IBM System x3755 M3 - Dense rack-optimized servers now offer the latest AMD Opteron 6000 series multicore processors

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At a glance

The IBM® System x3755 M3 is a low-cost, 4-socket server that is optimized for outstanding density. It provides flexibility and scalability while offering multiple levels of price/performance. The System x3755 M3 provides 4-socket performance at an entry-level price. With features such as low-cost processors, up to 32 available DIMMs with up to 512 GB of DDR3 memory, and robust I/O, the System x3755 M3 can be optimized to meet your needs.

Features include:

- New AMD Opteron 6000 series 8-core and 12-core processors:
  - AMD Opteron Processor Model 6180 SE 12C 2.5GHz 12MB Cache 140w
  - AMD Opteron Processor Model 6176 12C 2.3GHz 12MB Cache 115w
  - AMD Opteron Processor Model 6140 8C 2.6GHz 12MB Cache 115w
- Dense, rack-optimized, 2U-high form factor
- Two-way and 4-way interleaved Chipkill™, up to 1333 MHz ECC DDR3 SDRAM RDIMM memory; addressable up to 512 GB
- Eight 3.5-inch hot-swap SAS/SATA
- Integrated SAS/SATA controller with eight lanes for 16 TB1 high-speed internal disk storage solutions (8 x 2 TB)
- Support for PCI-Express
- Two hot-swap 1100-watt, auto-ranging power supplies
- Embedded systems management processor
- Integrated quad Gigabit Ethernet Broadcom BMC5709C
- One serial port (16550A-compatible), five USB ports (two front, two rear, one internal), and four RJ-45 ports
Overview

The IBM System x3755 M3 server delivers the performance and capacity that growing workloads demand. Featuring up to four new Opteron 6000 series processors in a dense 2U rack-optimized platform, this server delivers outstanding value for midsized applications.

Power and scalability for growing business workloads

The System x3755 M3 system offers leading edge processors, large memory capacity, high memory bandwidth, and PCI-Express buses to power through core-, memory-, and I/O-intensive applications. It includes:

- Eight-core and 12-core AMD Opteron 6000 series processors with 12 MB L3 cache
- 16 GB (4 x 4 GB) memory standard, with high-speed memory up to 1333 MHz ECC double data rate (DDR3) SDRAM RDIMM, upgradeable to 512 GB on four-processor systems
- Integrated SAS/SATA controller with eight lanes for 16 TB high-speed internal disk storage solutions (8 x 2 TB HDDs)
- Quad Gigabit Ethernet controllers with TOE; high I/O capacity for demanding applications, plus failover capability
- 32-bit and 64-bit applications using a 64-bit operating system
- Embedded RAID-0,-1, and -10 HDD, optional RAID-5
- Four standard integrated PCI-Express Gen2 slots:
  - x16 supports full-length, full-high adapters
  - x8 supports half-length, low-profile adapters
  - x4 supports half-length, low-profile adapters
  - x8 supports internal RAID adapters
- Hot-swap redundant power and cooling is standard on these models

High availability for around-the-clock on-demand business

High availability, manageability, and serviceability features help diagnose problems quickly, even from remote locations:

- Intelligent Platform Management Interface (IPMI) 2.0 integrated systems management processor
- Remote power control for accessing and managing your server remotely
- TextConsole redirect over serial or LAN
- Predictive failure analysis (PFA) on processors, voltage regulator module (VRM), memory, fans, power supply, and HDD options for early warning of problems before they occur
- Diagnostics and diagnostic LED indicator for fast and easy servicing
- Effective power management to monitor and trend actual

Service and support perfected for on-demand business

- ServerGuide™ and IBM Director
- Web support
- Warranty: Three years, customer replaceable unit (CRU) and on-site service, limited warranty; optional warranty service upgrades are available

1. When referring to HDD or tape backup capacity, GB stands for 1,000,000,000 bytes and TB stands for 1,000 GB. Total user capacity may vary depending on operating environments.
Some programs may not be available in all countries.

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.

You may be asked certain diagnostic questions before a technician is sent.

