IBM System x3850 M2 servers feature dual-core and quad-core Intel Xeon MP processors

At a glance

New IBM System x3850 M2 servers incorporate high-performance, dual-core, and quad-core Xeon MP processors:

- Models are powered with dual-core and quad-core Intel Xeon MP processors at up to 2.93 GHz with 2 x 4 MB L2 cache
- Up to 128 GB of high-speed, lower power, PC2-5300 ECC double data rate 2 (DDR2) SDRAM system memory with ability to scale to 512 GB
- Seven 2.5Gb PCIE x8 I/O slots (two are hot-plug)
- Serial Attached SCSI (SAS) controller
- Integrated Broadcom 5709 Dual-port 10/100/1000 Gigabit Ethernet
- Four 2.5-inch hot-swap bays for flexible installation of HDDs, supporting up to 584 GB of internal data storage
- Standard Remote Supervisor Adapter II Slimline, enabling remote, full-band systems management
- Two 1440-watt, voltage sensing, rear access, hot-swap power supplies
- Standard combo drive
- Five USB ports (two can be used for USB keyboard and mouse), SVGA video port, one serial port, and two Gb Ethernet ports per chassis
- Three-year Customer Replaceable Unit (CRU) and on-site limited warranty

For ordering, contact:
Your IBM representative, an IBM Business Partner, or the Americas Call Centers at

800-IBM-CALL Reference: SE001

Overview

Models of the x3850 M2 server are powered with dual-core and quad-core Intel® Xeon MP processors at up to 2.93 GHz with 2 x 4 MB L2 cache.

The x3850 M2 server is the fourth generation Enterprise X-Architecture™ delivering innovation with enhanced reliability and availability features to enable optimal performance for databases, enterprise applications, and virtualized environments.

Potential benefits include:
• Increased performance
• Memory reliability and availability
• Low power cost effective memory with Advanced Buffer eXecution chip delivering as much as 37% power savings and lower latency for optimal performance
• Enhanced systems management capabilities
• Power Management savings
• Quad-core processing performance

Power and scalability

• XA-64e fourth-generation EXA chipset powering XpandOnDemand up to 16-socket (64-core)
• Active Memory with hot-swap support: Memory ProteXion, Chipkill™ memory mirroring, and hot-swap and hot-add memory, for high performance with 256 MB Xcel4v cache per chassis
• Up to 32 DIMM slots per chassis delivering up to 128 GB of high-speed PC2-5300 double data rate (DDR2) memory; expandable to 512 GB in a 16-socket (64-core) complex
• Serial Attach SCSI (SAS) plus RAID to maximize throughput and ease installation of RAID card
• Four 2.5-inch SAS HDDs, up to 584 GB of maximum internal storage
• High-performance integrated dual Gigabit Ethernet built-in, high-speed networking with support for latest technologies
• Integrated remote Supervisor Adapter II Slimline
• 4 U rack-optimized, tool-free chassis that strikes the balance between rack density and ease of maintenance
• Rear access power supplies for easy access

Fourth-generation EXA features

• Advanced fourth-generation Chipkill ECC memory controller to help correct single-, two-, three-, and four-bit memory errors
• Memory ProteXion and memory mirroring support
• Active PCIE x8 I/O slots, as well as hot-add and hot-swap adapters
• Hot-swap drive bays and redundant fans to replace select components without powering down the server
• Two hot-swap, rear access, redundant power supplies
• Predictive Failure Analysis® (PFA) on processors, memory, fans, power supply, and HDD options to help warn of problems before they occur
• Innovative light path diagnostics and top access design; easy to service and configure

Preview

In addition to the enterprise server products being offered with this announcement, IBM intends to deliver additional System x3950 M2 servers based upon future quad-core, Xeon processor technology from Intel. IBM intends to introduce an additional server models in the first quarter of 2008, based upon the Intel Xeon Processor 7200 and 7300 series processors up to 2.93GHz.

IBM also intends to deliver an option kit, available in 1Q08, which allows you to take an x3850 M2 non-scaleable system and convert it to scale to be an x3950 M2. This option kit contains the scalability chip, cable, cable management arm, and new bezel showing x3950 M2.

Previews provide insight into IBM plans and directions, but they are subject to change or withdrawal. General availability, prices, ordering information, and terms and conditions will be provided when the product is announced.

1 When referring to hard drive or tape backup capacity, GB stands for one billion bytes. Total user capacity may vary depending on operating environments.

2 IBM sends a technician after attempting to diagnose and resolve the problem remotely.
The Microsoft™ Windows™ Preinstallation Environment software, included as part of ServerGuide™ software, may be used for boot diagnostic, setup, restoration, installation, configuration, test, or disaster recovery purposes only.

Note: The Microsoft Windows Preinstallation Environment software contains a security feature that will cause an end user customer's system to reboot without prior notification to the end user customer after 24 hours of continuous use of the Microsoft Windows Preinstallation Environment. During routine usage of ServerGuide, which does not usually require usage of the Microsoft Windows Preinstallation Environment software for such an extended time period, this condition should not occur.

For information on the IBM Statement of Limited Warranty, visit http://www.ibm.com/servers/support/machine_warranties/

Alternatively, this information is also available by contacting your IBM representative or reseller. Copies are available upon request. For the latest information on safe and effective computing, visit http://www.ibm.com/pc/safecomputing/

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

**Key prerequisites**

Refer to the Hardware requirements section for details.

**Planned availability date**

November 30, 2007

**Description**

**Related options**

**Intel Xeon Processor E7210 — 2.40 GHz 2x4MB L2 Cache 1066MHz Intel Dual Core Processor Upgrade (44E4244)** supports internal processing speeds of 2.40 GHz and external processing operations to memory at 1066 MHz. It contains an integrated, full-speed, 2 x 4 MB level 2 cache.

**Intel Xeon Processor E7320 — 2.13 GHz 2x2MB L2 Cache 1066MHz Intel Quad Core Processor Upgrade (44E4241)** supports internal processing speeds of 2.13 GHz and external processing operations to memory at 1066 MHz. It contains an integrated, full-speed, 2 x 2 MB level 2 cache.

**Intel Xeon Processor E7330 — 2.40 GHz 2x3MB L2 Cache 1066MHz Intel Quad Core Processor Upgrade (44E4242)** supports internal processing speeds of 2.40 GHz and external processing operations to memory at 1066 MHz. It contains an integrated, full-speed, 2 x 3 MB level 2 cache.

