



IBM @server® xSeries 366 servers – Innovation that matters with eServer X3, the third generation of Enterprise X-Architecture

Overview

Models of the xSeries® 366 server are powered with the 64-bit Intel™ Xeon MP processors at up to 3.66 GHz.

The IBM @server® xSeries 366 contains advanced third-generation Enterprise X-Architecture™ technologies that combine four-way SMP-capable power, Active Peripheral Component Interconnect-X (PCI-X) 2.0 expansion, high availability, and substantial internal data storage capacity.

As the first in a new family of eServer® X3 systems, the xSeries 366 delivers breakthrough four-socket performance in a rack-dense 3U design.

Improve performance, reduce latency

- IBM XA-64e substantially reduces system latency that bottlenecks commercial applications.
- Support for XceL4v Dynamic Server Cache.
- 64-bit Intel Xeon MP up to 3.66 GHz with 1 MB L2 Cache.
- Support for 32-bit and 64-bit applications with Intel EM64T.
- Dual-bus architecture plus 667 MHz FSB delivers 3X improvement in CPU bandwidth.
- High availability Active Memory with including support for Chipkill™, Memory Mirroring, and Memory ProteXion.
- 2 GB of high-speed PC2-3200 memory; expandable to 64GB (when 4GB DIMMs become available).
- Six 64-bit Active PCI-X 2.0 Slots support up to 266MHz.
- Up to six 2.5-inch Serial Attach SCSI (SAS) HDDs with optional RAID 0, 1, 5, 1E, 00, 10, 50, 1E0, 5EE ServeRAID™ 8i SAS controller available without using a system PCI-X slot.

- High-performance integrated dual Gigabit Ethernet
- Optional Remote Supervisor SlimLine Adapter II (RSAll) for advanced remote systems management (integrated IPMI-compliant BMC standard).
- 3U rack-optimized tool-free chassis.

Leverage high availability and increased security

- Support for Chipkill and ECC in the integrated processor and memory controller to help correct single-, two-, three-, and four-bit memory errors.
- Support for advanced Memory ProteXion at no additional cost.
- Active PCI-X 2.0 slots support hot-add and hot-swap of I/O adapters.
- Hot-swap hard drive bays and redundant fans to enable replacement of select components without powering down the server.
- Support for up to two hot-swap, redundant 1,300W power supplies.
- Predictive Failure Analysis® on processors, voltage regulator modules (VRMs), memory, fans, power supply, and HDD options to help warn of problems before they occur.
- IPMI-compliant basic hardware monitoring and alerting with continuous system monitoring and delivering true remote management capabilities
- Innovative light path diagnostics and top access design; easy to service and configure.

Key prerequisites

- Monitor, keyboard, and mouse
- SAS HDD
- Rack

At a glance

eServer X3 systems combine third-generation EXA with the high performance of the 64-bit Intel Xeon processor MPs

- IBM XA-64e chipset with latency-reducing integrated processor and memory controller supports 32-bit and 64-bit applications
- 64-bit Intel Xeon MP up to 3.66 GHz and 1 MB L2 Cache on a 667 MHz dual FSB architecture
- Up to 64 GB of high-speed PC2-3200 ECC DDR2 SDRAM system memory (when 4 GB DIMMs available)
- High performance Six Active 64-bit/266MHz PCI-X 2.0 slots
- Integrated Broadcom 5704 Dual-port 10/100/1000 Gigabit Ethernet
- Optional RSAll SlimLine for full out-of-band remote systems management
- Up to two 1,300-watt, voltage sensing, hot-swap power supplies
- 8X DVD-ROM, three USB ports, two serial ports, RS-485, SVGA video, mouse, and keyboard ports in a rack-dense 3U tool-free chassis
- Optimized for enterprise applications and commercial workloads: database, ERP, CRM, and in-house developed applications including Web services implementations

For ordering, contact:

Your IBM representative, an IBM Business Partner, or the Americas Call Centers at

800-IBM-CALL

Reference: YE001

Planned availability dates

- March 29, 2005
- June 30, 2005, Express Models

This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: <http://www.ibm.com>.

Description

Related options

xSeries 3.16 GHz 667 MHz 1 MB L2 Cache Upgrade for 64-bit Xeon Processor MP (13N0694) supports internal processing speeds of 3.16 GHz and external processing operations to memory at 667 MHz. It contains an integrated, full-speed, 1 MB level-2 cache.

xSeries 3.66 GHz 667 MHz 1 MB L2 Cache Upgrade for 64-bit Xeon Processor MP (13N0695) supports internal processing speeds of 3.66 GHz and external processing operations to memory at 667 MHz. It contains an integrated, full-speed, 1 MB level-2 cache.

These processor options are supported up to four-way SMP applications in the IBM *@server* xSeries 366. A VRM, specifically designed to support this xSeries server, is included.

ServeRAID 8i SAS Controller (13N2227) performs with new Serial Attached SCSI (SAS) Raid technology. The ServeRAID 8i is a Zero Channel RAID (ZCR) controller manages your internal data storage in selected xSeries servers. The ServeRAID 8i controller achieves higher performance and up to 10 times higher transfer rates at 3 GB/second than its Ultra-320 SCSI predecessors for a nominal increase in price.

The half-length adapter runs on a dedicated system's PCI-X 64-bit ZCR slot at speeds up to 133 MHz. With the onboard 256Mb memory and 600MHz Intel processor, the ServeRAID 8i takes RAID processing workload and offloads it directly to the controller. This allows your CPU ample bandwidth to perform the application processing required.

ServeRAID 8i SAS Controller offers:

- RAID levels include 0, 1, 10, 5, 50, 60, and IBM exclusive 1E, and 5EE.
- Performance up to 3GB/seconds of throughput.
- ServeRAID 8i supports independent and adjustable stripe sizes of 256k and 512k.
- Additional ServeRAID features such as Logical Drive Migration, Global Hot Spare, Copyback, and FlashCopy® are available to manage your storage drives.
- Battery backed memory provides added protection for your valuable data.
- Rebuild and Rapid Restore™ features to preserve RAID configurations.
- ServeRAID Manager software application is available for managing the SAS RAID array configurations.

