCSI System Disk**
- **Two disk drive bays/Three media bays**
- **5 PCI slots (two 64-bit, three 32-bit)**
- **10/100Mpbs Integrated Ethernet**
- **1-2 way Symmetric Multiprocessing (SMP)**
- **64-bit 200MHz POWER3 processors, with 4 MB L2 Cache per processor.**

The IBM RS/6000 43P 7043 Model 260 has the power to be whatever you want it to be - a single-seat MCAD design and analysis workstation, an Internet server, or even a cost-effective platform for developing and testing 64-bit SMP applications designed to run on larger RS/6000 systems. The compact, deskside Model 260 is an affordable 64-bit, 1- or 2-way SMP system with application support, powerful graphics options, and extended floating point capabilities that make it possible to perform both design and analysis on a single system. Plus, its SMP capabilities and robust set of DASD and communications features make the Model 260 an excellent choice for meeting a wide range of entry-level server requirements.

Start with a basic 1-way Model 260 with 200MHz POWER3 processor and 256MB of memory and modularly expand it into a fully configured 2-way SMP system with up to 8GB of system memory, 54.6GB of Ultra SCSI disk storage and five PCI slots (two 64-bit and three 32-bit). The Model 260 includes 4MB of L2 cache for each processor, a 9.1GB Ultra SCSI disk drive, 32X maximum speed CD-ROM drive, 1.44MB 3.5-inch diskette drive, and support for both 32-bit and 64-bit applications. You can economically mix and match storage devices with an integrated service processor, Ethernet, and both Ultra SCSI and Ultra-2 SCSI controllers integrated on the Model 260's planar. A variety of 2D and 3D graphics adapters, including the powerful new GXT2000P and GXT3000P 3D Graphics Accelerators, are also available for the Model 260.

The AIX V4.2.1 or AIX V4.3.2 operating system is supported on the Model 260.

Feature	Type	Mod	Description	Lease†	Price
▷	7043	260	43P-260 200MHz POWER3 SMP	*	$19,000
CPU Options					
▶ 4342			2nd 200MHz POWER3		$8,000
▶ 4107			64MB SDRAM (2-32MB DIMMS)		$640
▶ 4110			256MB SDRAM (2-128MB DIMMS)		$2,560
4119			512MB SDRAM		$6,400
▶ 2908			9.1GB Ultra SCSI		$1,300
2909			18.2GB Ultra SCSI		$2,300
▶ 4098			Ram Card for Expansion Slot 2GB		$1,038
Color Monitors for 43P Model 260					
▶ 3629			17" P76 (viewable image size of 16.0") Pearl White		$995
▶ 3630			21" P260 (viewable image size of 19.8") Pearl White		$1,995
▶ 3627			17" P76 (viewable image size of 16.0") Stealth Black		$995
▶ 3628			21" P260 (viewable image size of 19.8") Stealth Black		$1,995

FCC Class B (Defined on page 4)
System Dimensions: 16.5"W x 18.1"D x 6.5"H
For Benchmarks, check out the 4-page Power Lineup chart inside pages 6 and 7.
† Turn to page 76 for details on lease payment information
* ***PLEASE CALL FOR LATEST PRICES***
▶ 24 Hour QuickShip
▷ Custom QuickShip

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Higher performance than the Model 140, still at a low price

43P Model 150



The Model 150 Workstation/Server shown with the P72 Monitor (not included) displaying the RS/6000 CATIA Welcome Center. Keyboard and mouse not included.

- **375MHz PowerPC 604e Processor**
- **128MB - 1GB ECC SDRAM memory**
- **1MB of L2 cache**
- **9.1GB - 54.6GB Ultra SCSI disk drive**
- **Optional 10/100Mbps integrated Ethernet**

The IBM RS/6000 43P 7043 Model 150 PCI-based desktop system is a cost effective entry-level server. It features an enhanced memory controller that enables the use of SDRAM memory and a faster 83MHz memory bus speed, five PCI slots and five bays for expansion, 32X (Max.) CD-ROM drive, 1.44MB 3.5-inch diskette drive and your choice of AIX V4.2.1 or AIX V4.3.2. The 150 with the GXT2000P graphics accelerator provides outstanding price/performance as a design workstation.

	Type	Mod	Description	Lease†	Price
▷	7043	150	43P-150 375MHz	*	$9,995

† Turn to page 76 for details on lease payment information.
FCC Class B (Defined on page 4)
See page 50 for information on P Series Monitors.
System Dimensions: 16.5"W x 18.1"D x 6.5"H
For Benchmarks, check out the 4-page Power Lineup chart inside pages 6 and 7.
* ***PLEASE CALL FOR LATEST PRICES***
▷ Custom QuickShip

Options

	Feature	Description	Price
▶	4150	128MB SDRAM	$896
▶	4169	258MB SDRAM	$1,792
▶	2908	9.1GB Ultra SCSI	$1,300
▶	2909	18.2GB Ultra SCSI	$2,300

▶ 24 Hour QuickShip

An affordable, high-performance PCI platform

43P Model 140



- **233 or 332MHz PowerPC 604e**
- **64MB - 768MB ECC memory**
- **1MB Synchronous Level 2 cache**
- **9.1GB - 54.6GB SCSI-2 disk drive**
- **Five expansion slots (3 PCI, 2PSI/ISA shared)**
- **20X (Max.) 600MB CD-ROM drive**
- **Integrated SCSI and Ethernet controllers.**

The Model 140 excels as a powerful graphics workstation. It is upgradeable from 233MHz to 332MHz, and supports AIX V4.1.5, AIX V4.2.1 or AIX V4.3.

	Type	Mod	Description	Lease†	Price
▷	7043	140	Model 43P-140 233MHz	*	$5,250
▷			Model 43P-140 332MHz	*	$7,295

† Turn to page 76 for details on lease payment information.
FCC Class B (Defined on page 4)
Current users of AIX V4 may require Program Temporary Fixes to be Year 2000 ready.
* ***PLEASE CALL FOR LATEST PRICES***
▷ Custom QuickShip

Options

	Feature	Description	Price
	4102	Upgrade to 128MB ECC DIMM	$448
▶	4114	64MB ECC Memory DIMMs	$448
▶	4115	128MB ECC Memory DIMMs	$896
▶	2908	9.1GB Ultra SCSI	$1,300
▶	2909	18.2GB Ultra SCSI	$2,300

Systems Dimenstions: 16.5"W x 18.1"D x 6.5"H
For Benchmarks, check out the 4-page Power Lineup chart inside pages 6 and 7.
▶ 24 Hour QuickShip

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Optimized for Internet and application service providers

Enterprise Server Model B50

For e-business solutions
See page 13

New



- **Ideal for dedicated "appliance" solutions such as Web hosting, firewall, caching, messaging or e-commerce**
- **Space-saving industry standard 2U 19" rack-mount form factor ideal for large "server farm" environments**
- **Plug-in serviceability and toolless access to all major system components**
- **Comprehensive remote setup and system management features, like AIX Web System Management and Tivoli offerings**
- **High level of network connectivity, with built-in 10/100Mbps Ethernet, and support for high-speed protocols such as FDDI, ATM and ISDN**
- **Ultra-SCSI and SSA RAID storage external device options for improved data transfer performance and availability**
- **Supports award winning AIX Version 4.3, enabled for Linux and popular freeware applications.**

The IBM® RS/6000 Enterprise Server Model B50 was created specifically for the service provider industry. As a high performance UNIX solution platform, the RS/6000 product family is ideally suited for service provider applications including Web hosting, caching, messaging, firewalls, directory services and e-commerce.

The RS/6000 Model B50 has a mix of performance and features optimized for service provider needs, with:
- RISC-based PowerPC® 604e processor running at 375 MHz
- 128MB of main memory, expandable to 1GB
- 1MB Level 2 cache
- Performance enhanced AIX 4.3.3

The Model B50 server delivers a variety of high-performance, Web-serving features in a space saving, 2U (3.5") package designed specifically for industry standard 19" rack enclosures. This rack-mount packaging enables packaging as many as up to 20 servers, 60 discrete network connections and over 720GB of internal storage.

The reliability, availability and serviceability (RAS) features required by today's business-critical computing environments are built into the Model B50. For example, Error Checking and Correcting (ECC) memory helps detect and correct single-bit errors on the fly. An easy-to-read LED operator status panel on the front of the system keeps you informed of its status at a glance. Concurrent diagnostics enable troubleshooting minor problems that may occur without forcing a system shutdown.

Getting on-line, staying on-line
The Model B50 is an excellent choice for applications that require high availability and rock-solid reliability. As an established, proven platform, the RS/6000 supports rapid deployment of popular offerings, business critical applications and network infrastructure.

The New 2104 Expandable Storage Plus provides a compact, 5.1" (3u) high, 21.8" deep, 19" wide, rack-mountable storage drawer ideal for Internet and application service providers who need mass storage and/or require the hot-swap feature. This low-cost, 10-drive, storage enclosure features high-performance 80MB/s Ultra2 SCSI (LVD) technology. It scales easily from 9-364GB per drawer to terabytes per rack. And, it features hot-swappable 9.1GB, 18.2GB and 36.4GB disk drives. Attachment via supported IBM RS/6000 SCSI RAID adapters can enhance storage protection with RAID 0, 1 and 5 options.

Visit our Web site at: **www.rs6000.ibm.com**

Type	Mod	Description	Price
7046	B50	Model B50	$3,995

Call for prices for Model B50 features.

FCC Class A defined on page 4
Dimensions 3.5"H x 19"W x 24"D (standard 2u rack mount)

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Servers At-a-Glance

Servers

	Model F40	Model F50	Model B50
Packaging	Deskside	Deskside	Rack drawer
Operating System (Your choice at no additional charge.)	AIX V4.3	AIX V4.3	AIX V.4.3.3 or AIX V4.3.2
MP Configurations	1- or 2-way	1-, 2-, 3- or 4-way	Uni
Processor Type	PowerPC 604e, 233MHz	PowerPC 604e, 166MHz/332MHz	PowerPC 604e 375MHz
Memory	64MB-1GB	128MB-3GB	128MB - 1GB
Memory Slots	8	2	4
Standard SCSI Disk	9.1GB	9.1GB	9.1GB
Cache Memory per Processor	32KB/32KB L1, 1MB L2	32KB/32KB L1, 256KB L2	32KB/32KB L1, 1MB L2
I/O Bus	PCI	PCI	32b PCI
Number of I/O Buses	2	3	1
I/O Bandwidth (MB/sec.)	246	400	132
I/O Slots Available	9	9	2 (1 full length, 1 half length)
Disk Bays Available	18	18	2 avail. for 9.1GB or 18.2GB drives
Media Bays Available	4	4	diskette & 32X CD-ROM standard
"Hot-Pluggable" Disks	Yes	Yes	no
Optional Keyboard/Mouse Support	Yes	Yes	yes
SCSI-2 F/W Adapter	Yes	Yes	yes
Tray Loading CD-ROM Drive	Yes	Yes	yes standard
1.44MB Diskette Drive	Yes	Yes	yes standard
1 Parallel/3 Serial Ports	Yes	Yes	1 parallel, 2 serial
Lease††	*	*	*
Price	**$9,900†**	**$13,900/17,900†**	**$3,995†**

	Model H50	Model H70	Model R50	Model S70 Advanced	Model S80
Packaging	Rack drawer	Rack drawer	Rack drawer	Rack mounted	Rack mounted
Operating System (Your choice at no additional charge.)	AIX V4.3	AIX V.4.3.3 or V4.3.2	AIX V4.3	AIX V.4.3.3 or V4.3.2	AIX V4.3.3
MP Configurations	1-, 2-, 3- or 4-way	1-, 2-, 3- or 4-way	2-, 4-, 6- or 8-way	4-, 8- or 12-way	6-, 12-, 18- or 24-way
Processor Type	PowerPC 604e, 332MHz	PowerPC RS64-II, 340MHz	PowerPC 604e, 200MHz	PowerPC RS64 II	PowerPC RS64 III
Memory	128MB-3GB	128MB-8GB	256MB-4GB	1GB-32GB	2GB - 64GB
Memory Slots	2	2	4	20	16
Standard SCSI Disk	9.1GB	9.1GB	9.1GB	9.1GB	9.1GB
Cache Memory per Processor	32KB/32KB L1, 256KB L2	64KB/64KB L1, 4MB L2	32KB/32KB L1, 2MB L2	64KB/64KB L1 8MB L2	128KB/128KB L1, 8MB L2
I/O Bus	PCI	PCI	Micro Channel	PCI	PCI
Number of I/O Buses	3	4	2	4-16	4-16
I/O Bandwidth (MB/s)	400	528	160	500	500MB/s per I/O drawer
I/O Slots Available	9	8	15	11 minimum, 53 max.	11 minimum, 53 max.
Disk Bays Available	13	13	4	11 minimum, 47 max.	11 minimum, 47 max.
Media Bays Available	3	3	4	1 minimum, 7 max.	1 minimum, 7 max.
"Hot-Pluggable" Disks	Yes	Yes	No	Yes	Yes
Optional Keyboard/Mouse Support	Yes	Yes	Yes	Yes	Yes
SCSI-2 F/W Adapter	Yes	Yes	Yes	UltraSCSI	UltraSCSI
Tray Loading CD-ROM Drive	Yes	Yes	Yes	Yes	Yes
1.44MB Diskette Drive	Yes	Yes	Yes	Yes	Yes
1 Parallel/3 Serial Ports	Yes	Yes	Yes	1 parallel, 2 serial ports	1 parallel, 2 serial ports
SSA RAID Adapter	Yes	Yes	Yes	Yes	Yes
Lease††	*	*	*	*	*
Price	**$22,000†**	**$26,900†**	**$64,000†**	**$125,000†**	**$290,000†**

† Includes AIX base license.
†† Turn to page 76 for details on lease payment information.
FCC Class A (Defined on page 4)
* ***PLEASE CALL FOR LATEST PRICES***

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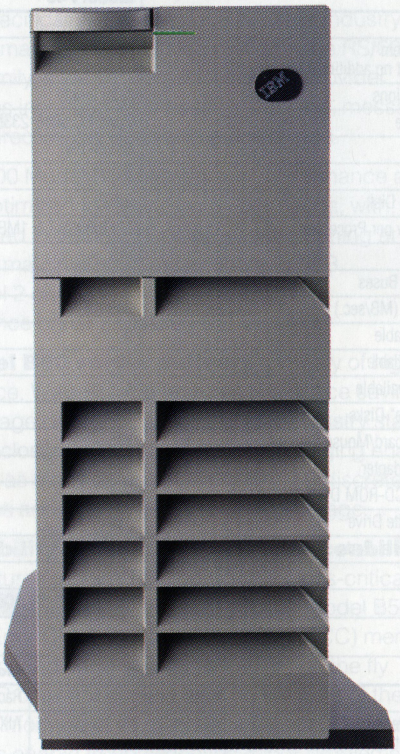
Servers for workgroups

Workgroup Server Model F40

Fax Document 6309

- **233MHz PowerPC 604e processor**
- **Optional second 233MHz PowerPC 604e for 2-way SMP**
- **7 PCI, 2 PCI/ISA slots**
- **64MB ECC memory (expandable to 1GB)**
- **1MB Level 2 cache per 233MHz processor**
- **Dual integrated SCSI-2 F/W controllers**
- **Up to 345.8GB internal disk storage**
- **SSA adapter available as an optional feature**
- **9.1GB or 18.2GB disk drives**
- **Ultra SCSI, SCSI F/W or SCSI F/W RAID**
- **20X (Max.) speed tray loading SCSI-2 CD-ROM drive**
- **5 available hot-swap disk bays and 2 available media bays (plus 12 optional hot-swap disk bays)**
- **Optional service processor to help ensure high availability**
- **1.44MB diskette drive**
- **Two serial ports, one parallel port**
- **AIX V4.3 is included in the base price.**



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Product Update

IBM's powerful Model F40 is one of our most expandable PCI workgroup servers, operating as a high-performance 1- or 2-way Symmetric Multiprocessing (SMP) system. Using IBM's AIX Connection software, a full range of clients - AIX, DOS, Windows** and MacOS - can attach to the F40.

An upgrade to the Model F50 with serial number protection is offered.

Type	Mod	Description	Lease†	Price
7025	F40	233MHz 604e	*	$9,900

† Turn to page 76 for details on lease payment information.
FCC Class A (Defined on page 4)
* ***PLEASE CALL FOR LATEST PRICES***

CPU Options

Feature	Description	Price
► 4306	2nd 166MHz PowerPC 604e (for 166MHz systems)	$2,000
► 4341	2nd 233MHz PowerPC 604e (for 233MHz systems)	$2,000

Memory Options

Feature	Description	Price
4129	Upgrade to 64MB ECC DIMM	$224
► 4114	Additional 64MB ECC DIMM	$448

Additional Internal Storage Options - see page 30

See page 50 for color monitor options.
System Dimensions: 9.6"W x 27.3"D x 24.3"H
For Benchmarks, check out the 4-page Power Lineup chart inside pages 6 and 7.
Expand to SMP - Enhance your uniprocessor system with a second 233MHz PowerPC 604e.
► 24 Hour QuickShip

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Top-rated Web Server

Workstation/Server Model F50

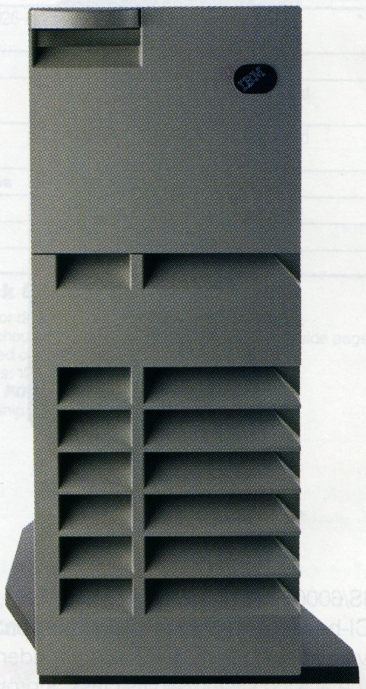
Fax Document 7614

- **New! 10K rpm 9.1GB Ultra SCSI and SSA drives for improved performance**
- **One, two, three or four 166MHz or 332MHz PowerPc processors with X5 Cache**
- **128MB synchronous DRAM memory (expandable to 3GB) with peak memory bandwidth of 1.3GB/s**
- **256KB 8-way, set-associative Level 2 cache per processor (expandable to 4 processors)**
- **9.1GB or 18.2GB disk drives for a maximum capacity of 345.8GB**
- **7 PCI and 2 shared PCI/ISA slots.**

The versatile Model F50 has a faster processor selection and is an excellent choice as either a high-end workgroup server or an entry-level enterprise server. It also boasts an aggregate I/O data rate of up to 400MB/second, using three I/O buses for nine slots. (Two 64-bit PCI slots connect to one bus, three 32-bit PCI slots connect to a second and the remaining four 32-bit slots [2 PCI, 2 PCI/ISA] connect to the third I/O bus.)

The F50 also features four media bays and 18 hot-swappable disk bays with three optional interconnect standards: SCSI-2 Fast/Wide, Ultra SCSI and SSA. An optional, integrated SSA RAID controller eliminates the need for an external SSA RAID subsystem.

Upgrade to the Model H70 with serial number protection.



Model F50

For FAX DOC Call 800 426-4329

Product Update

Reduced Prices

Custom QuickShip 7 days

QuickShip 24 hours

YEAR 2000 READY

	Type	Mod	Description	Lease†	Price
▷	7025	F50	166MHz 604e	*	$13,900[1]
▷	7025	F50	PowerPC 604e 332MHz 1-way Processor Card	*	$17,900[1]

	Feature	Description	Price
CPU Options			
▶	4307	PowerPC 604e 166MHz 1-way Processor Card with 256KB L2 Cache (F50)	$3,000
▶	4309	PowerPC 604e 166MHz 2-way Processor Card with 2x256KB L2 Cache (F50)	$6,000
	4356	PowerPC 604e 332MHz 1-way Processor Card	$4,000[1]
	4357	PowerPC 604e 332MHz 2-way Processor Card Select	$7,000[1]
▶	4358	PowerPC 604e 332MHz 1-way Processor Card	$7,000
▶	4359	PowerPC 604e 332MHz 2-way Processor Card	$10,000
Memory Options			
	4106	256MB (2X128MB), DIMMS	$1,280[1]
▶	4107	64MB (2X32MB), DIMMS	$640

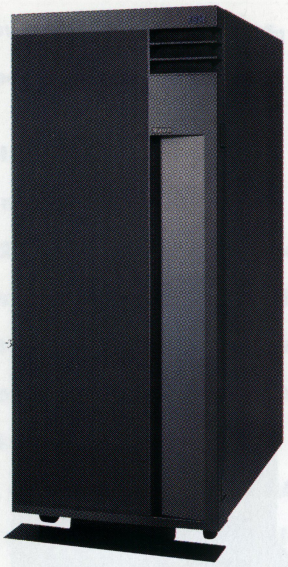
Additional Internal Storage Options - see page 30

† Turn to page 76 for details on lease payment information.
FCC Class A (Defined on page 4)
See page 50 for color monitor options.
Dimensions: 9.6"W x 27.3"D x 24.3"H
For Benchmarks, check out the 4-page Power Lineup chart inside pages 6 and 7.
[1]Reduced Price
* ***PLEASE CALL FOR LATEST PRICES***
▶ 24 Hour QuickShip
▷ Custom QuickShip

Superior SMP price/performance with rack-drawer expandability

RS/6000 Enterprise Server Model H50

Product Update



- **New! 10K rpm 9.1GB Ultra SCSI and SSA drives for improved performance**
- **One, two, three or four 332MHz PowerPC processors with X5 Cache**
- **256KB of 8-way set associative Level 2 cache per processor**
- **Redundant cooling fans and optional redundant power supply (both hot-swappable)**
- **128MB to 3GB of SDRAM memory**
- **Configurable for use as an SSA RAID server**
- **32X (Max.) CD-ROM**
- **AIX V4.3 is included in the base price.**

Type	Mod	Lease†	Price
7026	H50	*	$22,000

† Turn to page 76 for details on lease payment information.
For Benchmarks, check out the 4-page Power Lineup chart inside pages 6 and 7.
FCC Class A (Defined on page 4)
* ***PLEASE CALL FOR LATEST PRICES***

Feature	Description	Price
CPU Options		
4311	PowerPC 604e 332MHz 1-way Processor Card with 256MB L2 Cache	$7,000
4320	PowerPC 604e 332MHz 2-way Processor Card with 2x256MB L2 Cache	$10,000
4338	PowerPC 604e 332MHz Select 1-way to 2-way	$3,000

Internal Disk Options - see page 30

The IBM RS/6000 Enterprise Server Model H50, a rack-drawer, PCI-based, 1-4 way Symmetric Multiprocessing (SMP) server is designed to deliver unprecedented price/performance among systems in its class. It provides outstanding ease of use, sophisticated system and network management capabilities, and excellent reliability, availability and serviceability (RAS). The H50 is ideal for a variety of enterprise computing environments including:

- enterprise resource planning
- e-business applications
- business intelligence applications
- collaborative computing, e.g. Lotus Domino or other groupware applications

The H50 features IBM's enhanced X5 Cache system with the powerful 332MHz PowerPC 604e processors. It comes with 128MB and expands to 3GB of memory; 256KB of ECC Level 2 cache per processor in an 8-way set associative implementation; 9.1GB hard disk drive and a modular disk subsystem that allows fast, easy addition and replacement of drives while the system is running.

The H50 has a maximum hot-swappable disk storage capacity of 236.6GB and a flexible I/O subsystem with 9 I/O slots (5 32-bit PCI, 2 64-bit PCI and 2 shared PCI/ISA) and 16 disk/media bays. It is packaged in a black 9" x 16" 8-EIA rack drawer (recommended for use in the black Model S00 Rack) and is shipped with the internal adapters and devices configured and installed.

Designed for high availability, the Model H50 can be expanded from 1 to 4 processors as your performance requirements dictate. And you can upgrade to the Model H70 with serial number protection.

High availability solutions

RS/6000 High Availability Cluster Server-HA50

The RS/6000 High Availability Cluster Server – HA50 is an affordable, packaged – priced solution that provides redundant hardware and software and high-availability features that are designed to protect against unplanned system failures. It includes:

- Two rack mounted, 1-way (scalable to 4-way) SMP H50 Servers
- One 7133 Serial Disk System with built-in redundancy, data paths and high-performance SSA disks
- Proven HACMP for AIX software
- AIX operating system

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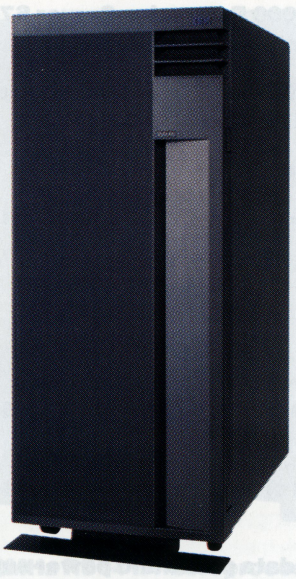
64-bit performance and availability

Enterprise Server Model H70

Product Update



- **New! 10K rpm 9.1GB UltraSCSI and SSA drives for improved performance**
- **9.1GB and 18.2GB disk drives**
- **8 I/O slots and up to 16 disk/media bays**
- **64-bit and 32-bit applications run concurrently**
- **The I/O data bandwidth provides more than 500MB/sec peak performance**
- **Ultra SCSI disk support doubles data transfer rates over SCSI-2 up to 40MB/sec**
- **Internal RAID storage helps protect data without purchasing external disk subsystems.**

The RS/6000 Enterprise Server Model H70 is an improved follow-on to the popular Enterprise Server Model H50.

