



IBM *@server*® xSeries 206, 306, 236, 336, and 346 Express Models – Fast processors for greater performance and availability

Overview

The **xSeries 206** model E1U comes with a 2.4 GHz/400 MHz FSB Celeron® processor with 1 MB L2, and 256 MB DDR 333 memory. The xSeries 206 models E2U and E3U come with a 3.2 GHz Pentium™ 4 processor with 1 MB L2 and 800 MHz FSB, 1 GB DDR 400 memory, model E2U also comes with an IBM ServeRAID™ 7T SATA adapter.

The **xSeries 306** models E1U and E2U contain a 3.2 GHz/800 MHz/ 1 MB L2, Pentium 4 processor, 2 GB DDR 400 system memory, model E1U comes with a 36.4 GB SCSI HDD and model E2U comes with a 7T SATA RAID adapter.

The **x306 system** features:

- Two 64-bit/66 MHz PCI-X half-length expansion slots, one full-height and one low-profile
- Integrated, dual Gigabit Ethernet controller
- Single-channel integrated Ultra320 SCSI
- Integrated SATA controller
- Simple-swap SATA open bay models and SCSI models

The **xSeries 236** model E2U contains 2 x 3.2 GHz/800 MHz/2 MB L2 Cache Xeon processors, 2 GB DDR2 system memory and a ServeRAID 7K adapter.

The **xSeries 236 system** features:

- High-speed, wide-bandwidth, one full-length PCI-X bus slot at 133 MHz (hot-swap)
- High-speed, wide-bandwidth, two full-length PCI-X bus slots at 100 MHz
- High-speed, wide-bandwidth, two full length PCI-E bus slots at 2 GB transfer rate or 512 MHz
- Dual Broadcom 5721 Gigabit Ethernet ports and dual-channel Adaptec 7902 UltraSCSI up to 320 MB/s
- Six hot-swap drive bays

The **xSeries 336** model E3U contains 2 x 3.2 GHz/800 MHz/2 MB L2 cache Xeon processors, 2 GB DDR2 system memory, and redundant power.

xSeries 336 server features:

- Redundant cooling fans
- Redundant power
- Memory mirroring and hot spare memory configurable using BIOS setup
- Integrated systems management processor
- Predictive Failure Analysis® (PFA) on processors, voltage regulator module (VRM), memory, fans, power supply, and HDD options warns of problems before they occur.
- Fast and easy servicing: innovative Light Path Diagnostics

The **xSeries 346** model E2U contains 2 x 3.2 GHz/800 MHz/2 MB L2 cache Xeon processors, 2 GB DDR2 system memory, one power supply and a ServeRAID 7k adapter.

The **xSeries 346 server** brings the following to rack-optimized server applications:

- Powerful, two-way, SMP-capable Intel™ Xeon processing
- 64-bit memory addressing — Up to 16 GB memory,
- PCI-X architecture and upgradability to PCI-Express
- Ultra320 SCSI technology
- High-availability and manageability features
- Support for Integrated xSeries Adapter for iSeries™ (1519-200)

Optimized for Intel's EM64T processor, the x336 and x346 enable customers with 64-bit applications to migrate to 64-bit computing.

New SCSI Hot-Swap HDDs options

- IBM 73 GB 10K rpm U320 SCSI HS HDD — 30R5094
- IBM 146 GB 10K rpm U320 SCSI HS HDD — 30R5095
- IBM 36 GB 15K rpm U320 SCSI HS HDD — 30R5096
- IBM 73 GB 15K rpm U320 SCSI HS HDD — 30R5097

Refer to model and server details in the **Description** section.

At a glance

New express models of the xSeries servers

Features of the Express program:

- Everyday low price
- Additional supply planned to help establish business continuity and enable on demand for small and medium business environments
- Configured to match the business needs of small and medium business customers
- xSeries 206 and xSeries 306: a one-year limited warranty^{1,2} on parts and labor³
- xSeries 236, xSeries 336, and xSeries 346: a three-year limited warranty^{1,2} on parts and labor³

Key prerequisites

- Monitor, keyboard, and mouse
- SCSI HDD
- Rack for rack models

Availability date

June 7, 2005

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

xSeries 206 uni-processor server

The IBM xSeries® 206 servers models E1U, E2U, and E3U are an excellent choice for cost-sensitive small businesses or distributed environments. They are easy to set up and use.

