



IBM System x3500 M3 servers feature fast 4C and 6C Intel Xeon processors with QPI and 4 MB, 8 MB, or 12 MB cache, delivering enhanced performance and scalability

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At a glance



The System x3500 M3 servers feature:

- Powerful 4C 2.13 GHz, 2.26 GHz and 2.4 GHz, 2.53 GHz 6C, 2.66 GHz 6C, or 3.06 GHz 6C, or 3.46 GHz 6C Intel® Xeon® processors with 8 MB or 12 MB cache, model dependent
- 4 GB of 1333 MHz DDR3 ECC system memory¹; 192 GB maximum
- Eight port SAS/SATA RAID controller
- One hot-swap 920-watt power supply fitted standard; optional hot-swap redundant power and cooling with hot-swap upgrade
- Integrated management module
- Six PCI-Express slots, and one PCI 32-bit/33 MHz slot
- Support for up to twenty-four 2.5-inch drives plus one standard optical drive or up to eight 3.5-inch drives plus one slim type optical drive
- A tape drive up to full-high
- Up to 24 TB² with 1 TB 2.5-inch HS NL SFF SAS/SATA disk storage
- Dual integrated 5709C Gigabit Ethernet controllers
- SVGA video with 16 MB memory
- Support for Remote Presence function

- 5U tower industry-standard models, rack mount special bid option
- Two USB front and four USB rear ports, one USB internal port, one com port, one d-sub connector, three 10/100/1000 RJ45 ports, one serial port

Overview

The System x3500 M3 servers include:

- Quickpath Interconnect (QPI) support for 4.8, 5.86, and 6.4 Gigabit transfers/second (GTS)
- Three hot-swap fans standard and three additional, with redundant power and cooling optional
- Six PCI-Express card slots, and one PCI 32-bit/33 MHz card slot
- Integrated dual Gigabit Ethernet and standard RAID -0, -1, -10 (upgradeable), or RAID 0, -1, -1E, -5, -50, with PCI-E adapter
- Optional RAID 6 or 60 via Advance Feature Key
- DDR3 ECC DIMMs, combined with an integrated ECC memory controller in core logic that corrects many soft and hard single-bit memory errors and minimizes disruption of service to LAN clients
- Integrated management module with Remote Presence function standard
- Light path diagnostics with a light path panel visible at front of chassis

Powered and scaled for business growth

- These servers contain one of the following
 - A 2.13 GHz/4.8 GTS-8 MB 4C Intel E5606, a 2.26 GHz/4.80 GTS-8 MB 4C E5607, a 2.4 GHz/5.86 GTS-12 MB 4C E5620, a 2.4 GHz/5.86 GTS- 12 MB 6C E5645, a 2.53 GHz/5.86 GTS- 12 MB 6C E5649, a 2.66 GHz/6.4 GTS- 12 MB 6C X5650, a 3.06 GHz/6.4 GTS-12 MB 6C X5675, or a 3.46 GHz/6.4 GTS-12 MB 6C X5690 Intel Xeon processor data bus to the system.
 - Data bus to the system delivering up to 10.6 Gb/s data transfer rate
- A 1333 MHz functional speed processor operations to memory and PCI bus
- 4 GB of high-speed, DDR3 - 1333 MHz ECC memory¹, 192 GB maximum using 16 GB memory DIMMs⁶
- High-speed, wide-bandwidth slots: Six PCI-E bus slots, and one PCI 32-bit/33 MHz bus slot
- Dual Broadcom 5709C Gigabit Ethernet ports and SAS/SATA support
- Standard SATA DVD-ROM and tape drive bay
- Eight standard SFF hot-swap drive bays and up to twenty-four 2.5-inch bays available using upgrade options with total HDD storage capacity of 24 TB, using 1 TB Near-Line SFF SAS/SATA HDD options

High availability for around-the-clock business demands

- Integrated systems management processor and support for the Remote Presence function
- Wake on LAN®
- ECC memory to detect double-bit errors and correct single-bit errors
- Integrated memory mirroring

Service and support perfected for business needs

- ServerGuide™ and IBM® Director
- IBM Server support and web support³
- Three-year, customer replaceable unit (CRU) and on-site service⁴, limited warranty⁵; optional warranty service upgrades available

¹ DDR3 1333 RDIMM memory. DDR3 memory stands for double data rate, which means up to twice the data is transferred compared to SDRAM in the same clock cycle.

² When referring to HDD or tape backup capacity, GB stands for 1,000,000,000 bytes and TB stands for 1,000,000,000,000 bytes. User capacity may vary depending on operating environments.

³ Some programs may not be available in all countries.

⁴ With respect to on-site service, you may be asked certain diagnostic questions before a technician is sent.

⁵ For information on the IBM Statement of Limited Warranty, contact your IBM representative or reseller. Copies are available upon request.

⁶ Sixteen DIMM slots that enable you to deploy up to 192 GB of DDR3 SDRAM Registered DIMM memory, with 12 slots populated with 16 GB DIMMs optional, 4 GB memory standard

Key prerequisites

- Monitor
- Keyboard (only in EMEA and Americas Group)
- Mouse (only in EMEA and Americas Group)

Planned availability date

March 15, 2011: System x3500 M3 - 7380

Description

Related options

IBM memory options

- 2GB (1x2GB, 1Rx8, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP UDIMM (49Y1403)
- 2GB (2Gb, 1Rx8, 1.35V) PC3L-10600R ECC LP RDIMM (49Y1405)
- 4GB (2Gb, 1Rx4, 1.35V) PC3L-10600R ECC LP RDIMM (49Y1406)
- 4GB (2Gb, 2Rx8, 1.35V) PC3L-10600R ECC LP RDIMM (49Y1407)
- 8GB 2Rx4 2Gbit PC3L-10600R LP RDIMM 1.35V Capable (49Y1397)
- 8GB 2Rx4 2Gbit PC3L-8500R LP RDIMM 1.35V Capable (49Y1398)
- 16GB (2Gb, 4Rx4, 1.35V) PC3L-8500R LP RDIMM (49Y1400)
- 2 GB (1 x 2 GB, 2R x 8, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM (49Y1392)
- 2 GB (1 x 2 GB, 1R x 4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM (49Y1393)
- 4 GB (1 x 4 GB, 2R x 4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM (49Y1394)