With one to four 64-bit 340MHz processors and up to 8GB of SDRAM memory, it provides significant performance gains when coupled with 64-bit database and application programs or when running legacy 32-bit applications. Reliability features include error correcting memory and L2 cache; a built-in service processor that can monitor system operation and report a system failure remotely; optional redundant power supplies and hot-swappable disks.

The Reliability/Availability/Serviceability (RAS) of the Model H70 is further enhanced by ECC level 1 cache, reduced soft memory errors and boot-time reconfiguration that can automatically take a failed processor offline. The combination of hardware features and high availability software (HACMP) means the model H70 excels in achieving up-time requirements critical in today's business operations.

Feature	Product No.	Description	Lease†	Price
	7026-H70	Model H70 - 340MHz processor	*	$26,900
CPU Options				
4317		340MHz 1-way Processor Card with 4MB L2 Cache		$10,000
4319		340MHz 2-way Processor Card with 2 x 4MB L2 Cache		$20,000
Memory Options				
► 4107		64MB (2 x 32MB) DIMMS		$960
► 4110		256MB (2 x 128MB) DIMMS		$3,840
► 4119		512MB (2 x 256MB) DIMMS		$6,400

Internal Disk Options - see page 30

† Turn to page 76 for details on lease payment information.
For Benchmarks, check out the 4-page Power Lineup chart inside pages 6 and 7.
FCC class A defined on page 4.
System Dimensions: 13.8"H x 17.5"W x 34.3"D
* ***PLEASE CALL FOR LATEST PRICES***
► 24 Hour QuickShip

Maximize system uptime

HA-H70 Cluster Server

- **Built-in redundant software and hardware**
- **High Availability Cluster Multi-processing for AIX (HACMP)**
- **Powerful one- to four-way symmetric multiprocessor (SMP)**
- **Designed for easy growth - up to four H70 servers and six 7133 disk systems (with a total storage capacity of 1.74TB) may be attached to the cluster system.**

HA-H70 is designed to maximize system uptime and keep your company's critical applications, data and systems operational and available 7 days a week, 24 hours a day and 365 days a year.

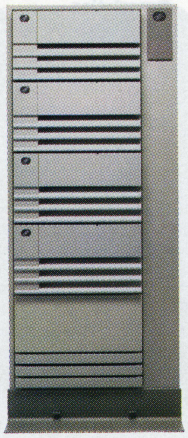
The HA-H70 solution provides the capability to recover from unplanned server hardware and application failures...the estimated downtime is less than six minutes per year (99.99% available). It also provides the means to take down an individual server (node) for planned maintenance and upgrades, without having to take down the entire HA-H70 Cluster, thus providing additional uptime.

Powerful SMP server

RS/6000 Enterprise Server Model R50

Fax Document 5664 (Model R50)

For FAX DOC Call 800 426-4329



Model R50

- **Non-blocking data crossbar delivers sustained memory bandwidth of 1.8GB/s**
- **Exclusive onboard IBM SystemGuard* service processor monitors your system and provides automatic, unattended recovery from most errors**
- **AIX V4.3 is included in the base price.**

RS/6000 Enterprise Server Model R50 offers a broad range of performance to meet your requirements. Featuring high-speed 200MHz PowerPC 604e processors, this enhanced SMP server delivers greater speed, flexibility and capability than previous 604-based models. For high output, high bandwidth and efficient cache management, SMP is a great solution.

Model R50 is rack mounted for easy expandability. It can be configured as a 2-, 4-, 6- or 8-way SMP system with one to four dual 200MHz PowerPC 604e processors.

Designed for high-throughput SMP from the ground up

Our RS/6000 SMP family schedules and synchronizes work across available processors, helping to provide efficient paths between each processor and memory. Each system has been engineered for demanding environments that require dependable, high-performance multiprocessor architecture.

Feature	Description	Lease†	Price
4162	1GB SMP DIMMs on 1GB card	*	$11,334
► 4165	256MB DIMMs on 1GB card	*	$7,680
► 4166	256MB DIMM Kit	*	$5,140

† Turn to page 76 for details on lease payment information.
FCC Class A defined on page 4.
System Dimensions: R50: 17.52"W x 36.42"D x 10.5"H
For Benchmarks, check out the 4-page Power Lineup chart inside pages 6 and 7.
Current users of AIX V4 may require Program Temporary Fixes to be Year 2000 ready.
* ***PLEASE CALL FOR LATEST PRICES***
► 24 Hour QuickShip

High availability for critical applications

HA-S70 Advanced Cluster Server

Two IBM RS/6000 Enterprise Server S70 Advanced; each server includes:

- **One 4-way SMP, 262MHz, RS64 II processor - each with 8MB L2 Cache**
- **2GB of memory**
- **Dual Ultra SCSI controllers and boot disk drives**
- **Dual PCI SSA disk adapters**
- **Three PCI Lan adapters**
- **N+1 AC power**

Two IBM 7133 Model D40 Serial Disk System; each 7133 includes:

- **Eight 9.1GB or 18.2GB hot-swappable SSA disk drives**
- **Redundant data paths and power supplies**
- **One IBM S70 Advanced I/O rack with redundant power distribution unit.**

HA-S70 Advanced enhances your ability to conduct business around the clock-day in, day out-around the world…knowing you have an ideal recovery system in the event of an unplanned failure. HA-S70 Advanced is designed to maximize system uptime. For outages caused by unplanned failures, the HA-S70 Advanced system is estimated to be available 99.999% of the time or be unavailable less than 6 minutes annually. Moreover, with the HA-S70 Advanced, IBM has made high availability much more robust and affordable.

HA-S70 Advanced Protection

HA-S70 Advanced is built on a reliable foundation with built-in redundancy… two powerful four- to twelve-way symmetric multiprocessor (SMP) RS/6000 Enterprise Server S70 Advanced, dual 7133 Serial Storage Architecture (SSA) disks, proven HACMP (High Availability Cluster Multi-Processing for AIX*) and AIX software. For added availability, the disk systems and I/O drawers are mounted in a rack with redundant power.

IBM's award-winning HACMP and AIX system software are integrated into the HA-S70 Advanced solution. HACMP provides high-availability application services and allows HA-S70 Advanced hardware and software resources to be fully utilized by monitoring and detecting system hardware and software failures, including processor, network, adapter, power, application and user-defined events.

HA-S70 Advanced financing options

HA-S70 Advanced financing options include pre-tested, industry-leading applications, high-availability services and attractive financing rates for credit qualified customers.

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High availability and greater expandability for mission-critical applications

RS/6000 Enterprise Server S70 Advanced



- **64-bit 262MHz RS64 II microprocessor, packaged 4 processors per card with 8MB of L2 ECC cache per processor**
- **4-way to 12-way SMP scalability**
- **1GB to 32GB of ECC SDRAM system memory**
- **Supports both 32-bit and 64-bit applications and PCI cards**
- **Supports SCSI, Ultra SCSI and SSA storage, media, and communications options**
- **RAID support for SSA**
- **Internal I/O system scalable to 56 PCI slots and 873.6GB internal disks**
- **Up to 48 hot-pluggable disk bays with an additional external capacity of 45TB.**

The IBM RS/6000 Enterprise Server S70 Advanced is the SMP server solution of choice. Offering a higher level of performance, reliability, availability and serviceability, it has been designed for mission-critical environments. The service processor, redundant cooling and power and the ability to cluster multiple systems using High Availability Cluster Multi-Processing (HACMP) for AIX software, allows greater horizontal system growth.

The S70 Advanced is a Central Electronics Complex (CEC) and an I/O rack. The entry-level CEC configuration is a 4-way scalable SMP system that utilizes the 64-bit 262MHz RS64 II processor with 8MB of L2 cache per processor, respectively. The first drawer in the I/O rack contains the service processor, high-performance disk drive, 32X maximum speed CD-ROM, 1.44MB 3.5-inch disk drive and two PCI Ultra SCSI disk adapters. Upgrades are also available.

Type	Mod	Description	Lease†	Price
7017	S7A	Model S70	*	$125,000

† Turn to page 76 for details on lease payment information.
* ***PLEASE CALL FOR LATEST PRICES***

CPU Option

Feature	Description	Price
▶ 5312	PowerPC RS64 II 4-way Processor Card	$55,000
Memory Options		
▶ 4171	512MB Memory Group (4 x 128MB)	$9,728
▶ 4173	1024MB Memory Group (4 x 256MB)	$19,456
▶ 4175	2048MB Memory Group (4 x 512MB)	$34,816
▶ 4177	4096MB Memory Group (4 x 1024MB)	$57,344
▶ 4179	8192MB Memory Group (4 x 2048MB)	$98,304
Internal Disk Options		
▶ 2913	9.1GB Ultra SCSI Hot Swap	$1,400
3104	18.2GB Ultra SCSI Hot Swap	$2,400
Additional Internal Storage Options		
▶ 6159	12GB/24GB 4mm Internal Tape Drive	$3,200
▶ 6156	20GB/40GB 8mm Internal Tape Drive	$6,250

FCC Class A (Defined on page 4)
CEC Dimensions: 22.3"W x 40.98"D x 62.0"H
I/O Dimensions: 25.5"W x 40.1"D x 62.0"H
For Benchmarks, check out the 4-page Power Lineup chart inside pages 6 and 7.
▶ 24 Hour QuickShip

64-Bit computing

RS/6000 Enterprise Server Upgrades

If you are an IBM J30/40/50 or R30/40/50 installation, the Model S70 Advanced is an ideal solution for increased processing power and application compatibility. And now IBM makes going to the Model S70 Advanced easier than ever. Model conversion kits enable J30/40/50 or R30/40/50 users to cost-effectively move to the Model S70 Advanced while maintaining their existing serial number.

The following required features must be ordered and installed on the Model S70 Advanced :

- Base 4-way processor
- Base or selected memory
- 9.1GB Ultra SCSI-enabled hot-swappable disk
- I/O Rack and base 8296 drawer (for J30/40/50 users) or 8296 drawer only (for R30/40/50 users)
- Two PCI Ultra SCSI adapters

In addition, you retain all memory, all Micro Channel adapter cards and all processor cards except for the base 2-way card. These features are now available for reuse in any other J30/40/50 or R30/40/50 systems you may have installed.

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Move into the next generation of mission-critical, commercial computing

Enterprise Server Model S80

New



The Model S80 provides the power, capacity, reliability and expandability you need with:

- **64-bit system with 6-, 12-, 18- or 24-way scalability - packaged on 4 processor cards (6 RS64 III processors per card)**
- **Expandable from 2GB to 64GB of ECC SDRAM**
- **Support for UltraSCSI, SSA and FCAL interfaces**
- **32-bit and 64-bit applications supported**
- **AIX for Servers (1 - 2 Users) license included**
- **Excellent reliability, availability and serviceability (RAS).**

Performance by design

The S80 is the newest member of IBM's popular S-series of 64-bit enterprise servers. It builds on the successful design of the S70 and S70 Advanced by doubling the number of processors to 24, and doubling memory to 64GB. And the S80 is the first RS/6000 to feature the RS64 III microprocessors, based on IBM's state-of-the-art "copper chip" technology. The result is faster, more reliable processors.

Strategic computing depends on throughput

Throughput depends on balanced system design and here, again, the S80 delivers with increased internal memory bandwidth and external I/O bandwidth that help eliminate potential bottlenecks. And new performance enhancements to AIX 4.3.3 take full advantage of this leading-edge design.

More power for business applications

In pre-release testing, a 12-way S80 delivered a SPECweb96[1] benchmark (which measures Web-serving performance) that was 66 percent better than the previous record. And in the VolanoMark[2] test (which measures Java performance) a six-way S80 shattered the previous best mark established by an 8-way Hewlett-Packard server.

Online, 24 x 365

To help ensure strategic applications remain available 24x365, the S80 features ECC main and cache memory that can detect and correct many errors. Should downtime occur, its fault and error correction functions - such as machine check handling, reboot recovery, PCI fault isolation and service processor error collection - help speed system recovery.

A strategic weapon

With its powerful combination of performance, scalable growth options, investment protection, reliability and flexibility, the S80 offers a comprehensive solution for mission-critical computing environments - for today and tomorrow.

Requirements:	Call for hardware and software requirements.

Product No.	Mod	Feature	Description	Lease†	Price
7017	S80		Model S80 with one 6-way processor, 2GB memory	*	$290,000
7017	S80	5308	RS64 III Processor, 6-Way SMP, 450MHz, 8MB L2 Cache		$200,000
		4190	1024MB Memory (4 x 256MB Cards)		$19,456
		4191	2048MB Memory (4 x 512MB Cards)		$34,816
		4192	4096MB Memory (4 x 1024MB Cards)		$57,344
		4193	8192MB Memory (4 x 2048MB Cards)		$98,304
		4194	16384MB Memory (4 x 4096MB Cards)		$147,456
		2913	9.1GB UltraSCSI 16-bit Hot-Swap Disk Drive		$1,400
		3008	9.1GB 10,000 rpm UltraSCSI 16-bit Hot-Swap Disk Drive		$1,680
		3104	18.1GB UltraSCSI 16-bit Hot-Swap Disk Drive		$2,400

† Turn to page 76 for details on lease payment information.
FCC Class A defined on page 4.
System Dimensions: CEC Enclosure 62"H x 22.3"W x 40.98"D
[1] For more information see **www.spec.org**, August '99
[2] For more information see **www.volano.com/benchmarks.html**
* ***PLEASE CALL FOR LATEST PRICES***

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The model S80 shatters benchmark records for Web-serving and Java!

Model S80 Benchmarks

Fast servers that are reliable and can handle large numbers of users are critical to companies transitioning their businesses and their customer relationships to the Internet.

SPECweb96 - A 12-way S80, running a pre-release version of AIX 4.3.3, the IBM UNIX operating system, delivered a SPECweb96 benchmark result of 40,161 http ops./sec., 66 percent better than the former champ, the HP 9000 N-Class server from Hewlett-Packard.

SPECweb96 measures the maximum number of Hypertext Transfer Protocol (HTTP) operations per second.

Imagine the power of this system when it is configured with its maximum of 24 processors!

VolanoMark - In this Java server performance measure, a 6-way S80 executed 22,906 messages/sec., 92% better than Hewlett-Packard's best result, 11,920 messages/sec. by an N Class server configured with 8 processors. VolanoMark is a 100 percent pure Java server benchmark that measures the speed of the Java platform and accurately predicts real-world Java performance and scalability.

While hardware improvements were important in setting these new records, AIX enhancements were just as significant. AIX 4.3.3, released in September, offers several Java, Web-performance, and scalability enhancements. It is also the first release of AIX to be influenced by Project Monterey. Project Monterey is an initiative led by IBM with SCO, Sequent, and Intel, to deliver a single UNIX product line that spans RS/6000 systems, IA-32, and upcoming IA-64 based systems.

VolanoMark testing also used IBM's Java Virtual Machine 1.1.8 and Just in Time Compiler 3.1, both of which have significant performance advantages over their predecessors.

For more information on:
SPEC - see **www.spec.org**
VolanoMark benchmark - see **www.volano.com/benchmarks.html**

IBM RS/6000 Results Magazine

RS/6000 Results is a quarterly IBM publication that is distributed across the United States and Canada. Providing the latest news about product releases, promotions, and coming events, RS/6000 Results contains customer case studies and insightful feature articles on technology and directions, application strategies, and implementation issues, all designed to help you gain a competitive edge with an RS/6000 solution. In a word - results!

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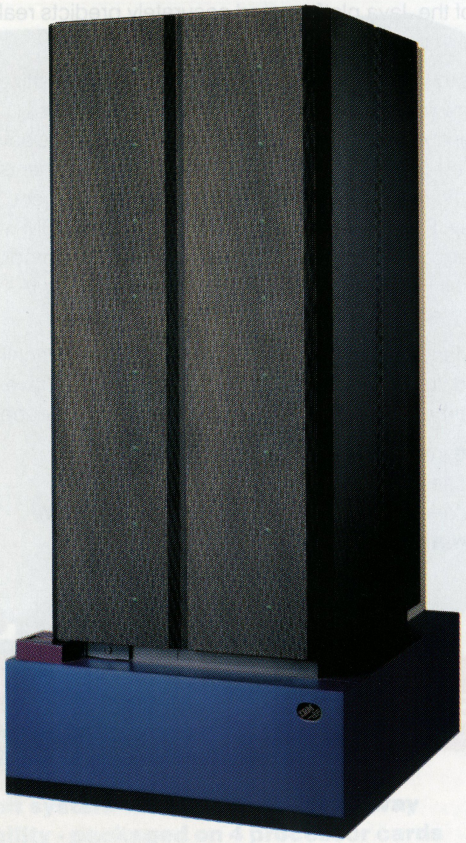
Server consolidation cuts administrative costs

RS/6000 SP



- **Building-block architecture - comprised of "nodes," each a complete RS/6000 system with its own processor(s), memory, PCI expansion slots, disk devices and AIX operating system**
- **Ability to serially run any of more than 10,000 AIX applications on separate nodes**
- **Ability to use nodes in parallel - bringing hundreds or thousands of processors together to create a massively parallel system that is perfect for large-scale computing requirements**
- **An optional SP Switch that provides high-speed communications for inter-node data transfers and system backups**
- **Flexible configuration - can mix node types as desired and house them in short or tall frames**
- **Growth to 512 nodes per system - harnessing the power of thousands of processors, all managed and controlled from a single graphical operations console.**

If your server-related administrative costs are skyrocketing, it's time to do what over 2,000 other leading-edge companies have already done: invest in an RS/6000 SP system - the industry's leading platform for UNIX** server consolidation. The SP* platform helps cut costs while allowing operational and applications flexibility. It handles Web-serving, transaction processing, financial analysis, simulation, decision support and more. Plus the SP has an unmatched ability to cost-effectively grow with your business.

World class scalability With the ability to start with a single node and grow to a total of 512, the RS/6000 SP system gives you excellent scalability. You determine how much power you need to add at any given time, since the SP system can be grown in one-node increments. You can even mix-and-match different processor generations in the same SP configuration, an important feature that lets you increase the performance of growing application nodes while leaving others at their current performance levels until more power is needed.

Superior availability The SP system was built with high availability in mind. It features "hot-pluggable" nodes, optional I/O and internal disk redundancy and multiple redundant, hot-pluggable power supplies. IBM's popular and industry-leading HACMP high-availability software is also supported on the RS/6000 SP system, up to 32 nodes, enabling nodes to provide backup and recovery for one another in the event of a node failure or other error.

Improved manageability The RS/6000 SP system allows for growth with limited increased administration. The status of all hardware, software, jobs and users can be monitored by your system administrator from a single graphical operations console - an RS/6000 control workstation running PSSP (Parallel Systems Support Programs) software. The administrator can also perform multiple management tasks from this console - everything from distributing software to hundreds of nodes and centrally managing error logs and password files, to monitoring and controlling SP hardware at remote sites.

Increased flexibility If you are looking for a truly multipurpose platform with excellent flexibility, the RS/6000 SP system is it. The SP system lets you support a wide variety of single or multi-tiered applications concurrently. There's no need to invest in multiple hardware platforms and administrative skill sets for different applications. You can develop, test and run applications for multiple AIX versions on the same hardware platform. You can even partition the system into pools of nodes. And because the SP system allows for nearly linear scaling of disk capacity along with processors and memory, upgrades are easier to manage and you can provide applications access to terabytes of data.

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SP nodes pack more power

RS/6000 Nodes: High, Thin and Wide



IBM is pleased to announce the new 64-bit, POWER3-based SMP High node. With up to eight 222MHz POWER3 processors, support for up to 16GB of memory and a 14GB/second (peak) memory bandwidth, this node is built for performance. And, with 5 internal PCI slots and up to 6 optional SP IO Expansion Units (each allowing an additional 8 PCI slots and 4 disk bays), the POWER3 High node can support up to 53 PCI attachments.

The 1- or 2-way POWER3 Thin and Wide nodes deliver great floating-point performance – ideal for technical applications like seismic processing, engineering analysis, scientific research, chemical modeling and electronic design automation – balanced with strong integer capabilities in a small package. They support up to 4GB of memory, a range of PCI adapters, and provide up to 36.4GB of mirrored disk.

The 332MHz PowerPC 604e SMP Thin and Wide nodes provide increased price/performance leadership, improved packaging and enhanced RAS over previous SMP configurations. Their excellent integer performance makes them the ideal solution for mission-critical applications such as data mining and warehousing, OLTP, collaborative computing and groupware solutions.

SP "attached servers" – S80 and S7A

RS/6000 SP Attached Servers: Models S80 and S70 Advanced



Now you can attach up to 16 of the RS/6000 Model S80 and S70 Advanced (S7A) servers to an SP system and have them function like internal SP nodes. This provides very large capacity, high-performance database server capabilities for advanced applications such as ERP and data marts. The attached server can be attached directly to the RS/6000 SP switch fabric and is managed like any other SP node using the PSSP systems management software.

Consolidating to the RS/6000 SP can save your organization money. Check out the Server Consolidation Savings Estimator to determine how much.

Visit our Web site at: **The Server Consolidation Savings Estimator can be found at: www.rs6000.ibm.com/estimator**

Scale your RS/6000 SP to new heights

RS/6000 SP



	POWER3 High	POWER3 Thin	POWER3 Wide	Thin-332	Wide-332
Processor	222MHz POWER3 (2-, 4-, 6-, 8-way)	200MHz POWER3 (1-, 2-way)	200MHz POWER3 (1-, 2-way)	332MHz PPC 604e (2-, 4-way)	332MHz PPC 604e (2-, 4-way)
L1 Cache	64KB data[1] 32KB instruction[1]	64KB data[1] 32KB instruction[1]	64KB data[1] 32KB instruction[1]	32KB data[1] 32KB instruction[1]	32KB data[1] 32KB instruction[1]
L2 Cache	4MB[1]	4MB[1]	4MB[1]	256KB[1]	256KB[1]
RAM	1-16GB	256MB-4GB	256MB-4GB	256MB-3GB	256MB-3GB
Memory Bus Width	576-bit	128-bit	128-bit	128-bit	128-bit
Basic Internal Storage	None required[3]	none required[3]	none required[3]	none required[3]	none required[3]
Max. Internal Storage	473.2GB[4,5]	36.4GB[4]	72.8GB[4]	36.4GB	72.8GB
Disk Bays	2-26[5]	2	4	2	4
PCI Expansion Slots (available)	5-53[5]	2	10	2	10
Nodes/Frame - Tall	Four	16	8	16	8
Nodes/Frame - Short	N/A	8	4	8	4
I/O Bus Speeds	264 MB/Second	132MB/second	132MB/second	132MB/second	132 and 264MB/second[2]
Adapters	Integrated Ultra SCSI and Ethernet (10/100 Mb/Second)	Integrated Ultra SCSI and Ethernet (10/100 MB/Second)	Integrated Ultra SCSI and Ethernet (10/100 MB/Second)	Integrated SCSI-2 F/W and Ethernet	Integrated SCSI-2 F/W and Ethernet

Pricing for RS/6000 SP systems ranges from approximately $150,000 for a single-node system to several million dollars for truly large-scale systems configured with up to 512 nodes.
[1] Per processor [2] Triple bus [3] Boot from external storage required if no internal storage [4] Disks must be installed in like pairs to support mirroring [5] with SP Expansion I/O Unit

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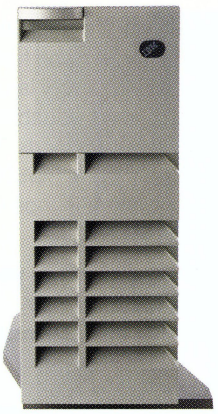

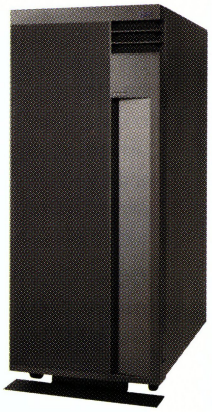



Deskside SMP Servers

Feature	Description	Model F40	Model F50	Model J50	Price
▶ 4093	0MB Card[a]	–	●	–	$1,038
▶ 4107	64MB (2x32MB DIMMs)	–	●	–	$640
▶ 4110	256MB (2x128MB DIMMs)	–	●	–	$2,560
▶ 4113	32MB DIMM[b]	●	–	–	$224
▶ 4114	64MB DIMM[b]	●	–	–	$448
▶ 4115	128MB DIMM[b]	●	–	–	$896
4165	1GB Card[c] (with 1 256MB DIMM)	–	–	●	$7,680
▶ 4166	256MB DIMM (for use with 4165)	–	–	●	$5,140
4167	1GB Card (with 4 256MB DIMMs)	–	–	●	$24,380

[a] 16 DIMM positions
[b] DIMMs must be installed in pairs
[c] Supports 256MB, 512MB or 1GB

Rack-Mounted Servers

Feature	Description	Model B50	Model H50	Model H70	Model R50	Price
▶ 4093	0MB Card[a]	–	●	●	–	$1,038
▶ 4107	64MB (2x32MB DIMMs)	–	●	●	–	$640
▶ 4110	256MB (2x128MB DIMMs)	–	●	●	–	$2,560
▶ 4119	512MB (2x256MB DIMMs)	–	–	●	–	$6,400
4150	125MB DIMM	●	–	–	–	*
4169	256MB DIMM	●	–	–	–	*
▶ 4165	1GB Card[c] (with 1 256MB DIMM)	–	–	–	●	$7,680
▶ 4166	256MB DIMM (for use with 4165)	–	–	–	●	$5,140
4167	1GB Card (with 4 256MB DIMMs)	–	–	–	●	$24,380

[a] 16 DIMM positions
[c] Supports 256MB, 512MB or 1GB

S Family Servers

Feature	Description	Model S70	Model S70 Advanced	Model S80	Price
▶ 4171	512MB	●	●	–	$9,728
▶ 4173	1GB	●	●	–	$19,456
▶ 4175	2GB	●	●	–	$34,816
▶ 4177	4GB	●	●	–	$57,344
▶ 4179	8GB	●	●	–	$98,304
4180	8GB	–	–	●	$84,480
4191	2GB	–	–	●	$34,816
4192	4GB	–	–	●	$57,344
4193	8GB	–	–	●	$98,304
4194	16GB	–	–	●	$147,456

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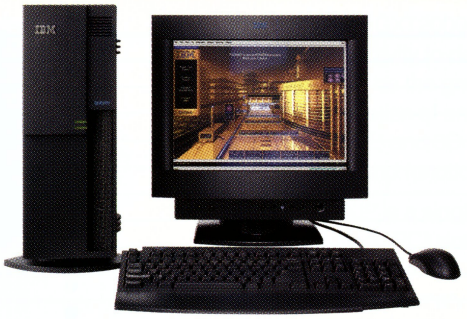



Workstations

Feature	Description	Models 120/132	Models 140/240	Model 150	Model 260	Models 25T[a]/41W/42W/T[a]	Model 3CT	Price
▶ 4083	32MB SIMM	●	–	–	–	–	–	$1,280
▶ 4011	16MB SIMM	–	–	–	–	●	–	$640
▶ 4012	32MB SIMM	–	–	–	–	●	–	$1,280
▶ 4113	32MB DIMM	–	●	–	–	–	–	$224
▶ 4114	64MB DIMM	–	●	–	–	–	–	$448
▶ 4115	128MB DIMM	–	●	–	–	–	–	$896
▶ 4069	64MB Card	–	–	–	–	–	●	$1,920
▶ 4090	128MB Card	–	–	–	–	–	●	$3,200
▶ 4095	256MB Card	–	–	–	–	–	●	$6,400
▶ 4149	64MB DIMM	–	–	●	–	–	–	$320
▶ 4150	128MB DIMM	–	–	●	–	–	–	$896
▶ 4169	256MB DIMM	–	–	●	–	–	–	$1,792
▶ 4098	0MB Card	–	–	–	●	–	–	$1,038
▶ 4107	64MB DIMM[†]	–	–	–	●	–	–	$640
▶ 4110	256MB DIMM[††]	–	–	–	●	–	–	$2,560
4119	512MB[†††]	–	–	–	●	–	–	$6,400

[a] Memory must be purchased in groups of four identical SIMMs.
[†] (2 x 32MB)
[††] (2 x 128MB)
[†††] (2 x 256MB)

Servers

Feature	Description	Models E30/F30	Models C10[a]/20[a]	Model 39H	Model 397	Models 59H[b]/590	Model 591[b]/595[b]	Price
▶ 4011	16MB SIMM	–	●	–	–	–	–	$640
▶ 4012	32MB SIMM	–	●	–	–	–	–	$1,280
▶ 4132	32MB DIMM	●	–	–	–	–	–	$480
▶ 4164	64MB DIMM	●	–	–	–	–	–	$960
4168	128MB DIMM	●	–	–	–	–	–	$1,920
▶ 4069	64MB Card	–	–	●	–	●	–	$1,920
▶ 4090	128MB Card	–	–	●	–	●	–	$3,200
▶ 4095	256MB Card	–	–	●	–	●	–	$6,400
4077	64MB Card	–	–	–	–	–	●	$1,920
▶ 4078	128MB Card	–	–	–	–	–	●	$1,920
▶ 4079	256MB Card	–	–	–	–	–	●	$3,840
▶ 4087	64MB Card	–	–	–	●	–	–	$1,920
▶ 4088	128MB Card	–	–	–	●	–	–	$1,920
▶ 4089	256MB Card	–	–	–	●	–	–	$3,840

(DIMM - Dual Inline Memory Module as opposed to Single Inline Memory Module - SIMM)
[a] Memory must be purchased in groups of 4 identical SIMMs.
[b] Memory must be purchased in matched pairs.