Raid manufacturing instructions

- 32R0700 — RAID 0 — SAS Primary Array — minimum of 1 HDD required
- 32R0701 — RAID 1 — SAS Primary Array — 2 HDDs required
- 32R0702 — RAID 1E — SAS Primary Array — 3 HDDs required
- 32R0703 — RAID 5 — SAS Primary Array — minimum of 3 HDDs required
- 32R0704 — RAID 5EE — SAS Primary Array — minimum of 4 HDDs required

- 32R0705 — RAID 0 — SAS Secondary Array — minimum of 1 HDD required
- 32R0706 — RAID 1 — SAS Secondary Array — 2 HDDs required
- 32R0707 — RAID 1E — SAS Secondary Array — 3 HDDs required
- 32R0708 — RAID 5 — SAS Secondary Array — minimum of 3 HDDs required
- 32R0709 — RAID 5EE — SAS Secondary Array — minimum of 4 HDDs required
- 32R0720 — Internal — RAID — Setup
- 32R0721 — Internal — RAID — Setup by Customer

Remote Supervisor SlimLine Adapter II (73P9341) is a daughter card enabling diagnostic, reset, POST, and auto recovery functions from remote locations and monitoring of temperature, voltage, and fan speed; alerts generated when thresholds are exceeded without utilizing an I/O slot.

Add another 1,300-watt, voltage-sensing, hot-swap power supply.

1,300-watt power supply Worldwide (13M7413)

2 GB (2 x 1 GB Kit) PC2-3200 CL3 ECC DDR2 SDRAM RDIMM (73P2866) contains two 1 GB DIMMs.

4 GB (2 x 2 GB Kit) PC2-3200 CL3x4 ECC DDR2 SDRAM RDIMM (73P2867) contains two 2 GB DIMMs.

8 GB (2 x 4 GB Kit) PC2-3200 CL3x4 ECC DDR2 SDRAM RDIMM (30R5145) contains two 4 GB DIMMs.

Note: This option is planned to be available third quarter 2005.

These high-speed, DDR2 registered DIMMs are synchronized to the processor so that once addressed, data can be transferred on both edges of the clock signal. This takes advantage of the improved performance of the new 667 MHz dual front-side bus architecture of the XA-64e third-generation chipset and the 64-bit Xeon MP processor. The memory bus transfers data at up to 5.3 GB per second;

Active Memory 4-slot Memory Expansion Card (13M7409) allows you to upgrade your x366 with four total memory expansion cards. System memory can be expanded to 64 GB by removing the two standard DIMMs and adding three additional memory expansion card options and a 4 GB PC2-3200 CL3x4 ECC DDR2 SDRAM RDIMM in each of the four DIMM sockets.

IBM Director 4.21 supports the x366. For more detailed information, including operating system support, see the IBM Director 4.21 compatibility document at

<http://www.ibm.com/>

xSeries 366 description

Standard xSeries 366 model configurations

Models	Processor	L2 Cache	Memory	HDDs	Power supply
8863 1RY	1 x 3.16 GHz	1 MB	2 GB ECC	Open bay	One
8863 2RY	1 x 3.66 GHz	1 MB	2 GB ECC	Open bay	One
8863 1RU	1 x 3.16 GHz	1 MB	2 GB ECC	Open bay	One
8863 2RU	1 x 3.66 GHz	1 MB	2 GB ECC	Open bay	One
8863 E1U	2 x 3.66 GHz	1 MB	4 GB ECC	3x36GB/8i	Two

High-performance server subsystems: xSeries 366 servers are high-performance, four-socket 64-bit SMP-capable x86 mission-critical servers. The x366 combines breakthrough 4-socket performance on an 64-bit x86 server optimized for commercial enterprise applications deployed in the application-serving tier.

These models are equipped with powerful 64-bit Xeon MP processors up to 3.66 GHz and 1 MB L2 cache. This new processor supports 64-bit extensions and compatibility with current 32-bit applications and system tools. Four connectors for Xeon MP processors are standard on the system board. High-speed PC2-3200 ECC DDR2 SDRAM provides excellent processor-to-memory subsystem performance.

As the first in a new family of eServer X3 systems, the xSeries 366 server is fine tuned and engineered to optimize the powerful new 64-bit Xeon MP processors. This architecture consists of the following components:

- 64-bit Intel Xeon MP processors on a highly reliable, high-performance 667MHz dual FSB architecture
- IBM XA-64e third-generation chipset with integrated processor and memory controller for reduced latencies and a high-throughput I/O southbridge supporting PCI-X 2.0 up to 266 MHz
- EM64T Memory addressability supporting up to 64 GB of max memory (when 4 GB DIMMs become available) to reduce paging and improve overall server performance
- Updated high-performance server technologies such as serial-attached SCSI (SAS), DDR2-based Active Memory, and XceL4v Dynamic Server Cache

High-availability and serviceability features: Many enterprise mission-critical, run commercial applications around the clock to supply information across the globe. These environments require “ruggedly” dependable servers designed with features that can tolerate a component failure without total shutdown. IBM *@server*™ xSeries 366 servers pack numerous fault-tolerant and high-availability features into a high-density, rack-optimized package that helps significantly reduce the space needed to support massive network computing operations without sacrificing performance or availability.

These features include:

- Active PCI-X 2.0 slots up to 266 MHz; hot-add and hot-swap adapters in Windows™ and Linux™ environments
 - Refer to the **Limitations** section.
- Six 2.5-inch Serial Attach SCSI (SAS) HDD bays
- Optional ServeRAID 8i controller supporting up to RAID 0, 1, 5, 1E, 00, 10, 50, 1E0, 5EE
- ECC DIMMs combined with an integrated advanced ECC memory controller with third-generation Chipkill support to correct many single-, two-, three-, and four-bit memory errors to minimize disruption of service to LAN clients
- Memory ProteXion and memory mirroring support
- Memory hardware scrubbing to correct many soft memory errors automatically without software intervention
- PFA on HDD options, memory, processors, VRMs, power supply, and fans in conjunction with IBM Director to help alert the system administrator of an imminent component failure

- Up to two 1300-watt power supplies that support typical configuration redundancy or full configurations requiring redundancy
- Eight, hot-swap, multispeed fans to provide cooling redundancy and enable individual fan replacement without powering down the server
- Optional RSAII SlimLine enabling diagnostic, reset, POST, and auto recovery functions from remote locations and monitoring of temperature, voltage, and fan speed; alerts generated when thresholds are exceeded without utilizing an IO slot
- Information LED panel, diagnostics LED panel, and component LEDs for visual indications of system well-being
- Light path diagnostics for an outside view of the potential problem without removing the cover to reduce downtime and service costs
- Easy top access to system board, adapter cards, power supplies, and memory
- CPU failure recovery in SMP configurations, allowing a failed processor to be forced offline, the server rebooted, an alert generated, and operation continued with the working processor

Performance scalability: IBM eServer xSeries 366 servers are designed for high performance on complex applications. They feature scalability of memory, I/O, and HDD storage for future growth potential.