**Intel Xeon Processor X7350 — 2.93 GHz 2x4 MB L2 Cache 1066MHz Intel Quad Core Processor Upgrade (44E4243)** supports internal processing speeds of 2.93 GHz and external processing operations to memory at 1066 MHz. It contains an integrated, full-speed, 2 x 4 MB level 2 cache.

These processor options support up to 16-socket (64-core) SMP applications in the x3850 M2. A VRM and heatsink, specifically designed to support this, are included.

**2 GB (2x1GB Kit) PC2-5300 CL5 ECC DDR2 SDRAM RDIMM (41Y2762)**

**4 GB (2x2GB Kit) PC2-5300 CL5 ECC DDR2 SDRAM RDIMM (41Y2771)**

**8 GB (2x4GB Kit) PC2-5300 CL5 ECC DDR2 SDRAM RDIMM (41Y2768)**

These high-speed, DDR2 registered DIMMs are synchronized to the processor. Once addressed, data can be transferred on both edges of the clock signal. This significantly improves performance of the 1066 MHz front-side bus Xeon MP processor.

**Memory Expansion Card (44E4252)** allows you to upgrade your machine with up to four memory expansion cards. System memory can be expanded to 128 GB by adding 4GB...
PC2-5300 CL5 ECC DDR2 SDRAM RDIMM in each of the eight DIMM sockets.

IBM Director CD, with 20 agent license proofs of entitlement, includes support for the IBM System x3850 M2 server.

IBM System x3850 M2 server description

Standard IBM System x3850 M2 model configurations

<table>
<thead>
<tr>
<th>System number</th>
<th>Processor</th>
<th>L2 Cache</th>
<th>Memory</th>
<th>Interface</th>
<th>HDD supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>7141-1Rx</td>
<td>Xeon E7210 Dual core</td>
<td>4 MB/core</td>
<td>8 MB total</td>
<td>Optional scalable</td>
<td>two</td>
</tr>
<tr>
<td></td>
<td>Xeon E7320 Quad core</td>
<td>2 MB/core</td>
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<td>7141-3Rx</td>
<td>Xeon E7330 Quad core</td>
<td>3 MB/core</td>
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<tr>
<td>7141-4Rx</td>
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<td>4 MB/core</td>
<td>8 MB total</td>
<td>Optional scalable</td>
<td>two</td>
</tr>
</tbody>
</table>

High-performance server subsystems: x3850 M2 servers are high-throughput, scalable SMP-capable dual-core and quad-core Xeon-based network servers. They deliver excellent scalability for adding memory, adapter cards, or multiple processors.

Models are powered with dual-core and quad-core Intel Xeon MP processors at up to 2.93 GHz with 2 x 4 MB L2 cache that uses 64-byte cache lines. EMT64T architecture supports 64-bit extensions. Four connectors for Xeon MP processors are standard on the system board. High-speed PC2-5300 ECC SDRAM provides excellent processor-to-memory subsystem performance.

The x3850 M2 system architecture is fine tuned and engineered to optimize the powerful Xeon MP processors. This architecture consists of the following components:

- Dual-core and quad-core Xeon MP processors
- Fourth-generation EXA-64e chipset
- System memory cards
- PCI-E host-bridge controllers

These Xeon MP processors use 1066 MHz common clock speed for external operations. The chipset supports eight 533MHz buses to the memory controller, for a total of 34.1GB/s of memory bandwidth.

The memory I/O controller (MIOC) supports:

- Data flow between the processor and memory, and to the PCIe host-bridge controller
- Chipkill ECC memory function

The two PCIe host-bridge controllers reside between the PCI buses and memory controller.

High-availability and serviceability features: Many enterprise on demand environments run around the clock to supply information around the globe. These environments require ruggedly dependable servers designed with features that can tolerate a component failure without total shutdown. x3850 M2 servers pack numerous fault-tolerant and high-availability features into a high-density, rack-optimized package that helps significantly reduce the space needed to support massive network computing operations.

Features include:
• Seven 2.5 Gb PCIE x8 I/O slots (two are hot-plug); hot-add and hot-swap adapters in Windows, and Linux™ environments

• Four Serial Attach SCSI (SAS) HDD bays

• ECC DIMMs combined with an integrated advanced ECC memory controller with fourth-generation Chipkill support to correct many single-, two-, three-, and four-bit memory errors to minimize disruption of service to LAN clients

• Memory ProteXion and memory mirroring hot-add and hot-swap memory support

• Memory hardware scrubbing to correct many soft memory errors automatically without software intervention downtime

• PFA on HDD options, memory, processors, power supply, and fans, in conjunction with IBM Director, to help alert the system administrator of an imminent component failure

• Two 1440-watt power supplies that support typical configuration redundancy or full configurations requiring redundancy

• Six, hot-swap, multispeed fans to provide cooling redundancy and enable individual fan replacement without powering down the server, plus one fan in each of the two hot-swap power supplies

• Standard Remote Supervisor Adapter II Slimline enabling diagnostic, reset, POST, and auto recovery functions from remote locations and monitoring of temperature, voltage, and fan speed; alerts generated when thresholds are exceeded without utilizing an IO slot

• Information LED panel, diagnostics LED panel, and component LEDs for visual indications of system well-being

• Light path diagnostics for an outside view of the potential problem without removing the cover to reduce downtime and service costs

• Easy top access to system board, adapter cards, and memory

• CPU failure recovery in SMP configurations, allowing a failed processor to be forced offline, the server rebooted, an alert generated, and operation continued with the working processor

**XpandOnDemand scalability:** The x3850 M2 servers are designed for complex applications. They feature XpandOnDemand scalability from fourth-generation Enterprise X-Architecture technology for future growth potential.

The servers include:

• Massive I/O expansion options supporting up to 28 PCIE x8 I/O card slots with four scaled chassis

• Up to 16-socket (64-core) SMP operations with powerful dual-core and quad-core Xeon MP processors

• 4 GB high-speed PC2-5300 DDR2 ECC memory standard, supporting up to 128 GB of system memory per chassis

• Two worldwide, voltage-sensing 1440-watt, hot-swap power supplies with auto restart, standard

• Four hot-swap drive bays, supporting up to 584 GB of internal data storage (using four 146 GB SAS Hot-Swap HDDs)

• Terabytes of external data storage supporting optional EXP400 storage units, ServeRAID™ SCSI controllers, and Fibre Channel controllers and storage units

**Configurations**

**XpandOnDemand scalability**

• Modular building-block scalability delivers the flexibility to scale to meet your business needs, allowing customers to configure their system to optimize for their application needs.