IBM processor options

- Addl Intel Xeon Processor E5603 4C 1.60GHz 4MB Cache (81Y5942) 1066Mhz 80w
- Addl Intel Xeon Processor E5606 4C 2.13GHz 8MB Cache (81Y5943) 1066MHZ 80w

- Addl Intel Xeon Processor E5607 4C 2.26GHz 8MB Cache (81Y5944) 1066MHz 80w
- Addl Intel Xeon Processor E5645 6C 2.40GHz 12MB Cache (81Y5945) 1333MHz 80w
- Addl Intel Xeon Processor E5649 6C 2.53GHz 12MB Cache (81Y5946) 1333MHz 80w
- Addl Intel Xeon Processor X5647 4C 2.93GHz 12MB Cache (81Y5947) 1066MHz 130w
- Addl Intel Xeon Processor X5675 6C 3.06GHz 12MB Cache (81Y5949) 1333MHz 95w
- Addl Intel Xeon Processor X5687 4C 3.60GHz 12MB Cache (81Y5950) 1333MHz 130w
- Addl Intel Xeon Processor X5690 6C 3.46GHz 12MB Cache (81Y5951) 1333MHz 130w

The 6C processors are ideal for data-intensive applications that range from data mining to evolving web services. Innovative technologies deliver processing speeds of up to 3.46 GHz/6.4 GTS with performance headroom for unpredictable server workloads and escalating computing needs.

Intel Xeon processors with 8 MB or 12 MB cache feature Intel NetBurst microarchitecture with Extended Memory 64 Technology (EM64T) that increases overall throughput via a faster system bus and enhanced cache. They also incorporate Enhanced Intel Speedstep (EIS) technology, allowing them to execute more than one thread per processor. These enhancements add up to faster response times, support for more simultaneous users, and increased transaction workloads.

These Intel DP processors with Quickpath Interconnect (QPI) support SMP applications when installed in the second processor slot of all System x3500 M3 models with similar processors.

Note: DDR3 ECC DIMMs, combined with an integrated ECC memory controller, correct many soft and hard single-bit memory errors, and minimize disruption of service to LAN clients.

Increased processor performance coupled with DDR memory enables you to retrieve and process information faster and more efficiently. DDR memory executes twice the number of operations per cycle than traditional SDRAM memory, effectively doubling the data exchange rate between memory and processors.

ServeRAID controllers supported

- ServeRAID-BR10i SAS/SATA Controller (provides RAID-0,-1,-1E) (44E8689)
- ServeRAID-MR10i SAS/SATA Controller (provides the advanced RAID levels) (43W4296)
- ServeRAID-MR10M SAS/SATA Controller (connection to external storage devices) (44E8825)
- ServeRAID™ M5015 SAS/SATA Controller (46M0829)
- ServeRAID M1015 SAS/SATA Controller (46M0831)
- ServeRAID M1000 Series Advance Feature Key (46M0832)
- ServeRAID M5014 SAS/SATA Controller (46M0916)
- ServeRAID M5000 Series Battery Kit (46M0917)
- ServeRAID M5000 Series Advance Feature Key (46M0930)

IBM Redundant Power and Cooling Option

This redundant power supply is designed to supply power for all systems. Power supply cooling are located in the fan cage.

High-performance server subsystems

System x3500 M3 servers are high-throughput, two-way, SMP-capable network servers with excellent performance scalability when you add memory and a second processor. They incorporate powerful Intel Xeon processors with 8 MB or 12 MB cache, model dependent. These flip-chip, land grid array 6 (FC-LGA6) processors feature advanced transfer caches integrated onto the processor core and run at the same clock speed as the processor core.

Two processor connectors are standard on the system board to support installation of a second processor. High-speed, 1333 MHz DDR3 RDIMMs are optimized for 1333 MHz processor-to-memory subsystem performance. The System x3500 M3 server uses the Intel Tylersburg DP chipset-36D to maximize throughput from processor to memory and system I/O buses.

Standard System x3500 M3 configurations

Model	Processor	Cache	Memory	SAS Interface	Mechanical
7380-B2x	2.13 GHz/4.8 GTS	8 MB	4 GB	HS SFF SAS/SATA	Tower
7380-44x	2.4 GHz/5.86 GTS	12 MB	4 GB	HS SFF SAS/SATA	Tower
7380-D2x	2.4 GHz/5.86 GTS	12 MB	4 GB	HS SFF SAS/SATA	Tower
7380-F2x	2.53 GHz/5.86 GTS	12 MB	4 GB	HS SFF SAS/SATA	Tower
7380-74x	2.66 GHz/6.4 GTS	12 MB	4 GB	HS SFF SAS/SATA	Tower
7380-G2x	3.06 GHz/6.4 GTS	12 MB	4 GB	HS SFF SAS/SATA	Tower
7380-H2x	3.46 GHz/6.4 GTS	12 MB	4 GB	HS SFF SAS/SATA	Tower

Note: For EMEA x=G

Additional features:

- Ability to upgrade to two-way SMP processing by adding a second processor of the same speed and processor type
- System board that contains 16 DIMM connectors supporting 1 GB, 2 GB, 4 GB, 8 GB, or 16 GB DDR3 1333 MHz SDRAMs memory for improved performance
 - Up to 192 GB of system memory (with 16 GB memory RDIMMs installed)
- High-speed, wide-bandwidth, PCI-E and PCI bus slots support
 - Slot 1 : PCIe2 x8 : PCI-E x8 slot with x8 lanes (Gen2, from IOH)
 - Slot 2 : PCIe2 x16^{5,7} : PCI-E x16 slot with x8 lanes (Gen2, from IOH)
 - Slot 3 : PCIe2 x8^{2,7} : PCI-E x8 slot with x4 lanes (Gen2, from IOH)
 - Slot 4 : PCIe2 x8^{2,7} : PCI-E x8 slot with x4 lanes (Gen2, from IOH)
 - Slot 5 : PCIe2 x8 : PCI-E x8 slot with x8 lanes (Gen2, from IOH)
 - Slot 6 : PCI-32 : PCI-32 slot with 32-bit/33 MHz (from ICH-10)
 - Slot 7 : PCIe x8^{2,7} : PCI-E x8 slot with x4 lanes (Gen1, from ICH-10)
- Eight-port SAS/SATA RAID controller that supports high-speed internal storage solutions
- Dual full-duplex, Gigabit Ethernet controllers that speed network communications to LAN clients

⁷ GHz and GTS denote the internal and/or external clock speed of the microprocessor only, not application performance. Many factors affect application performance.

