IBM System x3755 SMP-capable rack server supports new quad-core AMD Opteron processors

At a glance

The System x3755 server has the power, flexibility, and availability needed to handle compute-intensive applications in high-performance or business-performance computing:

- Rack-optimized, 4U high
- Three AMD Opteron processors with 2 MB of L2 cache and 6 MB of L3 cache
- Standard CPU Pass Thru card
- Two-way interleaved Chipkill™, PC5300 667 MHz ECC double data rate (DDR) SDRAM RDIMM memory; addressable up to 128 GB
- Choice of configurations -- flexible, hot-swap, serial attached SCSI (SAS) open bay models that support up to four drive bays
- 12 GB memory standard
- Single-channel SAS controller for high-speed, internal disk storage solutions up to 1.2 TB with RAID-1, -0, or -10 standard
- System configurations that include seven I/O slots:
  - One PCI Express x16
  - Two PCI Express x8
  - One PCI Express x4
  - Two PCI-X (one at 133 MHz or two at 100 MHz)
  - One HTx
- DVD in all models
- One 1500-watt ac-to-dc hot-swap power supply
- Three hot-swap fans standard with option for redundant kit
- Embedded systems management processor
- Integrated dual Gigabit Ethernet
- One serial port (16550A-compatible), three USB ports (two front, one rear), and two RJ-45 ports

Overview

The System x3755 server is optimized for general business applications. The highly manageable, 4U, rack-optimized platform features three quad-core, SMP-capable processors for high memory-intensive performance at an affordable price. Flexible configurations with the
IBM® CPU Pass Thru card standard offer entry pricing and the ability to add redundant features as needed.

IBM's unique design of the CPU Pass Thru card on the System x3755 delivers near linear scalability from two to three processors. With this feature, a 3-processor configuration will outperform a 4-processor configuration in certain applications, and at a lower cost, providing the optimal price-performance solution.

### Power and availability for On Demand Business

The System x3755 system includes AMD Opteron processors, large memory capacity with Xcelerated Memory Technology™, high memory bandwidth, and PCI-X, PCI Express, and HTx technology buses to power through core-, memory-, and I/O-intensive applications.

- Three AMD quad-core 8000 Series Opteron processors
- Up to 128 GB (32 x 4 GB), two-way interleaved, high-speed PC5300 667 MHz\(^1\) (eight RDIMMs per processor) ECC DDR SDRAM RDIMM memory, featuring Xcelerated Memory Technology
- Processor, heat sink, and eight memory DIMM slots on each processor card option
- Integrated single-channel SAS controller
- Up to 1.2 TB\(^2\) of SAS HDD storage
- Dual Gigabit Ethernet controllers, enabling high I/O capacity for demanding applications, plus failover capability
- 32- and 64-bit applications using a 64-bit operating system
- Embedded RAID-0, -1, or -10 HDD mirroring on all models with optional RAID-5 support available
- Support for PCI Express, PCI-X, and HTx technology
- Support for optional Remote Supervisor Adapter II Slimline
- Support for redundant power supply and cooling options

### High availability for around-the-clock operation

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

- IPMI 2.0 integrated systems management processor
- Remote power control for accessing and managing your server remotely
- TextConsole redirect over serial or LAN connection
- Early warning of problems before they occur through predictive failure analysis (PFA) on processors, memory, fans, power supply, and HDD options
- Pull-down, front-panel light path diagnostic for fast and easy service

### Outstanding service and support

- ServerGuide™, IBM Director, and Active Energy Manager
- Web support
- Warranty\(^4\): Three years, customer replaceable unit (CRU) and on-site service\(^5\), limited warranty; optional warranty service upgrades available

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\(^1\) GHz and MHz denote the internal and/or external clock speed of the microprocessor only, not application performance. Many factors affect application performance.

\(^2\) When referring to HDD or tape backup capacity, GB stands for 1,000,000,000 bytes. Total user capacity may vary depending on operating environments.