Refer to Hardware Announcement 105-016, dated January 18, 2005, for complete description.

xSeries 306 uni-processor server

The xSeries 306 server is an attractively priced, ultrathin, 20-inch deep, 1 U rack-optimized enterprise server.

Refer to Hardware Announcement 105-018, dated January 18, 2005, for complete description.

xSeries 236 SMP-capable server

Refer to Hardware Announcement 104-374, dated October 5, 2004, for complete description.

xSeries 336 SMP-capable server

The xSeries 336 server is designed to handle compute-intensive, Web-based, or enterprise network applications.

Refer to Hardware Announcement 104-372, dated October 5, 2004, for complete description.

xSeries 346 SMP-capable server

Refer to Hardware Announcement 104-348, dated October 5, 2004, for complete description.

Express Portfolio

Select configurations of xSeries systems are part of the IBM Express Portfolio program — designed, developed, and priced to meet the specific needs of mid-sized businesses. These systems are easy to acquire, install, and manage. They leverage IBM technology to provide tangible solutions to help you solve business problems in an on demand world.

Express models configurations

Model	Processor	Cache	Memory	Interface	HDD	Mechanical
8482-E1U	2.4 GHz	1 MB	256 MB ECC	SATA		Tower
8482-E2U	3.2 GHz	1 MB	1 GB ECC	7T RAID (SATA)		Tower
8482-E3U	3.2 GHz	1 MB	1 GB ECC	SCSI		Tower
8836-E1U	3.2 GHz	1 MB	2 GB ECC	SCSI	36.4 GB	Rack
8836-E2U	3.2 GHz	1 MB	2 GB ECC	7T RAID (SATA)		Rack
8837-E3U	2x3.2 GHz	2 MB	2 GB ECC	SCSI		Rack
8840-E2U	2x3.2 GHz	2 MB	2 GB ECC	ServeRAID 7K		Rack
8841-E2U	2x3.2 GHz	2 MB	2 GB ECC	ServeRAID 7K		Tower

Product positioning

These new xSeries servers are positioned to deliver a large number of systems on demand. They are available as uni- or SMP-capable servers and accommodate xSeries low-end demands for quick delivery.

Reference information

Notes

- GHz and MHz denote the internal and/or external clock speed of the microprocessor only, not application performance. Many factors affect application performance.
- When referring to HDD or tape backup capacity, GB stands for one billion bytes. TB is 1,000,000,000,000 bytes. Total user capacity may vary depending on operating environments.

¹ With respect to on-site service, the customer may be asked certain diagnostic questions before a technician is sent.

² IBM makes no warranties, expressed or implied, regarding non-IBM products and services that are ServerProven®, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. These products are offered and warranted solely by third parties.

³ For information on the IBM Statement of Limited Warranty, visit

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

Call 800-426-7378 or contact your IBM representative or reseller. Copies are available upon request.

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 105-203

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=105-203>

Trademarks

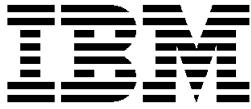
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IBM US Announcement Supplemental Information

June 7, 2005

Publications

The following publications and CD-ROMs are shipped with the express model servers:

- The 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 pictorials to enable you to quickly set up the express servers.
- The ServerGuide™ contains utilities and drivers to support the servers. In addition, it includes a set of easy-to-use utilities for assisted installation via CD of 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.

Express Server Installation Guide and *Hardware Maintenance Manual*, in U.S. English versions, are available from

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

Click servers, then Server Family, and then Online Publications.

The Publication Notification System (PNS) is available by order number/product number. Customers currently subscribing to PNS will automatically receive notifications by e-mail. Customers who wish to subscribe, can visit the PNS Web site location at

<http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi>

The publications listed on the notification can be ordered by calling the Pubs Support Group in Raleigh at 800-879-2755, option 1.

The IBM Publications Center Portal

<http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi>

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided, as well as payment options via credit card. Furthermore, a large number of publications are available online in various file formats, which can currently be downloaded free of charge.

Note: PNS subscribers most often order their publications via the Publication Center.