² When referring to HDD or tape backup capacity, GB stands for 1,000,000,000 bytes and TB stands for 1,000,000,000,000 bytes. User capacity may vary depending on operating environments.

⁵ For information on the IBM Statement of Limited Warranty, contact your IBM representative or reseller. Copies are available upon request.

The x3500 M3 subsystems are tuned to provide solid system throughput from processor, to memory, to bus, to disk-intensive I/O. These features, combined with

SMP capability, make the System x3500 M3 server an excellent choice for a stand-alone or clustered general-business application, file, and print server.

High-availability and serviceability features

- Redundant cooling includes:
 - Three hot-swap fans (single replaceable unit) with one hot-swap 920 W power supply option
- One hot-swap power supply standard, and one optional redundant power supply to support robust high-availability applications
- Hot-swap HDD bays with SAS backplane
- Standard SAS controller to support up to eight internal hot-swap SATA or SAS HDD devices
- DDR3 ECC RDIMMs, combined with an integrated ECC memory controller in core logic, to correct many soft and hard single-bit memory errors (using memory mirroring), while minimizing disruption of services to LAN clients
- Memory hardware scrubbing to correct soft memory errors automatically without software intervention
- 12 MB cache processors to improve data integrity and help reduce downtime
- PFA on processors and memory to help alert the system administrator of an imminent component failure
- Six hot-swap redundant system cooling fans to cool system and enable replacement without powering down the server
- Integrated management module that supports:
 - Fan monitoring and control
 - Power supply monitoring
 - Temperature monitoring
 - Voltage monitoring
 - Power on/off, reset sequencing
 - LED controls (light path diagnostics support)
 - IPMI capability that allows you to accept commands and send status
 - Remote firmware update
 - Automatic server restart (ASR)⁸
 - Numeric error logging

⁸ The ASR function is currently supported on Microsoft® Windows® 2000 and Windows 2003.

- Information LED panel to give visual indications of system health
- Light path diagnostics and onboard diagnostics for an LED map that provide error codes which are explained in the hardware maintenance manual
- Easy access to system board, adapter cards, processor, and memory
- CPU failure recovery in SMP configurations
 - Generates alerts error logs

Expandability and growth

The System x3500 M3 server is a 5U tower configuration engineered to meet the compactness of a 5U rack drawer. SVGA video, SAS/SATA, and full-duplex Gigabit Ethernet are integrated on the system board.

Features include:

- System memory expansion to 192 GB (with 16 GB memory RDIMMs installed in 12 DIMM slots)
- Seven adapter card slots: six PCI-Express, and one 32-bit/33 MHz card slot

- Eleven or 19 drive bays:
 - Eight 2.5-inch, half-high hot-swap drive bays; three 5.25 inch, half-high device bays
 - Internal support for high performance (up to 15,000 rpm) for up to eight SAS HDDs and a high-capacity tape backup device
 - Up to 24 TB, using 1 TB 2.5-inch NL SFF SAS/SATA hot-swap HDDs²

These servers can handle applications for today and expand for future growth.

² When referring to HDD or tape backup capacity, GB stands for 1,000,000,000 bytes and TB stands for 1,000,000,000,000 bytes. User capacity may vary depending on operating environments.

Systems management

Integrated management module controller (IMM)

The System x3500 M3 server includes an integrated management module controller that provides industry-standard Intelligent Platform Management Interface (IPMI) 2.0-compliant systems management. The IMM comes standard, and has a dedicated onboard Ethernet port for access. IMM can be accessed via software that is compatible with IPMI 2.0 (such as xCAT).

- Features and benefits
 - Monitoring of system and CMOS battery voltages.
 - Monitoring of system temperatures.
 - Fan speed control.
 - Fan tachometer monitor.
 - Power good signal monitor.
 - System ID and planar version detection.
 - System power control.
 - System reset control.
 - NMI and SMI detection and generation (System Interrupts).
 - Serial port text console redirection.
 - System LED control (power, HDD, activity, alerts, and heartbeat).
 - An embedded web server gives you remote control from any standard web browser. No additional software is required on the remote administrator's workstation.
 - For users who are accustomed to a command-line interface (CLI), the ability for the administrator to use the CLI from a Telnet session to perform some of the functions that can be performed from the web server.
 - Secure Sockets Layer (SSL) and Lightweight Directory Access Protocol (LDAP).
 - Built-in LAN and serial connectivity that supports virtually any network infrastructure.
 - Multiple alerting functions that warn systems administrators of potential problems through email, IPMI PETS, and SNMP.

IBM Director

x3500 M3 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 use rich security features to access and manage physically dispersed IT assets more efficiently over the Internet.

Potentially reduce costs through:

- Reduced downtime
- Increased productivity of IT personnel and end users

- Reduced service and support costs

IBM Director provides integration into leading workgroup and enterprise systems management environments, via upward integration modules. The advanced management capabilities built into System x® servers can be accessed from:

- Tivoli® Enterprise and Tivoli NetView®
- Computer Associates CA Unicenter TNG Framework
- NetIQ
- IMM Patrol
- Microsoft SMS
- Intel LANDesk Management Suite
- HP OpenView Network Node Manager

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 integrate into the Director framework and work with the integrated systems management processor to access environmental system information.

The processor supervises the operating system status and the following system components, and alerts the IT administrator to critical errors:

- Fan monitoring and control; status and presence are monitored. Fan speed is controlled and automatically increased to maintain system cooling if temperature thresholds are exceeded. An alert is generated if:
 - Failure occurs or is predicted.
 - Installation or removal occurs.
- Power supply condition changes for the power supply.
 - CPU temperatures are monitored. An alert is generated if (preset) temperature warning thresholds are exceeded or restored, and if critical temperature thresholds are exceeded. Soft and hard system shutdowns are automatically initiated if critical temperature thresholds are exceeded.
 - CPU and power subsystem voltage thresholds are monitored.
 - Light path diagnostics LEDs are illuminated in case of key component errors or failures to enable quick local diagnostics and servicing.
 - Flash update enables updates to the integrated systems management processor firmware.