\(^3\) 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.

**Key prerequisites**

- Monitor
- USB keyboard and mouse
- Rack

**Note:** Users will likely need a USB diskette drive to install device drivers or to save and restore such operating system features as Automatic System Recovery (ASR) settings.

**Planned availability date**

March 27, 2009

**Description**

**System x3755 related options**

2.7 GHz, 2 MB L2, 6 MB L3 cache, 75 W quad-core Opteron processor model 8384 upgrade (46M2498) supports internal processing speeds of 2.7 GHz and external processing operations to memory at 667 MHz. It contains an integrated, full-speed, 512 KB L2 cache per core and 6 MB L3 cache.

The System x3755 server is an AMD Opteron system that supports internal processing speeds of up to 2.7 GHz and processing operations to memory at up to 667 MHz. This system supports SMP applications through the removal of the CPU Pass Thru card and the installation of one additional like-processor in the System x3755 models.

In addition, four PCI Express slots, two PCI-X slots, and one HyperTransport expander slot are available.

**High-performance server subsystems**

These high-throughput servers feature quad-core, four-socket, SMP-capable AMD Opteron processors for excellent scalability.

This model comes with three processor cards standard. You can install a total of four option processor cards in this model by removing the standard CPU Pass Thru card and installing another processor card of the same type as the other three. Processor-to-memory subsystem performance is optimized for high-speed 667 MHz DDR 2 SDRAM, and supports up to 128 GB of memory. The System x3755 server uses the HT2100 and HT1000 chipsets to maximize processor-to-system I/O throughput. Seven system I/O slots are available:

- Four PCI Express
- Two PCI-X
- One HyperTransport expansion

**Additional features**

- System memory can be expanded to 128 GB.
  - Includes eight DIMM connectors per processor card that support 1 GB, 2 GB, and 4 GB of PC5300 CL3 ECC DDR SDRAM RDIMM
  - Uses interleaved memory populated with two DIMMs at a time with DIMMs of the same size
- Supports mixed memory sizes in pairs
- Features Chipkill memory
- A single-channel, 64-bit, SAS controller that supports high-speed communication at up to 320 MB/s, and Low-Voltage Differential SCSI (LVDS) internal storage solutions up to 1.2 TB.
- Dual full-duplex Broadcom 5708 Gigabit Ethernet PCI controllers speed network communications to LAN clients.

The System x3755 subsystems are tuned to maximize processor-to-system I/O throughput. These features, combined with SMP capability, make this server an excellent choice for:

- Scientific and technical computing
- Financial analysis
- Linux® clustering

**High-availability and serviceability features**

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

- Four hot-swap HDD bays with SCA-2 connectors supporting SAF-TE functions
- ECC RDIMMs combined with an integrated ECC memory controller correcting many soft and hard single-bit memory errors, while minimizing disruption of service to LAN clients
- Chipkill memory for the detection and correction of many multi-bit memory errors, helping keep the server up and running while taking the inoperative memory offline
- ECC L2 cache processors to improve data integrity and help reduce downtime
- PFA on HDD options, memory, processors, and fans to alert the system administrator of an imminent component failure
- Dual Broadcom 5708 Gigabit Ethernet controllers that support:
  - Failover, Adapter Fault Tolerance (AFT)
  - PXE 2.0 Boot Agent
  - Wake on LAN®
  - Load balancing or teaming
- Worldwide, voltage-sensing 1500-watt, ac-to-dc hot-swap power supplies
- Up to six hot-swap cooling fans for added reliability:
  - Two fans for I/O area and HDD bays
  - Four system fans for processors and memory
- Incorporated fan speed controls to reduce noise while reducing system temperatures
- Embedded systems management processor for diagnostic, reset, power-on self-test (POST), and auto recovery functions; monitoring of temperature, voltage, and fan speed; and generation of alerts when thresholds are exceeded (refer to the Limitations section for restrictions)
- Informational LED panel that gives visual indications of system well-being
- CD-ROM diagnostics and a diagnostic LED indicator to help you find a failing component, which may help reduce downtime and service costs
- Easy access to system board, adapter cards, processor, and memory