Displayable softcopy publications

The product books are offered in displayable softcopy form. All books are included. The displayable manuals are part of the basic machine-readable material. The files are shipped on DVD-ROM.

Terms and conditions for use of the machine-readable files are shipped with the files.

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 to be an on demand 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 available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

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

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.

Technical information

Physical specifications

xSeries® 206 uni-processor server: Refer to Hardware Announcement 105-016, dated January 18, 2005, for complete physical specifications.

xSeries 306 uni-processor server: Refer to Hardware Announcement 105-018, dated January 18, 2005, for complete physical specifications.

xSeries 236 SMP-capable server: Refer to Hardware Announcement 104-374, dated October 5, 2004, for complete physical specifications.

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>.

xSeries 336 SMP-capable server: Refer to Hardware Announcement 104-372, dated October 5, 2004, for complete physical specifications.

xSeries 346 SMP-capable server: Refer to Hardware Announcement 104-348, dated October 5, 2004, for complete physical specifications.

73.4 GB, 10,000 rpm HDD

- Formatted capacity: 36,400 MB or 73,400 MB
- Rotational speed: 10,000 rpm
- Typical average read seek time: <4.7 ms
- Data transfer rate (maximum bursting): 320 MB/s
- Average latency: 3.00 ms
- Sustained data transfer rate: 33 to 67 MB/s
- PFA/S.M.A.R.T. enabled: Yes
- Interface: Ultra320 SCSI

146.8 GB, 10,000 rpm HDD

- Formatted capacity: 146,800 MB
- Rotational speed: 10,000 rpm
- Typical average read seek time: <4.7 ms
- Data transfer rate (maximum bursting): 320 MB/s
- Average latency: 3.00 ms
- Sustained data transfer rate: 33 to 67 MB/s
- PFA/S.M.A.R.T. enabled: Yes
- Interface: Ultra320 SCSI

36.4 GB / 73.4 GB, 15,000 rpm HDD

- Formatted capacity: 36,400 MB or 73,400 MB
- Rotational speed: 15,000 rpm
- Typical average read seek time: <3.6 ms
- Data transfer rate (maximum bursting): 320 MB/s
- Average latency: 2.00 ms
- Sustained data transfer rate: 56 to 86 MB/s
- PFA/S.M.A.R.T. enabled: Yes
- Interface: Ultra320 SCSI

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
- HDD
- Display (E51, E54, P76, G78, LCD, or equivalent)

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
- HDD
- Display (E51, E54, P76, G78, LCD, or equivalent)

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 systems⁴ are supported on the express model servers:

- Microsoft™:
 - Windows™ 2000 Server
 - Windows 2000 Advanced Server
 - Windows 2003 Standard Edition
 - Windows 2003 Enterprise Edition
 - Windows Server 2003
- Novell: NetWare 6.5
- Linux™:
 - SUSE LINUX Enterprise Server 8
 - Red Hat Enterprise LINUX 3AS
 - Red Hat Enterprise LINUX 3ES
 - Red Hat Enterprise LINUX 3.0 for AMD64 and Intel™ EM64T

⁴ Certification is planned.

Note: For information on additional support, certification, and versions, visit

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

The following network operating systems are supported as preloads in the xSeries 346 express server:

- Microsoft:
 - Windows 2000 Server
 - Windows 2000 Advanced Server
 - Windows Server 2003 Standard Edition
 - Windows Server 2003 Enterprise Edition
 - Windows Server 2003

Compatibility: All the express model server systems contain licensed system programs that include set configuration, set features, and test programs. 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 x346 and to maintain compatibility with many current software programs.

Contact your IBM representative or 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

- All the express model xSeries servers have a preset configuration and are sold in that configuration only.
- Use the version of ServerGuide shipped with the system or a later version to load software and drivers. Earlier versions of ServerGuide cannot be used with the server.

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

User group requirements: This announcement satisfies or partially satisfies the requirements from one or more of the worldwide user group communities.

Planning information

Customer responsibilities: The express model servers are designated as customer setup. Customer setup instructions are shipped with each system.

Configuration information

Integrated RAID One configuration: There are two manufacturing instructions (MI) available to allow the customer to setup a RAID one (1) configuration. These instructions enable configuration via Odyssey (ibm.com).