The IT administrator has comprehensive, virtual on-site control of System x servers and can remotely:

- Access the server regardless of the status
- Inventory and often 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, SAS/SATA setup, and 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
- Memory
- Define automated actions, such as:
 - Send email or a page to an administrator
 - Execute a command or program
 - Deliver an error message to the Director console
- Monitor flash BIOS
- Monitor and graph the utilization of server resources, such as:
 - Memory
 - Processor
 - HDDs
- Identify potential performance bottlenecks and react to prevent down time
- Monitor, manage, and configure RAID subsystems without taking them offline

Integrated System x Adapter for iSeries , when supported

The System x3500 M3 server is the newest server to be attached to an IBM i5 or iSeries® server. A new Integrated System x Adapter (1519-200) can be attached to an x3500 M3 to connect to an i5 or iSeries server. You can connect the iSeries family of servers to provide virtual storage, virtual Ethernet, and tape sharing to an attached x3500 server. You can easily integrate security, backup, and operations of a Microsoft Windows and OS/400® environment.

Advanced Configuration and Power Interface (ACPI)

This open industry specification defines a flexible and extensible hardware interface for the system board. Software designers use this specification to integrate power management features throughout a computer system, including hardware, the operating system, and application software. This integration enables Windows to determine which applications are active, and handles all of the power management resources for computer subsystems and peripherals.

World-class support tools and programs

The System x3500 M3 server includes 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.

- Warranty: Three years, customer replaceable unit (CRU) and on-site service, limited warranty; optional warranty service upgrades available.
- The ServerProven⁹ program enables you to configure your server confidently with various devices and operating systems. This web-based program provides compatibility information from actual testing of the System x3500 M3 server with various adapters and devices.
- The ServerGuide CD includes utilities and drivers for assisted installation of popular network operating systems. Also included is a Broadcom Ethernet CD.
- Electronic support on the web provides additional support in an easy-to-use format.

⁹IBM makes no warranties, expressed or implied, regarding non-IBM products and services that are ServerProven®, including but not limited to implied warranties of merchantability and fitness for a particular purpose. These products are offered and warranted solely by third parties.

Product positioning

The System x3500 M3 server is positioned above the entry, two-way x3400 M3. These servers contain additional fault tolerance through PCI-Express, and support for PCI-X. They also feature enhanced systems-management control. As universal servers, they are offered in flexible tower models and can be rack-mounted using a tower-to-rack conversion kit (special bids only).

With these servers, two segments can be combined into one departmental and mission-critical space. The System x3500 M3 server is a compact 5U, two-way, SMP-capable Xeon processor-based platform designed with integrated high-availability features for mainstream network server applications.

These servers are ideal for clients who require up to two-way 3.46 GHz/6.4 GTS processing power, significant memory, high availability, and large data storage scalability. High-speed memory, 64-bit and 32-bit PCI buses, eight SAS/SATA hot-swap plus eight optional drive bays, and a device bay for high-capacity tape drives make these servers ideal for mainstream network computing.

Product number

Description	Part Number
2GB (1x2GB, 1Rx8, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHZ LP UDIMM	49Y1403
Intel Xeon Processor E5603 4C 1.60GHz 4MB Cache 1066MHZ 80w	81Y5942
Intel Xeon Processor E5606 4C 2.13GHz 8MB Cache 1066MHZ 80w	81Y5943
Intel Xeon Processor E5607 4C 2.26GHz 8MB Cache 1066MHZ 80w	81Y5944
Intel Xeon Processor E5645 6C 2.40GHz 12MB Cache 1333MHZ 80w	81Y5945
Intel Xeon Processor E5649 6C 2.53GHz 12MB Cache 1333MHZ 80w	81Y5946
Intel Xeon Processor X5647 4C 2.93GHz 12MB Cache 1066MHZ 130w	81Y5947
Intel Xeon Processor X5675 6C 3.06GHz 12MB Cache 1333MHZ 95w	81Y5949
Intel XeonProcessor X5687 4C 3.60GHz 12MB Cache 1333MHZ 130w	81Y5950
Intel XeonProcessor X5690 6C 3.46GHz 12MB Cache 1333MHZ 130w	81Y5951

Notes:

- All geographies except EMEA use the combined machine type/model number as the ordering number.
- All models are GAV except some AP models.

Description	Part number
IBM system x3500 M3	7380 B2G 7380B2G
	7380 D2G 7380D2G
	7380 F2G 7380F2G
	7380 G2G 7380G2G
	7380 H2G 7380H2G
	7380 44G 738044G
	7380 74G 738074G

Model conversions

None

Feature conversions

None

Reference information

For additional information on CPUs and memory, refer to Hardware Announcement [ZG10-0108](#), dated March 16, 2010.

Publications

The following publications and CD-ROMs are shipped with the x3500 M3 servers:

- The *System x3500 M3 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 System x3500 M3 server.
- ServerGuide CD contains drivers to support the System x3500 M3 servers. In addition, it includes a set of easy-to-use utilities for assisted installation via CD of several popular network operating systems.
- Publications CD and a Broadcom Ethernet Driver CD.
- 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 *x3500 M3 Installation Guide* and *Hardware Maintenance Manual*

The IBM Systems Information Center provides you with a single information center where you can access product documentation for IBM systems hardware, operating systems, and server software. Through a consistent framework, you can efficiently find information and personalize your access. The IBM Systems Information Center is at

<http://publib14.boulder.ibm.com/infocenter/systems>

IBM Publications Center Portal

<http://www.ibm.com/shop/publications/order>

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. A large number of publications are available online in various file formats, which can currently be downloaded free of charge.

Supplemental information and publications

- System x3500 M3 Installation Guide
- Documentation CD:
 - Option Installation Guide
 - Installation Guide
 - User's Guide
 - Hardware Maintenance Manual and Troubleshooting Guide

All of these publications are available at

<http://publib14.boulder.ibm.com/infocenter/systems>

Displayable softcopy publications

The product books are offered in displayable softcopy form. The displayable manuals are part of the basic machine-readable material at no charge. The files are shipped on the CD-ROM.

These displayable manuals can be used with the BookManager® READ licensed programs in any of the supported environments. Terms and conditions for use of the machine-readable files are shipped with the files.