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

Key prerequisites

- Monitor
- Universal serial bus (USB) keyboard
- USB mouse
- Rack

Planned availability date

May 6, 2011

Description

System x3755 M3 related options

- AMD Opteron Processor Model 6128 8C 2.0 GHz 12 MB Cache 115w
- AMD Opteron Processor Model 6128HE 8C 2.0 GHz 12 MB Cache 79w
- AMD Opteron Processor Model 6136 8C 2.4 GHz 12 MB Cache 115w
- AMD Opteron Processor Model 6164HE 12C 1.7 GHz 12 MB Cache 79w
- AMD Opteron Processor Model 6168 12C 1.9 GHz 12 MB Cache 115w
- AMD Opteron Processor Model 6174 12C 2.2 GHz 12 MB Cache 115w
- AMD Opteron Processor Model 6180 SE 12C 2.5GHz 12MB Cache 140w
- AMD Opteron Processor Model 6176 12C 2.3GHz 12MB Cache 115w
- AMD Opteron Processor Model 6140 8C 2.6GHz 12MB Cache 115w

The System x3755 M3 is an AMD Opteron processor system that supports an internal processing speed of up to 2.4 GHz and processing operations to memory up to 1333 MHz and PCI Express® bus up to 5 GHz. It contains an integrated, full-speed 512 KB ECC L2 cache and 12 MB L3 cache processors.
**High-performance server subsystems**

These servers are high-throughput, 8-core and 12-core SMP-capable AMD Opteron processor-based network servers with excellent scalability when you add memory and additional processors.

Four connectors are standard on the system board to support installation of four processors. High-speed 1333 MHz DDR3 SDRAM is optimized for processor-to-memory subsystem performance. The System x3755 M3 server uses the AMD SR5690 and SP5100 chipsets to maximize throughput from processors to memory. These new chips provide:

- PCI-Express
- SAS/SATA
- BMC5709C Ethernet

**Additional features**

- System board contains eight DIMM connectors per processor and supports 32 DIMM connectors on 4-processor systems.
  - Supports up to 512 GB of system memory
  - Supports 2 GB, 4 GB, 8 GB, and 16 GB up to 1333 MHz DDR3 memory
  - Contains memory populated with two DIMMs at a time, with same-size DIMMs
  - Supports 2-way and 4-way interleaving, depending on memory configuration
  - Supports mixed memory sizes in pairs
  - Features Chipkill memory
  - Features an integrated SAS/SATA controller, supporting high-speed internal storage solutions; up to 16 TB with SATA and up to 4.8 TB with hot-swap SAS HDD storage
- Two embedded dual full-duplex Broadcom BMC5709C Gigabit Ethernet PCI controllers speeding network communications to LAN clients

The System x3755 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 this server an excellent choice for:

- Scientific and technical computing
- Linux® clustering

**High-availability and serviceability features**

The System x3755 M3 server subsystem delivers excellent reliability and serviceability features:

- Eight 3.5-inch hot-swap HDD bays with SAS/SATA connectors supporting SAS/ SATA function
- ECC DIMMs combined with an integrated ECC memory controller correcting many soft and hard single-bit memory errors, while minimizing disruption of service to LAN clients
- ECC L2 cache processors to improve data integrity and help reduce downtime
- PFA on HDD options, memory, processors, VRMs, and fans to alert the system administrator of an imminent component failure
- Two embedded dual Broadcom 5709C Gigabit Ethernet controllers support
  - Failover, Adapter Fault Tolerance (AFT)
  - PXE 2.0 Boot Agent
  - Wake on LAN®
  - Load balancing or teaming
- Worldwide, voltage-sensing 1100-watt power supply features auto-restart
• Five cooling fan modules for added reliability:
  – Five system fans for processors, memory, and HDD bays
  – Fan speed controls incorporated to reduce noise while reducing system temperatures

• Embedded systems management processor for diagnostic, reset, power-on self-test (POST), and auto-recovery functions, monitoring temperature, voltage, and fan speed, while generating alerts when thresholds exceeded (refer to the Limitations section for restrictions)

• Information LED panel that gives visual indications of system well-being

• Diagnostic LED indicator to help you find a failing component, which may reduce downtime and service costs