The two instructions are:

- Integrated Mirroring —2 HDDs required via Instruction 01R1356
- Integrated Mirroring with HotSpare —3 HDDs required via Instruction 01R1357

Note: Mixing Ultra320 drives with drives of any other speed rating causes them to run at Ultra160 speeds.

In configurations where an external SCSI device attachment is required, an external SCSI connector is available at rear of some systems, check the installation guide.

Rack installations

The express servers rack-drawer models are designed to be installed in a 19-inch rack cabinet designed for 28-inch deep devices, such as the NetBAY42U ER and NetBAY42U SR. Installation into some of the older Netfinity® racks (9306900, 9306910, 9306200) requires a rack extension kit.

If an xSeries system is mounted in a non-IBM rack, the rack must satisfy the following specifications:

- The rack must meet EIA™-310-D standards for mounting flanges and hole locations.
- The front to rear distance of the mounting flanges must be between 698.5 mm and 762 mm (27.5 and 30 inches).
- The thickness of the mounting flanges must be between 1.9-3.3 mm.
- The mounting flanges must have either 7.1-mm (.28-in) diameter holes or 9.6-mm (.38-in) square holes on the standard EIA hole spacing.
- The rack must have a minimum depth of 70 mm (2.76 in.) between the front mounting flange and inside of the front door for appropriate cooling.
- The rack must have a minimum depth of 157 mm (6.2 in.) between the rear mounting flange and inside of the rear door to install the server and make space for cable management.
- The minimum side-to-side clearance in the rack between the front and rear mounting flanges must be 467 mm (18.2 in.) to accommodate the width of the server and the slide mounting brackets.
- The minimum side-to-side clearance in the rack between each door and the mounting flanges must be 484 mm (19.1 in.) to accommodate the slide mounting brackets.
- The rack must include perforated front and rear doors and must not prevent the flow of cool air into or out of the rack.
- The weight-handling capacity of the rack must be able to support the maximum rack configuration, including all servers, external cables, and PDUs.
- The rack must provide proper stabilization so that the rack does not become unstable when servers are pulled out for service.

Supported memory options

The following memory options are supported:

- IBM 512 MB PC2-3200 CL3 DDR2 ECC SDRAM RDIMM —(73P3523) (2 x 256 MB) non-Chipkill™
- IBM 1 GB PC2700 DDR II ECC Non-Chipkill SDRAM RDIMM —(73P3522) (2 x 512 MB) non-Chipkill
- IBM 1GB PC2-3200 CL3 ECC DDR2 Chipkill SDRAM RDIMM —(73P2865) (2 x 512 MB) Chipkill
- IBM 2GB PC2-3200 CL3 ECC DDR2 Chipkill SDRAM RDIMM —(73P2866) (2 x 1 GB) Chipkill

Supported HDD options

The following HDD options are supported:

- IBM 73 GB 10K rpm U320 SCSI HS HDD —30R5094
- IBM 146 GB 10K rpm U320 SCSI HS HDD —30R5095
- IBM 36 GB 15K rpm U320 SCSI HS HDD —30R5096
- IBM 73 GB 15K rpm U320 SCSI HS HDD —30R5097

Power considerations

Each express server comes with its own power supply. This power supply delivers sufficient power to run the server. The xSeries 336 model E3U will come with a second power supply to allow redundant power.

Cable orders: 10/100/1000 Mbps, full-duplex Ethernet PCI controllers, standard with the express server, are connected directly to an independent RJ-45 connector. The RJ-45 connector provides a 10BaseT, 100Base-TX, and 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 a 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 express 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

Express Server

System unit carton

xSeries 206, 306, 236, 336, 346 server

One box

- System unit
- Rack kit (as required)

System unit carton

xSeries servers

One box

- System unit power cord (1)
- PDU style power cord (1)
- xSeries Installation Guide

- Safety booklet
- ServerGuide and IBM Director
- DVD-ROM packages
- Media mounting kit
- On/off switch cover (1)

The xSeries server system is shipped as a single package. Other items are in zipped bags.

Supplies

For end users: The following IBM xSeries models can be purchased through the dealers.