Source file publications

The product books are offered in source file form as a no-charge feature. The source files are shipped on the same media type as the basic machine-readable material.

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Services

Global 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

Specified operating environment

Physical specifications

The x3500 M3

Note: U.S., Latin America, and Canada x=U; Brazil x=P; Argentina x=T; Europe, Middle East, and Africa x=G.

	7380-B2x	7380-44x	7380-D2x
Processor	Xeon 4C E5606	Xeon 4C E5620	Xeon 6C E5645
Internal speed	2.13 GHZ	2.4 GHZ	2.4 GHZ

External speed	4.8 GTS	5.86 GTS	5.86 GTS
Number standard	1	1	1
Maximum	2	2	2
L3 cache (full-speed)	8 MB	12 MB	12 MB
Memory (PC3-10600-999)	4 GB ECC 1 x 4 GB 2Gb,1Rx8, 1.35V No Chipkill	4 GB ECC 1 x 4 GB 2Gb,1Rx8, 1.35V No Chipkill	4 GB ECC 1 x 4 GB 2Gb,1Rx8, 1.35V No Chipkill
DIMM sockets	16	16	16
Capacity	192 GB ⁶	192 GB ⁶	192 GB ⁶
Video	SVGA	SVGA	SVGA
memory	16 MB	16 MB	16 MB
SAS/SATA RAID controller	M1015	M1015	M1015
Connector internal	2	2	2
Connector external	0	0	0
HDD	open-bay	open bay	open bay
Total bays	11	11	11
5.25-in	3	3	3
Hot-swap	8	8	8
Internal capacity	4.8 TB ¹⁰	4.8 TB ¹⁰	4.8 TB ¹⁰
Bays available	10	10	10
5.25 in	2	2	2
Hot-swap	8 ¹⁰	8 ¹⁰	8 ¹⁰
Total PCI slots	7	7	7
PCI-E slots	6	6	6
32-bit/33 MHz	1	1	1
Slots available	5	5	5
Integrated management	Standard ¹¹	Standard ¹¹	Standard ¹¹
Ethernet controllers	10/100/1000 Mb	10/100/1000 Mb	10/100/1000 Mb
Ultraslim SATA DVD	1	1	1
Power supply	920 W ¹²	920 W ¹²	920 W ¹²
Number standard	1	1	1
Hot-swap	Yes	Yes	Yes
Redundant power	Optional	Optional	Optional
	7380-F2x	7380-74x	7380-G2x
Processor	Xeon 6C E5649	Xeon 6C X5650	Xeon 6C X5675
Internal speed	2.53 GHZ	2.66 GHZ	3.06 GHZ
External speed	5.86 GTS	6.4 GTS	6.4 GTS
Number standard	1	1	1
Maximum	2	2	2
L3 cache (full-speed)	12 MB	12 MB	12 MB
Memory (PC2-5300-667)	4 GB ECC 1 x 4 GB 2Gb,1Rx8, 1.35V No Chipkill	4 GB ECC 1 x 4 GB 2Gb,1Rx8, 1.35V No Chipkill	4 GB ECC 1 x 4 GB 2Gb,1Rx8, 1.35V No Chipkill
DIMM sockets	16	16	16
Capacity	192 GB ⁶	192 GB ⁶	192 GB ⁶
Video	SVGA	SVGA	SVGA
memory	16 MB	16 MB	16 MB
SAS/SATA RAID controller	M5014	M5015	M5015
Channels	8	8	8
Connector internal	2	2	2
Connector external	0	0	0
HDD	open-bay	open bay	open bay
Total bays	11	11	11
5.25-in	3	3	3
Hot-swap	8	8	8
Internal capacity	4.8 TB ¹⁰	4.8 TB ¹⁰	4.8 TB ¹⁰
Bays available	10	10	10
5.25 in	2	2	2
Hot-swap	8 ¹⁰	8 ¹⁰	8 ¹⁰
Total PCI slots	7	7	7
PCI-E slots	6	6	6
32-bit/33 MHz	1	1	1
Slots available	5	5	5
Integrated management	Standard ¹¹	Standard ¹¹	Standard ¹¹
Ethernet controllers	10/100/1000 Mb	10/100/1000 Mb	10/100/1000 Mb

Ultraslim SATA DVD	1	1	1
Power supply	920 W ¹²	920 W ¹²	920 W ¹²
Number standard	1	1	1
Hot-swap	Yes	Yes	Yes
Redundant power	Optional	Optional	Optional

7380-H2x

Processor	Xeon 6C X5690
Internal speed	3.46 GHz
External speed	6.4 GTS
Number standard	1
Maximum	2
L3 cache (full-speed)	12 MB
Memory (DDR3 1333)	4 GB ECC
FBD	1 x 4 GB 2Gb,1Rx8, 1.35V No ChipKill
DIMM sockets	16
Capacity	192 GB ⁶
Video	SVGA
memory	16 MB
SAS/SATA RAID controller	M5015
Channels	8
Connector internal	2
Connector external	0
HDD	open-bay
Total bays	11
5.25-in	3
Hot-swap	8
Internal capacity	4.8 TB ¹⁰
Bays available	10
5.25 in	2
Hot-swap	8
Total PCI slots	7
64-bit/133 MHz	0
64-bit/100 MHz	0
PCI-E slots	6
32-bit/33 MHz	1
Slots available	5
Integrated management	Standard ¹¹
Ethernet controllers	10/100/1000 Mb
Ultraslim SATA DVD	1
Power supply	920 W ¹²
Number standard	1
Hot-swap	Yes
Redundant power	Optional

⁶ Sixteen DIMM slots that enable you to deploy up to 192 GB of DDR3 SDRAM Registered DIMM memory, with 12 slots populated with 16 GB DIMMs optional, 4 GB memory standard. 192 GB maximum is based on 12 x 16 GB RDIMMs, which will be available following system Planned Availability.

¹⁰ Drive bays provide 4.8 TB using 600 GB SFF SAS HDD options, Special bid models support up to 24 2.5-inch bays with an additional 9.6 TB of HDD capacity for a total of 14.4 TB. 24 TB total capacity using 1 TB 2.5-inch NL SFF SAS/SATA HDDs (available second quarter, 2011). For the latest information on supported HDD options, visit

<http://www.ibm.com/servers/eserver/serverproven/compat/us/>

¹¹ These systems contain an integrated management module that provides a set of monitoring and alert features. Refer to the [Description](#) section for details.