**Systems management:** x3850 M2 servers feature IBM Director, a powerful, highly integrated, systems-management software solution built on industry standards and designed for ease of use.
With IBM Director, a network administrator can perform the following tasks:

- View the hardware configuration of remote systems in detail
- Monitor the usage and performance of critical components such as microprocessors, disks, and memory
- Centrally manage individual or large groups of IBM and non-IBM, Intel-based servers, desktop computers, workstations, and mobile computers on a variety of platforms

IBM Director provides a comprehensive entry-level workgroup hardware manager. It includes the following key features:

- Advanced self-management capabilities for maximum system availability
- Support for multiple operating systems, including Microsoft Windows 2003 Server, Windows XP Professional, Red Hat Linux, SUSE Linux, and Novell NetWare. For a complete list of operating systems that support IBM Director, visit http://publib.boulder.ibm.com/infocenter/eserver/v1r2/index.jsp?topic=/diricinfo_5.20/fqm0_r_supported_operating_system.html The list is updated periodically.
- Support for IBM and non-IBM servers, desktop computers, workstations, and mobile computers
- Support for systems-management industry standards
- Integration into leading workgroup and enterprise systems-management environments
- Ease of use, training, and setup

IBM Director also provides an extensible platform that supports advanced server tools that are designed to help reduce the total cost of managing and supporting networked systems. By deploying IBM Director, you may achieve reductions in ownership costs through the following potential benefits:

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

For more information about IBM Director, refer to the CD that comes with the server, the IBM Director documentation on the CD, or visit http://www.ibm.com/systems/management/director/resources/

IBM Director includes IBM Director Extensions, a portfolio of server tools that integrates into the IBM Director interface and works with the Remote Supervisor Adapter II Slimline, or other systems-management monitoring functions contained in IBM System x3850 M2 servers. Typical functions and monitoring capabilities can include:

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

The IT administrator gains comprehensive, virtual on-site control of IBM System x3850 M2 servers through the ability to remotely:

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

IBM Director Agent provides integration into leading workgroup and enterprise system management environments, via Upward Integration Modules. This enables the advanced management capabilities built into IBM System x3850 M2 servers to be accessed from:

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

**IBM Systems Director Active Energy Manager for x86 tools and programs:** The IBM Systems Director Active Energy Manager for x86 tool is available on the System x3850 M2 server and allows direct power monitoring through IBM Director. This tool helps customer monitor power consumption to allow better utilization of available power resources.

For more information, refer to


**World-class support tools and programs:** x3850 M2 servers include tools and programs
designed to make ownership a positive experience. From the start, IBM programs help you purchase servers, get them running, and keep them running. IBM can help your company maintain ownership of technology leadership network servers.

- IBM Customer Replaceable Unit (CRU) and on-site, three-year limited warranty with next-business-day service (same-business-day service optionally available) protects your investment if a problem occurs. This service also includes replacement of parts identified through PFA.
- The ServerProven program lets you confidently configure your server with various devices and operating systems. This Web-based program provides compatibility information from actual testing of the x3850 M2 server with various adapters and devices.
- The ServerGuide CD library includes online publications and utilities and drivers that help you load popular network operating systems.
- Electronic support on the Web offers additional support in an easy-to-use format.

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<td>8 MB (total)</td>
<td>SAS</td>
<td>open bay</td>
<td>two</td>
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<tr>
<td></td>
<td>Dual core</td>
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<td>4x1 GB</td>
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<td>7141-2Rx</td>
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<tr>
<td></td>
<td>Quad core</td>
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<td>SAS</td>
<td>open bay</td>
<td>two</td>
</tr>
</tbody>
</table>

Product positioning

These new IBM System x3850 M2 models enhance the server line by providing new levels of performance and price/performance. The IBM System x3850 M2 server features a high-density, 4 U mechanical platform that supports dual-core and quad-core Xeon MP processors, PCI-E architecture, and high-speed DDR2 memory.

IBM System x3850 M2 servers deliver additional processing, expandability, and high-availability features over those of the IBM System x3850 server. These features make them ideal for handling complex, business-critical On Demand Business applications that must be supported by space-saving, rack-optimized servers.

The IBM System x3850 M2 server is designed for extremely complex, compute-intensive applications requiring four-socket, plus processing power and large memory support.

The IBM System x3850 M2 servers provide excellent scalable processing capability supporting high-speed memory, PCI-E bus architecture, and dual-core and quad-core Intel Xeon MP processors at up to 2.93 GHz with 2 x 4 MB L2 cache.

This makes the IBM System x3850 M2 servers an excellent fit for current and future enterprise on demand applications.

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

Applications include:

- On Demand Business
- Business intelligence
• Transaction processing
• Enterprise resource planning
• Collaboration applications (Microsoft Exchange and Lotus Notes®)
• Server consolidation
• Internet or intranet front-end serving
• Web content serving
• Database storage as a SAN solution

Reference information


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 107-606


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Memory ProteXion — Redundant bit steering

• Utilizes unused bits in each memory DIMM (hot-spare bits)
• Doubles the amount of Chipkill™ memory sustainable per server
• Included at no additional cost, requires no additional hardware, and works independently of operating system
• Similar to the "hot-spare" of a DASD array

Memory mirroring

• Propels Intel®-based servers towards continuous operations
• Dramatically helps to increases uptime and allows scheduled maintenance
• Provides mainframe capability and reliability
• Operating system independent; does not require drivers or operating system support

Chipkill memory

• Integrated XA-64e chipsets for using off-the-shelf DIMMs
• Better memory reliability to support in-memory databases
• Increased availability by detecting and helping to correct single-, two-, three-, and four-bit memory errors
• Fourth-generation Chipkill design

Publications

The following publications and CD-ROMs are shipped with the x3850 M2 servers.