The servers include:

- Substantial I/O expansion supporting up to six PCI-X 2.0 card slots including backward compatibility to existing legacy PCI and PCI-X adapters:
- Up to four-socket SMP operations with powerful new 64-bit Xeon MP processors
- 2 GB high-speed PC2-3200 DDR2 ECC memory standard, supporting up to 64 GB of system memory
- Support for up to two worldwide, voltage-sensing 1,300-watt, hot-swap power supplies with auto restart
- Six 2.5-inch hot-swap drive bays, supporting up to 440 GB of internal data storage (using six 73.4 GB SAS Hot-Swap HDDs)
- Optional ServeRAID 8i controller supporting up to RAID 0, 1, 5, 1E, 00, 10, 50, 1E0, 5EE
- Terabytes of external data storage with optional storage units, ServeRAID SCSI controllers, and Fibre Channel controllers

Systems management: IBM eServer xSeries 366 servers feature IBM Director, a powerful, highly integrated, systems management software solution built on industry standards and designed for ease of use. Exploit your existing enterprise or workgroup management environments and rich security features to access and manage physically dispersed IT assets more efficiently over the Internet. It can help reduce costs through potentially:

- Reduced downtime
- Increased productivity of IT personnel and end users
- Reduced service and support costs

IT administrators can view the hardware configuration of remote systems in detail and monitor the usage and performance of critical components such as processors, HDDs, and memory.

IBM Director includes IBM Director Extensions, a portfolio of server tools that integrates into the IBM Director interface and works with the RSAII SlimLine, or other systems-management monitoring functions contained in xSeries servers. Typical functions and monitoring capabilities can include:

- PFA-enabled critical hardware components
- Temperature
- Voltage
- Fan speed
- Light path diagnostics

The IT administrator gains comprehensive, virtual on-site control of xSeries servers through the ability to remotely:

- Access the server in many cases regardless of its status
- Inventory and display detailed system and component information
- View server bootup during POST
- Browse and delete logs of events and errors
- Reset or power cycle the server
- Run diagnostics, SCSI, RAID setup during POST
- Monitor thresholds on server health including:
 - Operating system load
 - POST time-out
 - Voltage
 - Temperature
- Set proactive alerts for critical server events including PFA on:
 - Processors
 - VRMs
 - Memory
 - Fans
 - Power supplies
 - HDDs
- Define automated actions such as:
 - Send an e-mail or page to an administrator
 - Execute a command or program
 - Pop up an error message to the IBM Director console
- Flash BIOS
- Monitor and graph the utilization of server resources such as:
 - Memory
 - Processor
 - HDDs
- Identify potential performance bottlenecks and react to prevent downtime
- Monitor, manage, and configure RAID subsystems without taking them offline

IBM Director Agent provides integration into leading workgroup and enterprise systems management environments, via Upward Integration Modules. This enables the advanced management capabilities built into xSeries servers to be accessed from:

- Tivoli® Enterprise and Tivoli NetView®
- Computer Associates Unicenter TNG
- HP OpenView
- Microsoft™ SMS
- BMC Patrol
- NetIQ

World-class support tools and programs: IBM eServer xSeries 366 servers include tools and programs designed to make ownership a positive experience. From the start, IBM programs help you purchase servers, get them running, and keep them running. IBM can help your company maintain ownership of technology leadership network servers.

- IBM on-site, three-year limited warranty with next-business-day service (same-business-day service optionally available) protects your investment if a problem occurs. This service also includes replacement of parts identified through PFA.
- The ServerProven program lets you confidently configure your server with various devices and operating systems. This Web-based program provides compatibility information from actual testing of the IBM eServer xSeries 366 server with various adapters and devices.
- The ServerGuide CD library includes online publications and utilities and drivers that help you load popular network operating systems.
- Electronic support on the Web offers additional support in an easy-to-use format.

Product positioning

Drawing upon latency-reducing mainframe-inspired technologies, IBM eServer X3 unleashes breakthrough 64-bit price-performance by combining the performance of the third-generation Enterprise X-Architecture chipset with the 64-bit capabilities of the latest Intel 64-bit Xeon MP processors to deliver the premiere industry-standard application server architecture.

These new xSeries 366 models enhance the xSeries High-Performance product line by introducing break-through x86 performance and price/performance for the newly emerging market of x86 64-bit servers targeted at commercial workloads and the application-serving tier.

Positioned between the xSeries 346 and the xSeries 445 servers, the IBM eServer xSeries 366 server features a high-density, 3 U mechanical platform that supports the new 64-bit Xeon MP processors, PCI-X 2.0 architecture, and high-speed DDR 2 memory.

IBM eServer xSeries 366 servers provide additional processing, I/O and memory expandability, and high-availability features over that of the xSeries 346 server. These features make them ideal for handling complex, business-critical commercial applications typical of application-serving tier such as ERP and CRM. The performance of the x366 also makes it well suited for consolidation of other uni, 2-way, and 4-way servers through virtualization.

The IBM eServer xSeries 366 server provides excellent four-socket processing capability with models supporting 3.16 and 3.66 GHz Xeon MP processors high-speed DDR2-based Active Memory and Active PCI-X 2.0 bus architecture.

With a focus on reducing latency, increasing bandwidth, and delivering mainstream 64-bit computing capability on one of the most prevalent server instruction set(s) in the world (x86 ISA), the xSeries 366 servers are an excellent fit for today and future commercial enterprise applications. The x366 also offers phenomenal investment protection required to meet the demands of a changing marketplace delivering 32-bit compatibility on a 64-bit platform including dual-core capability that allows

you to migrate with confidence according to your business needs, backed up by IBM, the most trusted name in servers.

These high-density, Xeon-based servers are designed to handle complex commercial 64-bit applications requiring high-speed computing power, and advanced high-availability functions in a minimum amount of rack space. Applications include:

- Enterprise Resource Planning
- Business intelligence
- Online Transaction processing
- In-house developed applications such as Web services
- Collaboration applications (Microsoft Exchange and Lotus Notes®)
- Server consolidation including virtualization
- Database
- Customer Relationship Management
- Supply Chain Management

The ServeRAID 8i SAS Controller is a high-performance RAID controller that works with the onboard SAS controller of selected xSeries servers to provide RAID-5 capability for SAS hard drives.

Statement of general direction

The x366 is the first in a new family of High Performance xSeries servers based on eServer X3, the third generation of Enterprise X-Architecture. IBM intends to introduce additional eServer X3 systems that allow customers to leverage the latest 64-bit Intel Xeon MP processors in systems with up to 32 sockets. These systems will extend the capabilities of IBM's leadership XpandOnDemand offerings.