**Expandability and growth**

The System x3755 server contains high levels of function and storage capacity for a 4U, 19-inch rack-drawer package. It supports customer installation of adapters, processors, memory, and HDD options. Functions (such as SVGA video, SAS SCSI, IDE, and two 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 128 GB of system memory
- Internal data storage up to 1200 GB (using four 300 GB SAS HDDs)
- DVD drive
• ATI RN50b video controller with 16 MB of memory

**Systems management**

The System x3755 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.

IT administrators have comprehensive, virtual on-site control of IBM 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
• 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 use of server resources such as:
  – Memory
  – Processor
  – HDDs
• Help identify potential performance bottlenecks and react to prevent downtime

IBM Director Agent delivers integration into leading workgroup and enterprise systems management environments via Upward Integration Modules (available from IBM and third parties). Advanced management capabilities built into System x 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 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.

- **Warranty:** Three years, customer replaceable unit (CRU) and on-site service, limited warranty; optional warranty service upgrades available.
- The ServerProven program lets you confidently configure your server with various devices and operating systems. This program includes compatibility information from actual testing of the System x3755 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.

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**Standard System x3755 configurations**

<table>
<thead>
<tr>
<th>Model</th>
<th>Processor</th>
<th>L2 cache</th>
<th>L3 cache</th>
<th>Memory</th>
<th>HDD</th>
<th>HDD iface</th>
<th>Power supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>7163-DBG</td>
<td>3 X 2.7 GHz Opteron 8384</td>
<td>2 MB</td>
<td>6 MB</td>
<td>12 GB SAS</td>
<td>Open bay</td>
<td>RAID</td>
<td></td>
</tr>
<tr>
<td>Standard CPU Pass Thru card</td>
<td></td>
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</tr>
</tbody>
</table>

Note: DVD/CD-RW included in all models.

**Accessibility by people with disabilities**

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


**Product positioning**

A high-performance, four-socket, SMP-capable network server with AMD Opteron processors helps to protect your hardware investment with an easy migration path from 32- to 64-bit computing. At the same time, the server can handle emerging applications requiring maximum computing power and function in 4U 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.
### The Single Entity Offerings (SEO)

<table>
<thead>
<tr>
<th>Description</th>
<th>Machine</th>
<th>Model</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>System x3755</td>
<td>7163</td>
<td>DBG</td>
<td>7163DBG</td>
</tr>
</tbody>
</table>

Remember a line cord, a keyboard, and a mouse have to be ordered separately for each model.

These options can be ordered with the systems.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order number</th>
<th>EAN number</th>
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</thead>
<tbody>
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</table>
USB Turkish 440                           42C0138  50-50689-87975-1
IBM Enhanced Performance Keyboard USB Turkish 179                           42C0139  50-50689-87976-8

Power Cords

European 10A C13 to CEE 7/7 2.8M Power Cord Option 39Y7917  50-50689-85276-1
Denmark 10A C13 to DK2-SA 2.8M Power Cord Option 39Y7918  50-50689-85277-8
Switzerland 10A C13 to SEV 1011 2.8M Power Cord Option 39Y7919  50-50689-85280-8
Israel 10A C13 to SI 32 2.8M Power Cord Option 39Y7920  50-50689-85282-2
Italy 10A C13 to CEE 7/7 2.8M Power Cord Option 39Y7921  50-50689-85281-5
South Africa 10A C13 to SABS 164/1 2.8M Power Cord Option 39Y7922  50-50689-85278-5
United Kingdom 10A C13 to BS 1363 2.8M Power Cord Option 39Y7923  50-50689-85279-2
Universal Jumper Cord - 1.5 m IEC C13 to C20 2.5M Power Jumper Cord Option 39Y7937  50-50689-85287-7