• x3850 M2 Installation Guide contains an introduction to the computer, installation and setup, installing options, reference information, and problem determination. The installation guide has easy-to-use text and illustrations to enable you to quickly set up your x3850 M2 server.
• ServerGuide™ contains online publications and drivers to support the x3850 M2 server. In addition, it includes a set of easy-to-use utilities on CD to help you install several popular network operating systems.
• IBM Director systems-management software is included.

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

The following publications are available immediately.

To order, contact your IBM representative.

The x3850 M2 Installation Guide and the Problem Determination Guide, in U.S. English versions, are available from:

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

IBM Publications Center Portal

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

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

**xSeries® & BladeCenter® support services**

**Recommended core technical support:** When you buy IBM xSeries technology, include the support services you need to help keep both your hardware and software working for you, day after day, at peak performance. It's your first step toward helping to protect your investment and sustain high levels of system availability. We offer service-level and response-time options to fit your business needs, and we'll help you get started with a core support package that includes:

- **Continuous system monitoring**
  Exclusive electronic monitoring that helps speed up problem-solving with automated, early detection of potential problems and system errors.

- **Hardware maintenance**
  World-class remote and on-site hardware problem determination and repair services.

- **Software technical support**
  Unlimited help line calls for fast, accurate answers to your questions during installation and throughout ongoing operations.

For more information, refer to

http://www.ibm.com/servers/eserver/xseries/services.html

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**Technical information**

**Specified operating environment**

*x3850 M2*

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<td>DIMMs</td>
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<td>DIMM sockets standard</td>
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<td>PCIe x8 slots</td>
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<td>Hot-swap</td>
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Management processor
BMC Standard
RSA-II Standard
RAID 0/1 Standard
ServeRAID(TM)-MR10k Optional
Dual Ethernet 10/100/1000 Mbps
controller
CD-ROM/DVD Optional
Combo drive Standard
Power supply 1440 watt
Number standard 2
Maxi mum 2
Hot-swap Yes
Redundant power Standard
Auto restart Yes

Processor
Quad-core
Internal speed 2.13 GHz
External speed 1066 MHz
Number standard 2
Maxi mum 4
L2 cache/core (full speed) 2 MB
L2 cache total 4 MB
Memory (PC2-5300 DDR2) 4 GB ECC
DIMMs 4 x 1 GB
DIMM sockets standard 16
DIMM sockets max num 32
Capacity 128 GB(6)
Memory Expansion Card
Number standard 2
Maxi mum 4
Video SVGA
Memory 16 MB
SAS SCSI controller 3.0 GHz
Ports 6
Connector internal 4
Connector external 1
HDD standard 0
Bays available 4
5.25-inch slim 0
3.5-inch slim 0
Hot-swap 4
Internal capacity 584 GB(7)
PCI-E x8 slots 7
Hot-swap 2
Management processor
BMC Standard
RSA-II Standard
RAID 0/1 Standard
ServeRAID D-MR10k Optional
Dual Ethernet 10/100/1000 Mbps
controller
CD-ROM/DVD Optional
Combo drive Standard
Power supply 1440 watt
Number standard 2
Maxi mum 2
Hot-swap Yes
Redundant power Standard
Auto restart Yes

Processor
Quad-core
Internal speed 2.40 GHz
External speed 1066 MHz
Number standard 2
Maxi mum 4
L2 cache/core (full speed) 3 MB
L2 cache total 6 MB
Memory (PC2-5300 DDR2) 8 GB ECC
DIMMs 8 x 1 GB
DIMM sockets standard: 32
DIMM sockets maximum: 32
Capacity: 128 GB (6)

Memory Expansion Card:
- Number standard: 4
- Maximum: 4

Video:
- Memory: 16 MB

SAS SCSI controller:
- Standard: 3.0 GHz
- Ports: 6
- Connector internal: 4
- Connector external: 11
- HDD standard: 0
- Bays available: 4
- 5.25-inch slim: 0
- 3.5-inch slim: 0
- Hot-swap: 4
- Internal capacity: 584 GB (7)

PCIe x8 slots: 7
Hot-swap: 2

Management processor:
- BMC: Standard
- RSA-Il: Standard
- RAID 0/1: Standard
- ServeRAID-D-MR10k: Optional
- Dual Ethernet: 10/100/1000 Mbps
- CD-ROM/DVD: Optional
- Combo drive: Standard
- Power supply: 1440 watt
- Number standard: 2
- Maximum: 2
- Hot-swap: Yes
- Redundant power: Standard
- Auto restart: Yes

Processor:
- Xeon X7350
- Quad-core
- Internal speed: 2.93 GHz
- External speed: 1066 MHz
- Number standard: 2
- Maximum: 4
- L2 cache/core (full speed): 4 MB
- L2 cache total: 8 MB

Memory (PC2-5300 DDR2):
- DIMMs: 8 x 1 GB
- DIMM sockets standard: 32
- DIMM sockets maximum: 32
- Capacity: 128 GB (6)

Memory Expansion Card:
- Number standard: 4
- Maximum: 4

Video:
- SVGA

SAS SCSI controller:
- Standard: 3.0 GHz
- Ports: 6
- Connector internal: 4
- Connector external: 1
- HDD standard: 0
- Bays available: 4
- 5.25-inch slim: 0
- 3.5-inch slim: 0
- Hot-swap: 4
- Internal capacity: 584 GB (7)

PCIe x8 slots: 7
Hot-swap: 2

Management processor:
- BMC: Standard
- RSA-Il: Standard
- RAID 0/1: Standard
- ServeRAID-MR10k: Optional
- Dual Ethernet: 10/100/1000 Mbps
Supported video mode capabilities for the SVGA PCI controller:

Microsoft³ Windows™ 2000 and Windows 2003

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Colors</th>
<th>Refresh rate (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>640 x 480 x 8</td>
<td>256</td>
<td>60, 72, 75, 85</td>
</tr>
<tr>
<td>640 x 480 x 16</td>
<td>64K</td>
<td>60, 72, 75, 85</td>
</tr>
<tr>
<td>640 x 480 x 32</td>
<td>16 million</td>
<td>60, 72, 75, 85</td>
</tr>
<tr>
<td>800 x 600 x 8</td>
<td>256</td>
<td>60, 72, 75, 85</td>
</tr>
<tr>
<td>800 x 600 x 16</td>
<td>64K</td>
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</tr>
<tr>
<td>800 x 600 x 32</td>
<td>16 million</td>
<td>60, 72, 75, 85</td>
</tr>
<tr>
<td>1024 x 768 x 8</td>
<td>256</td>
<td>60, 70, 75, 85</td>
</tr>
<tr>
<td>1024 x 768 x 16</td>
<td>64K</td>
<td>60, 70, 75, 85</td>
</tr>
<tr>
<td>1024 x 768 x 32</td>
<td>16 million</td>
<td>60, 70, 75, 85</td>
</tr>
</tbody>
</table>