In addition to the single-core Xeon processors MP available today, it is IBM's strategic intent to support dual-core microprocessor technology on the x366 server at such time that this technology becomes generally-available from our technology partners. It is also IBM's strategic intent to release a dual-core upgrade option kit to allow customers to upgrade from single-core to dual-core technology in the future. In both cases, this support may require updated server components made available in future revisions of the x366.

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. Contact your local IBM office or IBM authorized reseller for the full text of a specific Statement of General Direction.

Reference information

Notes

- Refer to the **Planning information** section for slot configuration information and restrictions.
- When referring to hard drive or tape backup capacity, GB stands for one billion bytes. Total user capacity may vary depending on operating environments.
- Actual playback speed will vary and is often less than the maximum possible.
- GHz and MHz denote the internal and/or external clock speed of the microprocessor only, not application performance. Many factors affect application performance.
- IBM sends a technician after attempting to diagnose and resolve the problem remotely.
- For information on the IBM Statement of Limited Warranty, visit

http://www.ibm.com/servers/support/machine_warranties/

Alternatively, this information is also available by contacting your IBM representative or reseller. Copies are available upon request.

For the latest information on safe and effective computing, periodically visit

<http://www.ibm.com/pc/safecomputing/>

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Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBM ID).

BP Attachment for Announcement Letter 105-125

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=105-125>

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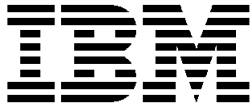
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IBM US Announcement Supplemental Information

March 29, 2005

Additional information

Memory ProteXion — Redundant Bit Steering

- Utilizes unused bits in each memory DIMM (hot spare bits)
- Double the number of Chipkill™ corrections sustainable per server
- Included at no additional cost, requires no additional hardware, and works independently of operating system
- Redundant Bit Steering is similar to the “hot-spare” of a DASD Array

Memory Mirroring

- Propels Intel™-based servers towards continuous operations
- Dramatically helps to increase uptime and allows scheduled maintenance
- Mainframe capability and reliability
- Operating System Independent: Does not require drivers or OS support

Chipkill Memory

- Support integrated into the XA-64e third-generation chipset for using off-the-shelf DIMMs
- Better memory reliability to support In-Memory Databases
- Chipkill Memory enables increased availability by detecting and help to correct single-, two-, three-, and four-bit memory errors
- Third-Generation Chipkill technology developed by IBM

Publications

The following publications and CD-ROMs are shipped with the IBM eServer® xSeries® 366 servers.

- **IBM eServer® xSeries 366 Installation Guide** contains an introduction to the computer, installation and setup, installing options, reference information, and problem determination. The installation guide has easy-to-use text and illustrations to enable you to quickly set up your IBM eServer® xSeries 366 server.

- **ServerGuide™** contains online publications and drivers to support the IBM eServer xSeries 366 server. In addition, it includes a set of easy-to-use utilities on CD to help you install several popular network operating systems.

- IBM Director systems-management software is included.

Note: Software versions, features, and functions shipped with these systems may change as new releases become available or may be discontinued at any time.

The *IBM eServer xSeries 366 Installation Guide* and the *Problem Determination Guide*, in U.S. English versions, are available from

<http://www.ibm.com/pc/support>

Services

Integrated Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure for e-business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or visit

<http://www.ibm.com/services/>

For details on education offerings related to specific products, visit

<http://www.ibm.com/services/learning/index.html>

Select your country, and then select the product as the category.

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Physical specifications

xSeries 366

8863-E1U

	8863-1RU	8863-2RU
Processor	Xeon MP	Xeon MP
Internal speed	3.16 GHz	3.66 GHz
External speed	667 MHz	667 MHz
Number standard	1	1
Maximum	4	4
L2 cache (full speed)	1 MB	1 MB
L3 cache (full speed)	0 MB	0 MB
Memory (PC2-3200 DDR2)	2 GB ECC	2 GB ECC
DIMMs	2 x 1 GB	2 x 1 GB
DIMM sockets std	4 ¹	4 ¹
DIMM sockets max	16 ¹	16 ¹
Capacity	64 GB ²	64 GB ²
Video	SVGA	SVGA
Memory	16 MB	16 MB
SAS SCSI controller	3.0 GHz	3.0 GHz
Links	6	6
Connector internal	2	2
Connector external	0	0
HDD	0	0
Total bays		
5.25-inch slim media	1	1
Hot-swap HDD	6	6
Accessible	7	7
Internal capacity	440.4 GB ³	440.4 GB ³
PCI-X 2.0 slots	6	6
Slots available	6	6
Management processor		
BMC	Standard	Standard
RSA-II SlimLine	Optional	Optional
Dual Ethernet	10/100/1000 Mbps	10/100/1000 Mbps
CD-ROM / DVD	Optional	Optional
DVD / ROM	Standard	Standard
Power supply	1300 W	1300 W
Number standard	1	1
Maximum	2	2
Hot-swap	Yes	Yes
Redundant power	Optional	Optional
Auto restart	Yes	Yes

Processor	Xeon MP
Internal speed	3.66 GHz
External speed	667 MHz
Number standard	2
Maximum	4
L2 cache (full speed)	1 MB
L3 cache (full speed)	0 MB
Memory (PC2-3200 DDR2)	4 GB ECC
DIMMs	4 x 1 GB
DIMM sockets std	4 ¹
DIMM sockets max	16 ¹
Capacity	64 GB ²
Video	SVGA
Memory	16 MB
SAS SCSI controller	3.0 GHz
Links	6
Connector internal	2
Connector external	0
HDD	3 x 36.4GB SAS
Total bays	
5.25-inch slim media	1
Hot-swap HDD	6
Accessible	7
Internal capacity	440.4 GB ³
PCI-X 2.0 slots	6
Slots available	6
Management processor	
BMC	Standard
RSA-II SlimLine	Optional
ServeRAID™ 8i SAS Ctr	Standard
Dual Ethernet	10/100/1000 Mbps
controller	
CD-ROM / DVD	Optional
DVD / ROM	Standard
Power supply	1,300 W
Number standard	2
Maximum	2
Hot-swap	Yes
Redundant power	Optional
Auto restart	Yes

¹ Number of sockets are based on installation of the 4 memory expansion cards (13M7409).

² Capacities are based on installation of the 4 memory expansion cards (13M7409) and 4x4 GB DIMMs installed in each card (when 4 GB DIMMs become available).