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Rack-Mounted Servers

Feature	Description	Model B50	Model H50	Model H70	Model R50	Price
▶ 2908	9.1GB UltraSCSI††	–	●	●	●	$1,300
2909	18.2GB UltraSCSI††	–	●	●	●	$2,300
▶ 2913	9.1GB UltraSCSI†	–	●	●	–	$1,400
3104	18.2GB UltraSCSI†	–	●	●	–	$2,400
3112	9.1GB UltraSCSI	●	–	–	–	*
3113	18.2GB UltraSCSI	●	–	–	–	*
3008	9.1GB UltraSCSI†, 10,000 rpm	–	●	●	–	$1,680
▶ 3071	4.5GB SSA†	–	●	●	–	$1,600
3074	9.1GB SSA†	–	●	●	–	$1,600
3009	9.1GB SSA†, 10,000 rpm	–	●	●	–	*

† Hot-Swappable Drive
†† Supported on SCSI-2 F/W in R50
* ***PLEASE CALL FOR LATEST PRICES***

S Family Servers

Feature	Description	Model S70	S70 Advanced	Model S80	Price
▶ 2913	9.1GB UltraSCSI†	●	●	●	$1,400
3104	18.2GB UltraSCSI†	●	●	●	$2,400
3008	9.1GB UltraSCSI†, 10,000rpm	●	●	●	$1,680

† Supported as SCSI2F/W in Model S70, UltraSCSI in S70 Advanced and S80; Hot-Swappable Drive

SMP Servers

Feature	Description	Model F40	Model F50	Model J50	Price
▶ 2913	9.1GB UltraSCSI†	●	●	–	$1,400
3104	18.2GB UltraSCSI†	●	●	–	$2,400
3008	9.1GB UltraSCSI†, 10,000 rpm	●	●	–	$1,680
▶ 3071	4.5GB SSA†	●	●	–	$1,600
3074	9.1GB SSA†	●	●	–	$1,600
3078	9.1GB SSA†, 10,000 rpm	●	●	–	$1,920
3020	9.1GB UltraSCSI††	–	–	●	$1,750

† Hot-Swappable Drive
†† Supported as SCSI-2 F/W

Workstation and Workgroup Servers

Feature	Description	Model 140	Model 150	Model 240	Model 260	Models 3BT/3CT	Model 397	Price
▶ 3028	4.5GB UltraSCSI 16-bit Enhanced	–	–	–	●	–	–	$1,400
▶ 3029	9.1GB UltraSCSI 16-bit Enhanced	–	–	–	●	–	–	$1,400
2906	9.1GB UltraSCSI 16-bit Enhanced 10,000 rpm	–	–	–	●	–	–	$1,680
3027	9.1GB UltraSCSI, 10,000 rpm	–	–	–	●	–	–	$1,560
▶ 2908	9.1GB UltraSCSI	●	●	●	●	●	●	$1,300
2909	18.2GB UltraSCSI	●	●	–	●	–	–	$2,300

Servers

Feature	Description	Model E30	Model F30	Models 390/39H	Model 591	Model 595	Price
▶ 3071	4.5GB SSA†	–	●	–	–	–	$1,600
3074	9.1GB SSA†	–	●	–	–	–	$1,600
3078	9.1GB SSA†, 10,000 rpm	–	●	–	–	–	$1,920
▶ 2908	9.1GB UltraSCSI	●	–	●	●	●	$1,300
▶ 2913	9.1GB UltraSCSI†	–	●	–	–	–	$1,400

† Hot-Swappable Drive

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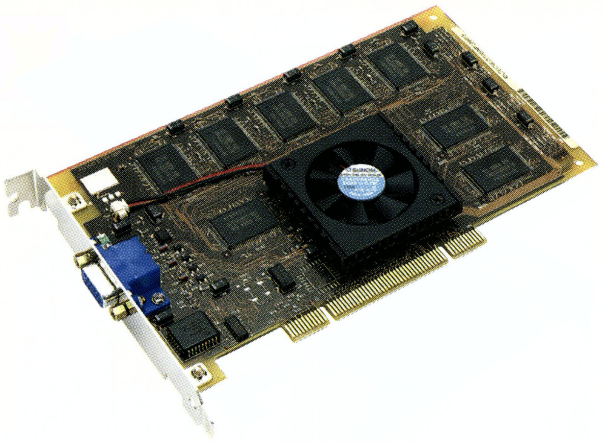
New single chip architecture for a price/performance breakthrough

POWER GXT2000P Graphics Accelerator



- **Exceptional 3D graphics performance and functionality at a competitive price**
- **Single-chip implementation supports primary 3D graphic functions including setup, rasterization, bus management and digital to analog conversion**
- **UNIX 3D graphics price/performance leader when coupled with the RS/6000 43P Model 150 workstation and AIX V4.3.2**
- **OpenGL™ and graPhIGS™ 3D Application Programming interfaces API features (such as 3D texture mapping and trilinear detail filtering) supported in hardware for the most demanding scientific and technical visualization applications**
- **Supports advanced 3D features such as:**
  - Hidden line and surface removal, line antialiasing
  - Advanced texture mapping, including luminance filtering
  - Gouraud shading, depth cueing/logging, transparency
  - YUV color space conversion, point and bilinear video scaling
- **Meets the performance and functional requirements of the most demanding 3D graphics application areas, such as mechanical computer-aided design (MCAD) and mechanical computer-aided engineering (MCAE).**

IBM's POWER GXT2000P Graphics Accelerator brings a new level of productivity to day-to-day design and engineering. It is designed to be the graphics accelerator for the primary design workstation of an engineering enterprise; providing the power of 2D and 3D visualization with winning price/performance and functionality.

The GXT2000P is a single PCI adapter card that requires only a half-sized PCI slot. It provides display resolutions up to 1920 x 1200 (maximum) at up to 76Hz, and includes support for monitors that comply with the ISO 9241 Part 3. It was designed specifically to support the functional requirements of the OpenGL and graPHIGS APIs, and offers many features demanded by the most widely used software applications for visualization and design including:

- 32MB Unified Frame Buffer
- Four 256-entry hardware color tables
- Separate gamma correction tables
- Face culling support
- OpenGL polygon offset support and mode support

The rich capabilities of the GXT2000P are driven by the highly innovative electronic design of a single chip solution, which reduces cost as it increases performance.

The GXT2000P has been tested to show highly competitive performance in GPC benchmarks as well as application-level graphics rating, providing up to two-and-a-half times IBM's previous entry 3D graphics workstations, positioning IBM as the price/performance leader in UNIX computer graphics solutions.

It has been tuned to support the most desirable MCAD applications, such as CATIA, ProENGINEER and I-DEAS Master Series, which continues IBM's strong support of automotive and aerospace manufacturing.

With the GXT2000P installed, the 43P Model 150 Workstation is an exceptional price/performance MCAD design seat. The GXT2000P can also be installed in the 43P Model 260 and most 43P Model 140 systems. Up to four GXT2000P 3D graphics accelerators may be installed on the 43P Models 140, 150 or 260.

Software Requirements:	AIX Version 4.3.2, AIX 4.2.1 OpenGL, PHIGS and Xlib are included with AIX V4.3.2. OpenGL, PHIGS are purchased separately with AIX 4.2.1.

Feature	Description	Slots/Bus	Price
2823	GXT2000P	1/PCI	**$2,995**

FCC Class B (Defined on page 4)

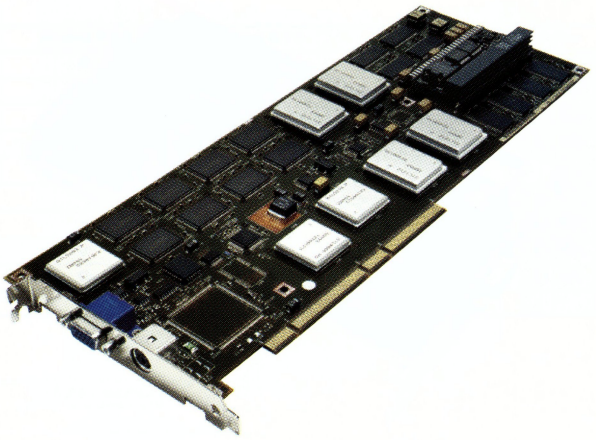
visit www.ibm.com/Shop call 800 426 2255 today

For your most demanding 3D visualization and modeling tasks

POWER GXT3000P Graphics Accelerator

QuickShip 24 hours

- **Single 64-bit PCI accelerator that attaches to the RS/6000 Model 260 via a 64-bit slot or Model 150 via a 32-bit slot. For the Model 150, the GXT3000P will use 2 slots of space**
- **Supports display resolutions up to 1280 x 1024 at 85Hz refresh rate, providing seamless display of the most complex 3D models**
- **8-bit and 24-bit double-buffered color**
- **24-bit Z buffer**
- **Allows the display of up to 16.7 million simultaneous colors**
- **Hardware acceleration for such advanced 3D graphics as hidden-line and surface removal, antialiasing, Gouraud shading, depth cueing, stenciling and transparency**
- **Face culling support**
- **Supports hardware 3D texture mapping, with 16MB texture memory**
- **8-bit overlay buffer, window ID buffer, stencil buffer and double buffered alpha**
- **Hardware-accelerated lighting, video scaling, and stereo-in-a-window capabilities. Requires AIX V4.3.2 or AIX V4.2.1.**



For 43P Series Models 150 and 260
Use the POWER GXT3000P with POWER3- and PowerPC-based workstations like the RS/6000 7043 Models 150 and 260 for your most demanding 3D visualization and design tasks - aerospace/automotive MCAD and engineering, petroleum exploration and production, scientific visualization, and other graphics-intensive applications in a wide range of technical industries.

The 64-bit, PCI-based POWER GXT3000P is IBM's top-performing graphics accelerator. It delivers up to three times greater GPC and graphics performance than previous IBM workstation adapters - placing it among the industry's graphics performance leaders. Native support is provided for both PHIGS and OpenGL application programming interfaces to facilitate adaptation of the most popular 3D applications to the AIX workstation environment.

Up to two GXT3000P graphics accelerators can be installed in a 7043 Model 260.

Graphics accelerators that are right for your application

- Typical Applications/Use - RS/6000 Model	- CASE - Customer Service - Process Control	- EDA - Drafting - Fin. Modeling - GIS	- MCAD/MCAE - Geo. Science - Visualization
43P Model 140	GXT120P	GXT250P	GXT2000P GXT3000P
43P Model 150	GXT120P	GXT250P	GXT2000P GXT3000P
43P Model 260	GXT120P	GXT250P	GXT2000P GXT3000P

Feature	Description	Price
2825	GXT3000P 1- or 2-PCI	**$6,500**

FCC Class B (Defined on page 4)

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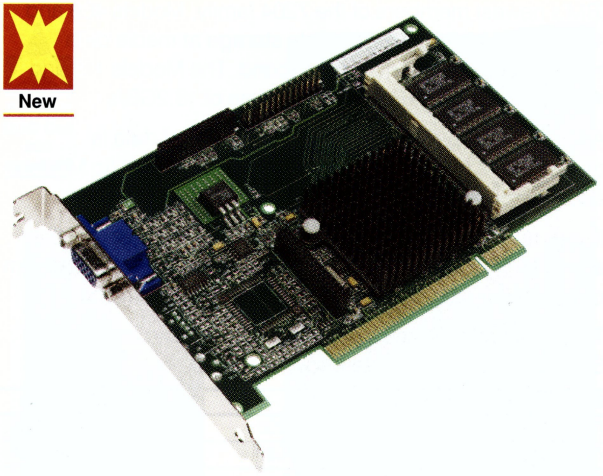
Exceptional 2D graphics performance

POWER GXT130P

New



- **Delivers exceptional 2D graphics performance for UNIX systems at a low price**
- **Provides graphic functions as a performance monitor for ebusiness server solutions**
- **Supports traditional X Windows graphics, database management and maintenance, process control status and activity for securities trading.**

The POWER GXT130P is a versatile, low-priced 2D graphics accelerator for RS/6000 workstations and servers.

This powerful accelerator is ideal for process control environments because as many as four may be installed in a single RS/6000 system. Each accelerator controls a monitor displaying graphics and text for dozens of process points. For decision support systems, the GXT130P provides opportunities for rapid, simultaneous display of large amounts of critical information at high resolution on one or more multiple screens.

Software Requirements:	AIX 4.2.1 or AX 4.3.2 (Xlib is included with AIX V4.2.1 or 4.3.2

Visit our Web site at: **www.rs6000.ibm.com**

Feature	Description	Price
2830	POWER GXT130P	**$340**

3D control at your fingertips

6094-051 3D Spaceball 3D Input Device



- **Four new buttons (adding up to twelve total)**
- **New Lighted Program Function Keys (LPFK)**
- **New PowerSensor technology allows improved response and motion control**
- **Ergonomically improved with new smaller "ball" design**
- **New SpaceWare 9.0 AIX driver with additional functions.**

Interactive control of the Model 051 is easy and natural. You simply apply fingertip control to push, pull and twist the ball, manipulating the image on screen in 3-D as though it were grasped in your hand. This allows the user to zoom, pan and rotate so a computer-generated model can be viewed from any angle, allowing improved productivity with smooth dynamic six degrees of freedom through the new sensing technology. The removable palm rest can be switched to optimize right and left hand use.

The Model 051 is enhanced by a new SpaceWare 9.0 AIX driver with additional finctions that allow users to:

- create and modify user-defined buttons
- make groups of functions for multiple-user configurations
- modify individual sensitivity settings for panning, zooming and rotating

AIX Version 4.2.1, or 4.3.2 or later modification level is required. The SpaceWare Installation/Driver CD-ROM is shipped with the unit. Shipped with everything required for full connectivity and operation.

Software Requirements:	AIX Version 4.2.1 or V4.3.2 or later modification level.

Type	Mod	Description	Price
6094	051	Spaceball Model 051	**$849**

FCC Class B (Defined on page 4)

Store your growing data in these 18.2GB drives

7204 External Disk Drive



7204

- **Models 118/418 support both Ultra SCSI (40Mbps) and SCSI F/W (20Mbps)**
- **Models 409 and 419 support both SCSI-3 Fast-20 Wide attachment (40Mbps) and LVD Fast-40 Wide attachment (80Mbps)**
- **Multiple 7204 devices allowed for each system**
- **Magneto-resistive (MR) head technology.**

IBM's newest members of the 7204 family, Models 409 and 419, offer reliable and affordable storage at media data transfer rates up to 32MB per second. The Models 118 and 418 offer a maximum data transfer rate of 18.2GB/s

A formatted capacity of 9.1GB and 18.2GB of data is provided in a LVD/SE Multi-mode drive. The specific Models and their capacities are depicted in the table below.

If your applications do not demand the performance of the above Models, then the Models 139 and 339 with a maximum data transfer rate of 13.7MB/s may be the best choice.

The 7204 Family comes in both single port and dual port SCSI connector configurations.

Type	Mod	Description	Lease†	Price
7204	118	(SCSI-2 F/W, Single Ended) 18.2GB	*	$4,750††
7204	139	(SCSI-2 F/W, Single Ended) 9.1GB	*	$2,750††
7204	339	(SCSI-2 F/W, Differential) 9.1GB	*	$2,950
7204	418	(SCSI-2, Ultra Differential) 18.2GB	*	$4,950††
7204	409	(SCSI-3 Fast-20 Wide, LVD Fast-40 Wide) 9.1GB	*	$2,550
7204	419	(SCSI-3 Fast-20 Wide, LVD Fast-40 Wide) 18.2GB	*	$3,800

† Turn to page 76 for details on lease payment information.
†† Reduced Price
FCC Class B (Defined on page 4)
Dimensions: 9.8"W x 10.8"D x 2.4"H
* ***PLEASE CALL FOR LATEST PRICES***

Optical storage at a low cost-per-MB

3995 Enhanced C-Series Optical Library Dataserver

Fax Document 3418/7302

For FAX DOC Call 800 426-4329


3995

- **Improved granularity with 5 models delivering from 104GB to 1341GB per model**
- **Helping to protect customer investment by supporting previous generations of IBM 5.25-inch optical cartridges**
- **Storage solution of choice for electronic storage of information currently stored on paper or microfiche.**

IBM's 3995 Enhanced C-Series Optical Library Dataserver is the solution of choice for extended online storage in data-intensive applications and for infrequently accessed database files. Double the capacity over previous generation IBM optical drives – up to 5.2GB (8X) (unformatted) storage per optical cartridge. All five models can read and write 5.2GB (8X) and 2.6GB (4X) and read 1.3GB (2X), 650MB (1X), Permanent WORM, CCW WORM and MO rewritable media. The 3995 optical cartridge media is available in convenient 10-pack or 52-pack bundles.

Optical Library Management functions to support these libraries need to be provided by your chosen application (such as ADSM for AIX) and/or software available from Independent Software Solution Providers that have certified support for these models.

Type	Mod	Storage Capacity (unformatted)	Internal Optical Drives	Lease†	Price††
3995	C60	104GB	1 or 2	*	$8,995
3995	C62	270GB	2	*	$22,500
3995	C64	540GB	2 or 4	*	$31,300
3995	C66	811GB	4 or 6	*	$49,000
3995	C68	1341GB	4 or 6	*	$68,500

† Turn to page 76 for details on lease payment information.
†† Does not include cost of optical media or the cost of optional additional drive(s).
FCC Class A (Defined on page 4)
Dimensions vary by model.
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Outgrown SCSI? Step up to 3.5TB of high performance SSA

7133 Serial Disk System

Fax Document 8229/4399

For FAX DOC Call 800 426-4329



7133-T40

7133-D40

- **Sustained data rate up to 90MB/s and 160MB/s/ loop bandwidth per SSA 160 adapter**
- **Excellent for low-cost, RAID-5 storage on PCI or Micro Channel (MCA) systems**
- **Attaches to supported models of HP, DEC and Sun Servers via the IBM 2108-S20 SAN Data Gateway for Serial Disk.**

The high-capacity 7133 Serial Disk System can accept up to 16 "hot-swappable" disk drives. The advanced models D40 and T40 can be configured with 4.5GB, 9.1GB, 18.2GB or 36.4GB disk drives. The 7133 D40 and T40 models can provide a total capacity of up to 582.4GB per drawer or tower and up to 3.5TB in a fully loaded 6-drawer rack. With SSA dual data paths to every disk, redundant power and cooling, host bypass features, and the ability to connect to multiple UNIX, Novell Netware and Windows NT** servers, the 7133 is ideally suited for multi-host attachments of RS/6000s and other open systems servers.

D40 (rack):	17.5"W x 29"D x 6.7"H
T40 (deskside):	8.3"W x 33.9"D x 24"H

Type	Mod	Description	Price
▶ 7133	D40	Rack-Mount Drawer Maximum Storage Up to 582.4GB	*
▶ 7133	T40	Deskside Tower Maximum Storage Up to 582.4GB	*

* ***PLEASE CALL FOR LATEST PRICES***
▶ 24 Hour QuickShip

Cluster up to eight RS/6000s or SP nodes

SSA Adapters

SSA RAID adapters let you cluster up to eight RS/6000 or SP nodes (two in RAID mode) for access to large databases residing on your SSA-based 7131 and 7133 storage solution. The Advanced SerialRAID adapters 6225 supports 160 MB/s throughput as well as non-RAID, RAID 5, and RAID 0 and provides support for "under the covers" SSA implementations. The SSA RAID EL adapter #6219 provides microchannel attachment to 7133 storage.

Feature	Description	Price
▶ 6219	SSA RAID EL (MCA), 2-way RAID 5- OR 8-way NON-RAID, 1-way only with SSA Fast Write Cache Module, Supports loop speed of 80 MB/s	$3,750
▶ 6222	4MB Non-Volatile SSA Fast Write Cache Module for use with 6215 and 6219	$3,700
▶ 6225	Advanced Serial RAID adapter PCI, 2-way RAID 5- or 8-way NON-RAID, 1-way only RAID 0, 1-way only with SSA Fast Write Cache Module, Supports loop speed of 160 MB/s	$3,000
▶ 6235	32MB Non-volatile SSA Fast Write Cache Module for use with #6225, 1-way only	$575

▶ 24 Hour QuickShip

High-performance storage at a low cost-per-GB

7131 Multi-Storage Tower

Fax Document 4832/3793

- **Model 405 (SSA) features the SSA interface with sustained data rate up to 35MB/s and 80MB/s/loop bandwidth**
- **Model 105 (SCSI) features the SCSI-2 interface with sustained data rate up to 12.5MB/s**

For FAX DOC Call 800 426-4329

Employing IBM's high-performance 9.1GB disk drives, the advanced deskside Multi-Storage Tower offers storage capacity up to 45.5GB (Model 405) or 63.7GB (Model 105). Both models offer five bays of "hot-swappable" disk drive modules, configurable with 4.5GB or 9.1GB drives. Model 405 features IBM's Serial Storage Architecture (SSA) for higher data rates, improved availability and significant performance advantages over its SCSI-based alternative.

Type	Mod	Description	Lease†	Price††
7131	105	SCSI Model Maximum Storage Up to 63.7GB	*	*
7131	405	SSA Model Maximum Storage Up to 45.5GB	*	*

† Turn to page 76 for details on lease payment information.
†† Depending on drive capacity.
FCC Class A (Defined on page 4)
Dimensions: 7.75"W x 19"D x 16"H
* ***PLEASE CALL FOR LATEST PRICES***

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Unprecedented scalability – great performance

Enterprise Storage Server (ESS)

Fax Document 9400

For FAX DOC Call 800 426-4329

New



- **Superior storage sharing for UNIX, Windows NT, AS/400 and S/390 servers**
- **Two powerful four-way RISC SMP processors, large cache and serial disk attachment provide high performance**
- **State-of-the-art copy services including FlashCopy, Peer-to-Peer Remote Copy and Extended Remote Copy provide for rapid backup and disaster recovery**
- **Redundant hardware and RAID 5 disk arrays provide high availability for mission critical business applications.**

The IBM Enterprise Storage Server (ESS) is ideal for organizations with growing e-business operations that are being handled by multiple heterogeneous servers. It provides unprecedented scalability (up to 11TB) while maintaining excellent performance.