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

**Expandability and growth**

The System x3755 M3 server contains high levels of function and storage capacity for a 2U, 19-inch rack-drawer package. It supports customer installation of adapters, processors, memory, and HDD options. Functions (such as SVGA video, SAS, SATA, and two dual Gigabit Ethernet controllers) are integrated on the system board. Features include:

• Rack-optimized design for 19-inch wide industry-standard rack cabinets supported in the NetBAY42 and NetBAY25

• Thirty-two DIMM connectors capable of support for up to 512 GB of system memory

• PCI riser card to support:
  – One PCI-Express (x16) slot (full-length, full-height)
  – One PCI-Express (x8) slot (half-length, low profile)
  – One PCI-Express (x4) slot (half-length, low profile)
  – One PCI-Express (x8) internal slot (half-length, low profile)

• Internal data storage up to:
  – 16 TB (using eight 2 TB SATA HDDs)
  – 4.8 TB (using six 600 GB HS SAS HDDs)

• Aspeed AST2050 integrated video controller with 8 MB of memory

**Systems management**

The System x3755 M3 server also features Cluster Systems Management Software and 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. It can help reduce costs through potentially:

• Reduced downtime

• Increased productivity of IT personnel and end users

• Reduced service and support costs

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

IBM Director has portfolio of integrated server tools that work with the system processor or other systems-management monitoring functions, such as HDDs. Typical functions and monitoring capabilities can include:

• PFA-enabled critical hardware components

• Temperature

• Voltage
- Fan speed
- Light Path Diagnostics

IT administrators have comprehensive, virtual on-site control of System x® servers with the ability to remotely:

- Access the server, often regardless of its status
- Inventory and display detailed system and component information
- View server boot up during POST
- Browse and delete logs of events and errors
- Reset or power cycle the server
- Monitor and set thresholds on server health including:
  - Operating system load
  - POST time-out
  - Voltage
  - Temperature
- Set proactive alerts for critical server events including PFA on HDDs
  - Processors
  - VRMs
  - Memory
  - Fans
  - Power supplies
  - HDDs
- Define automated actions such as:
  - Sending an email or page to an administrator
  - Executing a command or program
  - Displaying an error message to the IBM Director console
- Flash system management controller firmware
- Monitor and graph the use of server resources such as:
  - Memory
  - Processor
  - HDDs
- Identify potential performance bottlenecks and react to prevent downtime

IBM Director Agent provides integration into leading workgroup and enterprise systems management environments via Upward Integration Modules (available from IBM and third parties). Advanced management capabilities built into xSeries® servers are available through:

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

**World-class support tools and programs**

The System x3755 M3 server includes a number of 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 (NBD) service (same-business-day service optionally available) helps protect your investment if a problem occurs. This service also includes replacement of parts identified through PFA.

• The ServerProven<sup>6</sup> program features the flexibility to configure your server with various devices and operating systems. This program includes compatibility information from actual testing of the System x3755 M3 server with various adapters and devices.

• The ServerGuide CD library includes online publications, in addition to utilities and drivers that enable assisted loading of popular network operating systems.

• Electronic support on the web provides additional support in an easy-to-use format.

<sup>6</sup> IBM makes no warranties, expressed or implied, regarding non-IBM products and services that are ServerProven®. Including but not implied warranties of merchantability and fitness for a particular purpose. These products are offered and warranted solely by third parties.

Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at


Product positioning

The IBM System x3755 M3 is a low-cost, 4-socket server that is optimized for growing 2-socket workloads that require outstanding performance, memory, and storage capacity. It provides flexibility and scalability, while offering multiple levels of price/performance.

The System x3755 M3 provides 8-core or 12-core performance at an entry-level price. With features such as 32 available DIMMs with up to 512 GB of DDR3 memory at speeds up to 1333 MHz, you can configure the System x3755 M3 to meet your needs, helping to lower total cost of ownership (TCO).

AMD Opteron processor performance and IBM reliability to help improve your competitive advantage.

The System x3755 M3 server is an ultrathin 2U rack platform. With the industry-standard x86 architecture, you have the flexibility to effectively manage your business in a cost-conscious manner.