¹² The 920-watt redundant power supply is designed to support all systems.

SATA DVD drive characteristics¹³

- Formatted capacity: 650 MB
- Average access time including latency: Less than 85 ms
- Sustained data transfer rate: 3,000 to 7,200 KB/s
- Burst data transfer rate
 - ATA PIO mode 4: 16.6 MB/sec
 - ATA Multiword DMA Mode 2: 16.6 MB/sec
- Technology: Full constant angular velocity (CAV)

¹³ Actual playback speed varies and is often less than maximum.

Video subsystem

- Matrox G200 Video Graphics Controller
- Integrated on planar and connected to the PCI bus
- SVGA compatible video controller (Matrox G200)
- DDR2-250MHz SDRAM video memory controller
- Video memory is not expandable in this system
- One DVI (Digital Video Interface) is not used

Supported video mode capabilities for the SVGA PCI controller

Resolution Vertical	Refresh Rate	Color Depth
1600 x 1200	60, 65, 70, 75, 85	8, 16
1680 x 1050	60, 75, 85	8, 16
1440 x 900	75, 85	8, 16
1440 x 900	60	8, 16, 32
1280 x 1024	75, 85	8, 16
1280 x 1024	60	8, 16, 32
1152 x 864	60	8, 16, 32
1024 x 768	60, 70, 75, 85	8, 16, 32
800 x 600	56, 60, 72, 75, 85	8, 16, 32
640 x 400	60, 72, 75, 85	8, 16, 32

Notes:

- The grayed ones are supported only if the monitor contains this resolution in his EDID.
- The connector is a 15-pin D-shell; a video cable of 1.8 meters is the maximum supported length.

Dimensions

Tower

- Width: 218.0 mm (8.6 in)
- Depth: 767.0 mm (30.2 in)
- Height: 440.0 mm (17.3 in)
- Weight: 27.40 kg (60.4 lb) (minimum configuration)
- Weight: 38.90 kg (85.6 lb) (maximum configuration)

Rack

- Width: 424.0 mm (16.7 in)
- Depth: 702.0 mm (27.6 in)
- Height: 218.0 mm (8.6 in)

- Weight: 26.20 kg (57.7 lb) (minimum configuration)
- Weight: 37.20 kg (82.0 lb) (maximum configuration)

Electrical

- 100 to 240 V ac; 50 - 60 Hz; 11 - 5.5 A
- Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.60 kVA
 - Maximum configuration: 1.10 kVA
- Btu output: ship configuration - 2013 Btu/hr (590 watts)
- Btu output: full configuration - 3610 Btu/hr (1056 watts)
- Acoustical noise emission levels:
 - 5.5 bels (idling)
 - 6.0 bels (operating)

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.

These servers are intended for use as floor-standing servers and are tested and designed to operate in a horizontal position. These servers can also be used as a rack model with the optional rack install kit.

Standards

These systems support or comply with the following standards:

- Multiprocessor Specification (MPS) 1.4
- Peripheral Component Interconnect (PCI) specification 2.2
- Peripheral Component Interconnect (PCI-X) specification v2.1
- PCI-Express specification 1.0
- Hardware-enabled to meet the International Organization for Standardization (ISO) 9241, Part 3

Equipment approvals and safety

- CE Mark (EN55022 Class A, EN60950-1, EN55024, EN61000-3-2, and EN61000-3-3)
- CISPR 22, Class A
- TUV-GS EN60950-1 /IEC60950-1,EK1-ITB2000)
- Russia/GOST ME01, IEC-60950-1, GOST R 51318.22-99, GOST R 51318.24-99, GOST R 51317.3.2-99, GOST R 51317.3.3-99
- IEC 60950-1 (CB Certificate and CB Test Report)

Operating environment

- Environment temperature:
 - Server on: 10° C to 35° C (50° F to 95° F); altitude: 0 to 915 m (3,000 ft)
 - Server on: 10° C to 32° C (50° F to 90° F); altitude: 915 m (3,000 ft) to 2,134 m (7,000 ft)
 - Server on: 10° C to 28° C (50° F to 83° F); altitude: 2,134 m (7,000 ft) to 3,050 m (10,000 ft)
 - Server off: 5° C to 45° C (41.0° F to 113° F)
 - Shipping: -40° C to 60° C (-40° F to 140° F)
- Humidity:
 - Server on: 20% to 80%, Max. Dew Point 21° C, Max. rate of change 5° C/hr

- Server off: 8% to 80%, Max. Dew Point 27° C
- Maximum altitude: 2,134 m (7,000 ft)

Hardware requirements

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

- Keyboard (only in EMEA and Americas Group)
- Mouse (only in EMEA and Americas Group)
- HDD
- Display (C117, T115, T117 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 (only in EMEA and Americas Group)
- Mouse (only in EMEA and Americas Group)
- HDD
- 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

Programming requirements

The following network operating systems are supported in the x3500 M3 servers:

- Microsoft
 - Windows Server 2008, (32 bit and EM64T)
 - Windows Server 2008, R2
 - Windows Small Business Server 2008 (Premium and Standard)
- VMware
 - VMware ESX Server 4.0
 - VMware ESXi Server 4.0
 - VMware ESX Server 4.1
 - VMware ESXi Server 4.1
- Linux®
 - SUSE Linux Enterprise Server 10 for AMD64/EM64T
 - SUSE Linux Enterprise Server 10 with Xen for AMD64/EM64T
 - SUSE Linux Enterprise Server 10 for x86
 - SUSE Linux Enterprise Server 11 for x86
 - SUSE Linux Enterprise Server 11 for AMD64/EM64T
 - SUSE Linux Enterprise Server 11 with Xen AMD64/ EM64T
 - Red Hat Enterprise Linux 5 Server Edition
 - Red Hat Enterprise Linux 5 Server x64 Edition
 - Red Hat Enterprise Linux 5 Server with Xen x64 Edition
 - Red Hat Enterprise Linux 6 Server Edition
 - Red Hat Enterprise Linux 6 Server x64 Edition

Note: Certification is planned for these operating systems. For additional information on support, certification, and versions on network operating systems, visit

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

Compatibility

The System x3500 M3 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 x3500 server and to maintain compatibility with many current software programs.