The ESS offers a variety of host attachment options such as UltraSCSI, ESCON, FICON and Fibre Channel. This enables the Enterprise Storage System to be optimized for the price/performance requirements of each computing environment.

Visit our Web site at: **www.ibm.com/storage/ess**

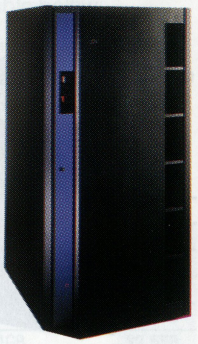
Centralize and share server storage across your data center

IBM Versatile Storage Server (VSS)

Fax Document 9315

For FAX DOC Call 800 426-4329

- **Scalable to over 4TB of serial disk storage capacity**
- **Dual SMP clusters with up to 6GB of read/write cache assure high performance for all attached servers**
- **Storage server fail-over and RAID 5 protection with dynamic hot sparing and mirrored Fast Write cache provide high availability**
- **Remote management of VSS using Web-based storage management software over company-secured network/intranet connections.**



IBM Versatile Storage Server (VSS)

Visit our Web site at: **www.ibm.com/storage/vss**

Reach optimum system performance and protection

IBM Fibre Channel RAID Storage Server

Fax Document 9660

For FAX DOC Call 800 426-4329

- **High performance with bandwidth of 200 MB/s with two Fibre Channel ports**
- **Supports multiple RAID levels (0, 1, 5 and 0+1)**
- **Automatic I/O path failover capabilities**
- **Dynamic RAID array migration, RAID array capacity expansion and segment size change**
- **Scalability designed to accommodate business growth, starting from 36GB to over 1TB.**



2102-F10 IBM Fibre Channel RAID Storage Server and 2102-D00 IBM Expandable Storage Unit

This is an ideal solution for customers planning to implement Fibre Channel SANs or requiring high availability and easily managed storage solutions for their distributed systems.

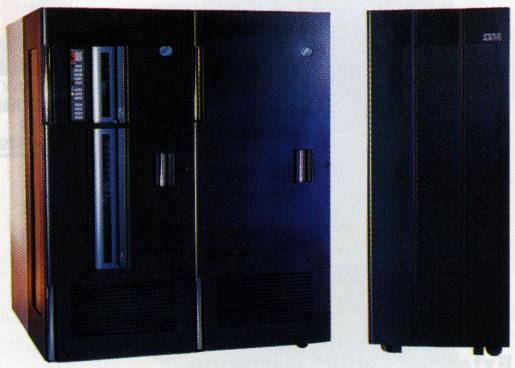
Visit our Web site at: **www.ibm.com/storage/fcss**

visit www.ibm.com/Shop call 800 426 2255 today

Distributed data protection for network computing environments

IBM Network Storage Manager

Fax Document 5881



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Network Storage

- **332MHz PowerPC processor in a 2- or 4-way SMP configuration**
- **SSA Serial Disk Storage subsystem with 72GB to 864GB capacity**
- **Choice of industry-standard DLT tape library or IBM Magstar* tape library**
- **Preloaded NSM Software Package V3.1 that includes functions provided in Tivoli Storage Manager (formerly ADSM); as well as a Web browser function for administrators**
- **Support for clients running on more than 30 server types and ADSM-supported workstations**
- **Support for new 3466 models C00, C10, C20 and C30**
- **Optional features include: Disaster Recovery Manager (DRM), Hierarchical Storage Manager (HSM), Open Systems and Server-to-Server Communication.**

Your business rides on your network, and the mission-critical business data that flows across that network must be protected at all times against both manmade and natural disasters. The IBM Network Storage Manager (NSM) is a complete, integrated storage solution that provides comprehensive distributed data protection and disaster recovery capabilities for your network computing environment. A member of the Seascape family of products, the easy-to-install-and-manage IBM Network Storage Manager (NSM) is a complete, integrated storage solution that provides comprehensive distributed-data protection and disaster recovery capabilities for your network computing environment.

Visit our Web site at: **www.ibm.com/storage**

Double the UltraSCSI data rate with Ultra2 SCSI

Ultra2 SCSI LVD Adapters

- **Up to 80MB/s data transfer rate**
- **Protects investment in existing disks**
- **Industry standard.**

New

IBM is now offering Ultra2 SCSI Low Voltage Differential (LVD) adapters in both RAID (FC2494) and non-RAID (FC6205) versions. Both support data rates of up to 80MB/s when used in conjunction with an Ultra2 SCSI LVD capable subsystem, such as IBM Expandable Storage Plus Models 2104-DL1 or 2104-TL1. They also support UltraSCSI or SCSI2 F/W implementation, thus protecting your investment in existing devices. In such a case the data transfer rate will be determined by the speed of the device, up to 40MB/s.

Feature 2494 supports RAID levels 0, 1 and 5 for either external or internal applications. When used in conjunction with available UltraSCSI hot-swappable disks in the RS/6000 models F50, H50 and H70, it provides an "under-the-covers" RAID solution that allows "hot-swap" in the event of disk failure.

Feature	Description	Price
6205	Ultra2 SCSI PCI LVD 2-channel	$790
2494	Ultra2 SCSI PCI 3-channel RAID (0,1,5) with 32MB Fast Write cache	$3,500

Run at Ultra speed!

UltraSCSI Adapters

- **Up to 40MB/s data transfer rate**
- **Cost-effective, 1-channel alternative for environments not Ultra2 SCSI capable**
- **Single-ended or Differential**
- **Industry Standard.**

IBM offers 9.1GB and 18.2GB internal disks that run at Ultra speeds in many RS/6000 systems. Both adapters will support SCSI2 F/W implementation, thus protecting your investment in existing devices. In such a case the data transfer rate will be determined by the speed of the device, up to 20MB/s.

Feature	Description	Price
6206	UltraSCSI PCI Single Ended 1-channel	$395
6207	UltraSCSI PCI Differential 1-channel	$650

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Custom QuickShip 7 days

Ultra-fast, reliable access to data

3570 Magstar MP Tape Subsystem

Fax Document 5869

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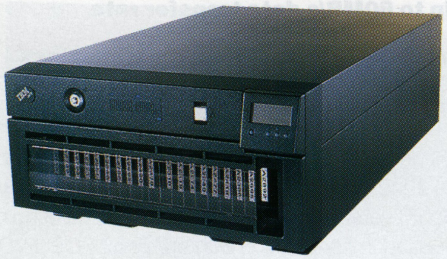


Model 3570

- **NEW Extended Length Cartridge**
- **Magstar MP 3570 Model C enhanced to support 7GB native cartridge capacity (40% improvement)**
- **Serpentine longitudinal recording technique maximizes tape cartridge capacity (up to 21GB with 3:1 compression)**
- **Model C drives deliver data rates over three times faster than Model B drives (Model C: 7MB/s vs. Model B: 2.2MB/s).**

The 3570 Magstar MP (Multi-Purpose) Magnetic Tape Subsystem expands the capability of tape to optimize both write- and read-intensive operations. You can access up to 420GB of compressed storage with near online performance. Model C drives can back up larger amounts in less time and existing B-Format data can be read and updated by Model C drives - up to a 50% improvement in performance.

The 3570 can be used with the RS/6000, AS/400, Netfinity and other popular SCSI-attach systems.

B01/B02:	19"W x 3.11"D x 9.7"H
C01/C02:	483mmW x 790mmD x 247mmH
B11/B12:	17.5"W x 19.5"D x 10.5"H
C11/C12:	444mmW x 748mmD x 266mm (6 EIA units)H

Product No.	Feature	Description	Lease†	Price
3570-B00		3570 MP Drive, Stand-alone	*	$8,500
3570-B01		Magstar MP 1-Drive Library, Stand-alone	*	$14,900
3570-B02		Magstar MP 2-Drive Library, Stand-alone	*	$23,400
3570-B11		Magstar MP 1-Drive Library, Rack Mount	*	$14,900
3570-B12		Magstar MP 2-Drive Library, Rack Mount	*	$23,400
3570-C00		Magstar MP Drive Unit	*	$14,999
3570-C01		Magstar MP 1-Drive Library, Stand-alone	*	$19,900
3570-C02		Magstar MP 2 Drive Library, Stand-alone	*	$29,900
3570-C11		Magstar MP 1-Drive Library, Rack Mount	*	$19,900
3570-C12		Magstar MP 2 Drive Library, Rack Mount	*	$29,900
	2007	Magstar MP Extended Length Cartridge		*

† Turn to page 76 for details on lease payment information.
Media, interposers and cables available separately - call to order!
FCC Class A (defined on page 4)
* ***PLEASE CALL FOR LATEST PRICES***

Fast and reliable automated tape handling and storage

3575 Magstar MP Tape Library Dataserver

Fax Document 7631



Model 3575

For FAX DOC Call 800 426-4329

- **NEW Extended Length Cartridge**
- **Combined drive throughput of up to 300GB/hour (Model C drives) with maximum compression with 6 Model C drives**
- **Mid-point load for faster access to data**
- **Library cartridge capacities of 60, 120, 180, 240 and 324**
- **Native data capacities of 420GB, 840GB, 1.26TB, 1.68TB and 2.26TB**
- **Compressed data capacities of 1.26TB, 2.52TB, 3.78TB, 5.04TB and 6.8TB.**

Here's a midrange and network tape storage solution for your RS/6000 system that is fully scalable to meet your growing needs. It provides an ideal near-online storage and retrieval system, as well as a high-capacity, high-performance, traditional, data-backup storage solution.

The 3575 has the speed needed to increase productivity in network storage management, image processing and data warehousing, and digital library applications. It also provides an ideal storage solution for less-frequently used, storage-intensive and historical applications. In addition, the patented, new, multipath architecture of the 3575 allows both homogeneous and heterogeneous hosts to share library resources.

Product No.	Feature	Description	Lease†	Price
3575-L06		Magstar MP Library, 60 cartridge	*	$19,500
3575-L12		Magstar MP Library, 120 cartridge	*	$36,000
3575-L18		Magstar MP Library, 180 cartridge	*	$46,800
3575-L24		Magstar MP Library, 240 cartridge	*	$49,500
3575-L32		Magstar MP Library, 324 cartridge	*	$62,000
	2007	Magstar MP Extended Length Cartridge		*

† Turn to page 76 for details on lease payment information.
FCC Class A (defined on page 4)
Dimensions: 40"W x 34"D x 40"H
* ***PLEASE CALL FOR LATEST PRICES***

Put 374TB of data at your fingertips

Magstar 3494 Tape Library

Fax Document 2207

For FAX DOC Call 800 426-4329



- **Perform up to 610 cartridge mounts/dismounts per hour with DAA option**
- **Can mix 3490E and Magstar 3590 tape drives**
- **Modular growth**
- **Disaster recovery and unattended backup**
- **High-end reliability at a mid-range price.**

Now you can use the modular, automated IBM Magstar 3494 Tape Library Dataserver to provide hierarchical storage management of up to 374 terabytes of data (over 6,000 cartridges) while reducing time and operational costs. The Magstar 3494 Model HA1 with a second library manager and accessor meets your high-availability needs. With feature 5230, up to 30 cartridges can be added or removed from the library without interrupting library operations. And a tape control unit expansion feature doubles the number of tape control units that can be attached to 16 - allowing you to add more Magstar 3590 tape drives in your Magstar 3494 library.

Type	Mod	Feature	Description	Lease†	Price
3494	L10		Tape Library Dataserver[1]	*	$86,900
3494	L12		Tape Library Dataserver[1]	*	$86,900
3494	L14		Tape Library Dataserver[1]	*	$86,900
3494	D10		Drive Unit	*	$35,000
3494	D12		Drive Unit	*	$35,000
3494	D14		Drive Unit	*	$35,000
3494	S10		Storage Frame	*	$30,000
3494	HA1		High-availability Model	*	$86,900
3494	B18††		Virtual Tape Server	*	$180,000
	10	5210	10 I/O Stations	*	$3,630
	30	5230	30 I/O Stations	*	$8,710
		5228	Tape Control Support	*	$2,000
		5215	Dual Gripper	*	$10,000

† Turn to page 76 for details on lease payment information.
†† Base 3494-B18 price
FCC Class A (Defined on page 4)
[1] Dimensions: 30"W x 60"D x 71"H
* ***PLEASE CALL FOR LATEST PRICES***

IBM's high-performance, large-capacity tape subsystem

Magstar 3590 Tape Subsystem

Fax Document 9664

- **Up to 120GB backed up per hour***
- **Up to 60GB* capacity per standard cartridge.**

The IBM Magstar 3590 delivers a high level of reliability, performance, capacity and cost-effectiveness. When attached to RS/6000 servers with Ultra SCSI adapter (FC 6207) it can provide a data rate up to 40MB/s, compacted. Magstar 3590 cartridges have a capacity of up to 20GB. Up to 60GB per cartridge can be stored using LZ1 compaction. With it's Automatic Cartridge Facility (ACF) the rack models can provide random access up to 300GB with the 3590-B11 and 600GB with the 3590-E11 of compacted data stored in a removable ten-cartridge magazine. *User results may vary.

Custom QuickShip 7 days

For FAX DOC Call 800 426-4329

Type	Mod	Description	Lease†	Price
3590	B1A	Designed for use in 3494	*	$29,500
3590	B11	Rack-mount, includes ACF	*	$32,500
3590	E1A	Designed for use in 3494	*	$43,500
3590	E11	Rack-mount, includes ACF	*	$46,500
		Model BXX to Model EXX Upgrade	*	$15,500

† Turn to page 76 for details on lease payment information.
FCC Class A (Defined on page 4)
Dimensions: B1A: 8.8"W x 29.8"D x 10.5"H B11: 9.1"W x 39"D x 20.6"H
* ***PLEASE CALL FOR LATEST PRICES***

Compact, yet full-featured tape

3490E Magnetic Tape Subsystem

- **18- and 36-track reading and writing for RS/6000**
- **Simplified tape threading and improved mechanical and data reliability**
- **Random access to up to 24GB of compacted data using the 10-cartridge ACF.**

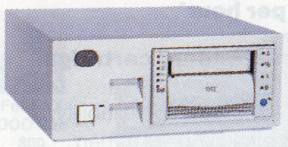
The 3490E F models write bidirectionally, doubling the capacity of a base IBM Cartridge System Tape and virtually eliminating rewind time. Using the Improved Data Recording Capability (IDRC) and a SCSI interface, effective data throughput can be as high as 6.8MB/sec. Connection can be made to a wide variety of RS/6000 PCI and non-PCI SCSI-2 and Ultra SCSI adapters.

Type	Mod	Description	Lease†	Price
3490	F00	Tabletop Single Drive	*	$18,500
3490	F01	Tabletop Single Drive 10 Cartridge RAL	*	$22,500
3490	F11	Rack-mounted Single Drive 10 Cartridge RAL	*	$22,500
3490	F1A	Library Model	*	$18,500

† Turn to page 76 for details on lease payment information.
FCC Class A (Defined on page 4)
Dimensions: 17"W x 24"D x 7"H
* ***PLEASE CALL FOR LATEST PRICES***

High-capacity, high-performance

7205 Digital Linear Tape Drive



7205

- **High Capacity: 35GB to 70GB†† data storage capacity**
- **High Throughput: 5MB/sec. to 10MB/sec.†† data transfer rate.**

IBM's newest stand-alone tape drive employs proven DLT7000† tape technology and provides the benefits of shorter backup windows, less operator intervention, affordable and reliable data integrity and high-function save-and-restore tape management. It has flexible read/write compatibility with previous DLT media formats and features proven longitudinal serial serpentine recording format for high reliability.

Type	Mod	Lease†††	Price
7205	311	*	$11,850

† DLT7000 is a trademark of Quantum Corp.
†† Capacity values shown assume average compression ratios. Compression ratios can vary widely based on data characteristics.
††† Turn to page 76 for details on lease payment information.
FCC Class B (Defined on page 4)
* ***PLEASE CALL FOR LATEST PRICES***

Speed and reliability on a desktop

7208 External 8mm Tape Drive



7208

- **20GB to 40GB† data storage capacity**
- **Up to 6MB/sec. data transfer rate.**

Our 7208 Model 341 External Tape Drive is a compact, tabletop drive with the capacity, advanced performance and high reliability you demand in a data storage solution.

Enhanced reliability is provided through a streamlined, rugged design with fewer moving parts, improved capstan-less tape path, dynamic head cleaner, simplified and gentle tape loading and highly-integrated electronics and diagnostics.

The onboard data compression of the new 8mm Mammoth drive increases its data storage capacity up to 40GB† on new 170-meter 20GB AME tape.

Type	Mod	Lease††	Price
7208	341	*	$6,500

† Capacity values shown assume average compression ratios. Compression ratios can vary widely based on data characteristics.
†† Turn to page 76 for details on lease payment information.
FCC Class B (Defined on page 4)
Dimensions: 11"W x 11.3"D x 3.125"H
* ***PLEASE CALL FOR LATEST PRICES***

Supports up to 13GB native

7207 ¼" Cartridge Tape Drive



7207

For reliable and affordable entry-level external tape storage, IBM's 7207 family of products leads the way. This leading-edge tape storage subsystem offers up to 13GB native per tape cartridge and up to 26GB per cartridge with 2:1 compression. With an enhanced data transfer rate of up to 1.5MB/sec. native (up to 3MB/sec. with 2:1 compression), the 7207 is an excellent solution for customers who are migrating from older ¼-inch and 4mm tape formats.

Type	Mod	Description	Lease†	Price
7207	122	4GB native	*	$1,850
7207	315	13GB native	*	$4,940

† Turn to page 76 for details on lease payment information.
FCC Class B (Defined on page 4)
Dimensions: 9.8"W x 10.8"D x 2.2"H
* ***PLEASE CALL FOR LATEST PRICES***

Terrific low-cost solution

7206 External 4mm Tape Drive



7206

This powerful stand-alone DAT cartridge tape drive is the ideal low-cost solution for your workstation storage needs. It features an advanced data grade "media recognition" system along with host-independent diagnostics.

	Storage Capacity	Data Transfer Rate
7206-005	4GB to 8GB† data	400KB/sec. to 800KB/sec. New DDS-3 technology
7206-110	12GB to 24GB	1.1MB/sec. to 2.2MB/sec.

Type	Mod	Lease††	Price
7206	005	*	$2,995
7206	110	*	$3,245

† Capacity values shown assume average compression ratios. Compression ratios can vary widely based on data characteristics.
†† Turn to page 76 for details on lease payment information.
FCC Class B (Defined on page 4)
Now available for HP, Sun and DEC systems. Call for details.
Dimensions: 11"W x 11.3"D x 3.125"H
* ***PLEASE CALL FOR LATEST PRICES***

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Autoloading save-and-restore

7332 4mm DDS-3 Tape Autoloader

Fax Document 1996

For FAX DOC Call 800 426-4329



7332

- **Low cost, 4mm tape cartridge auto loader**
- **1.1MB/sec data transfer rate - up to 2.2MB/sec with data compression.**

Operating in streaming mode, this external, multiple-cartridge, tape autoloader is read/write compatible with older IBM 7206 models as well as other open systems 4mm tape devices. Designed with advanced digital audio tape (DAT) technology. 4-cartridge magazine yields 48GB data storage capacity - up to 96GB capacity (compressed data).

Type	Mod	Description	Lease†	Price
7332	110	(4-cartridge magazine)	*	$5,745

FCC Class B (Defined on page 4)
Also available for HP and Sun systems. Call for details.
Dimensions: 11"W x 11.5"D x 4.8"H
† Turn to page 76 for details on lease payment information.
* ***PLEASE CALL FOR LATEST PRICES***

Expand your storage needs effectively

7337 (DLT) Digital Linear Tape Library

For FAX DOC Call 800 426-4329



7337

- **Model 305 - DLT Stand-alone Desktop Library**
- **Model 306 - DLT 19" Rack-mountable Library.**

Models 305 and 306 are efficient offerings of DLT Tape technology for RS/6000 systems. DLT offers additional capacity over 8mm tape to 35GB/70GB with an effective data rate of up to 10MB/sec.

Type	Mod	Description	Lease†	Price
7337	305	DLT Stand-alone Desktop Library	*	$23,995
7337	306	DLT Rack-mountable Library	*	$23,995

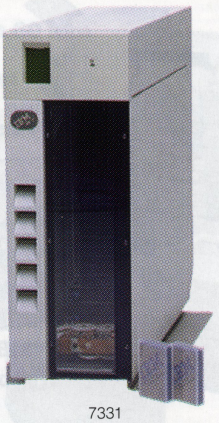
† Turn to page 76 for details on lease payment information.
FCC Class B (Defined on page 4)
* ***PLEASE CALL FOR LATEST PRICES***

High-capacity tape library

7331 8mm Tape Library

Fax Document 3045

For FAX DOC Call 800 426-4329



7331

- **Holds up to 20 cartridges (20GB each) for a total storage capacity of up to 400GB (up to 800GB of compressed data)**
- **Up to 6MB/sec per drive with data compression**
- **Includes 1 or 2 20GB tape drives (dual drive is field-installable)**
- **Automatic drive cleaning.**

This high-performance tape library is perfect for customers with ever-growing online storage needs that include save/restore, program distribution, migration, data interchange, automatic migration of data between disk storage and tape mass storage for data archive.

The IBM 7331 Tape Library has a dual-host function which will allow two RS/6000 processors to be attached and operated as two independent libraries. This tape library has 1 or 2 tape drives and 2 removable magazines with slots for twenty 8mm cartridges plus two bonus slots: one for cleaning cartridges and one for user-defined purposes. Using an implementation of IBM's improved data recording capabillity (DRC), up to 40GB of data can be stored on a single cartridge with a data transfer rate of up to 6MB/sec. This is equal to as much as 43GB per hour with compression on a split, dual-host, two-drive model.

Type	Mod	Description	Lease†	Price
7331	305	20/40GB 8mm	*	$13,995

† Turn to page 76 for details on lease payment information.
FCC Class B (Defined on page 4)
Also available for HP and Sun systems. Call for details.
Dimensions: 8.8"W x 26.6"D x 24.5"H
* ***PLEASE CALL FOR LATEST PRICES***

Five versatile network printing solutions

Workgroup Printers



- **Full connectivity - parallel, network and IBM host.**

IBM Infoprint 40
High quality output with print speeds up to 40 pages per minute (ppm) is achieved with this robust workgroup printer. It features 600 dpi quality (with REFINE mode that rivals 1200 dpi quality), a duty cycle up to 200,000 pages monthly, RePro copier-like function, optional 2,000 sheet finisher with stapling and offset jogging, and duplex option for two-sided printing.

IBM Infoprint 32
A heavy-duty, 32 page per minute (ppm) workgroup printer that features: optional duplex, 600 dpi printing, RePro transmit-once copier-like capability, duty cycle up to 150,000 pages monthly and optional 2,500-sheet input and 2,000-sheet finisher with stapling and offset jogging.

IBM Infoprint 20
Award-winning office and workgroup printer delivers up to 20 ppm speed, 600 dpi quality (with 1200 dpi emulation), Adobe PostScript 3 support, 75,000-page maximum monthly duty cycle and full-bleed 11x17 and A3/ledger printing.

IBM Network Printer 17
Versatile 17 ppm printer with standard duplex printing features 600 dpi quality with TrueRes edge smoothing and up to 5 input trays with 1,350-sheet total capacity, with offset jogging and secure mailbox options.

IBM Network Printer 12
A compact, entry-level printer for small workgroups that prints up to 12 ppm at 600 dpi with TrueRes edge smoothing and provides both PC and Macintosh** support.

Complete family of midrange, heavy-duty printers

6400 Line Matrix Printers

- **Attachment via ethernet ASCII, coax or twinax interfaces, parallel or serial network**
- **Supports wide range of systems from IBM mainframe/parallel servers to PCs**
- **Emulation with IBM Proprinter*, Epson and an expanded range of Printronix** printers.**



IBM's family of continuous form, line matrix 6400 printers covers the full spectrum of print requirements for today's busy office environments, offering high-quality printing from 500 lines per minute (lpm) to a high-volume 1,500 lpm.

The 6400 family supports IPDS*, SCS and ASCII for IBM and non-IBM environments. All 6400 models can handle one- to six-part forms and offer a number of flexible form handling characteristics.

Ideal for all of your form-printing requirements

4247 Multi-Form Printer



The 4247 handles multiple forms.

The versatile 4247 is ideal for high-speed office printing, heavy-duty printing for small systems, or workstation printing for larger systems and networks. With the 4247, you can load up to six different types of forms at once, allowing you to consolidate applications that previously required multiple printers. Rated speed is 700 characters per second.

Dimensions: 26.75"W 15.75"D 12.25"H
Warranty: Three months
FCC Class A (Defined on page 4)

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Improved performance and network connectivity

3130 Advanced Function Printer

- **Up to 3 concurrently active interfaces**
- **Low cost of operation**
- **Either 240 or 300 dpi resolution**
- **Superior IPDS performance.**



Advanced, cut-sheet machines that print up to 30 impressions per minute and 200,000 impressions per month, the 3130 models 03S and 02D feature optional network attachments for improved connectivity in AIX, IBM LAN Server and Novell NetWare** environments. They are available with support for PCL5e and PostScript Level 2 as well as drivers for AIX, OS/2* and Microsoft Windows.