High-performance, 8-core and 12-core AMD Opteron processor models help you protect your hardware investment with 32-bit to 64-bit computing. At the same time, the server can handle emerging applications requiring maximum computing power and function in a small amount of rack space. These applications include:

• Scientific and technical computing
• Linux clustering
• Financial analysis computing
• Digital content creation

These powerful servers also meet traditional enterprise network server requirements, but with an added benefit of requiring less space.
### Product number

<table>
<thead>
<tr>
<th>Description</th>
<th>Part number</th>
</tr>
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<tbody>
<tr>
<td>Addl AMD Opteron Processor Model 6180 SE 12C 2.5GHz 12MB Cache 140w</td>
<td>81Y7581</td>
</tr>
<tr>
<td>Addl AMD Opteron Processor Model 6176 12C 2.3GHz 12MB Cache 115w</td>
<td>81Y7582</td>
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<tr>
<td>Addl AMD Opteron Processor Model 6140 8C 2.6GHz 12MB Cache 115w</td>
<td>81Y7583</td>
</tr>
</tbody>
</table>

### Pseudo part numbers

**Note:** The following Pseudo part numbers cannot be ordered as stand-alone parts and can only be ordered via configurator.

<table>
<thead>
<tr>
<th>Description</th>
<th>Pseudo Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMD Opteron Processor Model 6180 SE 12C 2.5GHz 12MB Cache 140w</td>
<td>81Y7587</td>
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<tr>
<td>AMD Opteron Processor Model 6176 12C 2.3GHz 12MB Cache 115w</td>
<td>81Y7588</td>
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<tr>
<td>AMD Opteron Processor Model 6140 8C 2.6GHz 12MB Cache 115w</td>
<td>81Y7589</td>
</tr>
</tbody>
</table>

### Publications

The following publications and CDs are shipped with the System x3755 M3 server:

- **Installation and User's Guide** - This document is in Portable Document Format (PDF) on the IBM Documentation CD. It provides general information about setting up and cabling the server, including information about features, and how to configure the server. It also contains detailed instructions for installing, removing, and connecting optional devices supported by the server.
- **Rack Installation Instructions** - This printed document contains instructions for installing the server in a rack.
- **Safety Information** - This document is in PDF on the IBM Documentation CD. It contains translated caution and danger statements. Each caution and danger statement that appears in the documentation has a number that you can use to locate the corresponding statement in your language in the Safety Information document.
- **IBM Warranty Information** - This printed document contains the warranty terms and a pointer to the IBM Statement of Limited Warranty on the IBM website.
- **Environmental Notices and User Guide** - This document is in PDF on the IBM Documentation CD. It contains translated environmental notices.
- **IBM License Agreement for Machine Code** - This document is in PDF on the IBM Documentation CD. It provides translated versions of the IBM License Agreement for Machine code for your server.
- **IBM Linux License Information and Attributions** - This document is in PDF on the IBM Document CD. It provides information about the open-source notices.
- **Option Installation Guide** - This document is in PDF on the IBM eServer™ Documentation CD. It contains detailed instructions for installing, removing, and connecting optional devices that the server supports.
- **Hardware Maintenance Manual and Troubleshooting Guide** - This document is available from the IBM Support website. It contains information to help you solve problems yourself, and it contains information for service technicians.
- ServerGuide - Contains online publications and drivers to support the System x3755 M3 server. In addition, it includes a set of easy-to-use utilities to help you install the system using CDs of several popular network operating systems.
- IBM Director - Systems management software is included.

To check for updated documentation and technical updates, visit

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

Under Search technical support, type 7164, and click Search.

Notes:

- Changes are made periodically to the IBM website. The actual procedure might vary slightly from what is described in this document.
- Software versions, features, and functions shipped with these systems may change as new releases become available or may be discontinued at any time.

The System x3755 M3 Installation and User’s Guide, Problem Determination and Service Guide, in US English and translation versions, are available from

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

Select "Product Support," "System x," then "Product family," and then click "Publications lookup."

The 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.