- 8482-E1U
- 8482-E2U
- 8482-E3U
- 8836-E1U
- 8836-E2U
- 8841-E2U
- 8837-E3U
- 8840-E2U

Security, auditability, and control

Security and auditability features include:

- Power-on and privileged access password functions control access to the data and server setup program on the server.
- 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.
- Selectable boot sequence can be used to prevent unauthorized installation of software or removal of data from the diskette drive.

It is a customer's responsibility to ensure that the server is secure to prevent sensitive data from being removed.

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 learn how IBM Electronic Services can work for you, visit

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

Terms and conditions

IBM Global Financing: Yes

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

xSeries 206 (8482) and 306 (8836)

- System hardware — One year
- Options — One year

xSeries 236 (8841), 336 (8837), and 346 (8840)

- System hardware — Three years
- Options — One year

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.

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, 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. These products do not contain licensed internal code or licensed machine code.

Prices

Description	Machine type/ model	Part number	List price ⁵
xSeries 236 — Tower 2 x 3.2 GHz/800 MHz/ 2 MB L2 2 GB, ServeRAID™ 7K	8841-E2U	8841E2U	\$3,805
xSeries 336 — Rack 2 x 3.2 GHz/800 MHz/ 2 MB L2 2 GB, Redundant power	8837-E3U	8837E3U	4,035
xSeries 346 — Rack 2 x 3.2 GHz/800 MHz/ 2 MB L2 2 GB, ServeRAID 7K adapter	8840-E2U	8840E2U	4,159
xSeries 206 — Tower 2.4 GHz/400 MHz, 1 MB L2, 256 MB,	8482-E1U	8482E1U	445
xSeries 206 — Tower 3.2 GHz/800 MHz, 1 MB L2, 1 GB, 7T SATA RAID adapter	8482-E2U	8482E2U	1,329
xSeries 206 — Tower 3.2 GHz/800 MHz, 1 MB L2, 1 GB	8482-E3U	8482E3U	1,195
xSeries 306 — Rack 3.2 GHz/800 MHz, 1 MB L2, 2 GB, 36.4 GB SCSI HDD	8836-E1U	8836E1U	2,225
xSeries 306 — Rack 3.2 GHz/800 MHz, 1 MB L2, 2 GB, 7T SATA RAID adapter	8836-E2U	8836E2U	2,435
IBM 73 GB 10K rpm U320 SCSI HS HDD Option		30R5094	295
IBM 146 GB 10K rpm U320 SCSI HS HDD Option		30R5095	449
IBM 36 GB 15K rpm U320 SCSI HS HDD Option		30R5096	275
IBM 73 GB 15K rpm U320 SCSI HS HDD Option		30R5097	495

⁵ 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

Refer to following for complete ServicePac listing.

Refer to Hardware Announcement 105-016, dated January 18, 2005, for complete ServicePac listing.

xSeries 306 uni-processor server

Refer to Hardware Announcement 105-018, dated January 18, 2005, for complete ServicePac listing.

xSeries 236 SMP-capable server

Refer to Hardware Announcement 104-374, dated October 5, 2004, for complete ServicePac listing.

xSeries 336 SMP-capable server

Refer to Hardware Announcement 104-372, dated October 5, 2004, for complete ServicePac listing.

xSeries 346 SMP-capable server

Refer to Hardware Announcement 104-348, dated October 5, 2004, for complete ServicePac listing.

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

Maintenance service charges (ICA)

Alternative service (warranty service upgrades)

Description	Machine Type/Model	IOR 24 x 7
xSeries 206	8482-E1U 8482-E2U 8482-E3U	\$140
xSeries 306	8836-E1U 8836-E2U	160
xSeries 236	8841-E2U	689
xSeries 336	8837-E3U	450
xSeries 346	8840-E2U	600

Annual maintenance service

Description	Machine Type/Model	IOR 9 x 5	IOR 24 x 7
xSeries 206	8482-E1U 8482-E2U 8482-E3U	\$ 380	\$ 570
xSeries 306	8836-E1U 8836-E2U	380	570
xSeries 236	8841-E2U	1,300	1,950
xSeries 336	8837-E3U	380	570
xSeries 346	8840-E2U	700	1,050

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

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