Dimensions: O3S: 26"W x 26"D x 54"H
O2D: 26"W x 26"D x 54"H
Warranty: Three months
FCC Class A (Defined on page 4)

The new standard in distributed, cut-sheet printing

IBM Infoprint 60/3160 Advanced Function Printer

- **Speeds up to 60 ipm**
- **Duty Cycle up to 750,000 pages per month**
- **Infoprint 60 now offers optional PCL5e support**
- **Supports Adobe PostScript Level 2 and PCL (through IBM server technology).**



High-volume, high-speed printing in a small footprint

Speed, flexibility and affordability make these cut-sheet printers perfect for the most demanding data center or departmental needs. The IBM 3160 and the Infoprint 60 pack power and endurance into one of the smallest footprints in their class (just over 7 sq. ft.).

Optional finisher for the Infoprint 60 also available (not compatible with PCL5e option).
Dimensions: 41.75"W x 27.4"D x 51.2"H
Warranty: Three months
FCC Class A (Defined on page 4)

IBM printers to meet your every need

Printer Comparison Table

Printer	Speed	Description	Lease†	Price	Fax Doc
LASER					
Network Printer 12	Up to 12 PPM	Cut sheet	*	$1,036	–
Network Printer 17	Up to 17 PPM	Cut sheet, duplex standard	*	$1,387	–
Infoprint 20	Up to 20 PPM	Cut sheet	*	$1,999	–
Infoprint 32	Up to 32 PPM	Cut sheet	*	$3,229	–
Infoprint 40	Up to 40 PPM	Cut sheet	*	$3,799	–
3130-02D	Up to 30 ipm	Cut sheet, duplex	*	$20,995	3139
3130-03S	Up to 30 ipm	Cut sheet, simplex	*	$17,995	3139
3160-001	Up to 60 ipm	Cut sheet, duplex	*	$49,995	3916
Infoprint 60 (3160-002)	Up to 60 ipm	Cut sheet, duplex	*	$69,995	3916
LINE MATRIX					
6400-050	Up to 500 lpm	Enclosed cabinet	*	$6,195	2108
6400-P50	Up to 500 lpm	Pedestal model	*	$5,195	2108
6400-010	Up to 1,000 lpm	Enclosed cabinet	*	$7,995	2108
6400-P10	Up to 1,000 lpm	Pedestal model	*	$7,395	2108
6400-015	Up to 1,500 lpm	Enclosed cabinet	*	$11,595	2108
DOT MATRIX					
4247-A00	700 cps	ASCII, continuous forms, cut sheet	*	$2,895	4753
4247-001	700 cps	ASCII, Coax or Twinax, continuous forms, cut sheet	*	$3,595	4753
4230-4I3	600 cps	IPDS, Twinax/ASCII, continuous forms, cut sheet	*	$3,995	2899
4230-4S3	600 cps	SCS, Twinax/ASCII, continuous forms, cut sheet	*	$3,395	2899
4230-5I3	600 cps	IPDS, Coax/ASCII, continuous forms, cut sheet	*	$3,995	2899
4230-5S3	600 cps	SCS, Coax/ASCII, continuous forms, cut sheet	*	$3,395	2899
4232-302	600 cps	ASCII, continuous forms, cut sheet	*	$2,595	2245

† Turn to page 76 for details on lease payment information.
FCC Class A (Defined on page 4)
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Local Area Network Adapters

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Feature	Description	Price
Ethernet Adapters		
► 2993	**Ethernet BNC MC Adapter** Designed for connection to 10Mbps networks with improved price/performance over previous Ethernet adapter (#2980). - Optimized 32-bit busmaster interface and software device driver for high throughput, low latency and reception - Makes full use of the 40MB/sec. data streaming capability of the Micro Channel bus - Compatible with IEEE 802.3, 10Base2 networks	$595
► 2992	**Ethernet/FDX 10Mbps TP/AUI MC Adapter** Provides full duplex Ethernet connectivity for RS/6000 systems. - Supports 10BaseT networks directly or any 802.3 medium via external transceiver connected to AUI port - Makes full use of the 40MB/sec. data streaming capability of the Micro Channel bus - Optimized 32-bit busmaster interface, low latency and low device driver overhead to free up more CPU power	$595
► 2994	**IBM 10/100Mbps Ethernet MC Adapter** This fast Ethernet solution offers MCA-based RS/6000 users an easy migration from 10Mbps to 100Mbps. Uses Category 5 UTP wiring. - Single-port connection to 10/100BaseTX LANs using UTP Category 5 cable - Supports full duplex - Auto Speed detection – adapter automatically senses the line speed: 10Mbps or 100Mbps	$795
► 2985	**Ethernet BNC/RJ-45 PCI Adapter** Provides 10Mbps Ethernet connectivity for PCI RS/6000 systems. - Supports 10BaseT or 10Base2 networks directly - Provides full duplex Ethernet on 10BaseT port	$195
► 2987	**Ethernet AUI/RJ-45 PCI Adapter** Provides 10Mbps Ethernet connectivity for PCI RS/6000 systems. - Supports 10BaseT networks directly or any 802.3 medium via external transceiver connected to AUI port	$195
► 2968	**10/100Mbps Ethernet PCI Adapter** This fast Ethernet solution offers PCI-based RS/6000 users an easy migration path from 10Mbps to 100Mbps LANs without requiring a change of adapter. - Supports full duplex using Category 5 UTP cable - Auto Speed detection - Adapter is designed to sense the line speed: 10Mbps or 100Mbps	$275
2969	**Gigabit Ethernet - SX PCI Adapter** Provides one Gigabit Ethernet connection for selected RS/6000 PCI systems - Full duplex operation - Multimode fiber - NIM support	$2,125

Feature	Description	Price
FDDI Adapters		
► 2724	**FDDI-Fiber Single-Ring Adapter (MC)** LAN communications adapter using optical cabling designed for FDDI protocols with a line speed up to 100Mbps. - Compatible with ANSI X3T9.5 and ISO 9314, requires one Micro Channel slot Fax Doc 2283	$3,955
► 2723	**FDDI-Fiber Dual-Ring Upgrade Kit (MC)** An upgrade for FC #2724 for use with dual attach stations – requires additional Micro Channel slot.	$1,995
► 2741	**SysKonnect SK-NET FDDI-LP SAS PCI Fiber†**	$1,590
► 2742	**SysKonnect SK-NET FDDI-LP DAS PCI Fiber†**	$2,230
► 2743	**SysKonnect SK-NET FDDI-UP SAS PCI UTP†** † Lets PCI-based RS/6000 users connect to fiber or UTP FDDI rings as either SAS (Single Attach Station) or DAS (Dual Attach Station), directly or through FDDI concentrators. - High speed, low latency and low CPU and bus utilization - AMD SUPERNET3 single-chip FDDI design - Conforms to FDDI-ANSI X3T12 specification and FDDI Standard Series	$955
Token Ring Adapters		
► 2972	**Auto Token-Ring LANStreamer MC 32 Adapter** Additional functionality over FC #2970 includes: - Adapter Auto senses line speed between 4Mbps and 16Mbps - Data streaming support - Supports full duplex	$850
► 2920	**Auto Token-Ring LANStreamer† PCI Adapter** Provides 4/16Mbps Token-Ring connectivity for PCI RS/6000 systems. - Adapter is designed to sense the line speed between 4Mbps and 16Mbps - Data streaming support - 7025-F40 and 7043-140 only	$795
4959	**IBM Token-Ring PCI Adapter** PCI adapter for RS/6000 - Single slot, short, 32-bit PCI adapter - Supports 4 or 16 Mbps data rates, either half-duplex or full-duplex	$795
Ethernet Transceivers		
4223	**Ethernet 10Base2 Transceiver** Provides a connection to thin Ethernet coaxial cable, 10Base2 (Model 2XX only). - Compatible with Ethernet/IEEE 802.3 transceiver specifications and 10Mbps Ethernet CSMA/CD operation	$195

FCC Class A (Defined on page 4)
FCC Class B (Defined on page 4) - (except features 2741, 2742 and 2743)
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With IBM, you will get the perfect connection every time

Communications Adapters and Cables

Asynchronous Adapters and Cables

Feature	Description	Price
► 2930	**8-Port Async Adapter - EIA-232 (MC)** Allows for attachment of up to eight EIA-232D Async serial devices. - Supports eight ports, utilizing one I/O card slot (eight connectors for device attachment are provided in Multiport Cable #2995) - Data rates up to 38.4Kbps per port - Supports cabling up to 61 meters (200 ft.) FC #2950 for MIL-STD 188 also available, call for details	$832
► 8128	**128-Port Async Controller (MC)** Provides support for attaching a maximum of 128 EIA-232D asynchronous serial devices using a single Micro Channel slot. - Contains two async channels - each allows a daisy-chain cable connection of up to four Remote Async Nodes (FC #8130) - Support for direct or synchronous modem - Attachment of up to eight Remote Async Nodes - 512KB memory Fax Doc 2282	$1,295
► 2943	**8-Port Async EIA 232/422A PCI BUS** - Supports eight ports, utilizing one I/O card slot - Data rates up to 230Kbps per port - EIA 232A supports up to 61 meters (200 ft.) - RS 422A cabling up to 1,200 meters (4,000 ft.) - Includes 8-Port breakout cable	$1,395
► 2944	**128-Port Async Controller - PCI BUS** - Contains two synchronous channels - each allows a daisy-chain cable connection up to four Remote Async Nodes - Data rates up to 230Kbps - Supports cabling up to 61 meters using EIA RAN (FC # 8136), up to 1200 meters using 422 RAN (FC # 8137)	$1,295
RANS		
► 8137	**Enhanced Remote Async Node RAN 16-Port EIA-232** Provides remote connection of up to 16 EIA-232 devices to a 128-Port Async Controller adapter. FC #8128 (MC), #2933 (ISA), #2944 (PCI). - 16 async ports each with a data interchange rate up to 230Kbps - Cable lengths up to 200 feet - Compatible with EIA-232D Full set of modem control signals	$1,595
► 8138	**Enhanced Remote Async Node RAN 16-Port RS-422** Provides remote connection of up to 16 RS-422 devices to a 128-Port Async Controller adapter. FC #8128 (MC), #2933 (ISA), #2944 (PCI). - 16 async ports each with a data interchange rate up to 230Kbps - Cable lengths up to 4,000 feet - Supports the following interface signals: +TxD, +RxD, -TxD, -RxD	$1,795

MC = Micro Channel
FCC Class A (Defined on page 4)
► 24 Hour QuickShip

Feature	Description	Price
Asynchronous Communications Cables		
► 8131	**128-Port Async Controller Cable** Length (M) = 4.57	$60
► 8132	**128-Port Async Controller Cable** Length (M) = .23 For use with FC #2944 and #8128 provides an 8-wire Controller-to-RAN, or RAN-to-RAN connection	$40
8133	**RJ-45 to DB25 0.61 Converter Cables** For use with FC #8137 - provides 25-pin D-shell connector for device attached to RAN (four cables provided per order).	$120
► 8135	**64-Port to 128-Port Pin-out Converter** Attaches async devices wired for 64-port concentrators to 128-port remote async nodes EIA-232 (quantity: four to a package).	$45
2995	**Multiport Interface Cable** Length (M) = 3 For use with FC #2930, #2940, #2950	$384
Wide Area Network Adapters		
► 2700	**4-Port Multiprotocol Communications Controller (MC)** Attaches system to synchronous networks at data rates up to 64Kbps per port (user-provided software required). - Prepares all in/outbound data, relieves system processor of various communications tasks, supports SDLC and BSC protocols - Supports EIA-232D on Ports 0, 1, 2 and 3; EIA-422A on Ports 0 and 2; V.35 on Ports 0 and 1; and X.21 on Port 0 - Multiport interface box and cables for X.21, EIA-232 and V.35 are available	$2,600
► 2708	**Eicon ISDN DIVA PCI Adapter** Allows ISDN Basic Rate connection to RS/6000 integrating with AIX PPP-Subsystem allowing TCP/IP protocol to connect over ISDN. - 2 B Channels - 64KB each channel - 1 D Channel - Support for 2 64KB connections - Multilink PPP capability combining both 64KB channels together providing a single 128KB data path - Common ISDN API Version 2.0 (CAPI 2.0) compliant - Global ISDN Support - Europe - ETSI - USA - National ISDN 1 and ATT 5ESS-Australia - ATEL - Japan	$995
► 2962	**2-Port Multiprotocol PCI Adapter** Allows SDLC and X.25 connections to synchronous data networks at speeds up to 64Kbps per port. The following physical interfaces are supported: X.21, V.24, V.35 or V.36. - Full duplex, synchronous - Cables supported - Supports SDLC and X.25	$1,595
Communication Cables		
► 2951	**2-Port V.24/EIA-232 Cable**	$175
► 2952	**2-Port V.35 Cable**	$320
► 2953	**2-Port V.36/EIA-449 Cable**	$255
► 2954	**2-Port X.21 Cable**	$175

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Get connected with IBM

Wide Area Network Adapters

Feature	Description	Price
2960	**ARTIC X.25 Interface Coprocessor/2 (MC)** Allows connection to an X.25 Packet Switched network via a single port that accommodates one of three selectable interfaces: X.21, EIA-232D V.24 and V.35 (wrap plug is included). - Onboard software processes in/outbound data streams to offload communications tasks from system processor - Full duplex, synchronous - X.21 bis (V.24) up to 19.2Kbps; X.21 bis (V.35) up to 56Kbps; X.21 (non-switched) up to 64Kbps - Call to order your cables	$1,570
6310	**IBM ARTIC960RxD Quad Digital Trunk PCI Adapter** Provides voice processing for up to four T1 or E1 digital trunk lines, providing connectivity for 96 (T1) or 120 (E1) voice channels in a single PCI slot. The voice processing function is provided by DirectTalk for AIX Version 2.1 LPP. Seven cables are available in support of this adapter. - Connection of 1 to 4 T1/E1 Trunk lines - Uses DirectTalk for AIX V2.1 LPP application software	$11,000
2871	**IBM ARTIC960RxD Quad DTA, T1, 100 Ohm, 3M 4-Port Cable** - Connection of 1 to 4 T1 Trunk lines	$305
2872	**IBM ARTIC960RxD Quad DTA, T1, 100 Ohm, 15M Extension Cable** - Connection of 1 to 4 T1 Trunk lines	$315
2873	**IBM ARTIC960RxD Quad DTA, E1, 120 Ohm Balanced, 3M 4-Port Cable** - Connection of 1 to 4 E1 Trunk lines	$315
2874	**IBM ARTIC960RxD Quad DTA, E1, 120 Ohm Balanced, 7.5M Extension Cable** - Connection of 1 to 4 E1 Trunk lines	$160
2875	**IBM ARTIC960RxD Quad DTA, E1, 75 Ohm Unbalanced-Grounded, 1.8M 4-Port Cable** - Connection of 1 to 4 E1 Trunk lines	$430
2876	**IBM ARTIC960RxD Quad DTA, E1, 75 Ohm Unbalanced-Ungrounded, 1.8M 4-Port Cable** - Connection of 1 to 4 E1 Trunk lines	$430
2877	**IBM ARTIC960RxD Quad DTA, H.100, 4-Drop Cable** - H.100 bus connection between adapters	$30
Artic Cables		
► 2947	**ARTIC 960 HX 4-Port Selectable PCI Adapter†** - Hardware support for WAN protocols such as SNA, BSC and X.25 - Software support available for SNA and BSC on AIX 4.3.2 and V4.2.1 - X.25 support via AIXLink 1.1.5 - Each port will support speeds up to 2.0Mbps on EIA-330, X.25, V.35 or V.36 interfaces	$3,625

FCC Class A (Defined on page 4)
► 24 Hour QuickShip

High-speed, high-throughput

ARTIC Communications Adapters

- **Helps relieve the host from compute-intensive tasks associated with WAN applications and protocols, providing 4-6 times higher performance than Portmaster adapters**
- **New 8-port models support 8-port EIA-232, 6 port V.36 and 8 port X.21**
- **All ports support WAN link speeds up to 2.048Mbps full duplex**
- **All models include ARTIC real-time kernel and AIX V3.2.5 Operating system development driver.**

ARTIC is a family of high-speed, high-throughput coprocessor adapters designed to operate in 32-bit Micro Channel bus-compatible systems. Call for cabling options.

Feature	Description	Price
ARTIC Communications Adapters		
7006	**ARTIC Portmaster*** (1.0MB) (MC)	$1,595
7042	**ARTIC Portmaster EIB** (8 port, RS232) (MC)	$697
7044	**ARTIC Portmaster EIB** (8 port, RS422) (MC)	$673
7046	**ARTIC Portmaster EIB** (6 port, V.35) (MC)	$1,227
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Channel Adapters

Feature	Description	Price
2751	**System/390 ESCON Control Unit Adapter (PCI)** Attaches RS/6000 via fiber optic link to System/390* and ESCON-capable System/370* hosts, as well as ESCON attached tape peripheral devices. - Attachment is supported on both 10MB/s and 17MB/s ESCON Channels - RS/6000 device driver Interface (provided) supports user written channel programs	$9,500
2754	**S/390 ESCON Channel Emulator Adapter (MC)** Allows attachment of selected ESCON-capable I/O units (tape units and tape libraries) to RS/6000. - Extends I/O attachment capabilities offered by the S/370 Channel Emulator/A Adapter (FC #2759) to ESCON customers - Fax Doc 3053	$10,000
► 2755	**Block Multiplexer Channel Adapter (MC)** Provides high-speed parallel channel communications to a S/370 or S/390 at data rates up to 4.5Mbps (requires FC #2757 and #2758). - Supported on AIX Version 4.1.4	$4,400
► 2756	**System/390 ESCON Control Unit Adapter (MC)** Attaches RS/6000 via fiber optic link to System/390 and ESCON-capable System/370 hosts (requires two Micro Channel slots). - Attachment is supported on both 10MB/s and 17MB/s ESCON Channels - RS/6000 device driver Interface (provided) supports user written channel programs	$10,000
2757	**Block Multiplexer Channel Adapter Cable**	$700
2758	**Block Multiplexer Channel Cable Assembly** Requires S/370 channel bus/tag cable.	$900
2759	**S/370 Channel Emulator/A Adapter (MC)** Allows attachment of selected Pennant* Printers and ADSTAR tape subsystems to an RS/6000 via an S/370 parallel channel (block multiplexer) connection. - Includes adapter, cable, wrap plugs, terminators and diagnostic diskette - Requires separately purchased software Print Services Facility* (#5765-505) or Parallel Channel TP Attach (#5799-QDA) - Fax Doc 2288	$3,500
2732	**IBM Short wave Serial HIPPI PCI Adapter for RS/6000** Single slot, full size, 32-bit PCI adapter supporting TCP/IP over a serial HIPPI link. Data is sent and received over optical fiber at 1.2Gbps using the HIPPI standard 20/24 bit encoding scheme with short wave optical transducers. The effective maximum data rate of the HIPPI interface is 800Mbps. - attachment to a Serial HIPPI Network	$12,000
2733	**IBM Long wave Serial HIPPI PCI Adapter for RS/6000** Single slot, full size, 32-bit PCI adapter supporting TCP/IP over a serial HIPPI link. Data is sent and received over optical fiber at 1.2Gbps using the HIPPI standard 20/24 bit encoding scheme with long wave optical transducers. The effective maximum data rate of the HIPPI interface is 800Mbps. - Attachment to a Serial HIPPI Network	$12,000
TURBOWAYS ATM Adapters		
► 2989	**TURBOWAYS® 155 ATM Adapter (155Mbps) (MC)** High-performance intelligent adapters providing direct access to high-bandwidth asynchronous transfer mode (ATM) LANs. - Offers RS/6000 users cost-efficient access to ATM networks supporting voice, data and video - Operation at 155Mbps (TURBOWAYS 155) full-duplex to provide dedicated bandwidth between RS/6000 and other ATM devices - i960 RISC processor and specialized ATM chips offload tasks from host processor - Up to 2 adapters can be installed in single RS/6000 Micro Channel - Up to 1,024 virtual connections - PVC/SVC support ATM Forum UNI 3.0, UNI 3.1 - ATM adaptation layer (AAL) 5 support - Supported on AIX 3.2.5 and AIX 4.1.4 or later - Supports IP over ATM, RFC 1577 - Supports LAN Emulation 1.0	$2,695
► 2998	**TURBOWAYS 25 ATM PCI Adapter** 25Mbps ATM adapter providing access through an IBM 25Mbps ATM Concentrator (#8282) to an ATM LANs. - Up to 6 adapters can be installed in a system - Up to 32 virtual connections - PVC/SVC support ATM Forum UNI 3.0, UNI 3.1 - Uses Cat-5 UTP wiring - Supports IP over ATM, RFC 1577 - Supports LAN Emulation 1.0	$375
► 2988	**TURBOWAYS 155 ATM PCI MMF Adapter** 155Mbps ATM adapter providing access to an ATM switch. - Up to 4 adapters can be installed in a system - Up to 1024 virtual connections - PVC/SVC support - ATM Forum UNI 3.0, UNI 3.1 - Uses 62.5 micron multimode fiber - Supports IP over ATM, RFC 1577 - Supports LAN Emulation 1.0	$1,595
► 2963	**TURBOWAYS 155 ATM PCI UTP Adapter** Same as #2988, however attaches to Category-5 unshielded twisted pair (UTP Cat-5) wiring.	$1,495
Miscellaneous Cables		
► 2936	Async Cable - EIA-232/V.24 Length (M) = 3	$73
► 2945	Terminal Cable - EIA-422A Length (M) = 20	$130

FCC Class A (Defined on page 4)
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Feature Number/Description		Page
MONITORS		
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3621	Pearl White 19" P92 color monitor	50
3630	Pearl White 21" P260 color monitor	50
3627	Stealth Black 17" P76 color monitor	50
3625	Stealth Black 19" P92 color monitor	50
3628	Stealth Black 21" P260 color monitor	50
MODEL F40		
3071	4.5GB SSA Hot-Swap Drive	30
4306	2nd 166 MHz PowerPC 604e	18
4341	2nd 233MHz PowerPC 604e	18
4114	Additional 64MB ECC DIMM	18
4113	32MB DIMM	28
4115	128MB DIMM	28
6159	12GB/24GB 4mm Internal Tape Drive	18
2913	9.1GB UltraSCSI	30
MODEL F50		
4307	PowerPC 604e 166MHz 1-way	19
4309	PowerPC 604e 166MHz 2-way	19
4358	PowerPC 604e 332MHz 1-way	19
4359	PowerPC 604e 332MHz 2-way	19
3074	9.1GB SSA Hot-Swap drive	30
3071	4.5GB SSA Hot-Swap drive	30
4093	OMB Card	28
MODELS F50, H50		
3071	4.5GB SSA Hot-Swap Drive	30
4107	64MB (2X32MB DIMMs)	19, 28
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MODEL H70		
4093	OMB Card	28
4107	64MB (2X32MB DIMMs)	21, 28
4110	256MB (2X128MB DIMMs)	21, 28
4119	512MB (2X256MB DIMMs)	21, 28
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4165	256MB (1GB) Card	22, 28
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MODEL S70 ADVANCED		
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4171	512MB Memory Group (4X128MB)	23
4173	1024MB Memory Group (4X256MB)	23
4175	2048MB Memory Group (4X512MB)	23
4177	4096MB Memory Group (4X1024MB)	23
4179	8192MB Memory Group (4X2048MB), for Model S70A	23
5312	PowerPC RS64 II 4-way Processor Card with 8MB L2 Cache, for Model S70A	23
6159	12GB/24GB 4mm Internal Tape Drive	23
6156	20GB/40GB 8mm Internal Drive, for Model S70A	23
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4083	32MB SIMM	29
MODELS 25T/41W/42W/T		
4011	16MB SIMM	29
4012	32MB SIMM	29
MODELS 140/240		
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2909	18.2GB UltraSCSI	15
4113	32MB DIMM	29
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4069	64MB Card	29
4090	126MB Card	29
4095	256MB Card	29
MODEL 397		
4087	64MB Card	29
4088	128MB Card	29
4089	256MB Card	29
MODEL 260		
3028	4.5GB Ultra SCSI 16-bit Hot Swap	30
3029	9.1GB Ultra SCSI 16-bit Hot Swap	30
4342	2nd 200MHz POWER3	14
4107	64MB DIMM	14, 29

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Item No.	Product	Page
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7043	43P Model 150	15
7043	43P Model 140	15
7025	Model F40	17
7025	Model F50	18
7133	Serial Disk System	35
3570	Magstar Tape Subsystem	38
3590	Magstar Tape Drive, Models B1A, B11	39

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RS/6000 QUICKSHIP PRODUCTS

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MODELS 39H, 59H, 590		
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4090	126MB Card	29
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MODEL 591/595		
4078	128MB Card	29
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MODEL 397		
4087	64MB Card	29
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STORAGE		
6219	SSA RAID EL (MCA), 2-way RAID 5- OR 8-way NON-RAID, 1-way only with SSA Fast Write Cache Module	35
6222	4MB Non-Volatile SSA Fast Write Cache Module for use with 6215 and 6219	35
6225*	Advanced Serial RAID adapter PCI, 2-way RAID 5- or 8-way NON-RAID, 1-way only RAID 0, 1-way only with SSA Fast Write Cache Module, Supports loop speed of 160MB/s	35
7133-D40	Rack-Mount Drawer up to 291.2GB	35
7133-T40	Deskside Tower up to 291.2GB	35
PERIPHERALS		
2994	IBM 10/100Mbps Ethernet MC Adapter	44
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8137	Enhanced Remote Async Node 16-Port EIA-232	45
8138	Enhanced Remote Async Node 16-Port RS-422	45
8131	128-Port Async Controller Cable, lg. 4.57	45
8132	128-Port Async Controller Cable, lg. 0.23	45
8135	64-Port to 128-Port Pin-out Converter	45
2700	4-Port Multiprotocol Communications Controller (MC)	45
2708	Eicon ISDN DIVA PCI Adapter	45
2943	8-Port Async Controller (MC)	45
2962	2-Port Multiprotocol PCI Adapter	45
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► 3153BA3FC9131	14" amber (RS232 Main Port) 102-key PC Keyboard	$577
► 3153CG3FC9231	14" green (RS422 Main Port) 102-key ASCII Keyboard	$577
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FCC Class A (Defined on page 4)
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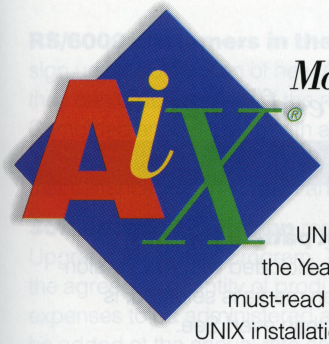

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Product No.	Feature	Description	OTC
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* AIX Bonus Pack Contents are subject to change and may vary by country due to import/export requirements.
Appropriate media charges apply and shipments of AIX, AIX Fast Connect and Bonus Pack are initiated through SPO 5692-AIX.
[1]Project Monterey, a major UNIX operating system initiative led by IBM. For more information refer to **www.ibm.com/servers/monterey**.