Dimensions: 4 U rack drawer:
- Width: 443.6mm (17.46 in)
- Depth: 720.2mm (28.35 in)
- Height: 172.8mm (6.80 in)
- Minimum configuration: 31.75 kg (70 lb)
- Maximum configuration: 43.2 kg (95 lb)

Electrical
- 100 to 127 (nominal) V ac; 50 Hz or 60 Hz; System 17.2A (8.6A/PS)
- 200 to 240 (nominal) V ac; 50 Hz or 60 Hz; System 8A
- Input kilovolt-amperes (kVA) (approximately):
  - Minimum configuration: 0.39 kVA (two power supplies)
  - Typical configuration: 0.82 kVA (two power supplies)
  - Maximum configuration: 1.65 kVA (two power supplies)
- Btu output:
  - Ship configuration: 1,297 Btu/hr (380 watts)
  - Typical configuration: 2,730 Btu/hr (800 watts)
  - Full configuration: 5,527 Btu/hr (1620 watts)
- Noise level horizontal position: 6.6 bels

Note: The noise emission level stated is the declared (upper limit) sound power level, in bels, for a random sample of machines. All measurements made in accordance with ISO 7779 and reported in conformance with ISO 9296.
x3850 M2 servers are intended for use as rack-drawer servers and are tested and designed to operate in a horizontal position.

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

- Multiprocessor Specification (MPS) 1.4.
- Hardware-enabled to meet ISO 9241, Part 3.

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

**Equipment approvals and safety**

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

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

**Operating environment**

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

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

- Keyboard
- Mouse
- Display

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

For service, the server requires a compatible:

- Keyboard
- Mouse
- Display

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

**Software requirements**

**Programming requirements:** The following network operating systems have been tested for compatibility with the x3850 M2 server:

**Network operating systems**

- Microsoft™:
  - Windows Server 2003 R2
- Windows Server 2003 R2
- Linux™:
  - Red Hat EL 5 Server for 32-bit (5.0)
  - Red Hat EL 5 Server for 32-bit (w/Xen) (5.0)
  - Red Hat EL 5 Server for 64-bit (5.0)
  - Red Hat EL 5 Server for 64-bit (w/Xen) (5.0)
  - Red Hat EL 4 AS, ES for 32-bit (4.5)
  - Red Hat EL 4 AS, ES for 64-bit (4.5)
  - SUSE Linux ES 10 for 32-bit (SP1)
  - SUSE Linux ES 10 for 64-bit (SP1)
  - SUSE Linux ES 10 for 64-bit (w/Xen) (SP1)
  - SUSE Linux ES 9 for 32-bit (SP3U2)
  - SUSE Linux ES 9 for 64-bit (SP3U2)
- Other:
  - VMware ESX Server 3.0.2+

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


**Compatibility:** The IBM System x3850 M2 server contains licensed system programs that include set configuration, set features, and test programs. IBM system BIOS is loaded from a "flash" EEPROM into system memory. This BIOS provides instructions and interfaces designed to support the standard features of the IBM System x3850 M2 server and to maintain compatibility with many current software programs.

For detailed information about IBM and non-IBM devices, adapters, software, and network operating systems supported with IBM System x3850 M2 servers, visit


Contact your IBM representative, IBM Business Partner, or refer to the IBM Sales Manual for information on the compatibility of hardware and software for IBM System x3850 M2 servers. The Sales Manual is updated periodically as new features and options are announced that support these servers.

**Limitations: Memory**

The x3850 M2 servers are shipped with up to 8 GB (8 X 1 GB) of memory. A maximum of up to 128 GB of system memory is supported by adding a 4GB PC2-5300 CL5 ECC DDR2 SDRAM RDIMM in each of the eight DIMM sockets. All supported system memory is addressable through direct memory access (DMA). This server supports 1 GB, 2 GB, and 4 GB 1.8 V, 240-pin, PC2-5300 ECC DDR-2 SDRAM RDIMMs. Supported DIMMs can coexist in the same server; however, memory DIMMs of the same capacity must be installed in matched pairs. Refer to the Planning information section or the IBM System x3850 M2 server Web page memory options.

The x3850 M2 has RAID 0 and 1 standard. The optional ServeRAID-MR10k SAS/SATA Controller provides additional RAID levels.

**ServerGuide**

Use the version of ServerGuide that is shipped with the system, or a later version, to load software and drivers. Earlier versions of ServerGuide may not be compatible with the server.

For the two-socket, and four-socket configurations, ServerGuide can help you:

- Set up and configure the system
- Set up and configure any ServeRAID adapters as well as the onboard SAS chipset
Perform™ an unattended install of Windows 2003 with SP1 integrated CD (32-bit only)

For the 16-socket configurations, the ServerGuide can help you:

- Set up and configure the system
- Set up and configure any ServeRAID adapters as well as the onboard SAS chipset


5709 native support limitations

5709 support will not be native to RHEL5.0, and that network installs would be impacted until RHEL5.1, when native 5709 would be included in the bnx2 driver, which is shipping at the launch of the product. The software updates necessary will be released by the appropriate networking operating system.

Hot-swap limitations

- Active-PCI-E currently is not supported by Linux versions that are shipping at the launch of the product. The software updates necessary will be released by the appropriate networking operating system.
- PCI hot-plug support is limited in SLES9.
- For Linux, multifunction adapters (those that use PCI bridges) are currently not supported.

Refer to the Software requirements section for operating system limitations.

Planning information

Customer responsibilities: x3850 M2 server and related options

The x3850 M2 server is designated as customer setup. Customer setup instructions are shipped with systems.

Configuration information

Bay configuration

The x3850 M2 server contains five customer-accessible drive bays on the front of the server. The top right bay is for the slim combo drive. Four unpopulated 2.5-inch, slim-high, hot-swap drive bays are located beneath this bay.