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.
## Technical information

### Specified operating environment

**Video subsystem**
- Aspeed AST2050 integrated video controller
- Integrated on system management controller
- 8 MB memory shared from system management controller memory
- Graphics engine with 8 bpp, 16 bpp, and 24 bpp mode acceleration
- 32 bpp (4G colors/true color) support
- DDC2B monitor communications support

Supported video mode capabilities for the SVGA PCI controller with a 200 MHz memory clock:

<table>
<thead>
<tr>
<th>Resolution x Colors</th>
<th>Refresh Rate (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>640 x 480 x 8</td>
<td>60, 72, 75, 85, 90, 100, 120, 160, 200</td>
</tr>
<tr>
<td>640 x 480 x 16</td>
<td>64K 60, 72, 75, 85, 90, 100, 120, 160, 200</td>
</tr>
<tr>
<td>640 x 480 x 32</td>
<td>16M 60, 70, 72, 75, 85, 90, 100, 120, 160, 200</td>
</tr>
<tr>
<td>800 x 600 x 8</td>
<td>256 60, 70, 72, 75, 85, 90, 100, 120, 160, 200</td>
</tr>
<tr>
<td>800 x 600 x 16</td>
<td>64K 60, 70, 72, 75, 85, 90, 100, 120, 160, 200</td>
</tr>
<tr>
<td>800 x 600 x 32</td>
<td>16M 60, 70, 72, 75, 85, 90, 100, 120, 160, 200</td>
</tr>
<tr>
<td>1024 x 768 x 8</td>
<td>256 60, 70, 72, 75, 85, 90, 100, 120, 140, 150, 160, 200</td>
</tr>
<tr>
<td>1024 x 768 x 16</td>
<td>64K 60, 70, 72, 75, 85, 90, 100, 120, 140, 150, 160, 200</td>
</tr>
<tr>
<td>1024 x 768 x 32</td>
<td>16M 60, 70, 72, 75, 85, 90, 100, 120, 160, 200</td>
</tr>
<tr>
<td>1280 x 1024 x 8</td>
<td>256 60, 70, 74, 75, 85, 90, 100, 120</td>
</tr>
<tr>
<td>1280 x 1024 x 16</td>
<td>64K 60, 70, 74, 75, 85, 90, 100, 120</td>
</tr>
</tbody>
</table>

**Note:** Some modes are not supported by all monitors. The maximum resolution supported is 1280 x 1024. However, if the system is using Remote Supervisor Adapter, then the maximum resolution is 1024 x 768.

### Dimensions
- Width: 446 mm (17.56 in), without rack EIA bracket; 482 mm (18.98 in) with rack EIA bracket
- Depth: 727.5 mm (28.64 in), without front panel; 747 mm (18.98 in) with front panel
- Height: 87 mm (3.43 in)
- Weight:
  - Minimum configuration 22 Kg (48.6 lb))
  - Maximum configuration 33 Kg (72.7 lb)

### Electrical
- 100 - 127 (nominal) V ac; 50 Hz or 60 Hz; 19.0 A
- 200 - 240 (nominal) V ac; 50 Hz or 60 Hz; 11.6 A
- Input kilovolt-amperes (kVA) (approximately)
  - Minimum configuration: 0.20 kVA
  - Maximum configuration: 2.17 kVA
- Btu output
Ship configuration: 648 Btu/hr (190 watts)
Full configuration: 6739 Btu/hr (2150 watts)

Acoustical noise emission level: Sound power levels
- 6.8 bels (idling)
- 6.8 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.

System x3755 M3 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:

- Peripheral Component Interconnect (PCI) specification 2.2
- Hardware-enabled to meet the International Organization for Standardization (ISO) 9241, Part 3

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

**Operating environment**
- Temperature
  - 10.0° C - 35.0° C (50° F - 95° F) (Server on)
  - 10.0° C - 43.0° C (50° F - 109.6° F) (Server off)
- Relative humidity: 8% - 80%
- Maximum altitude: 2,133 m (7,000 ft)
- Heat output: 6739 Btu/hr (maximum configuration)
- Electrical power:
  - 100 - 127 V ac, 0.20 kVA maximum
  - 200 - 240 V ac, 2.17 kVA maximum
- Capacity of exhaust: 168 CFM
- Noise level: 6.8 bels (idling)

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

- Keyboard
- Mouse
- HDD
- 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
- HDD
- Display