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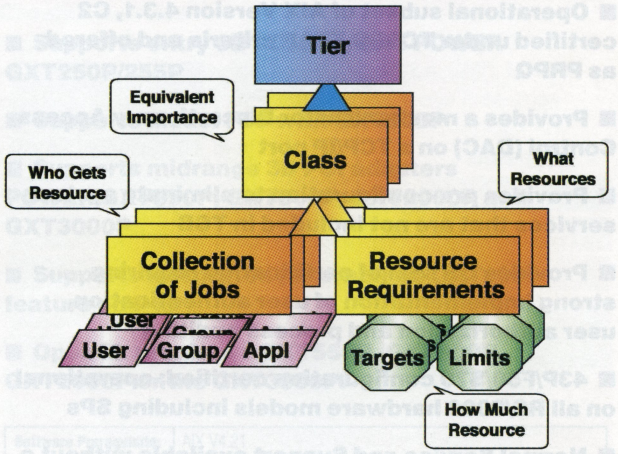
AIX Workload Management

New



- **Permits system resource allocation with fine granularity to specific jobs to help ensure meeting business requirements**
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- **This PRPQ has a prerequisite that the customer must have a valid AIX V4 license separate from the PRPQ.**

A system that has been rated C2 enforces a discretionary access control policy to help protect information. It allows users to share information under their daily control only with other specified users.

AIX Version 4.3 releases have C2 security built into the product, however, this PRPQ is an operational subset of AIX V4.3.1, which has been evaluated for the conformance to government standards according to United States Trusted Computer Security Evaluation Criteria (TCSEC) for C2 level of functionality. This is the first 64-bit UNIX system to be certified under the new TCSEC TTAP Criteria.

PRPQ is available on CDROM, including full documentation on HTML.

Product No.	Description	Price
5799-GFG	Certified C2 for AIX V4.3.1	**$995.00**

Powerful B1-designed security functions for your mission-critical data

Bull B1/EST-X V2.0.2 for AIX V4.3.2

- **Supplements AIX® 4.3.2 and is designed to provide B1-level features as defined by the Department of Defense 5200.28.STD**
- **Mandatory Access Control (MAC) enforced by the system**
- **Privileges that are managed via administrative commands**
- **Multilevel directories that control access to designated levels**
- **Password management, allowing the system administrator to select encryption procedures**
- **Additional Audit Events, providing systems administrators more control over unauthorized access**
- **B1 system boot is fully integrated into the system boot process**
- **Runs on all RS/6000® configurations supported by AIX V4.3.2 except for SP**
- **Groupe Bull product offered and serviced by IBM**
- **Supports 32-bit application environments.**

Now you can give your financial, government and other mission-critical applications the protection required to provide for the integrity of your all-important corporate data. The new B1/EST-X V2.0.2 is designed to supplement the AIX V4.3.2 base to provide a B1 level of security functionality as defined in the Department of Defense 5200.28.STD†.

With access management, you can limit the number of times users log onto the system. Terminal inactivity checking automatically disconnects workstations at user-specified times. And with multilevel directories files can be hidden from users who do not have the appropriate access clearance.

Product No.	Description	OTC
5799-GFH 4001	Bull B1/EST-X security Group D	**$8,500**
5799-GFH 4002	Bull B1/EST-X security Group E	**$11,275**
5799-GFH 4003	Bull B1/EST-X security Group F	**$19,275**
5799-GFH 4004	Bull B1/EST-X security Group G	**$28,200**

Note: Requires installation on a newly installed copy of AIX V4.3.2.
† This product is not B1 certified.

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Full-featured and multithreaded APIs

APIs for Complex 3D Graphics

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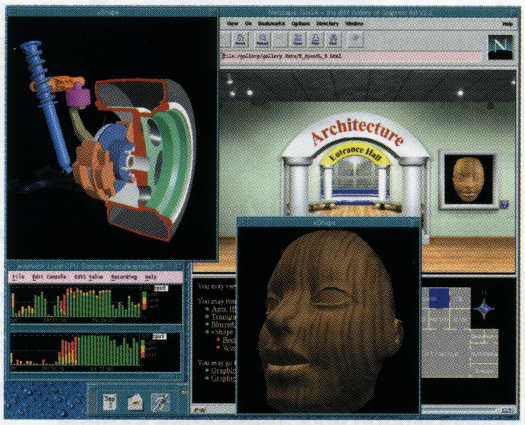

Softgraphics is an advanced graphics feature of AIX V4

PHIGS for AIX V4.3
OpenGL and GL 3.2 for AIX V4.3

AIX V4.3 enhancements now include PHIGS and OpenGL† runtime and development environments in the base operating system. The PEX API is no longer supported. Both PHIGS and OpenGL APIs for the PowerPC 604e platforms are SMP multithreaded enabled. In addition to the previous models and adapters supported on AIX V4.2, the RS/6000 Model F50 with the GXT800P, the GXT3000P on Models 150 and 260, and the newly announced GXT2000P in models 140, 150 and 260 are also supported.

PEX and PHIGS for AIX V4.2.1
OpenGL and GL 3.2 for AIX V4.2.1

These powerful software tools are supported on most IBM 2D and 3D graphics adapters either through software or hardware acceleration. Our PHIGS products offer the graPHIGS API and PHIGS language bindings based on the ISO/ANSI PHIGS standard. They feature independent lighting and shading controls, advanced primitives, extended rendering attributes and more.

The OpenGL and GL 3.2 for AIX provide real-time 3D rendering capabilities with OpenGL 1.1 compatibility. A rendering library, utility toolkit, X11 Window System integration suite, networking protocol and OpenGL widgets are included. GL 3.2 supports a full-featured 3D rendering interface as well as windowing interfaces.

Graphics support for PowerPC 604e platforms

Version 4.2.1 enhancements (both products) include full 3D graphics acceleration for the PowerPC 604e-based 43P Series Models 140, 150, 260 and Model F40 Server and the Notebook 860.

- **Supports entry 3D PCI adapters POWER GXT250P/255P**
- **Supports Model F50 with GXT800P**
- **Supports midrange 3D PCI adapters POWER GXT550P, GXT800P, GXT2000P and GXT3000P**
- **Supports integrated (internal) 3D GXT1000 feature on F40**
- **OpenGL requires a GXT550P, GXT800P, GXT2000P or the GXT3000P.**

Software Prerequisite:	AIX V4.21

Product No.	Description	OTC
5765-660	PEX and PHIGS for AIX V4.2.1	$695
5765-659	OpenGL and GL 3.2 for AIX V4.2.1	$695
5765-C34	OpenGL and PHIGS for AIX V4.3††	N/C

† OpenGL is a registered trademark of Silicon Graphics Inc.
†† OpenGL and PHIGs included with AIX V4.3 at no additional charge.

3D graphics with 2D hardware

Softgraphics

- **Supports all RS/6000s. Scales with CPU so graphics performance increases without modification when moving to a faster system**
- **Supports multiple 3D APIs on a single workstation to help reduce purchase and training costs**
- **Ideal for applications development and distribution - 3D applications can be developed on low-cost 2D platforms, then distributed to both 2D and 3D systems in the field!**

IBM's breakthrough Softgraphics 3D capability is available for OpenGL, PHIGS and PEX for AIX Version 4.2 and Version 4.1.5. It is available for OpenGL and PHIGS for AIX V4.3. As the cornerstone of IBM's 3D API strategy, Softgraphics provides a full software implementation of OpenGL 1.1, PEXlib 5.1 and graPHIGS 3D APIs so you can perform full-function 3D graphics while utilizing many of IBM's low-cost 2D graphics adapters!

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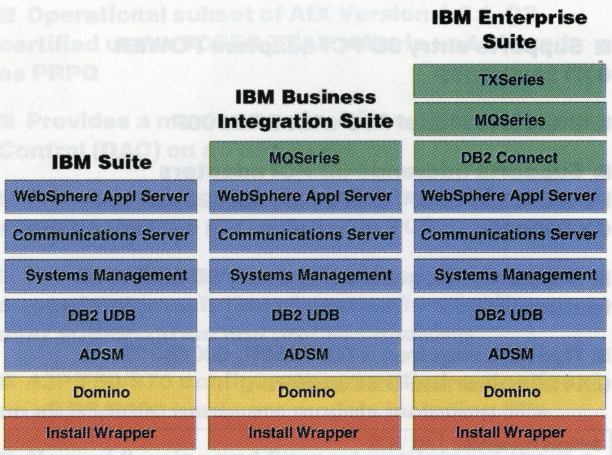
Enabling e-business for competitive advantage

IBM Suites for AIX



IBM Suites for e-business for Windows NT, IBM AIX and Sun Solaris.

ADSM is optional for Suites for AIX and Solaris.

- **IBM Suites for AIX makes it easy for companies to build, deploy and manage e-business applications**
- **Key components of award winning software such as Domino Server, DB2 Universal Database, WebSphere Application Server, MQSeries and TXSeries are integrated into IBM Suites for AIX®**
- **Flexible licensing allows you to install components across multiple servers, decreasing overall costs and allowing you to use all of the components**
- **Upgrading is simplified, whether from a single IBM product or from one suite level to the next**
- **Easy installation with a choice of express and custom options.**

IBM Suites for e-business combines all the essential e-business application servers - Lotus Domino, WebSphere, DB2 Universal Database and MQSeries - into an integrated package that includes software for host integration and local systems management, plus an integrated installation tool.

What's in Suites for e-business?

E-mail and collaboration

The Domino Server is an integrated messaging and Web application software platform for growing companies that need to improve customer responsiveness and streamline business processes. As the only solution built on an open, unified architecture, Domino delivers secure communication, collaboration and business applications.

Transactional Web application Servers

These servers enable your company to conduct a wide range of business, from simple Web publishing to enterprise-scale, round-the-clock, online transaction processing.

TXSeries allows developers to build secure, reliable transaction systems

Data Management

DB2 Universal Database is one of the truly scalable, multimedia databases ready for e-business. This award-winning database offers 34-203% more power and 39-109% more throughput than competitive offerings.

Connectivity Services

MQSeries is a messaging and information backbone that enables organizations to transact complex business processes across 35 operating systems, more than any other messaging software on the market.

IBM eNetwork Communications Server smoothly integrates your host systems with the rest of your network and e-business applications.

Systems Management

EnlightenDSM™, a full-featured suite of workgroup systems administration and event monitoring capabilities that offer cross-platform functionality for UNIX and Microsoft Windows clients.

Visit our Web site at: **www.ibm.com/software/xplatformsuites**

Product No.	Feature	Description	Price
5697-E91	1001	IBM Suite for AIX Version 1.5[1,2]	$2,499
5697-E91	1002	IBM Suite for AIX Version 1.5 Client	$225
5697-E97	0001	IBM Business Integration Suite for AIX Version 1.5[1,2]	$6,499
5697-E97	0002	IBM Business Integration Suite for AIX Version 1.5 Client	$225
5697-E90	2001	IBM Enterprise Suite for AIX Version 1.5[1,3]	$18,249
5697-E90	2002	IBM Enterprise Suite for AIX Version 1.5 Client	$375

[1] Requires registered user
[2] Authorized to run on RS/6000 Models 43P, F40 and F50 with up to 4 processors.
[3] Authorized to run on any RS/6000 machine up to 4 processors.

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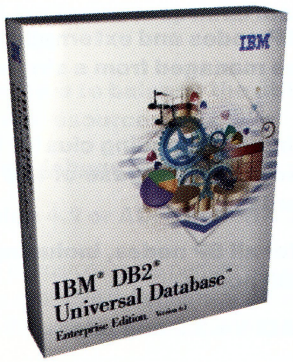
Powering the world's e-business solutions

DB2 Universal Database

Product Update



- **Provides unparalleled power and performance**
- **Offers wide-ranging accessibility and high availability**
- **Supports large data objects including text, audio, video, images and spatial**
- **Enables you to deploy e-business applications rapidly and cost effectively**
- **Works with IBM business intelligence solutions to help you exploit valuable business data**
- **Features tools that make data management easy.**

As the foundation for e-business, DB2® Universal Database™ is the industry's first multimedia, Web-ready relational database management system, strong enough to meet the demands of large corporations and flexible enough to serve medium-sized and small businesses. DB2 Universal Database combines power for business intelligence (data warehousing and data mining) with industry-leading performance and reliability to drive the most demanding industry solutions. Industry-leading application vendors like SAP, PeopleSoft and Siebel Systems support DB2 in a wide variety of applications from ERP to Supply Chain Management to Customer Relationship Management. According to Dataquest Inc., a unit of Gartner Group, Inc., IBM® is the market share leader in the world-wide database industry with more than one million DB2 server licenses and 40 million users.

Cluster Proven

High performance parallel relational databases are provided whether you plan to implement AIX desktops, SMP, MPP, or clusters of SMPs with DB2 Universal Database Enterprise Edition and Enterprise Extended Edition. DB2 exploits AIX High Availability Cluster Multiprocessing (HACMP) feature offering customers wide-ranging accessibility and high availability. In addition, the optimizer in DB2 selects the lowest-cost path for execution making almost any query run faster, so you can generate results sooner and reach business conclusions way ahead of the competition.

Easy to Use

To make data management easy, the DB2 Control Center, is designed to manage all of the DB2 servers in your enterprise. Running as a Web browser or as native Java application, the Control Center offers an intuitive interface for accessing and manipulating any database object, a job scheduler, a performance monitors, and index SmartGuide along other management tools. DB2 is also integrated with Tivoli to provide Tivoli customers with the means to automatically discover, inventory and monitor DB2 resources enterprise wide.

Also available:

DB2 Connect provides your applications transparent access to data stored on any DRDA compliant database.

DB2 Universal Developer's Edition gives you a comprehensive suite of tools that help you build DB2 Universal Database applications.

DB2 Data Links Manager provides security and recoverability for external data by allowing files external to DB2 to be referenced and controlled by DB2.

DB2 Query Patroller provides query and resource management and tracking for decision-support systems.

DB2 Universal Database Enterprise Edition is part of the AIX Bonus Pack and is also a key component of the IBM Suites for AIX.

Hardware Prerequisites:	RS/6000 with CD-ROM
Software Prerequisites:	AIX Version 4.2 or later

For prerequisites on the full family of DB2 products, call 800-426-2265. All products are supplied on CD-ROM.

Product No.	Description	Platform	Foot-notes	OTC
41L1685	DB2 UDB Enterprise Edition V6.1	OS/2, Windows NT, AIX, Sun, HP-UX, Linux	1	$12,550
41L1714	DB2 UDB Enterprise - Extended Edition for AIX V6.1	AIX	1	$20,050
41L3059	DB2 Connect Unlimited Edition V6.1	OS/2, Windows NT, AIX, Sun, HP-UX, Linux		$5,050
41L1730	DB2 Connect Enterprise Edition V6.1	OS/2, Windows NT, AIX, Sun, HP-UX, Linux		$2,500
41L1094	DB2 Universal Developer's Edition V6.1	OS/2, Windows, Windows NT, AIX, Sun, HP-UX, Linux	2	$999
41L1704	DB2 Data Links Manager V6.1 for AIX	AIX		$8,050
41L1699	DB2 Query Patroller V6.1	AIX, SUN		$5,050

1 Additional charges apply for servers having a greater number of processors.
2 Universal Developer's Edition is licensed for installation and use by individual user only for the purpose of evaluating, demonstrating, testing and developing application programs.

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A high performance, scalable, cluster file system for the RS/6000 SP

General Parallel File System, V1.2

- **Follows with UNIX file standards, with minor exceptions**
- **Increases I/O performance and scales with the system**
- **Optimizes RS/6000 SP Switch and disk utilization with support of multiple file block sizes**
- **Runs most AIX applications unmodified**
- **Provides greater data availability with logging, replication and component failover support**
- **Spans multiple SP nodes and disks and allows access to SP files from any GPFS node in the system**
- **Simplifies multinode file system administration.**

If you've been looking for a truly scalable cluster file system for your SP system – one that follows most UNIX file standards and delivers superior performance across multiple file system nodes, with outstanding recoverability – here it is. IBM's General Parallel File System V1.2 (GPFS) can deliver greater file performance than existing NFS, DFS and PIOFS file systems on the SP. Plus, it provides the all-important scalability needed as you grow your SP system with additional processors and disks, while maintaining the application interfaces used in standard UNIX file systems.

GPFS can also survive most system and I/O failures. On an appropriately configured system it is capable of automatically recovering from node, disk and disk adapter failures and allows for continued operations in the event of failed disk connections.

Hardware Prerequisites:	RS/6000 SP with a minimum of 3 nodes running GPFS
Software Prerequisites:	AIX V4.3.2 or later modification levels. Parallel System Support Programs for AIX V3.1 or later (5765-D51). The IBM Virtual Shared Disk image of PSSP must be installed prior to the installation of Recoverable Virtual Shared Disk.

Feature	Product No.	Description	OTC
4000	5765-B95	BOTC Program Pkg. – GPFS	$10,000
4001		1-User Pack – GPFS	$2,500
4002		5-User Pack – GPFS	$10,000
4003		10-User Pack – GPFS	$17,500
4004		50-User Pack – GPFS	$40,000
1001		V1.2 Program Package (Incl 1 User)	$10,000
1002		V1.2, 1-User Pack	$2,500
1003		V1.2, 5-User Pack	$10,000
1004		V1.2, 10-User Pack	$17,500
1005		V1.2, 50-User Pack	$40,000
1006		UPG V1.1 to V1.2 Program Package (Incl. 1 User)	N/C
1007		UPG V1.1 to V1.2, 1-User Pack	N/C

System management for RS/6000 SP & SP-attached S80 & S70 Advanced

Parallel Systems Support Programs for AIX V3.1

- **Permits SP nodes and externally attached servers to be managed from a single point of control**
- **Exploits industry-leading cluster technology and provides numerous ease-of-use enhancements**
- **Support for all SP nodes, including 332 MHz and POWER3 SMP nodes**
- **Runs on AIX V4.3.2 and later**
- **Support for the attachment of S80 and S70 Advanced as SP-attached servers**
- **Supports PCI I/O adapters and SP Switch MX adapter**
- **Coexists with previous PSSP V2 releases and multiple AIX levels for easier migration.**

PSSP is a collection of administrative and operational software applications – built on AIX system management tools and commands – that enable system administrators and operators to more easily manage SP system installation, configuration, device management, security, error logging and resource accounting.

With IBM's Parallel System Support Programs for AIX (PSSP), you can attach S80 and S70 Advanced RS/6000 Enterprise Servers to dramatically increase the SP's database capabilities. The PSSP V3.1 repackages previous PSSP features such as PTPE and HACWS into the base product. RVSD, previously a separate product, has been merged within VSD function in PSSP. V3.1 continues to enhance SP usability and diagnostic capabilities.

Hardware Prerequisites:	RS/6000 SP, including one control workstation.
Software Prerequisites for PSSP V3.1:	RS/6000 SP system control workstation AIX 4.3.2 or later.

Feature	Product No.	Description	OTC
2000	5765-529	UPG Nodes 4 V1.2-V2.2	$750
2001	5765-529	UPG Nodes 16 V1.2-V2.2	$11,250
2002	5765-529	UPG Nodes 32 V1.2-V2.2	$22,500
2003	5765-529	UPG Nodes 64 V1.2-V2.2	$33,750
2004		UPG Nodes 128 V1.2-V2.2	$45,000
3000	5765-529	UPG Nodes 4 V2.1-V2.2	$500
3001		UPG Nodes 16 V2.1-V2.2	$7,500
3002	5765-529	UPG Nodes 32 V2.1-V2.2	$15,000
3003	5765-529	UPG Nodes 64 V2.1-V2.2	$22,500
3004	5765-529	UPG Nodes 128 V2.1-V2.2	$30,000
4001	5765-D51	PSSP V3.1 (Incl. in Hardware)	N/C
4002	5765-D51	PSSP for Ext. Att. Server	$15,000
4003	5765-D51	UPG from 5765-529 (V.2.2) - Per Node	$2,250

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Monitor, analyze and fine-tune your workstation performance

Performance Toolbox for AIX V2.2

- **Monitors AIX systems for optimal local or client/server performance**
- **Tunes parameters to balance the utilization of your fixed system resources**
- **Diagnoses and debugs performance problems**
- **For AIX Version 4.2 or AIX Version 4.3.**

With a wide range of customizable performance management tools available in Performance Toolbox, it's easier to optimize the utilization of your workstation resources.

The enhanced Motif-based V2.2 includes support for either a stand-alone system (entry-level Local version) or multiple networked systems (Network version), orderable as separate features. Moving from Local to Network operation is a smooth transition.

Performance Aide, the client (agent) component, is shipped as an integrated feature of Performance Toolbox. It can perform local data filtering and alert processing as well as provide data to an SNMP agent.

Hardware and Software Requirements:	Call 800 426-2255 for specific requirements.

Feature	Product No.	Description	OTC
4001	5765-654	Performance Toolbox – Network	**$4,545**
4002		Performance Toolbox – Local	**$850**
4003		Performance Aide[1] Qty. 1	**$450**
4004		Performance Aide[1] Qty. 5	**$2,000**
4005		Performance Aide[1] Qty. 10	**$3,500**
4007		Performance Aide[1] Qty. 50	**$14,500**

1 Client agent

Award-winning TP monitors for your transaction applications

TXSeries V4.2 for AIX

- **Connect to a wide range of client machine environments**
- **Integrate TXSeries with other applications and middleware by deploying MQSeries applications**
- **Web-enable your TXSeries-based applications**
- **Connect to Lotus Notes applications**
- **Create complete e-business applications using the Domino Go Webserver.**

IBM TXSeries V4.2 brings together and extends the functionality of the Transaction Server, CICS and Encina products. TXSeries provides a cohesive infrastructure to develop, manage and deploy high-performance, distributed transactional client/server applications. It supports multiple programming models, optional Web enablement and connectivity to a range of host-based and distributed systems.

The two TP monitors, Encina and CICS, are award-winning technology solutions. Encina received Network Computing Magazine's 1997 Well-Connected Award as a model of the next generation TP monitor; the CICS Transaction Monitor received Honorable Mention.

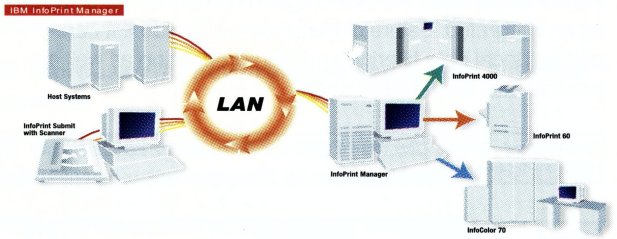
Whether your primary interest is leveraging previous investments in CICS programs or to develop new, high-performance enterprise-level applications using the latest development tools, TXSeries offers incomparable security, host connectivity, scalability and robustness.

Hardware Prerequisites:	Any RS/6000 hardware capable of running AIX V4.2 with the required memory and disk space for a given configuration. Call for more information on requirements.
Software Prerequisites:	AIX Operating System (32-bit) V4.2.1 or V4.3

Product No.	Description		OTC
04L3036	TXSeries for AIX V4.2 Program Package	From	**$3,275**
04L3032	TXSeries for AIX V4.2 (DES) Program Package	From	**$3,275**

A scalable, digital printing management solution

IBM Infoprint Manager V3.1



- **Secure, scalable enterprise printing support**
- **Reliability for mission-critical applications like SAP/R3**
- **Facility to include printing in Tivoli system management solution**
- **Ability to manage and print to printers, fax machines and more**
- **Support for wide range of printers (up to 1,000+ pages per minute)**
- **Server-based Adobe PostScript RIP with Level 3 PostScript support**
- **Support for IPDS, AFPDS, PostScript, PCL, PDF, GIF, JPEG, TIFF and other file types**
- **Set of Windows and Macintosh applications to receive print files in commonly used formats and assemble, archive or submit jobs for just-in-time printing.**

IBM Infoprint Manager V3.1 is a comprehensive software solution that you can use to manage your entire digital printing facility. Infoprint Manager delivers production-volume, single-copy integrity with PostScript quality – while simplifying the print process and helping to cut operating costs.

Infoprint manager combines award-winning print management technology with enhanced file management and spooling capabilities to address a wide variety of printing needs. Whether you must manage digital printing across your enterprise, workgroup, or commercial printing facility, it can provide a complete, easy-to-use print management solution. Its reliable queue and job management, comprehensive PSF* print and job control facilities, and server-based Adobe PostScript RIP ensure that your documents are printed completely and accurately the first time.

Infoprint Manager also gives commercial printers the tools they need to grow their businesses and manage all of their digital print shop facilities and processes, from file submission to final print.

Hardware Prerequisites:	Any RS/6000 Power2* 666MHz or PowerPC 133MHz or better machine. 64MB memory, 2GB Disk Storage and CD-ROM. Call for more information.
Software Prerequisites:	AIX V4.2.1 or 4.3 with specific APARs. Call for more information.