³ Capacities are based on installation of six 73.4 GB 2.5-in SAS HDDs. For the latest information on supported HDD options, visit

<http://www.ibm.com/pc/us/compat>

36.4 GB 10K 2.5-inch Serial-attached SCSI Hot-swap HDD characteristics

- Formatted capacity: 36,400 million bytes
- Average read seek time: 4.7 ms
- Burst transfer rate (maximum): 3.0 Gb/s
- Average latency: 2.99 ms
- Drive rotation speed (RPM): 10,000 rpm
- PFA/S.M.A.R.T enabled: Yes
- Interface: SAS 3.0 GHz

73.4 GB 10K 2.5-inch Serial-attached SCSI Hot-swap HDD characteristics

- Formatted capacity: 73,400 million bytes
- Average read seek time: 4.7 ms
- Burst transfer rate (maximum): 3.0 Gb/s
- Average latency: 2.99 ms
- Drive rotation speed (RPM): 10,000 rpm
- PFA/S.M.A.R.T enabled: Yes
- Interface: SAS 3.0 GHz

ServeRAID 8i Serial-attached SCSI Controller characteristics

- Transfer Rate (maximum): 3 GB/s
- Interface: SAS 3.0 GHz
- Cache Memory: 256 MB
- Measured Performance at 6 SFF Drives 16K OLTP: 850 IO/sec
- 512 Bytes out of cache Performance: 25,000 IO/sec
- Sequential Reads 64K: 312 MB/sec

8x DVD-ROM drive characteristics: ThinkPad® Multi-Burner Plus Ultrabay™ Enhanced Drive

Refer to Hardware Announcement 104-326, dated September 14, 2004, for details.

Video subsystem

- ATI Radeon 7000M embedded
- 16 MB SDRAM standard/maximum video memory
- 128-bit graphics engine with 8, 16, and 32 bpp mode acceleration
- 32 bpp (4G colors/True Color) support digital 24-bit TMDS digital video signal to the optional RSA-2 SlimLine
- DDC2 ci monitor communications support

Supported video mode capabilities for the SVGA PCI controller:

Resolution	Colors	Refresh rate (Hz)
Microsoft™ Windows™ 2000 and Windows 2003		
640 x 480 x 8	256	60, 72, 75, 85
640 x 480 x 16	64K	60, 72, 75, 85
640 x 480 x 32	16 million	60, 72, 75, 85
800 x 600 x 8	256	60, 72, 75, 85
800 x 600 x 16	64K	60, 72, 75, 85
800 x 600 x 32	16 million	60, 72, 75, 85
1024 x 768 x 8	256	60, 70, 75, 85
1024 x 768 x 16	64K	60, 70, 75, 85
1024 x 768 x 32	16 million	60, 70, 75, 85

Note: NetWare and SCO drivers are contained in the respective operating system packages or bulletin boards.

Dimensions

3 U rack drawer

- Width: 442.0 mm (17.4 in)
- Depth: 701.0 mm (27.6 in)
- Height: 128.4mm (5.05 in)
 - Minimum configuration: 28.6 kg (63 lb)
 - Maximum configuration: 37.6 kg (83 lb)

Electrical

- 100 to 127 (nominal) V ac; 50 Hz or 60 Hz; 8.5 A
- 200 to 240 (nominal) V ac; 50 Hz or 60 Hz; 8.5 A
- Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.37 kVA (two power supplies)
 - Maximum configuration: 1.2 kVA (two power supplies)
- Btu output:
 - Ship configuration: 1,262 Btu/hr (361 watts)
 - Full configuration: 4,053 Btu/hr (1045 watts)
- Noise level horizontal position: 6.6 bels

Note: The noise emission level stated is the declared (upper limit) sound power level, in bels, for a random sample of machines. All measurements made in accordance with ISO 7779 and reported in conformance with ISO 9296.

IBM eServer xSeries 366 servers are intended for use as rack-drawer servers and are tested and designed to operate in a horizontal position.

Standards: These systems support or comply with the following standards:

- Multi Processor Specification (MPS) 1.4
- Hardware-enabled to meet the International Organization for Standardization (ISO) 9241, Part 3

In addition to the above standards, they are compatible with the PCI-X specification 2.0.

Equipment approvals and safety

- FCC — Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 4, Class A
- IEC/UL 60950-1, 1st edition
- CAN/CSA — C22.2 No. 60950-1-03
- NOM-019⁴

⁴ This server is certified by the respective UL and NOM agencies.

Operating environment

- Temperature:
 - 10.0° to 35.0°C (50° to 95°F) at 0 to 914 m (0 to 3,000 ft)
 - 10.0° to 32.0°C (50° to 90°F) at 914 to 2,133 m (3,000 to 7,000 ft)
- Relative humidity: 8% to 80%
- Maximum altitude: 2,133 m (7,000 ft)

Hardware requirements: For attended installation of an operating system, this server requires a compatible:

- Keyboard
- Mouse
- Display

Unattended or remote installation may be performed without requiring some or all of these components. Review your unattended software installation program information for specific hardware configuration requirements.

For service, the server requires a compatible:

- Keyboard
- Mouse
- Display

When having the unit serviced, plan to have these components attached to your server either directly or indirectly via a console switch.

Software requirements: The following network operating systems have been tested for compatibility with the IBM eServer xSeries 366 server:

- Microsoft:
 - Windows 2000 Advanced Server
 - Windows 2000 Server
 - Windows Server 2003 Standard Edition (32-bit)
 - Windows Server 2003 Enterprise Edition (32-bit)
- Linux™:
 - Red Hat Enterprise Linux 3 Advanced Server 64-bit
 - SUSE LINUX Enterprise Server 9 UL (SLES9) 64-bit
- Other:
 - VMware ESX Server 2.5.1

Note: For information on additional support, certification, and versions of network operating systems, visit

<http://www.ibm.com/pc/us/compat>

Compatibility: The IBM eServer xSeries 366 server contains licensed system programs that include set configuration, set features, and test programs. IBM system BIOS is loaded from a “flash” EEPROM into system memory. This BIOS provides instructions and interfaces designed to support the standard features of the IBM eServer xSeries 366 server and to maintain compatibility with many current software programs.

For detailed information about IBM and non-IBM devices, adapters, software, and network operating systems supported with xSeries servers, visit

<http://www.pc.ibm.com/us/compat>

Contact your IBM representative, IBM Business Partner, or refer to the IBM Sales Manual for information on the compatibility of hardware and software for xSeries servers. The Sales Manual is updated periodically as new features and options are announced that support these servers.

Limitations

- The IBM eServer xSeries 366 servers are shipped with 2 GB (2 x 1 GB) of memory. A maximum of up to 64 GB of system memory is supported (when 4 GB DIMMs become available) by adding three additional memory expansion card options and a 4 GB PC2-3200 CL3x4 ECC DDR2 SDRAM RDIMM in each of the 4 DIMM sockets. All supported system memory is addressable

through direct memory access (DMA). This server supports 1 GB, 2 GB, and 4 GB 1.8V, 240-pin, 8-byte RDIMMs. Supported DIMMs can coexist in the same server; however, memory DIMMs of the same capacity must be installed in matched pairs. Refer to the **Planning information** section or the xSeries server Web page memory options.