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

**Software requirements**

The following network operating systems are supported in the System x3755 M3:

- Microsoft
  - Microsoft Windows Server 2008 R2
  - Microsoft Windows Server 2008, Datacenter x64 Edition
  - Microsoft Windows Server 2008, Enterprise x64 Edition
  - Microsoft Windows Server 2008, Standard x64 Edition
  - Microsoft Windows Server 2008, Web x64 Edition
- Linux
  - Red Hat Enterprise Linux 5 Server x64 Edition
  - SUSE Linux Enterprise Server 10 for AMD64/EM64
  - SUSE Linux Enterprise Server 11 for AMD64/EM64

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

http://www-03.ibm.com/servers/eserver/serverproven/compat/us/

**Compatibility**

The System x3755 M3 server contains 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 System x3755 M3 server and to maintain compatibility with many current software programs.

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

http://www-03.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 xSeries servers. The Sales Manual is updated periodically as new features and options are announced that support these servers.

**Limitations**

- The System x3755 M3 server contains a single, configurable serial port. It can be configured to be operating-system controlled, service-processor controlled, or shared between the two. You can set the configuration by changing the header location to which the internal serial cable is plugged. The default location from the factory is in the shared position. In the shared position, the service processor controls the port until the operating system is running, then the operating system takes control. The service processor can regain control of the port for user-configured dial-out situations or if the operating system is not available, but operating system control cannot be reestablished without resetting the server.
- To enable proper air flow for cooling, the System x3755 M3 server requires a rack with a perforated door, such as the NetBAY42 SR or NetBAY25 SR. An alternative is to remove the front door of rack cabinets where the door panel is of solid construction.
• Microprocessor SMP upgrades must be of the same type and clock speed. Mixing microprocessors of different speeds or cache size is not supported.
• The latest version of ServerGuide is available on the web. Use this latest version; 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
System x3755 M3 and related options
The System x3755 M3 server and related options are designated as customer setup. Customer setup instructions are shipped with system and options.

Configuration information

Cabling - Standard Non-RAID configurations System x3755 M3 3.5-inch SAS/SATA models contain DASD backplane supporting eight SAS/SATA drive bays. The backplane is connected to the raid adapter through two 16-bit low-voltage differential SCSI cables.

Additional cabling alternatives
In configurations where an external SCSI device attachment is required, a supported SCSI adapter or ServeRAID™ controller must be installed.

Rack installations
System x3755 M3 server 2U rack-drawer models are designed for installation in a 19-inch rack cabinet made for 28.5-inch deep devices, such as the IBM 42U Enterprise Rack.

If a System x3755 M3 server is mounted in a non-IBM rack, the rack must satisfy the following specifications:

• The rack must meet EIA- 310-D standards for mounting flanges and hole locations.
• The front to rear distance of the mounting flanges must be 660 - 734 mm (26.0 - 29 in).
• The thickness of the mounting flanges must be 1.9 - 3.3 mm (0.08 - 0.13 in).
• The mounting flanges must have either 7.1 mm (0.28 in) diameter holes or 9.6 mm (0.38 in) square holes on the standard EIA hole spacing.
• The rack must have a minimum depth of 50 mm (1.97 in) between the front mounting flange and inside of the front door for appropriate cooling.
• The rack must have a minimum depth of 200 mm (7.9 in) between the rear mounting flange and inside of the rear door to install the server and provide cable management space.
• The minimum side-to-side clearance in the rack between the front and rear mounting flanges must be of 467 mm (18.2 in) to accommodate the width of the server and the slide mounting brackets.
• The minimum side-to-side clearance in the rack between each door and the mounting flanges must be 484 mm (19.1 in) to accommodate the slide mounting brackets.
• The rack must include perforated front and rear doors and must not prevent the flow of cool air into or out of the rack.
• The weight-handling capacity of the rack must be able to support the maximum rack configuration, including all servers, external cables, PDUs, and so on.
• The rack must provide proper stabilization so that the rack does not become unstable when servers are pulled out for service.