Feature	Product No.	Description	OTC
0001	5648-B34	Infoprint Manager V3.1	**$15,000**
0002		Page Formatting Aid	**$2,500**
0003		SAP Integration	**$5,000**
0004		Kanji Package	**$5,000**
0005		InfoPrint Library	**$30,000**
0006		Adobe PostScript	**$30,000**
0007		Scanner Client	**$250**
0008-0017		46-100 IPM Attachment (10 Max.)	**$2,000**
0018-0023		<46 IPM Attachment (in increments of 20 printers)	**$4,000**
0028-0031		>101 IPM Attachment (4 Max.)	**$12,000**
0036-0039		Fax Support, 2-5 lines (17 Max.)	**$6,000**
0071		InfoprintPlus for Tivoli	**$5,000**

Manage R/3 systems, applications and networks from NetView platform

Application Manager for SAP R/3

- **Integrated, centralized control and management of R/3 systems, applications and client/server network from a single NetView* platform**
- **Integrated repository of key management information across entire client/server environment.**

IBM's new Application Manager for SAP R/3* component is designed to help customers manage the complex, highly integrated R/3 client/server environment from SAP. When combined with NetView, this open environment enables centralized management of the network and R/3 applications using a Management Information Database (MIB) and SNMP.

Hardware Prerequisites:	RS/6000 workstations or servers running AIX V4.1 or later; keyboard, mouse and color display. May require a TCP/IP network communication adapter; NetView (3.1) for AIX or later. Call for agent requirements. Available on CD-ROM and tape media.
Software Prerequisites:	AIX 3.2.5.1: IBM AIX V4.1 or later (5756-030); IBM Visual System Management (VSM); IBM AIXwindows* V1.2.3 (5605-257) or later with Xwindows System* V11.5 or later and Motif 1.2 or later, AIX 4.1.3: (5765-393).

Feature	Product No.	Description	OTC
0001	5799-FQY	Base	**$12,000**
0002		SNMP/Agent	**$12,000**

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Distributed SMIT for AIX 2.2

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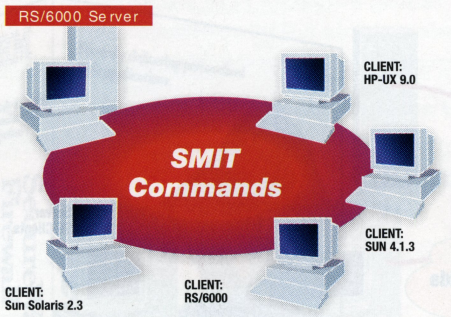

Bring AIX power to your distributed environment and manage clusters of resources with increased flexibility. With DSMIT you can remotely execute AIX commands simultaneously or sequentially across multiple systems without logging on.

DSMIT's easy-to-use, menu-driven services include installation, configuration, device management, problem determination and more. Interactive menus/dialogs automatically build, execute and log commands without your learning command-level syntax.

- **Lets you execute system commands on RS/6000, Sun or HP platforms through a common user interface**
- **Provides ongoing security with single sign-on, administrator authentication, Message Authentication Code, Commercial Data Masking Facility and audit log of significant events**
- **Motif interface available**
- **Sun Solaris 2.3 Client.**

Hardware Prerequisites:	Display and keyboard, Ethernet or Token-Ring adapter required: RS/6000 minimum; 16MB RAM, 500KB of fixed-disk storage for server, additional 1MB of fixed-disk storage for client. DSMIT client for AIX: Same as above with 50KB fixed-disk storage. Sun DSMIT client for SunOS: Sun SPARC** systems, 300KB of fixed-disk storage. HP DSMIT client for HP-UX: HP Series 700** system, 300KB of fixed-disk storage.
Software Prerequisites:	DSMIT for AIX: AIX V4.2 or later, compatible releases; TCP/IP, NFS** may be installed and configured to distribute the DSMIT database. DSMIT client for AIX: AIX V4.1 or later, compatible releases. Sun DSMIT client for SunOS: SunOS V4.1.3; TCP/IP HP DSMIT client for HP-UX: HP-UX V9.0; TCP/IP.

Product No.	Description	OTC
5696-902	DSMIT for AIX V4	$5,000
	DSMIT for DSMIT client (AIX/6000*† SunOS or HP-UX)	$300

† License required per DSMIT client.
Two-Month Unconditional Guarantee

Run more jobs in less time with greater balance of your workstation resources

LoadLeveler V2.1

Fax Document 5865

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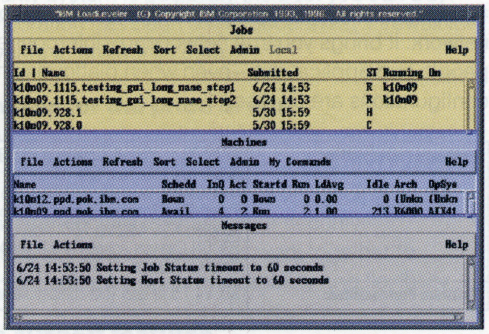

LoadLeveler manages individual systems as a single computational.

Control the scheduling and managing of your serial and parallel batch jobs. Manage individual systems as a single resource, dispatch jobs to various systems in the network seamlessly, and balance the workload for gains on productivity, cycle utilization and return on investment.

LoadLeveler V2.1 includes the Resource Manager function from PSSP, and supports multiple adapter windows along with Parallel Environment V2.4 multiple user space tasks per adapter function for parallel job exploitation of SMP nodes.

- **Scalable job management from the "supercomputing" RS/6000 SP System down to workstations on end-user desktops**
- **Administration from a single point of control**
- **Job requirements are easily specified and matched with available resources**
- **LoadLeveler's Central Manager can automatically recover on other designated machines with no loss of job information.**

Hardware Prerequisites:	RS/6000 with minimum 30MB free disk space available on at least one LoadLeveler node; 15-20MB disk space must be available for each node in a cluster (for local log and work files).
Software Prerequisites:	AIX V4.3.2 or later, compatible releases.

Feature	Product No.	Description	OTC
0001	5765-D61	Program Package (Incl. 1 User)	$2,200
0002		1 User Pack	$1,900
0003		5 User Pack	$9,700
0004		10 User Pack	$16,000
0005		50 User Pack	$48,000
1001		UPG V1.3 to V2.1 Program Package (Incl. 1 User)	$330
1002		UPG V1.3 to V2.1, 1-User Pack	$285

Call for special educational discounts.
Two-Month Unconditional Guarantee

Enhanced SNA and TCP/IP connectivity for your AIX users

SecureWay Communications Server for AIX V5.0

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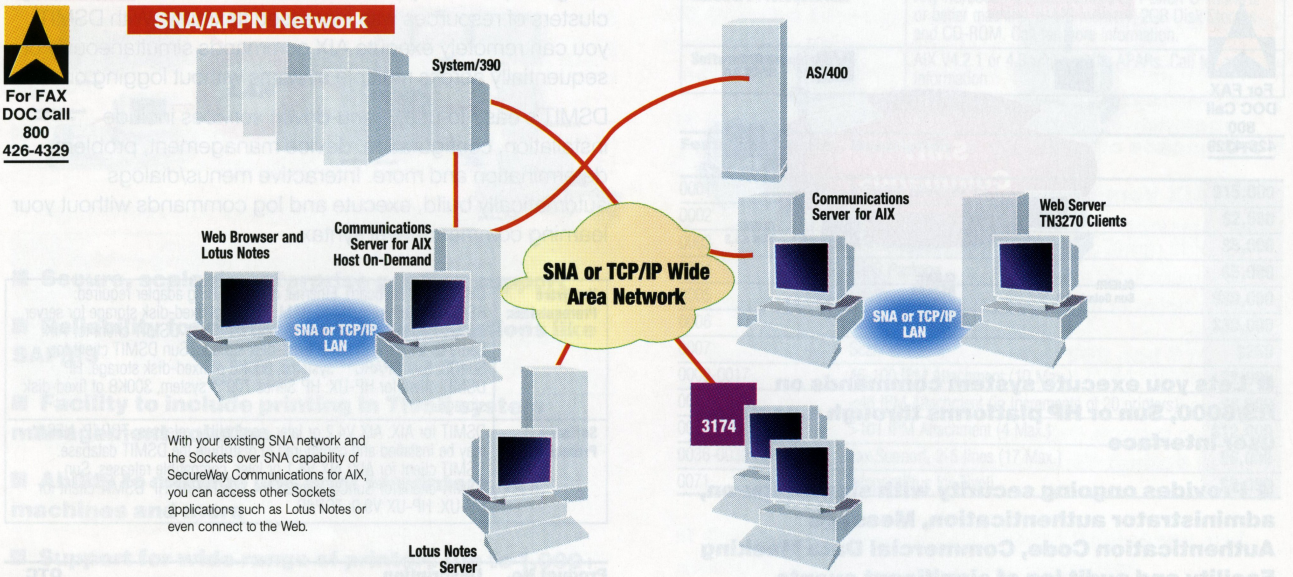

- **Integrated TN3270E Server with load balancing provides SNA 3270 application access to TCP/IP clients**
- **Includes Host On-Demand Entry which provides easy 3270 SNA application access from any Java-enabled Web browser**
- **Multiprotocol support provides flexible access to TCP/IP, network computing and SNA applications**
- **High Performance Routing (HPR) improves network performance and reliability, including re-routing sessions around network outages, without disrupting the user session**
- **Dependent LU Requester (DLUR) allows dependent LUs to take advantage of APPN networks, leveraging your investments in 3270 and other Dependent LU applications**
- **Easy-to-use Motif graphical user interface provides simplified configuration and management**
- **Channel attachment support now included in the base product.**

IBM SecureWay Communications Server for AIX, a SecureWay Software offering, meets the challenge of today's changing business environment. It provides highly flexible SNA and TCP/IP interoperability for RS/6000 customers who need to build or connect to SNA networks, integrate TCP/IP with SNA, connect over WANs or LANs, connect to new Internet or intranet solutions and/or exploit the capabilities of Advanced Peer-to-Peer Networking* (APPN*). With SecureWay Communications Server for AIX V5.0, you choose applications based on your business needs, not on your network. It brings you true networking - interconnecting people and applications - even when platforms and network configurations are diverse.

Hardware Prerequisites:	RS/6000 or other AIX platform with 32MB memory, 32MB available hard disk minimum. Appropriate communication adapters, cables and device drivers: Token-Ring Adapter, Ethernet Adapter, SDLC Adapter, X.25 Adapter, FDDI Adapter, ATM Adapter, ESCON Channel Adapter and Block Multiplexer Channel Adapter.
Software Prerequisites:	AIX V4.1.5 or later (not compatible with AIX V3.2.X).

Product No.	Description	OTC
04L0743	SecureWay Communications Server for AIX Program Package CD-ROM	**$995**
4302129	1 registered user	**$69**
4302130	5 registered users	**$328**
4302131	10 registered users	**$642**
4302132	50 registered users	**$3,174**

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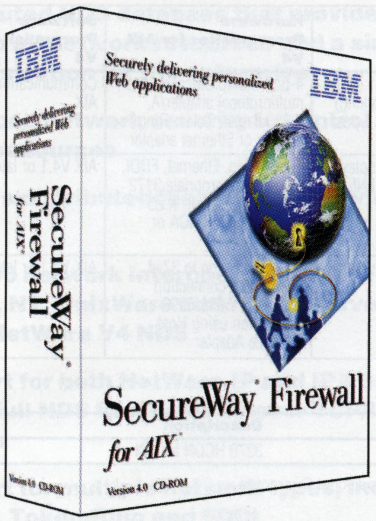
A hot, new way to secure your e-business

SecureWay Firewall for AIX

Product Update



- **Safeguards your intranet as you access the Internet**
- **All 3 standard firewall architectures built into one product**
- **Enhanced hardware-platform support including SMP on RS/6000.**

The data in your company's intranet is one of your most valuable assets. Keep it from falling into the wrong hands with IBM SecureWay Firewall for AIX. This comprehensive network security system is positively the best you can buy. The IBM Corporation has been using SecureWay Firewall for the past 10 years to protect its data.

Three firewalls for the price of one

We put all three leading firewall architectures – Application Gateway Proxy, SOCKS Circuit-Level Gateway and Expert Filtering - into this one solution. No more depending on a single firewall architecture to satisfy your security requirements. The three architectures work together to provide you with optimum security, reliability and flexibility.

Innovative support features

- The first firewall to offer SOCKS V5 security protocol standard
- One of the first firewalls to provide a hardened operating system platform – to help reduce configuration errors
- Virtual Private Network (VPN) capability
- Java-based GUI for easy administration.

Hardware Requirements:	RS/6000 POWERstation and POWERserver 64MB of memory, 100MB of disk space
Software Requirements:	V4.3.2

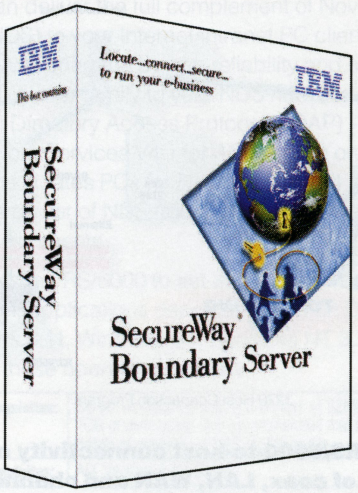
Product No.

Please call for product number and pricing information

A complete boundary security solution

SecureWay Boundary Server

New



- **IBM eNetwork Firewall Version 3.3**
- **Security Dynamic ACE/Server and SecurID tokens (2-user license and 2 tokens)**
- **Content Technologies MIMEsweeper: MAILsweeper, and WEBsweeper**
- **SurfinGate 4.03 from Finjan: SurfinGate Server; SurfinConsole; SurfinGate database.**

Secure boundaries are needed everywhere – between your company's internal departments and between your company and the outside world.

This security not only protects your network, applications and information, but it extends their reach. Proper boundary security doesn't just mean controlling who accesses your network. It also means controlling the information entering or leaving your network.

IBM SecureWay Boundary Server brings together a complete boundary security solution. It provides firewall protection, virtual private networking (VPN) and content security. Managed by the SecureWay Policy Director, it provides centralized control of user authentication and access to Web objects, including HTML pages, graphics, applications written in Java and CGI and database queries. SecureWay Boundary Server brings together best-of-breed technology from the security industry into an integrated solution with IBM support and services standing behind it.

Product No.

Available only through IBM Passport Advantage Contract.
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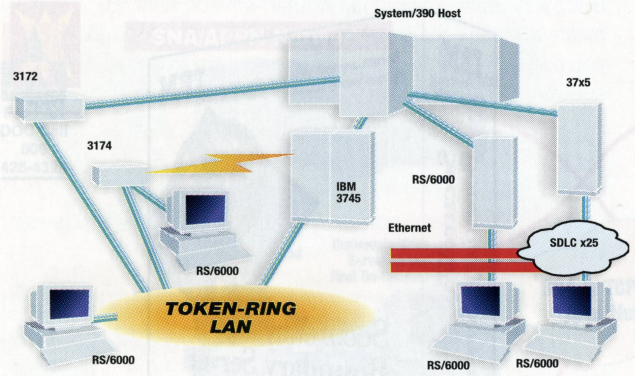
Link your RS/6000 to a System/370 or System/390 for fast, easy file sharing

3270 Host Connection Program for AIX



3270 Host Connection Program

- **Reliable RS/6000-to-host connectivity over a wide range of coax, LAN, WAN and channel networks**
- **Concurrent access to multiple hosts and multiple host sessions**
- **Support of 3278/79 display emulation using ASCII terminals, graphical displays and Xstations**
- **3286/87 printer emulation on most printers supported by AIX V4**
- **Friendly graphical interface allows fast start-up by an icon from AIX Windows Desktop Application Manager**
- **Functionality equivalent to HCON V1.3.2 for AIX V3.2.5**
- **Industry-standard HLLAPI (High Level Language Application Programming Interface) support, using C, FORTRAN and COBOL languages**
- **Provides extensive International Language Support for both single- and multi-byte character sets as well as support for Arabic and Hebrew languages, including multiple concurrent sessions in different national languages.**

Do your RS/6000 users require 3270 emulation and host file transfer capabilities between AIX and your IBM host systems? This versatile program offers an implementation of IBM's popular HCON product running under AIX V4. By enabling a subset of IBM 327X functions on AIX V4, it allows your RS/6000 platform to connect to a System/370 or System/390 and appear to the host as an attached 3270 display terminal or printer.

	Hardware Prerequisites for AIX V4	Software Prerequisites for AIX V4
For SNA Node 2.1 (Low Entry Networking) for LU 1, 2 and 3 types:	4-port multiprotocol adapter, multiprotocol adapter/A, X.25 adapter, Token-Ring adapter or Ethernet adapter	Communications Server for AIX
For TCP/IP for display session using TELNET:	Token-Ring, Ethernet, FDDI, using the appropriate 3172 or 8232 controller, X.25 (using 37x5), BMCA or ESCON	AIX V4.1 or later
For other attachments:	DFT connection to 37x4 using 3270 connection adapter or 5088/6098 connection using Host Interface Adapter	AIX V4.1 or later

Product No.	Description	OTC
5765-398	3270 HCON for AIX	$1,195

Two-Month Unconditional Guarantee

Easy point-to-point connection between RS/6000 and IBM host

ESCON Channel Connectivity for AIX V1.1

- **Offloads host system activities to RS/6000**
- **High-speed host system connectivity**
- **Supports Client Input Output/Sockets (CLIO/S) V2.1, a data transfer protocol utilizing the ESCON or Block Multiplexer channels in the TCP/IP environment for high-speed file and data transfers**
- **Supports Multiple Path Channel (MPC) over ESCON to provide even greater throughput.**

These versatile products enable the RS/6000 to access an IBM host channel, providing a point-to-point connection between the RS/6000 and an IBM host. Either ESCON or Block Multiplexer channel environments are supported and each supports both SNA and TCP/IP environments.

Hardware Prerequisites:	ESCON Channel Adapter or Block Multiplexer Channel Adapter
Software Prerequisites:	For TCP/IP environments: AIX V4.1.2. or later

Feature	Product No.	Description	OTC
4000	5765-603	ESCON Channel Connectivity for AIX	$2,500
4000	5765-604	Block Multiplexer Channel Connectivity for AIX	$2,500

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Bring NDS to Internet/intranet PC clients and browsers

Novell Network Services V4.1 for AIX

- **Distributed NDS database that provides global access to all network resources and a single point of administration for the enterprise**
- **Advanced network security to control access to network resources**
- **Novell's distributed file and print services for PC clients**
- **RS/6000 network interoperability with other NetWare, NT, UnixWare and HP/UX servers running NetWare V4 NDS**
- **Support for both NetWare-IP and IPX/SPX that extends full NDS functionality over TCP/IP networks**
- **Support for multiple network types, including Ethernet, Token-Ring and FDDI**
- **AIX Versions 4.2.1 and 4.3 support.**

Now you can deliver the full complement of Novell Directory Services (NDS) to your Internet/intranet PC clients and browsers - and bring the power, reliability and scalability of the RS/6000 server family to your NDS network. The IETF Lightweight Directory Access Protocol (LDAP) - compliant Novell Network Services V4.1 for AIX running on RS/6000 servers consolidates PCs for NetWare 3 and 4 services, and extends the power of NDS from PC LANs to Internet and intranet environments.

NDS enables the RS/6000 to act as server for both Internet and PC client applications designed to run on DOS 5.0, OS/2 2.1, Windows 3.11, Windows 95, Windows NT 3.5 or later versions of these operating systems.

Hardware Prerequisites:	Server workstation with a minimum of 32MB of memory and 1GB of disk space. It is recommended that the server have 64MB of memory or 1GB of disk space.
Software Prerequisites:	AIX Version 4.2.1 or 4.3

Feature	Product No.	Description	OTC
4001	5765-C95	Server	**$0**
4003		5 Connects	**$1,095**
4004		10 Connects	**$2,095**
4005		25 Connects	**$3,695**
4006		50 Connects	**$4,995**
4007		100 Connects	**$6,995**
4008		250 Connects	**$12,495**
4009		500 Connects	**$24,995**

RS/6000 news via email...at no charge

iSource Web site

iSource
http://www.ibm.com/isource

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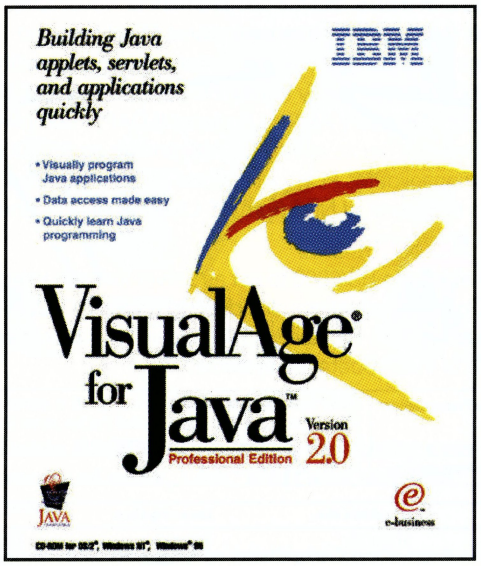
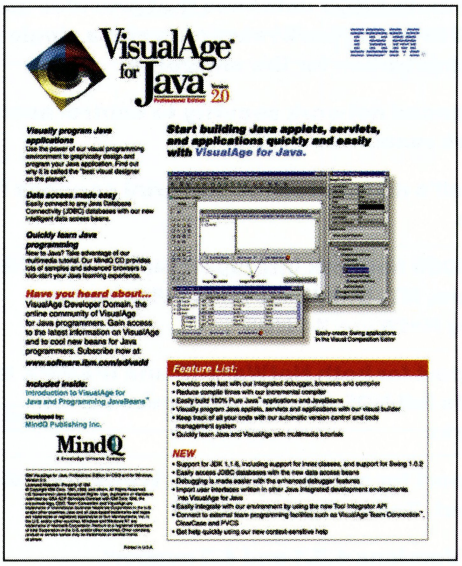
The award-winning Java development program

IBM VisualAge for Java V2.0





- **New HPC allows you to optimize code for specific server platforms (OS/2, Windows NT, AIX, OS/400* and OS/390)**
- **Additional Enterprise Access Builders provide Java applications connectivity to CICS, DB2, SAP R/3, RMI and JDBC-enabled relational databases**
- **Automated object-to-relational mapping**
- **Integration with SanFrancisco Application Business Components, Tivoli, eSuite and Component Broker**
- **Enhanced remote debugging tool permits you to test and debug multi-tier, multi-language applications across heterogeneous server platforms**
- **Support for JDK 1.1.6**
- **Data Access JavaBeans enables Java applications to access JDBC-enabled relational databases**
- **Increased support for AS/400 and System/390 Java application development**
- **New support for AIX 4.2 and 4.3 workstations as a development platform**
- **New Open Tool Integrator APIs**
- **Integrated, Java team-programming support - including integration with VisualAge TeamConnection*, ClearCase and PVCS.**

You need to build the best Java applications, applets, servlets, and JavaBean components possible. So use the very best Java programming environment on the market today to do it: IBM VisualAge for Java V2.0. This new version of IBM's award-winning VisualAge for Java gives you a complete solution for developing scalable e-business applications, managing component-based development for large project teams, and extending existing enterprise applications to the Web – without rewriting them. The solution includes a new High Performance Compiler (HPC), connections to more enterprise systems, team programming support and exploitation of the very latest Java technology.

V2.0 is immediately available in three editions, an Entry Edition, Professional Edition and Enterprise Edition. And to help you make the most of V2.0, our VisualAge Developer Domain Subscription for Java offers you a single access point for everything you need to build mission-critical Java applications – including Java-related samples, education, support, and the opportunity to network with a community of Java professionals.

Visit our Web sites at: **www.ibm.com/software/ad** and **www.ibm.com/software/vadd**

Product No.	Description	OTC
31L1786	VisualAge for Java, Professional Edition for OS/2 and Windows V2.0	**$99**
31L1885	VisualAge for Java, Enterprise Edition for OS/2 and Windows V2.0	**$2,999**
31L1953	VisualAge for Java, Enterprise Edition for AIX V2.0	**$2,999**
31L1797	VisualAge for Java, Professional Edition V2.0 Competitive Upgrade	**$29**

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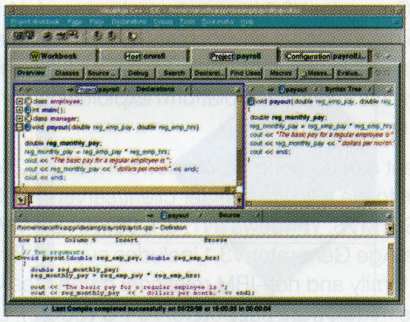
Improved programmer productivity and enhanced portability

VisualAge C++ Professional for AIX V4



VisualAge C++ Professional for AIX V4

- **Robust visual RAD environment that includes Visual Builder and Data Access Builder**
- **Fully incremental development facilities with incremental, compilers and linker**
- **Rich set of IBM Open Class† Libraries that includes over 500 portable classes with over 5,000 methods.**

If you need a powerful rapid application development (RAD) tool for your heterogeneous environment, you couldn't do better than VisualAge C++ Professional for AIX V4 product. It provides standards-compliant, 64-bit enabled IBM C and C++ batch compilers, an incremental development environment and easy-to-use visual programming tools for developing AIX applications. The unusually productive VisualAge C++ Professional for AIX V4 enables RAD using visual construction from parts, solid code generation, and cross-platform support.