The IDE combo drive is cabled directly to the IDE port. The four hot-swap bays are connected to the integrated SAS SCSI controller through an integrated circuit.

Internal SCSI cabling

The x3850 M2 server contains a DASD backplane supporting four hot-swap, SCA-2-compliant drive bays. The x3850 M2 has RAID 0 and 1 standard. The optional ServeRAID-MR10k SAS/SATA Controller provides additional RAID levels.

Processor upgrades

The following processor upgrade option is supported:

- Intel Xeon Processor E7210 — 2.40 GHz 2x4MB L2 Cache 1066MHz Intel Dual Core Processor Upgrade (44E4244)
- Intel Xeon Processor E7320 — 2.13 GHz 2x2MB L2 Cache 1066MHz Intel Quad Core Processor Upgrade (44E4241)
- Intel Xeon Processor E7330 — 2.40 GHz 2x3MB L2 Cache 1066MHz Intel Quad Core Processor Upgrade (44E4242)
- Intel Xeon Processor X7350 — 2.93 GHz 2x4 MB L2 Cache 1066MHz Intel Quad Core Processor Upgrade (44E4243)

Memory support

The following memory options are supported:
The 256 MB Xcel4v cache, in multi-chassis configurations, uses system memory for this function. The total system memory as seen by the operating system is reduced by 256 MB per chassis for configurations of more than four sockets.

**PCI-E adapter installations**

The x3850 M2 server contains PCI-E architecture. Seven 2.5Gb PCIe x8 I/O slots (two are hot-plug).

**Rack installations**

x3850 M2 4 U, rack-drawer models are designed to be installed in a 19-inch rack cabinet designed for 26-inch deep devices, such as the NetBAY42 ER, NetBAY42 SR, NetBAY25 SR, or NetBAY11.

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

**Power considerations**

These x3850 M2 models include two standard 1440-watt, hot-swap power supplies which have redundancy for all configurations when powered at 200 to 240 V ac.

**Cable orders:** The 10/100/1000 Mbps full-duplex, Dual Ethernet PCI-E Controller is standard with the x3850 M2 server. The RJ-45 connectors provide a 10BaseT or 100/1000Base-TX interface for connecting twisted-pair cable to the Ethernet network. Cabling is not included with the server. To connect the Ethernet controller to a repeater or switch, use 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 x3850 M2 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**

<table>
<thead>
<tr>
<th>Product</th>
<th>Shipment group</th>
<th>Number of boxes</th>
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<tbody>
<tr>
<td>IBM System x3850 M2</td>
<td>System unit carton</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Contents:</td>
<td></td>
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<tr>
<td></td>
<td>System unit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rack components:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rails</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cable management hardware</td>
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</tr>
<tr>
<td>IBM System x3850 M2</td>
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<tr>
<td></td>
<td>Contents:</td>
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</tr>
<tr>
<td></td>
<td>Two 9-foot 220 V intra-rack cables</td>
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</tr>
<tr>
<td></td>
<td>IBM System x3850 M2 Installation Guide</td>
<td></td>
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<tr>
<td></td>
<td>Safety booklets</td>
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<td></td>
<td>SCSI cable</td>
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<td>Rack installation template</td>
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<td>ServerGuide</td>
<td></td>
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<tr>
<td></td>
<td>CD-ROM Packages</td>
<td></td>
</tr>
<tr>
<td></td>
<td>On/off switch cover</td>
<td></td>
</tr>
</tbody>
</table>

The x3850 M2 system is shipped as a single package. The country kit carton is contained inside.
the top portion of the system unit carton, while the rack components are contained in the system unit carton.

Related options

Processor upgrades:

• Xeon MP processor
• VRM and heat sink
• Installation publications/warranty

Supplies: None

Security, auditability, and control

Security and auditability features include:

• Power-on and privileged access password functions provide controls of who has access to the data and server setup program on the server.
• A set unattended boot mode allows the system keyboard to be locked to all entries except the password and at the same time allows other computers on the network to access the system disk drive.
• A selectable boot sequence can be used to prevent unauthorized installation of software or removal of data from the diskette drive.
• Winbond Trusted Platform Module ver 1.2, TCG (Trusted Computing Group) compliant.

Limitations: The x3850 M2 server has no security intrusion detection; therefore, it should be installed in a rack environment that provides security through lockable doors or other security measures. It is a customer's responsibility to ensure that the server is secure to protect sensitive data.

The system supports integrity measurements. The TPM is TCG V1.2-compliant, and is ready for use with software purchased from third party TPM Ecosystem partners in compliance with the TPM v1.2 specification.

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

Terms and conditions

IBM credit corporation financing: Yes

IBM System x3850 M2

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

• Three years
• Optional features — One year

Optional IBM features initially installed in an IBM machine carry the same warranty period as the
machine. If installed after the initial machine installation, they carry the balance of the machine 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 below 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, hard disk drive) service and on-site service.

**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 or a Tier 2 CRU. Installation of a Tier 1 CRU 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, (1) return instructions and a container are shipped with the replacement CRU, and (2) 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 have been designated as a Tier 1 CRU:

- Battery
- Blank filler
- Hard disk drive
- Hot-swap fan
- Hot-swap power supply
- Lift handle kit
- Memory DIMM
- Memory expansion card
- Optical drive
- PCI adapter
- PCI divider
- Power cord
- Service label
- Service processor
- System label
- Top cover
- Voltage regulator module

**On-site service:** 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 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-county 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:** International Warranty Service (IWS) is available in selected countries or regions.

The warranty service type, for example, on-site repair and CRU, and service level, 9x5 NBD and 24x7, 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


For more information on IWS, refer to Services Announcement 601-034, 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.

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**Maintenance services**

**ServicePac®, ServiceSuite™, ServiceElect, and ServiceElite:** ServicePac, ServiceSuite, ServiceElect, and ServiceElite provide hardware warranty service upgrades, maintenance, and selected support services in one agreement.

**Warranty service upgrade:** During the warranty period, a 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 below.

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

Refer to Prices section for specific offerings.

**Maintenance service:** If required, IBM provides repair or exchange service depending on the type of maintenance service specified below 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, hard disk drive), 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, (1) return instructions and a container are shipped with the replacement CRU, and (2) 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.
On-site service: IBM will repair the failing machine at your location and verify its operation. You must provide suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

Refer to Prices section for specific offerings.