- The IBM eServer xSeries 366 supports up to 6 HDDs which limits the ServeRAID 8i SAS Controller to reach RAID configurations of RAID 0, 1, 5, 1E, 00, 10, 50, 1E0, 5EE, but not RAID 60.
- Use the version of *ServerGuide* that is shipped with the system, or a later version, to load software and drivers. Earlier versions of *ServerGuide* may not be compatible with the server.

Refer to the **Software requirements** section for operating system limitations.

Hot-swap limitations

- PCI hot-plug is not supported in Red Hat Enterprise Linux 3.
- PCI hot-plug support is limited in SUSE LINUX Enterprise Server 9, and Novell NetWare 6.5.
- For Linux, multi-function adapters (those that use PCI bridges) are currently not supported.
- For Netware, only hot-replace of adapters is supported.

Planning information

Customer responsibilities

IBM eServer xSeries 366 Server and related options

The IBM eServer xSeries 366 server is designated as customer setup. Customer setup instructions are shipped with systems.

Configuration information

Bay configuration

The IBM eServer xSeries 366 server contains seven customer-accessible drive bays on the top, front of the server. The top right bay is for the standard DVD-ROM. Six unpopulated 2.5-inch, slim-high, hot-swap drive bays are located to the left of the DVD.

The IDE DVD-ROM is cabled directly to the IDE port. The six hot-swap bays are connected to the integrated Serial-attached SCSI controller through an integrated circuit.

Serial attach SCSI

The IBM eServer xSeries 366 server contains a DASD backplane supporting up to six hot-swap, SCA-2-compliant drive bays.

There is an optional ServeRAID 8i controller supporting up to RAID 0, 1, 5, 1E, 00, 10, 50, 1E0, 5EE.

Processor upgrades

The following processor upgrade options are supported:

- xSeries 3.16 GHz 667 MHz 1 MB L2 Cache Upgrade for 64-bit Xeon Processor MP (13N0694)
- xSeries 3.66 GHz 667 MHz 1 MB L2 Cache Upgrade for 64-bit Xeon Processor MP (13N0695)

Memory support

The following memory options are supported:

- 2 GB PC2-3200 ECC DDR2 SDRAM RDIMM (73P2866)
- 4 GB (2x2GB Kit) PC2-3200 CL3x4 ECC DDR2 SDRAM RDIMM (73P2867)
- 8 GB (2x4GB Kit) PC2-3200 CL3x4 ECC DDR2 SDRAM RDIMM (30R5145)

PCI-X 2.0 adapter installations

The IBM eServer xSeries 366 server contains PCI-X 2.0 architecture. There are six 64-bit full-length slots that support PCI-X 2.0, PCI-X 1.0, and PCI adapters of various clock speeds.

Rack installations

IBM eServer xSeries 366 3 U, rack-drawer models are designed to be installed in a 19-inch rack cabinet designed for 26-inch deep devices, such as the NetBAY42 ER, NetBAY42 SR, NetBAY25 SR, or NetBAY11.

If using a non-IBM rack, the cabinet must meet the EIA™-310-D standards with a depth of at least 71.1 cm (28 in). Also, adequate space (approximately 5 cm (2 in) for the front bezel and 2.5 cm (1 in) for air flow) must be maintained from the slide assembly to the front door of the rack cabinet to allow sufficient space for the door to close and provide adequate air flow.

Power considerations

These IBM eServer xSeries 366 models include one standard 1300-watt, hot-swap power supply. With a single power supply, they provide sufficient power to support full configurations.

Cable orders: The 10/100/1000 Mbps full-duplex, Dual Ethernet PCI-X Controller is standard with IBM eServer xSeries 366. The RJ-45 connectors provide a 10BaseT or 100/1000Base-TX interface for connecting twisted-pair cable to the Ethernet network. Cabling is not included with the server. To connect the Ethernet controller to a repeater or switch, use an unshielded twisted pair (UTP) cable with RJ-45 connectors at both ends. For 100/1000 Mbps operation, Category 5 cabling must be used. For 10 Mbps operation, Category 3, or better, cabling must be used.

There are no additional cabling requirements, other than for system power, keyboard, mouse, and monitor connections.

Installability: The IBM eServer xSeries 366 server requires about 20 minutes for installation. Installation includes unpacking, setting up, and powering on the system. Additional time is required to install an operating system, additional adapters, or features.

Packaging: One box

System unit carton

- System unit
- Rack components:
 - Rails
 - Cable management hardware

Country kit carton

- One or two line cords (110 V for wall outlet)
- One or two 9-foot 220 V intra-rack cables
- xSeries 366 Installation Guide
- Safety booklet

- Rack install template
- ServerGuide and IBM Director
- CD-ROM packages
- On/off switch cover

The IBM eServer xSeries 366 system is shipped as a single package. The country kit carton is contained inside the top portion of the system unit carton, while the rack components are contained in the system unit carton.

Related option

Processor upgrades

- 64-bit Xeon MP processor
- VRM and heat sink
- Installation publications/warranty

Security, auditability, and control

Security and auditability features include:

- Power-on and privileged access password functions provide controls of who has access to the data and server setup program on the server.
- A set unattended boot mode allows the system keyboard to be locked to all entries except the password and at the same time allows other computers on the network to access the system disk drive.
- A selectable boot sequence can be used to prevent unauthorized installation of software or removal of data from the diskette drive.

Limitations: The IBM eServer xSeries 366 server has no security intrusion detection; therefore, it should be installed in a rack environment that provides security through lockable doors or other security measures. It is a customer's responsibility to ensure that the server is secure to protect sensitive data.

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

IBM Electronic Services

IBM Global Services has transformed its delivery of hardware and software support services to put you on the road to higher systems availability. IBM Electronic Services is a Web-enabled solution that provides you with an exclusive, no-additional-charge enhancement to the service and support on the IBM eServer. You should benefit from greater system availability due to faster problem resolution and preemptive monitoring. IBM Electronic Services is comprised of two separate, but complementary, elements: IBM Electronic Services news page and IBM Electronic Service Agent™.