Processor options

The System x3755 M3 server is an AMD Opteron processor system that supports internal processing speeds of up to 2.4 GHz and processing operations to memory up to 1333 MHz and the PCI Express bus up to 5 GHz. It contains an integrated, full-speed 512 KB ECC L2 cache and a 12 MB L3 cache. This system supports SMP applications through installation of identical processors in the additional processor slots of System x3755 M3 models.

Supported processor options

The following processor options are supported:

• 49Y7332 AMD Opteron Processor Model 6128 8C 2.0GHz 12MB Cache 115w
• 49Y7333 AMD Opteron Processor Model 6128HE 8C 2.0GHz 12MB Cache 79w
• 49Y7334 AMD Opteron Processor Model 6136 8C 2.4GHz 12MB Cache 115w
• 49Y7335 AMD Opteron Processor Model 6134 8C 2.3GHz 12MB Cache 115w
• 49Y7336 AMD Opteron Processor Model 6172 12C 2.1GHz 12MB Cache 115w
• 49Y7337 AMD Opteron Processor Model 6174 12C 2.2GHz 12MB Cache 115w
• 49Y7338 AMD Opteron Processor Model 6124HE 8C 1.8GHz 12MB Cache 79w
• 49Y7339 AMD Opteron Processor Model 6164HE 12C 1.7GHz 12MB Cache 79w
• 49Y7340 AMD Opteron Processor Model 6168 12C 1.9GHz 12MB Cache 115w
• 49Y7341 AMD Opteron Processor Model 6176SE 12C 2.3GHz 12MB Cache 137w
• 81Y7581 AMD Opteron Processor Model 6180SE 12C 2.5GHz 12MB Cache 140w
• 81Y7582 AMD Opteron Processor Model 6176 12C 2.3GHz 12MB Cache 115w
• 81Y7583 AMD Opteron Processor Model 6140 8C 2.6GHz 12MB Cache 115w

Supported memory options

The following memory options are supported:

• 49Y1400 16GB (2Gb, 4Rx4, 1.35V) PC3L-8500R LP RDIMM
• 49Y1405 2GB (2Gb, 1Rx8, 1.35V) PC3L-10600R ECC LP RDIMM
• 44T1592 2GB 1Rx8 2Gbit PC3-10600R-999 LP RDIMM
• 49Y1435 4GB (1x4GB, 2Rx4, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM
• 49Y1406 4GB (2Gb, 1Rx4, 1.35V) PC3L-10600R ECC LP RDIMM
• 49Y1436 8GB (1x8GB, 2Rx4, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM
• 49Y1397 8GB 2Rx4 2Gbit PC3L-10600R LP RDIMM 1.35V Capable
• 44T1570 2GB (1x2GB) 1Rx8 2Gbit PC3-10600 DDR3-1333 LP UDIMM
• 49Y1404 4GB (2Gb, 2Rx8, 1.35V) PC3L-10600E LP UDIMM

Power considerations

The System x3755 M3 server includes a standard 1100-watt power supply. This power supply is capable of providing sufficient power to run the server fully configured with supported devices.

Cable orders

Two dual 10/100/1000 Mbps, full duplex, Ethernet PCI controllers, standard with the System x3755 M3, are connected directly to independent RJ-45 connectors. The
RJ-45 connectors provide a 10/100/1000 Base-T interface (either at half- or full-duplex) for connecting twisted-pair cable to the Ethernet network. Cabling is not included with the server. To connect the Ethernet controller to a repeater or switch, use an unshielded twisted pair (UTP) cable with RJ-45 connectors at both ends. For 100 Mbps or higher 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 x3755 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**

- System unit
- Country kit carton
  - Power cord
  - Rack Installation Guide
  - Documentation CD

**Note:** The System x3755 M3 server is shipped in a single package. The country kit carton is contained inside the top portion of the system unit carton.

**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.

These servers are intended to be installed and secured in a rack. It is a customer's responsibility to ensure that the server and rack installation are 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.

**Terms and conditions**

**Field installable feature**

Yes
Warranty period

- One year (options)

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.

Customer setup

Yes

Machine code

No license terms apply.

Prices

For all local charges, contact your IBM representative.

Announcement countries

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Corrections

(Corrected on August 15, 2011)
Revision made to Publications section.