Maintenance service (ICA)

Maintenance services are available for ICA legacy contracts.

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.

A CRU 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 below, on-site service.

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

Refer to Prices section for specific offerings.

Maintenance service: If required, IBM provides repair or exchange service depending on the type of maintenance service specified below 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, hard disk drive), 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, (1) return instructions and a container are shipped with the replacement CRU, and (2) 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.

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

Refer to Prices section for specific offerings.

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 (for example, adapter cards, PCMCIA cards, disk drives, memory) installed within IBM machines covered under warranty service upgrades or maintenance services and provides the labor to replace the failing
parts at no additional charge.

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

**IBM hourly service rate classification:** One

**Field-installable features:** Yes

**Model conversions:** No

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

**Graduated program license charges apply:** No. This product does not contain Licensed Internal Code or Licensed Machine Code.

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**Prices**

For current prices, visit

www.ibm.com/systems/x

You may also obtain information by calling 1-888-Shop-IBM.

<table>
<thead>
<tr>
<th>Machine/Model number</th>
<th>Description</th>
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<tbody>
<tr>
<td>7141-AC1</td>
<td>xSeries 3850 M2</td>
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<td>1143</td>
<td>Motherboards (x3850 M2/x3950 M2)</td>
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<td>1485</td>
<td>NetXtreme II 1000 Express G Ethernet Adapter - PCIe</td>
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<td>1681</td>
<td>IBM SAS HBA Controller</td>
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<td>2056</td>
<td>Entry Cable Management Arm</td>
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<td>2200</td>
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<td>2201</td>
<td>Custom Asset Tagging -- Enhanced</td>
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<td>2206</td>
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<td>2207</td>
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<td>2208</td>
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<td>2209</td>
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<td>2221</td>
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<td>2247</td>
<td>Request for a new Vendor Logo Hardware</td>
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<td>Request for an existing IBM Feature</td>
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Request for an existing Public RPQ
RAID Configuration
Rack Installation greater than 1U Component
Department of Defense UID Label
System Packaging -- WW
x3850 M2/x3950 M2 Base
CPU Heatsink Filler
IBM Non-DC GBM
CD/DVD Filler
PRO/1000 PT Dual Port Server Adapter by Intel
PRO/1000 PT Quad Port Server Adapter
QLogic iSCSI Single Port PCIe HBA for IBM System x
QLogic iSCSI Dual Port PCIe HBA for IBM System x
IBM 10 GbE PCIe SR Server Adapter
Intel Xeon Processor X7350 (2.93GHz 8MB L2 Quad Core)
Intel Xeon Processor E7330 (2.40GHz 6MB L2 Quad Core)
Intel Xeon Processor E7320 (2.13GHz 4MB L2 Quad Core)
Intel Xeon Processor E7210 (2.40GHz 8MB L2 Dual Core)
Install in Rack 01
Install in Rack 02
Install in Rack 03
Install in Rack 04
Install in Rack 05
Install in Rack 06
Install in Rack 07
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Install in Rack 10
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3159 Install in Rack 59
3160 Install in Rack 60
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3162 Install in Rack 62
3163 Install in Rack 63
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3201 Rack location U01
3202 Rack location U02
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3204 Rack location U04
3205 Rack location U05
3206 Rack location U06
3207 Rack location U07
3208 Rack location U08
3209 Rack location U09
3210 Rack location U10
3211 Rack location U11
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3235 Rack location U35
3236 Rack location U36
3237 Rack location U37
3238 Rack location U38
3239 Rack location U39
3240 Rack location U40
3241 Rack location U41
3242 Rack location U42
3473 Addl. Intel Xeon Processor E7320
   (2.13GHz 4MB L2 Quad Core)
3474 Addl. Intel Xeon Processor E7330
   (2.40GHz 6MB L2 Quad Core)
3475 Addl. Intel Xeon Processor X7350
   (2.93GHz 8MB L2 Quad Core)
3476 Addl. Intel Xeon Processor E7210
   (2.40GHz 8MB L2 Dual Core)
3557 ServeRAID-MR10k SAS/ SATA Controller
3567 QLogic 4Gb FC Single-Port PCIe HBA
   for IBM System x
3568 QLogic 4Gb FC Dual-Port PCIe HBA for
   IBM System x
3569 IBM Ultra 320 SCSI PCIe Controller
3700 1m LC-LC Fiber Cable (networking)
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<th>Code</th>
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<tr>
<td>3701</td>
<td>5m LC-LC Fiber Cable (networking)</td>
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<td>3702</td>
<td>25m LC-LC Fiber Cable (networking)</td>
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<td>3712</td>
<td>InfiniBand 4x 3 meter DDR Cable</td>
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<td>3713</td>
<td>InfiniBand 4x 8 meter DDR Cable</td>
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<td>3714</td>
<td>IBM 1m SAS Cable</td>
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<td>3715</td>
<td>IBM 3m InfiniBand to SAS Cable</td>
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<td>3716</td>
<td>IBM 3m SAS Cable</td>
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<td>3751</td>
<td>3m Console Switch Cable (USB)</td>
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<tr>
<td>3757</td>
<td>1.5M USB Conversion Cable Set</td>
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<tr>
<td>3758</td>
<td>Virtual Media Conversion Option</td>
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<td>3760</td>
<td>1.8m Black Cat5e Cable</td>
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<td>3761</td>
<td>3m Black Cat5e Cable</td>
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<td>3762</td>
<td>10m Black Cat5e Cable</td>
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<tr>
<td>3766</td>
<td>1m Myricom Quad Fiber Cable</td>
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<td>3767</td>
<td>3m Myricom Quad Fiber Cable</td>
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<td>3768</td>
<td>10m Myricom Quad Fiber Cable</td>
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<td>3782</td>
<td>1.5m 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable</td>
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<td>3783</td>
<td>3m 10GBASE-CX4 Copper Cable</td>
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<td>3784</td>
<td>10m 10GBASE-CX4 Copper Cable</td>
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<td>3791</td>
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<td>3793</td>
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<td>4GB PC2-5300 CL5 ECC DDR2 SDRAM RDIMM</td>
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<td>3939</td>
<td>2GB PC2-5300 CL5 ECC DDR2 SDRAM RDIMM</td>
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<td>4056</td>
<td>Label's GMB</td>
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<td>4071</td>
<td>x3850 Bezel</td>
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<tr>
<td>4156</td>
<td>UltraSlim Enhanced CD-RW DVD-ROM Combo</td>
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<td>4157</td>
<td>UltraSlim Enhanced Multi-Burner</td>
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<td>4294</td>
<td>InfiniBand 8 meter 4x Cable for IBM eServer BladeCenter</td>
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<td>4296</td>
<td>InfiniBand 4x Cable 3 meter for IBM eServer BladeCenter</td>
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<td>4714</td>
<td>Customer Provided and Installed -- Red Hat Enterprise Linux 4 ES for AMD64/EM64T</td>
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<td>4743</td>
<td>Customer Provided and Installed -- Red Hat Enterprise Linux 4 AS for AMD64/EM64T</td>
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<td>4745</td>
<td>Customer Provided and Installed -- Red Hat Enterprise Linux 4 ES for x86</td>
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<td>4747</td>
<td>Customer Provided and Installed -- SUSE Linux Enterprise Server 9 for AMD64/EM64T</td>
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<td>4915</td>
<td>Flash Drive</td>
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<td>5159</td>
<td>73GB 10K 2.5&quot; Hot-Swap SAS HDD</td>
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<td>5534</td>
<td>146GB 10K 2.5&quot; Hot-Swap SAS HDD</td>
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<td>IBM Server 73GB SAS 15K 2.5&quot; SFF HS</td>
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<td>6201</td>
<td>1.5m 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable</td>
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<tr>
<td>6204</td>
<td>2.8m 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable</td>
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<td>6263</td>
<td>4.3m 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable</td>
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<tr>
<td>6311</td>
<td>Rack power cable -- 2.8m 100-240V, C13 to IEC 320-C14 (WW)</td>
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| 6372 | Line cord -- 2.8m 10A/250V, C13 to
NEMA 6-15P (U.S.)