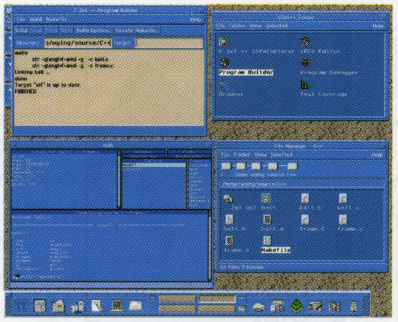
The visual programming tools include Visual Builder and Data Access Builder, a graphical debugger, memory management and debug memory management routines, tools for creating and compiling resources, online help and a powerful, full-text search engine.

Hardware Prerequisites:	Any system which runs AIX V4.1.5 or later configured with SVGA display (1024 x 768 recommended), CD-ROM, and mouse or other pointing device. It requires a minimum of 96MB RAM (128MB or higher recommended), with 128MB swap/paging space and 650MB of disk space (or 260MB for just the C and C++ Compilers for AIX V3.6.4).
Software Prerequisites:	IBM AIX V4.1.5 or later for RS/6000 and a frames-capable browser like Netscape Communicator V4.0.4 or later to access the HTML-based help. Data Access Builder requires a database with the appropriate ODBC database driver and DB2 V2.1.2.

Product No.	Description	OTC
30L8178	VisualAge C++ Professional V4	$2,499
30L8179	1 registered user	$2,479
30L8180	Product Upgrade C Set++* for AIX V3.1 or IBM C and C++ Compilers V3.6	$949
30L8183	1 registered user	$929

Enhanced performance fully exploits 64-bit SMP architecture

C for AIX V4.4



- **Programming support for SMP architecture, including automatic parallelization of sequential loops and explicit parallelization of C code**
- **State-of-the-art, 64-bit enabled compiler and graphical debugger**
- **32-bit source and binary compatibility**
- **Conformance to C programming language industry standards.**

IBM C for AIX V4.4 provides a functionally rich software development environment that allows you to prepare now for your expanding development requirements and future business needs. C for AIX V4.4 has been designed to exploit the 64-bit RS/6000 Symmetric Multiprocessing (SMP) architecture, but it allows both 32-bit and 64-bit applications to execute at the same time and share access to files, memory, and inter-process communications resources. It also provides facilities that assist in the porting of applications from 32-bit to 64-bit environments.

C for AIX V4.4 offers an application development environment for constructing high-performance applications.

Hardware Prerequisites:	Any system which runs AIX configured with at least one supported SVGA display, keyboard, mouse and CD-ROM drive. It requires at least 32MB of memory, 42MB of disk space for all tools and documentation and 32MB of swap/paging space.
Software Prerequisites:	IBM AIX V4.1.5 or later as well as browser such as Netscape V3.0 or Internet Explorer V3.0 or later to access HTML-based help. Please note that 64-bit applications will run only on AIX V4.3.

Product No.	Description	OTC
31L0488	C for AIX, Version 4.4	$799
31L0497	Use Authorization (1)	$779
31L0491	Upgrade from C for AIX V3 or C Set ++ for AIX V3	$299
31L0498	Use Authorization (1) Upgrade	$279
31L0494	Upgrade from IBM C for AIX V4	$99
31L0499	Use Authorization (1) Upgrade	$79

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Award winner for enterprise scalability and mission-critical operations

IBM VisualAge Generator V3.1

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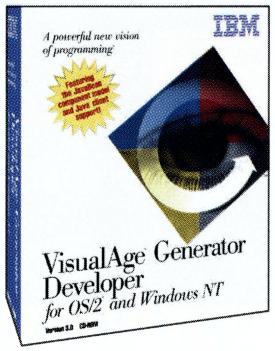

- **Native Oracle 7 support**
- **VisualAge Generator Java Gateway support on OS/390 and AIX**
- **New built-in floating point arithmetic, exponentiation and logarithmic functions for mathematical operations**
- **Ability to load the VisualAge Generator Server run time, into VM shared saved segments.**

VisualAge Generator V3.1 is an extremely powerful high-end application development environment used to build and deploy multitier client/server applications. It offers versatile solutions with scalable, multiplatform exploitation across networked systems.

Development can be done on Windows NT or OS/2 for deployment to the following N-Tier client/servers: AIX, OS/400, VSE, MVS, Windows (NT, 3.1, 95) HP-UX VM and OS/2. VisualAge Generator V3.1 includes support for the entire DB2 family and non-IBM relational databases via ODBC, plus middleware support for APPC (LU6.2), LU2, TCP/IP, Named Pipes, DCE and CICS. It also leverages MQSeries.

Hardware Prerequisites:	486 90MHz Pentium** processor or higher, 64MB RAM (minimum); 180MB hard disk space, CD-ROM drive for installation.
Software Prerequisites:	Windows NT 4.0 or OS/2 Warp 4.0

Product No.	Description	OTC
04L9680	VisualAge Generator Developer V3.1 (Windows NT - OS/2) (Includes unlimited use of Single-User run times for OS/2 and Windows)	**$6,499**
04L9681	VisualAge Generator Server V3.1 (Multi-User - Server for Windows, OS/2, HP-UX, or AIX)	**$1,499**
04L9723	VisualAge Generator V3.1 Documentation Kit (Should be ordered for each developer.) (Hard copy books.)	**$20**

Media CD-ROM - except Documentation Kit.

Transforming application development for the 21st century

IBM VisualAge TeamConnection Enterprise Server V3.0

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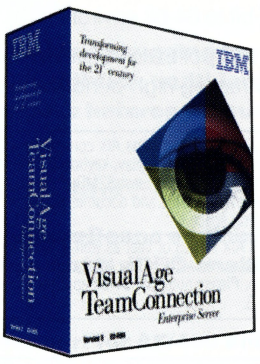


- **Increase team productivity while shortening development schedules**
- **Build and distribute applications in a distributed environment across multiple production platforms.**

VisualAge TeamConnection Enterprise Server is a repository-based software configuration management (SCM) system designed for a team programming environment. It uses IBM's award-winning DB2 Universal Database and repository technology to maintain the integrity of your development assets while scaling to fit your needs. With VisualAge TeamConnection you can manage and control your development projects, increase your team's productivity and improve overall software quality.

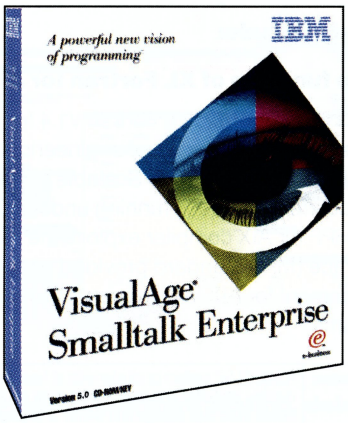
Hardware and Software Prerequisites:	Dependent upon the environment. Call 800 426-2255 for specific details.

Product No.	Description	OTC
04L3809	VisualAge TeamConnection Enterprise Server V3.0 Program Package with 1 Server Access License†	**$3,249**
04L3810	VisualAge TeamConnection Enterprise Server V3.0 Additional License – 1 Server Access License†	**$3,149**

† One Server Access License must be purchased for each active user. Server access represents a single user accessing the VisualAge TeamConnection Enterprise Server at any single point in time.

Develop complex applications quickly

IBM VisualAge Smalltalk Enterprise V5.0



IBM VisualAge Smalltalk Enterprise V5.0 (VAST) combines the simplicity of visual construction with the power of an object-oriented environment to enable you to develop complex applications in a fraction of the time previously required. It provides full life-cycle support - from requirements and modeling to integration of transaction-enabled objects with legacy data - via a persistence framework.

Use the VAST Composition Editor to build, test and debug client, server and Web server applications - then integrate your objects with TXSeries, CICS and MQSeries middleware.

Hardware Prerequisites:	66MHz Pentium or RISC System/6000* uniprocessor (AIX) or SunSPARC uniprocessor or HP PA RISC uniprocessor, 32MB RAM for OS/2 and Windows, 64MB RAM for UNIX, 175MB disk space for stand alone, 130MB for Manager library.
Software Prerequisites:	OS/2 Warp V4, Windows 95 or NT 4.0, AIX 4.2.1 or 4.3, Solaris 2.5.1, 2.6 or HP-UX 10.1 or 10.2.

New features in VAST V5.0 include:

- **Increased code library size (to 16GB on UNIX and Windows NT, 4GB on NetWare and 2GB on OS/2) with improved usability**
- **Enhanced Web Connection support for OS/390, JavaScript, dynamic HTML and test launching.**

Product No.	Description	OTC
04L8642	VisualAge Smalltalk Enterprise V5.0	**$4,999**
04L9030	VisualAge Smalltalk Server Workbench V5.0	**$4,999**
39L8990	VisualAge Smalltalk Enterprise V5.0, Upgrade	**$1,499**
39L8993	VisualAge Smalltalk Enterprise Server Workbench V5.0, Upgrade	**$1,500**

Increase productivity with new IBM VisualAge Smalltalk add-ons

VisualAge Smalltalk Add-Ons

VisualAge Smalltalk UML Designer

IBM VisualAge Smalltalk Unified Modeling Language (UML) Designer is a tool for engineering application models and requirements to improve overall quality and maintainability. You can now define requirements, document use cases, create and print object model diagrams, and both generate and reverse-engineer Smalltalk code with VisualAge Smalltalk UML Designer.

VisualAge Smalltalk ObjectExtender

IBM VisualAge Smalltalk ObjectExtender is an extensive and powerful persistence framework that provides a complete solution for building robust, scalable persistence support for object models. A rich set of integrated tools - code generation, import and export facilities, debug and monitoring tools, etc. - makes the persistence effort minimal, allowing you to focus on your solution rather than your infrastructure.

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- Homogeneous Smalltalk messaging on AIX, Windows NT and OS/2
- Running of CICS transactions written in Smalltalk on AIX, Windows NT and OS/390

Product No.	Description	OTC
04L9032	VisualAge Smalltalk Object Extender V4.5	**$3,999**
04L9033	VisualAge Smalltalk UML Designer V4.5	**$3,599**
04L9034	VisualAge Smalltalk Server	**$1,499**

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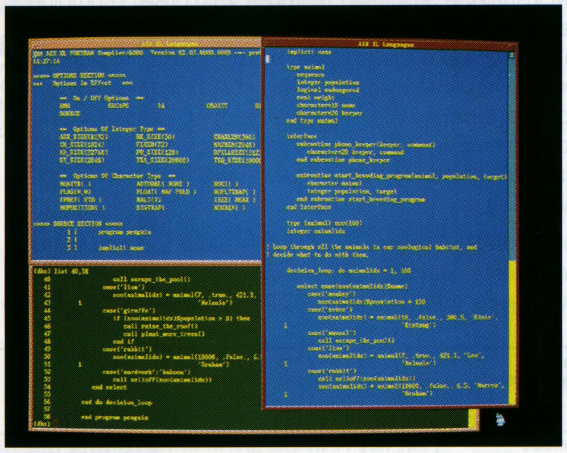
Highly optimized compiler to exploit SMP architecture

XL Fortran for AIX Version 6



New features include:

- **Support for the full implementation of the Fortran 95 standard**
- **Support for the new IBM POWER3 architecture.**

IBM's XL Fortran V6.1 for AIX (XLF for AIX) is a highly optimized, native compiler designed to exploit the RS/6000 line of symmetric-multiprocessing (SMP) hardware. Customers have the option of automatically parallelizing their Fortran code, or explicitly parallelizing it through the use of directives. This compiler also supports 64 bit programming.

XL Fortran V6.1 provides additional support for the Open MP Fortran API, provides a technical preview of the new IBM Distributed Debugger, and continues to:
- Support both Fortran 90 and FORTRAN77 programming
- Support 64-bit pointers and addressability for serial and SMP codes
- Exploit IBM POWER, POWER2 and POWERPC architectures.

Hardware Prerequisites:	Both XL Fortran and XL Fortran RTE: RS/6000 with a CD-ROM drive, a minimum of 80MB RAM, 50MB of fixed-disk storage and 64MB paging space.
Software Prerequisites:	Both XL Fortran and XL Fortran RTE: AIX V4.1 or later (for RS/6000), AIX V4.2.1 or AIX V4.3.2 or later (for RS/6000 SP and SMP), AIX V4.3 (for 64-bit).

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Part No.	Feature	Product No.	Description	OTC
31L3111	2000	5765-D78	Program Package	**$1,599**
39L9093	2002	5765-D78	Registered User – Single	**$1,589**
39L9091	2006	5765-D78	Program Package Upgrade	**$799**
39L9094	2008	5465-D78	Registered User – Single for Upgrade	**$789**
31L3113	1006	5465-D77	XL Fortran RTE for AIX V6.1	**$299**

Improved Fortran performance on parallel AIX systems

XL High Performance Fortran for AIX Version 1

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Hardware Prerequisites:	RS/6000 SP system or cluster with at least one supported display, keyboard and mouse. Minimum of 80MB of RAM, 50MB fixed disk storage and 64MB of paging space for compilation.
Software Prerequisites:	AIX V4.1.3 or later, IBM Parallel Environment for AIX V2.1 or later

Feature	Product No.	Description	OTC
0010	5765-613	Program package with 1-user pack	**$6,995**
0011	5765-613	5-user pack	**$24,975**
0012	5765-613	10-user pack	**$32,975**
0013	5765-613	50-user pack	**$109,975**
XL High Performance Fortran V1 Run-Time Environment for AIX			
4001	5765-612	1 license per SP Node or RS/6000	**$295**
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Software Prerequisites:	Call for specific requirements.

Product No.	Description	OTC
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33H4408	8mm tape	**$1,045**

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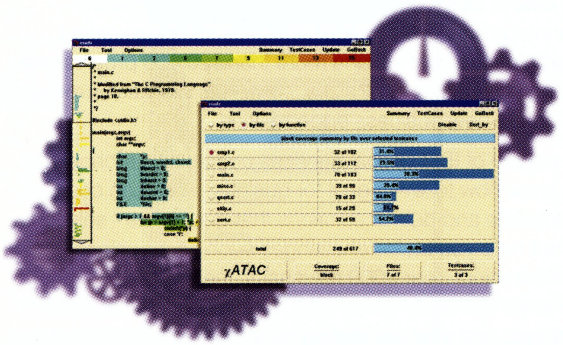

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04L3761	One Install Software Advantage	AIX and Sun Solaris	**$2,349**
04L7226	Additional Users Software Advantage	AIX and Sun Solaris	**$2,349**
04L7227	Additional Users Upgrade Protection- OTC Software Advantage	AIX and Sun Solaris	**$719**
04L3764	IBM C and C++ Maintenance and Test Toolsuite V1.0	AIX and Sun Solaris	**$12**

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Fax Document 1548

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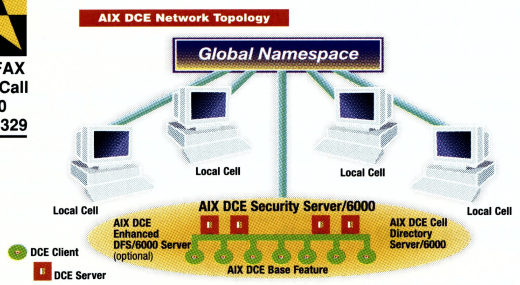

- **DCE V2.2 for AIX**
- **DCE V2.2 Cell Directory Services for AIX**
- **DCE V2.2 Security Services for AIX**
- **DCE Base Services.**

The DCE for AIX family is an integrated suite of modular products designed to support transparent internetworking and resource sharing in heterogeneous computing environments. DCE architecture masks the physical complexity of the network and provides a layered model built from the bottom, supplier of services (the operating system), to the top, consumers of services (applications).

Minimum DCE development environment: AIX V4.3 for Client on every machine, plus one DCE Security Services and one Cell Directory Services in the network.

Hardware and Software Prerequisites:	Dependent upon the environment. Supports AIX Versions 4.1.5, 4.2.1 and 4.3. Call 800 426-2255 for specific requirements.

Product No.	Description	OTC
5765-D14	DCE V2.2 for AIX	**$3,999†**
5765-D17	DCE V2.2 Base Services	**$149†**

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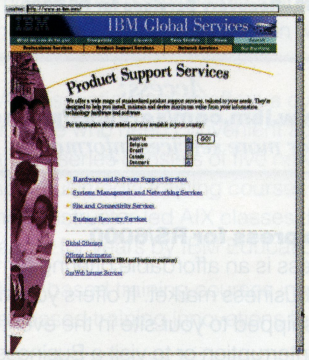

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IBM SmoothStart Services

Fax Document 7939 - Domino on RS/6000
Fax Document 9189 - Domino Go Webserver

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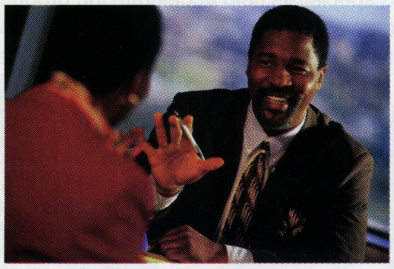

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Highlights:
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- Optional use of hotsite in the event of a disaster
- Recovery plan development workshop

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Experienced IBM Business Recovery Consultants are trained to help understand your business and analyze its critical components - from personnel and processes to technology and facilities. Then, we can develop a comprehensive protection program designed to shield your company from the effects of events that can disrupt your ability to reliably deliver products and services to the marketplace.

Highlights:
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- Environment Analysis to evaluate your I/T environment
- Plan Development and Implementation

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AIX Basics	S5051	5639-E04	15 hours	**$1,025**
AIX System Administration	S5052	5639-E02	20 hours	**$1,775**
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AIX Version 4.3 Feature Overview	S5055	5639-E06	2 hours	**$295**

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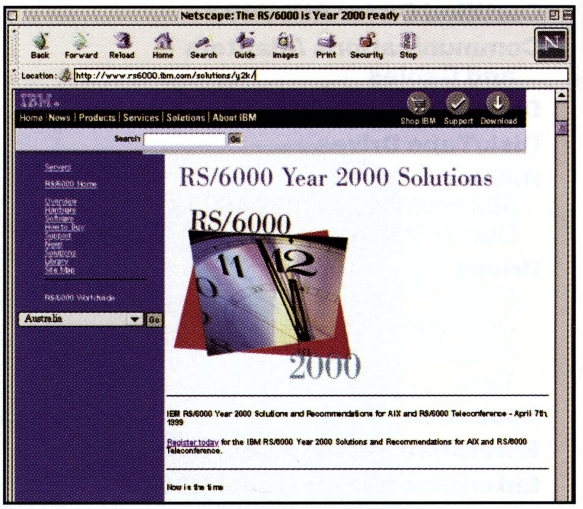
Year 2000

Year 2000 readiness tips

Points to consider

- **Potential business impact**
- **What you need to do to get your RS/6000 systems ready**
- **How it affects your RS/6000**



The current RS/6000 family is Year 2000 ready, but that doesn't mean your RS/6000 installation is ready for the Year 2000 – even if you do have a completely current system. You still have to fix and test all of the software that runs on your RS/6000 for Year 2000 readiness. And, if you have older RS/6000 systems or are running earlier versions of AIX, you have even more work to do.

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Benchmarks:
Values shown in the Power Lineup chart are the results of development-level systems using the AIX operating system. All performance data was obtained in a specific environment and is presented "as is" for illustrative purposes only. Although these values should be indicative of generally available systems, no warranties or guarantees are stated or implied by IBM. IBM recommends application-oriented testing for performance predictions and offers the above commonly reported benchmarks only as an initial indicator. Additional information on these tests is available from your IBM local Branch Office or IBM Authorized Reseller.

QppD is the power metric of TPC-D and is based on a geometric mean of the 17 TPC-D queries, the insert test and the delete test. QppD is scaled based on database size from 30GB to 1TB.

QthD is the throughput metric of TPC-D and is a classical throughput measure characterizing the ability of the system to support a multiuser workload in a balanced way. In the background, there is an update stream that runs a series of insert/delete operations. QthD is scaled based on the database size from 30GB to 1TB.

$/QphD is the price/performance metric for the TPC-C benchmark, where QphD is the geometric mean of QppD and QthD. The price is the five-year cost of ownership for the tested configuration and includes maintenance and software support.

tpmC: TPC Benchmark C throughput as measured in transactions per minute during a valid TPC-C** run.

$/tpmC: TPC Benchmark C price/performance ratio, where the five-year total cost of ownership for hardware, software and maintenance is divided by the throughput tpmC.

Rel OLTP Perf: Relative OLTP Performance is an estimate of commercial throughput using an IBM analytical model. This model simulates some of the system's operations of the CPU, caches and memory in an OLTP environment, but does not simulate the disk or network I/O operations. Although general database and operating systems parameters are used, the model does not represent specific databases or AIX versions. With these limitations, ROLTP may be used to compare RS/6000 performance. The Model 250 is the reference system and has a value of 1.0.

Details on the configurations and operating systems used for specific SPEC benchmarks shown can be found at:
www.specbench.org

LINPACK details can be found at:
www.rs6000.ibm.com/ hardware/perf_notes.html
TPC results can be found on the TPC home page at: www.tpc.org

The NotesBench Mail workload models actively simulate users reading and sending mail. A simulated average user will execute a prescribed set of functions 4 times per hour and will generate mail traffic about every 90 minutes. Performance metrics are:

NotesMark – transactions/minute (TPM) with the minimum Notemark being at least 1.3 times the number of Mail Only users.
NotesBench users – number of client (user) sessions being simulated by the NotesBench workload.
$/NotesMark – ratio of total system cost divided by the NotesMark (TPM) achieved on the Mail workload.
$/User – ratio of total system cost divided by the number of client sessions successfully simulated for the Mail NotesBench workload measured. Total system cost is the price of the server under test to the customer, including hardware, operating system and Domino Server licenses.

VolanoMark is a 100% Pure Java server benchmark characterized by long-lasting network connections and high thread counts. In this context, long-lasting means the connections last several minutes or longer, rather than just a few seconds. The VolanoMark benchmark creates client connections in groups of 20 and measures how long it takes for the clients to take turns broadcasting their messages to the group. At the end of the test, it reports a score as the average number of messages transferred by the server per second. For more information about the VolanoMark benchmark, see http://www.volano.com

VolanoMark 2.1.2 local performance test measures throughput in messages per second. The final score is the average of the best two out of three results.

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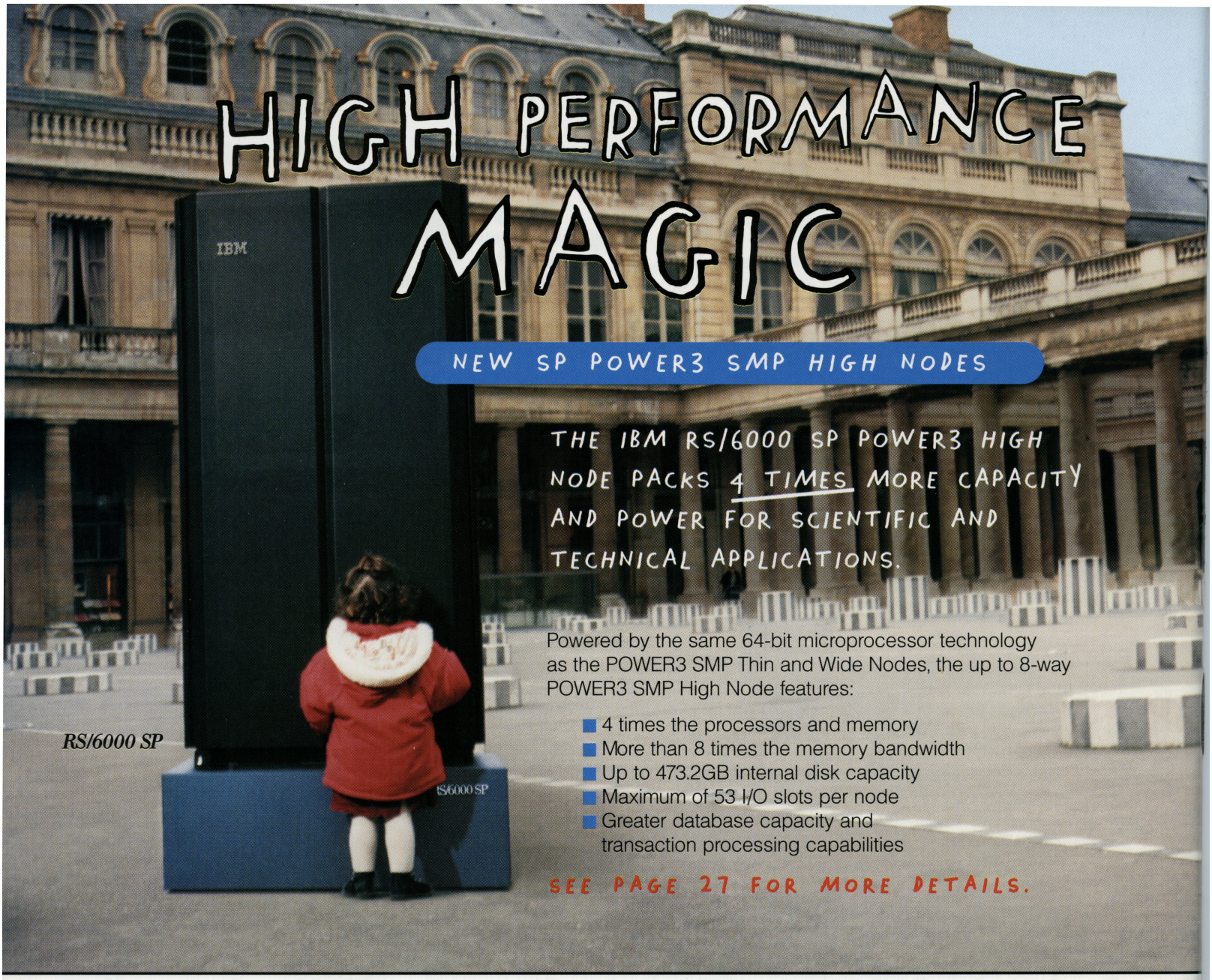

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