IBM Electronic Services news page provides you with a single Internet entry point that replaces the multiple entry points traditionally used by customers to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The IBM Electronic Service Agent is a no-additional-charge software that resides on your IBM eServer system. It is designed to proactively monitor events and transmit system inventory information to IBM on a periodic, customer-defined timetable. The IBM Electronic Service Agent tracks system inventory,

hardware error logs, and performance information. If the server is under a current IBM maintenance service agreement or within the IBM warranty period, the Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to provide proactive service that maintains higher system availability and performance. In addition, information collected through the Service Agent will be made available to IBM service support representatives when they are helping answer your questions or diagnosing problems. To take full advantage of IBM Electronic Services on an IBM eServer i5 running AIX® 5L 5.2, clients should install Service Agent under AIX 5L 5.2 to assist in reporting AIX operating system related problems.

To learn how IBM Electronic Services can work for you, visit

<http://www.ibm.com/support/electronic>

Terms and conditions

IBM Global Financing: Yes

xSeries 366

To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or IBM. In the United States, call 800-IBM-SERV (426-7378), or write to:

Warranty Information
P.O. Box 12195
Research Triangle Park, NC 27709
Attn: Dept JDJA/B203

Warranty period

- System hardware — Three years
- Optional features — Three years

Optional IBM features initially installed in an IBM system carry the same warranty period as the system. If installed after the initial system installation, they carry the balance of the system warranty or the optional feature warranty, whichever is greater.

Warranty service: If required, IBM provides repair or exchange service depending on the type of warranty service specified for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country- and location-specific information.

Customer Replaceable Unit (CRU) (for example, keyboard, mouse, speaker, memory, HDD) service and on-site service for other selected parts.

CRU service: IBM provides replacement CRUs to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request. CRUs are designated as being either a Tier 1 or a Tier 2 CRU. Installation of Tier 1 CRUs is your responsibility. If IBM installs a Tier 1 CRU, at your request, you will be charged

for the installation. You may install a Tier 2 CRU yourself or request IBM to install it at no additional charge under the type of warranty service specified, on-site service.

Based upon availability, CRUs will be shipped for next-business-day delivery. IBM specifies in the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM. When return is required, return instructions and a container are shipped with the replacement CRU, and you may be charged for the replacement CRU if IBM does not receive the defective CRU within 30 days of your receipt of the replacement.

The following parts have been designated as Tier 1 CRUs:

- Fan
- Memory
- Memory expansion card, 4 slot
- Power supply
- Line cord
- DVD-ROM
- HDD
- PCI spacer
- Lift handle kit
- HDD blank filler
- Chassis top cover assembly
- System bezel
- System labels

On-site service: IBM on-site repair (IOR), 9 hours per day, Monday through Friday excluding holidays, next-business-day response. IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose. On-site service is not available in all countries, and some countries have kilometer or mileage limitations from an IBM service center. In those locations where on-site service is not available, the normal in-country service delivery is used.

Call IBM at 800-IBM-SERV (426-7378), to assist with problem isolation for hardware to determine if warranty service is required. Telephone support may be subject to additional charges, even during the limited warranty period.

International Warranty Service (IWS): IWS is available during the warranty period to customers who travel or relocate to countries where their computer is sold and serviced by IBM or IBM resellers authorized to perform warranty service. Eligible IBM computers are identified by their four-digit machine type.

You can obtain IWS through the method of service, such as CRU, depot, carry-in, or on-site, provided in the servicing country. Service methods and procedures vary by country, and some service or parts may not be available in all countries. Service centers in certain countries may not be able to service all models of a particular machine type. In addition, some countries may have fees and restrictions that apply at the time of service.

To determine the eligibility of your computer and to view a list of countries where service is available, visit

<http://www-3.ibm.com/pc/support/site.wss/warranty/warranty.vm>

For more information on IWS, refer to Services Announcement 601-034, dated September 25, 2001.

Note: Due to the earth's magnetic field, CRT monitors are manufactured to work in northern, southern, and equatorial regions of the earth and may not produce a satisfactory image when moved between them. Any required adjustment (if possible) is not covered under IWS and may be subject to a chargeable action. The magnetic field does not affect flat panel LCD monitors.

Licensing: Programs included with this product are licensed under the terms and conditions of the License Agreements that are shipped with the system.

Maintenance services — ServicePac®, ServiceSuite™, and ServiceElect

ServicePac, ServiceSuite and ServiceElect provide hardware warranty service upgrades, maintenance, and selected support services in one agreement.

Warranty service upgrade: During the warranty period, warranty service upgrade provides an enhanced level of on-site service for an additional charge. A warranty service upgrade must be purchased during the warranty period and is for a fixed term (duration). It is not refundable or transferable and may not be prorated. If required, IBM will provide the warranty service upgrade enhanced level of on-site service acquired by the customer. Service levels are response time objectives and are not guaranteed.

IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability.

CRUs will be provided as part of the machine's standard warranty CRU service except that you may install a Tier 1 CRU yourself or request IBM installation, at no additional charge, under one of the on-site service levels specified.

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose.

The following warranty service upgrade options are available:

- On-site service — IOR, 9 hours per day, Monday through Friday excluding holidays, 4-hour average response
- On-site service — IOR, 24 hours per day, 7 days a week, 4-hour average response
- On-site service — IOR, 24 hours per day, 7 days a week, 2-hour average response

Maintenance service: If required, IBM provides repair or exchange service depending on the type of maintenance service specified for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response time objectives and are not guaranteed.

CRU service: If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, HDD), IBM will ship the CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request.

IBM specifies in the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM. When return is required, return instructions and a container are shipped with the replacement CRU, and you may be charged for the replacement CRU if IBM does not receive the defective CRU within 30 days of your receipt of the replacement.

On-site service: IOR. IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose.

The following on-site service options are available:

- On-site service — IOR, 9 hours per day, Monday through Friday excluding holidays, next-business-day response
- On-site service — IOR, 9 hours per day, Monday through Friday excluding holidays, 4-hour average response
- On-site service — IOR, 24 hours per day, 7 days a week, 4-hour average response
- On-site service — IOR, 24 hours per day, 7 days a week, 2-hour average response

Maintenance service (ICA)

Maintenance services are available for ICA legacy contracts. The preferred go-to-market offerings are ServiceElect. However, ICA legacy contracts will still be available for current customers until they are withdrawn.

Alternative service (Warranty service upgrades): During the warranty period, warranty service upgrade provides an enhanced level of on-site service for an additional charge. A warranty service upgrade must be purchased during the warranty period and is for a fixed term (duration). It is not refundable or transferable and may not be prorated. If required, IBM will provide the warranty service upgrade enhanced level of on-site service acquired by the customer. Service levels are response time objectives and are not guaranteed.

IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability.

CRUs will be provided as part of the machine's standard warranty CRU service except that you may install a Tier 1 CRU yourself or request IBM to install it at no additional charge under the type of warranty service specified, on-site service.

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose.