To view detailed information on the Internet about IBM and non-IBM devices, adapters, software, and network operating systems supported with x3500 servers, visit

<http://www.ibm.com/servers/eserver/serverproven/compat/us/>

Contact your IBM representative, IBM Business Partner, or refer to the *IBM Sales Manual* for information on the compatibility of hardware and software for x3500 servers. The *Sales Manual* is updated periodically as new features and options are announced that support these servers.

Limitations

- The System x3500 M3 servers support a maximum of 192 GB⁶ of system memory when you add a 16 GB memory RDIMMs in each of 12 DIMM slots. All supported system memory is addressable through direct memory access (DMA). The x3500 M3 server supports 1 GB, 2 GB, 4 GB, 8 GB, and 16 GB memory synchronized with processor FSB bandwidth. DIMMs must be installed in matched pairs. Refer to the [Planning information](#) section for supported memory options.
- Mixing microprocessors of different speeds or cache size is not supported.
- Use the version of ServerGuide 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.

User group requirements

This announcement satisfies or partially satisfies requirements from one or more of the worldwide user group communities. Groups include COMMON, COMMON Europe, Guide Share Europe (GSE), InterAction (Australia/New Zealand), Japan Guide Share (JGS), and SHARE Inc.

Planning information

Customer responsibilities

Customer setup

The x3500 M3 servers are designated as customer setup. Customer setup instructions are shipped with systems and options.

Bay configuration

The server contains 11 drive bays. The four 3.5-inch hot-swap bays or the eight 2.5-inch bays are located on the lower half of System x3500 tower models. These bays are ready for various supported hot-swap HDD drive option installation. The three bays on the top portion of tower models are designed primarily for removable media devices. One bay contains the DVD-ROM drive, while the remaining two 5.25-inch half-high bays can support tape backup or other devices.

SAS cabling considerations

The x3500 M3 server contains two backplanes. One backplane supports eight 2.5-inch SAS/SATA drives. One backplane is connected with ServeRAID-BR10i controller through two miniSAS cables.

ServeRAID-BR10i is standard offering on system.

The DVD is SATA attached.

External SAS attachment

In the configurations where an external SAS device attachment is required, a support SAS adapter is required.

External serial attachment

To attach an external serial cable RS-232, use the serial connector at the rear of the system.

Processor upgrades

The following processor upgrades are supported:

- Addl Intel Xeon Processor E5603 4C 1.60GHz 4MB Cache (81Y5942) 1066Mhz 80w
- Addl Intel Xeon Processor E5606 4C 2.13GHz 8MB Cache (81Y5943) 1066MHz 80w
- Addl Intel Xeon Processor E5607 4C 2.26GHz 8MB Cache (81Y5944) 1066MHz 80w
- Addl Intel Xeon Processor E5645 6C 2.40GHz 12MB Cache (81Y5945) 1333Mhz 80w
- Addl Intel Xeon Processor E5649 6C 2.53GHz 12MB Cache (81Y5946) 1333MHz 80w
- Addl Intel Xeon Processor X5647 4C 2.93GHz 12MB Cache (81Y5947) 1333MHz 130w
- Addl Intel Xeon Processor X5675 6C 3.06GHz 12MB Cache (81Y5949) 1066MHz 95w
- Addl Intel Xeon Processor X5687 4C 3.60GHz 12MB Cache (81Y5950) 1333MHz 130w
- Addl Intel Xeon Processor X5690 6C 3.46GHz 12MB Cache (81Y5951) 1333MHz 130w

Supported memory options

The following memory options are supported:

- 2GB (2Gb, 1Rx8, 1.35V) PC3L-10600R ECC LP RDIMM (49Y1405)
- 4GB (2Gb, 1Rx4, 1.35V) PC3L-10600R ECC LP RDIMM (49Y1406)
- 4GB (2Gb, 2Rx8, 1.35V) PC3L-10600R ECC LP RDIMM (49Y1407)
- 8GB 2Rx4 2Gbit PC3L-10600R LP RDIMM 1.35V Capable (49Y1397)
- 8GB 2Rx4 2Gbit PC3L-8500R LP RDIMM 1.35V Capable (49Y1398)
- 16GB (2Gb, 4Rx4, 1.35V) PC3L-8500R LP RDIMM (49Y1400)
- 2GB (1x2GB, 2Rx8, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP (49Y1392) RDIMM
- 2GB (1x2GB, 1Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP (49Y1393) RDIMM
- 4GB (1x4GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP (49Y1394) RDIMM

Power supply requirements

These models contain one 920-watt power supply, which is a hot-swap capable supply. When not using redundancy, one hot-swap supply has enough power to supply a fully loaded box. If redundancy is required, you should install additional power supplies to ensure sufficient power will be available. A fault light illuminates when a power supplies fails.

Optional rack installations

These models are optionally installable as rack units and are designed so they can be installed in an industry-standard 19-inch rack cabinet such as the NetBAY42 or NetBAY25. The x3500 M3 server system requires a rack mount kit for rack installation. In addition, it can also be installed in the deeper NetBAY42 ER.

If you choose not to use an IBM rack, the cabinet must meet EIA-310-D standards for mounting flanges and hole clearances with front to rear mounting of 70 - 73 cm (27.5 - 28.5 in). The rack must provide sufficient room in front of the forward EIA flange to allow for bezel attachment. The standard for 310-D suggests 49 mm (1.9 in) clearance. It must also provide adequate room at the rear of the rack, behind the rear flange for cable management; the System x3500 M3 server requires approximately 16.6 cm (6.5 in) in this space.

The rack should 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 is 22.7 kg (50 lb). Finally, the rack must provide proper stabilization so that the rack does not become unstable when servers are pulled out of service.

Cable orders

Dual Broadcom 5709C 10/100/1000 Mbps, full-duplex Ethernet PCI controllers, standard with the x3500 M3 server, are connected directly to two independent RJ-45 connectors. The RJ-45 connectors provide a 10BaseT, 100Base-TX, or 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 System x3500 M3 server requires about 30 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

Product	Package Description	Boxes
System x3500 M3	System Unit Carton	1
	Contents:	
	System Unit	
System x3500 M3	Country Kit Carton	
	Contents:	
	M/T 7380 x3500 M3 Ship Group	
	- Important Notices Flyer	
	- M/T 7380 x3500 M3 Doc Browser CD	

- Director V5.20.3 CD
- Ethernet V T4.6.13 CD

The system is shipped as a single package. The country kit carton is contained inside the top portion of the system unit carton.