7296 System Documentation and Software-US
7831 Customer Solution Center Services
1768 Offload Manufacturing
to Guadalajara HVEC
1769 Offload Manufacturing to RTP HVEC
7853 RAID 5 -- Primary Array (SAS) --
    minimum of 3 HDDs required
7857 RAID 6 -- Primary Array (SAS) --
    minimum of 4 HDDs required
8026 No HDD Selected
8031 Consolidate Shipment
8034 e1350 Solution Component
8036 Compute Node
8037 Management Node
8038 Storage Node
8067 TAA Compliant Order
8072 General Racking Solution
8081 No 2.5" SAS HDD Selected
8086 No Publications Selected
8141 RAID 0 -- Primary Array (SAS) --
    minimum of 2 HDDs required
8142 RAID 1 -- Primary Array (SAS) --
    2 HDDs required
8144 RAID 0 -- Secondary Array (SAS) --
    minimum of 2 HDDs required
8145 RAID 1 -- Secondary Array (SAS) --
    2 HDDs required
8957 Performance Memory Configuration
8971 Integrate in manufacturing
8972 Ship Uninstalled (Safety)
9012 No Internal RAID
9013 Hot Spare
9017 Enable Memory Mirroring
9066 Internal RAID -- Setup by IBM
9067 Internal RAID -- Setup by Customer
9170 Storage Subsystem ID 01
9171 Storage Subsystem ID 02
9172 Storage Subsystem ID 03
9173 Storage Subsystem ID 04
9174 Storage Subsystem ID 05
9175 Storage Subsystem ID 06
9176 Storage Subsystem ID 07
9177 Storage Subsystem ID 08
9178 Storage Subsystem ID 09
9179 Storage Subsystem ID 10
9180 Storage Subsystem ID 11
9181 Storage Subsystem ID 12
9182 Storage Subsystem ID 13
9183 Storage Subsystem ID 14
9184 Storage Subsystem ID 15
9185 Storage Subsystem ID 16
9186 Storage Subsystem ID 17
9187 Storage Subsystem ID 18
9188 Storage Subsystem ID 19
9189 Storage Subsystem ID 20
9200 Preload Specify
9201 Windows Specify
9202 Red Hat Specify
9203 SUSE Specify
9205 Drop-in-the-Box Specify
9206 No Preload Specify

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<th>SEO number</th>
<th>Support</th>
<th>CSU</th>
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<td>x3850 M2 -- 2x2.13 GHz/4 MB, 4 GB Quad core Optional</td>
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Option SEOs

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<th>Both/ Supp</th>
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<tr>
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<td>44E4243</td>
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<tr>
<td>-- 2.93GHz 8MB L2 Quad Core</td>
<td>44E4242</td>
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<td>Intel Xeon Processor E7330</td>
<td>44E4241</td>
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<td>-- 2.13GHz 4MB L2 Quad Core</td>
<td>44E4244</td>
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<td>Intel Xeon Processor E7210</td>
<td>44E4252</td>
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<td>Internal Removable Flash Drive</td>
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IBM System x3850 — 7141

Hardware models announcing with this release will utilize existing U.S. ServicePacs.

Reference the following IBM Web site for applicable U.S. ServicePac information


ServicePac for warranty and maintenance

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<tr>
<th>Machine type/model</th>
<th>Description</th>
<th>ServicePac part number</th>
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<tr>
<td>7141-XXX</td>
<td>3 YR onsite repair 9x5x4 hour average response</td>
<td>10N3058</td>
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<tr>
<td>7141-XXX</td>
<td>3 YR onsite repair 24x7x4 hour average response</td>
<td>10N3059</td>
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<td>7141-XXX</td>
<td>3 YR onsite repair 24x7x2 hour average response</td>
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<tr>
<td>7141-XXX</td>
<td>4 YR onsite repair 9x5/next day average response</td>
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<td>7141-XXX</td>
<td>4 YR onsite repair 9x5x4 hour average response</td>
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<tr>
<td>7141-XXX</td>
<td>5 YR onsite repair 24x7x2 hour average response</td>
<td>10N3068</td>
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These ServicePac offerings are valid for models announced in the United States.

Maintenance service offerings (ICA)

Alternative service (warranty service upgrades)

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Annual maintenance service

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<tr>
<td>System x3850</td>
<td>M2 7141</td>
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<td>$1,320 $1,980</td>
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</tbody>
</table>

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