The following warranty service upgrade option is available: On-site service — IOR, 24 hours per day, 7 days a week, 4-hour average response.

Maintenance service: If required, IBM provides repair or exchange service depending on the type of maintenance service specified for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response time objectives and are not guaranteed.

CRU service: If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, HDD), IBM will ship the CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request.

IBM specifies in the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM. When return is required, return instructions and a container are shipped with the replacement CRU, and you may be charged for the replacement CRU if IBM does not receive the defective CRU within 30 days of your receipt of the replacement.

On-site service: IOR. IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose.

The following on-site service options are available:

- On-site service — IOR, 9 hours per day, Monday through Friday excluding holidays, next-business-day response
- On-site service — IOR, 24 hours per day, 7 days a week, 4-hour average response

Non-IBM parts support

Warranty service: IBM is now shipping machines with selected non-IBM parts that contain an IBM field replaceable unit (FRU) part number label. These parts are to be serviced during the IBM machine warranty period. IBM is covering the service on these selected non-IBM parts as an accommodation to their customers, and normal warranty service procedures for the IBM machine apply.

Warranty service upgrades and maintenance services: Under certain conditions, IBM Integrated Technology Services repairs selected non-IBM parts at no additional charge for machines that are covered under warranty service upgrades or maintenance services.

IBM service provides hardware problem determination on non-IBM parts (adapter cards, PCMCIA cards, disk drives, memory, and so forth) installed within IBM systems covered under warranty service upgrades or maintenance services and provides the labor to replace the failing parts at no additional charge.

If IBM has a Technical Service Agreement with the manufacturer of the failing part, or if the failing part is an accommodations part (a part with an IBM FRU label), IBM may also source and replace the failing part at no additional charge. For all other non-IBM parts, customers are responsible for sourcing the parts. Installation labor is provided at no additional charge, if the machine is covered under a warranty service upgrade or a maintenance service.

IBM hourly service rate classification: One

Field-installable features: Yes

Model conversions: No

Machine installation: Customer setup. Customers are responsible for installation according to the instructions IBM provides with the machine.

Graduated Program License Charges apply: No. This product does not contain licensed internal code or licensed machine code.

Prices

xSeries 366

Description	Machine type/ model	Part number	IBM list price ⁵
Rack, 3.16 GHz/ 1 MB, 2 GB	8863-1RU	88631RU	\$ 6,999
Rack, 3.66 GHz/ 1 MB, 2 GB	8863-2RU	88632RU	9,999
Rack, 2 x 3.66 GHz/ 1 MB, 4 GB, 3 x 36.4 GB, ServeRAID 8i	8863-E1U	8863E1U	13,799
xSeries 3.16 GHz 1 MB L2 Cache Upgrade for 64-bit Xeon Processor MP		13N0694	1,499
xSeries 3.66 GHz 1 MB L2 Cache Upgrade for 64-bit Xeon Processor MP		13N0695	1,999
ServeRAID 8i SAS Controller		13N2227	659
1300w Hot-Swap Redundant Power Supply		13M7413	299
Active Memory 4-Slot Memory Expansion Card		13M7409	499
8 GB (2x4GB Kit) PC2-3200 CL3 ECC DDR2 SDRAM RDIMM		30R5145	17,879
36.4 GB 10K 2.5-inch SAS HDD		26K5654	419
73.4 GB 10K 2.5-inch SAS HDD		26K5655	699

⁵ IBM list price does not include tax or shipping and is subject to change without notice. Reseller prices may vary.

To order direct, call IBM at 877-999-7115 and select option 4.

For the name of the nearest IBM representative or Business Partner, call 800-IBM-4YOU (426-4968).

ServicePac for warranty and maintenance

Description	Part number
1-year MA IOR 9 x 5 next-business-day average response	69P9402
1-year MA IOR 9 x 5 4-hour average response	69P9403
1-year MA IOR 24 X 7 4-hour average response	69P9404

Description	Part number
1-year MA IOR 24 x 7 2-hour average response	69P9405
2-year MA IOR 9 x 5 next-business-day average response	96P2121
2-year MA IOR 9 x 5 4-hour average response	96P2122
2-year MA IOR 24 X 7 4-hour average response	96P2123
2-year MA IOR 24 x 7 2-hour average response	96P2124
3-year IOR 9 x 5 4-hour average response	96P2252
3-year IOR 24 x 7 4-hour average response	96P2253
3-year IOR 24 x 7 2-hour average response	96P2254
4-year IOR 9 x 5 next-business-day average response	96P2255
4-year IOR 9 x 5 4-hour average response	96P2256
4-year IOR 24 x 7 4-hour average response	96P2257
4-year IOR 24 x 7 2-hour average response	96P2258
5-year IOR 9 x 5 next-business-day average response	96P2259
5-year IOR 9 x 5 4-hour response	96P2260
5-year IOR 24 x 7 4-hour response	96P2261
5-year IOR 24 x 7 2-hour response	96P2262

These ServicePac offerings are valid for models announced in the United States.

Maintenance service charges (ICA)

Alternative service (warranty service upgrades)

IOR
24 x 7

\$900

Annual maintenance service

IOR	IOR
9 x 5	24 x 7
 \$700	 \$1,050

For ServiceElect (ESA) Maintenance Service Charges, contact IBM Global Services at 888-IBM-4343 (426-4343).

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<http://www.ibm.com/financing>

IBM Global Financing offerings are provided through IBM Credit LLC in the United States and other IBM subsidiaries and divisions worldwide to qualified commercial and government customers. Rates are based on a customer's credit rating, financing terms, offering type, equipment type, and options, and may vary by country. Other restrictions may apply. Rates and offerings are subject to change, extension, or withdrawal without notice. Financing solutions from IBM Global Financing can help you stretch your budget and affordably acquire the new product. But beyond the initial acquisition, our end-to-end approach to IT management can also help keep your technologies current, reduce costs, minimize risk, and preserve your ability to make flexible equipment decisions throughout the entire technology life cycle.

Order now

To order, contact the Americas Call Centers, your local IBM representative, or your IBM Business Partner.

To identify your local IBM representative or IBM Business Partner, call 800-IBM-4YOU (426-4968).

Phone: 800-IBM-CALL (426-2255)
 Fax: 800-2IBM-FAX (242-6329)
 Internet: ibm_direct@vnet.ibm.com
 Mail: IBM Americas Call Centers
 Dept: IBM CALL, 11th Floor
 105 Moatfield Drive
 North York, Ontario
 Canada M3B 3R1

Reference: YE001

The Americas Call Centers, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

Note: Shipments will begin after the planned availability date.

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Microsoft and Windows are trademarks of Microsoft Corporation.

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