Supplies

For end users

IBM System x3500 M3 servers can be purchased through the dealers around the world.

Security, auditability, and control

Security and auditability features include:

- Power-on and remote-control password functions provide controls of who has access to the data and server setup program on the server.

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.

Global Technology Services

Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings, for the efficient installation, implementation, and/or integration of this product.

IBM Electronic Services

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used 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 Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

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

Terms and conditions

To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or IBM.

Warranty period

- System x3500 7380 - Three years
- Optional features - One year

An IBM part or feature installed during the initial installation of an IBM machine is subject to a full warranty effective on the date of installation of the machine. An IBM part or feature which replaces a previously installed part or feature assumes the remainder of the warranty period for the replaced part or feature. An IBM part or feature added to a machine without replacing a previously installed part or feature is subject to a full warranty effective on its date of installation. Unless specified otherwise, the warranty period, type of warranty service and service level of a part or feature is the same as the machine it is installed in.

The following has been designated as a consumable or supply item and is, therefore, not covered by this warranty:

- RAID battery

Warranty service

If required, IBM provides repair or exchange service, depending on the type of warranty service specified below for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. 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.

The type of service is Customer Replaceable Unit (for example, keyboard, mouse, speaker, memory, or hard disk drive) Service and On-site Service.

Customer Replaceable Unit (CRU) Service

IBM provides a replacement 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. A CRU is designated as being either a Tier 1 (mandatory) or a Tier 2 (optional) CRU. Installation of Tier 1 CRUs, as specified in this announcement, 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 below, On-site Service.

Based upon availability, a CRU will be shipped for next-business-day (NBD) 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 15 days of your receipt of the replacement.

The following parts are designated as CRUs:

- System foot kit (rear)
- System foot kit (front)
- Blank filler
- EMC shield kit
- SS EMC plate kit
- EMC shield 4x3.5
- 3.5-inch HS EMC kit
- Cable bracket asm
- Hard disk drive
- Hot-swap fan cage asm
- Hot-swap power supply
- Fan cage/guide arm asm
- Lift handle kit
- Opt wheel USB
- Cover Top/side
- Side cover asm
- Bottom cover
- Front bezel asm
- 120 mm Fan aasm
- DDR3-1333 Memory
- Memory expansion card
- Optical drive
- PCI adapter
- PCI divider
- Power cord
- CMOS battery
- Service label
- Service processor
- Rack bezel asm
- Air duct
- Key card asm
- W2008 CDs
- Keyboards
- USB/Lightpath cable bracket asm

On-site Service

This provides On-site Repair, 9 hours per day, Monday through Friday excluding holidays, NBD response. IBM or your reseller 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.

International Warranty Service

International Warranty Service (IWS) is available in selected countries or regions.

The warranty service type and the service level provided in the servicing country may be different from that provided in the country in which the machine was purchased.

Under IWS, warranty service will be provided with the prevailing warranty service type and service level available for the IWS-eligible machine type in the servicing country, and the warranty period observed will be that of the country in which the machine was purchased.

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

<http://www-304.ibm.com/jct01004c/systems/support/supportsite.wss/warrantyform?brandind=5000008>

For more information on IWS, refer to Services Announcement [ZS01-0168](#), dated September 25, 2001.

Licensing

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

IBM hourly service rate classification

Two

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.

Licensed Machine Code

IBM Machine Code is licensed for use by a customer on the IBM machine for which it was provided by IBM under the terms and conditions of the IBM License Agreement for Machine Code, to enable the machine to function in accordance with its specifications, and only for the capacity authorized by IBM and acquired by the customer. You can obtain the agreement by contacting your IBM representative or visiting

http://www-1.ibm.com/servers/support/machine_warranties/machine_code.html

IBM may release changes to the Machine Code. IBM plans to make the Machine Code changes available for download from the IBM System x technical support website

<http://www-304.ibm.com/systems/support>

If the machine does not function as warranted and your problem can be resolved through your application of downloadable Machine Code, you are responsible for downloading and installing these designated Machine Code changes as IBM specifies. If you would prefer, you may request IBM to install downloadable Machine Code changes; however, you may be charged for that service.

Prices

For all local charges, contact your IBM representative.

ServicePac information

ServicePac® service upgrades

The announced products are also eligible for ServicePac warranty upgrades. ServicePacs provide a higher level of service than that provided under the base IBM Machine Warranty.

These ServicePacs can be purchased through your IBM Business Partner and are specific to the machines/products listed.

System x3500 Servicepac Offering	ServicePac Number	Ordering Part Number
7380		
3yr On-site Repair 5 days x 9hr x 4hr Resp Target	PC1139	68Y5335
3yr On-site Repair 7 days x 24 hr x 4hr Resp Target	PC1140	68Y5336
4yr On-site Repair 5 days x 9hr x 4hr Resp Target	PC1141	68Y5337
4yr On-site Repair 7 days x 24hr x 4hr Resp Target	PC1142	68Y5338
5yr On-site Repair 5 days x 9hr x 4hr Resp Target	PC1143	68Y5339
5yr On-site Repair 7 days x 24hr x 4hr Resp Target	PC1144	68Y5340

Announcement is restricted to the following countries:

e-ServicePac

Austria, Belgium, Bulgaria,
Croatia, Czech Rep, Denmark,
Finland, France*, Germany,
Greece, Hungary, Ireland,
Israel, Italy, Luxembourg,
Netherlands, Norway, Poland,
Portugal, Romania,
South Africa, Slovakia, Slovenia,
Spain, Sweden, Switzerland,
Turkey, UK**

* Except overseas Territories

** UK mainland only

IBM Announcement Letter Number ZS06-0105, dated February 17, 2006. See final section for details of availability and limitations, if applicable.

Maintenance

The products in this document are also covered by Maintenance Agreements and ServiceSuite™ contracts.

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

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Announcement countries

All European, Middle Eastern, and African countries.

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Corrections

(Corrected on February 28, 2011)

Product number section revised.