Publications

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

- **Installation Guide.** This printed document contains instructions for setting up the server and basic instructions for installing some options.
- **User’s Guide.** This document is in Portable Document Format (PDF) on the IBM Server Documentation CD. It contains general information about the server, including information about features and how to configure the server.
- **Warranty and Support Information.** This PDF document on the IBM Server Documentation CD contains information about the terms of the warranty and how to receive service and assistance.
- **Option Installation Guide.** This PDF document on the IBM Server Documentation CD contains detailed instructions for installing, removing, and connecting optional devices that the server supports.
- **Safety Information.** This PDF document on the IBM Server Documentation CD 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.
- **Rack Installation Instructions.** This printed document contains instructions for installing the server in a rack.
- **Hardware Maintenance Manual and Troubleshooting Guide.** This document available from the IBM Support Web site contains information to help you solve problems yourself as well as information for service technicians.
- **ServerGuide.** This document consists of online publications and drivers to support the System x3755 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.** This systems-management software is included.

To check for updated documentation and technical updates, visit


Under Search technical support, type x3755, and click Search.

**Note:** Changes are made periodically to the IBM Web site. 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 IBM Systems Information Center provides you with a single information center where you can access product documentation for IBM systems hardware, operating systems, and server software. Through a
consistent framework, you can efficiently find information and personalize your access. The IBM Systems Information Center is at


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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.

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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

Physical specifications

7163-DBG

Processor (quad-core) Opteron 8384 75w
Internal speed - 2.7 GHz
External speed - 2000 MT/s
Number standard - 3
Maximum - 310
L2 cache total 6 MB
L3 cache total 18 MB
CPU Pass Thru card Standard
Memory (667 MHz SDRAM) 12 GB ECC
RDIMMs - 6 x 2 GB
DIMM sockets - 8
Address capability 128 GB
Video - SVGA
Memory - 8 MB
HDD controller SAS
Channels - 1
Connector internal - 1
Connector external - 0
IDE controller - IDE
Channels - 1
Connector internal - 1
Connector external - 0
HDD - Open Bay
Total bays - 4
3.5-inch, hot-swap SAS - 4
Internal capacity - 1.2 TB
Bays available - 4
3.5-inch, hot-swap SAS - 4
Total slots - 7
PCI-X 64-bit/133 MHz - 2
PCI-E x4, x8, x16 - 4
Hyper Transport Expander - 1
Slots available - 7
Management proc; - Standard
RSA-II SlimLine - Optional
ServeRAID™ 8k-1 - Standard
Ethernet controller - 2x10/100/1k Mbps
DVD/CD-RW - 24x-10x
Diskette drive - 0
Power supply - 1500 W
Number standard - 1
Number maximum - 2
Hot-swap - Yes
Redundant power - Optional
Auto restart - Yes

7 Capacities are based on installation of four processor cards and 8 x 4 GB RDIMMs installed in each card.

8 Capacities are based on installation of four 300 GB HDDs.

9 Wattage is dependent on input voltage: 110 V ac input provides 750 W output, 220 V ac input provides 1500 W.

10 With the CPU Pass Thru card installed, the maximum number of processors is reduced from four to three.

**Video subsystem**

- ATI RN50b graphics controller chip
- Integrated on planar and connected to the PCI bus
- Support for DDR2 SDRAM external memory
- 128-bit graphics engine with 8, 16, and 24 bpp mode acceleration
- 32-bpp (4G colors/true color) support
- Integrated 350 MHz RAMDAC
- DDC2B monitor communications support

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

**Microsoft Windows® 2000/2003 (32- and 64-bit) and Linux (all distributions)**

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Refresh rate (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>640 x 480</td>
<td>60, 72, 75, 85</td>
</tr>
<tr>
<td>800 x 600</td>
<td>60, 72, 75, 85</td>
</tr>
<tr>
<td>1024 x 768</td>
<td>60, 70, 72, 75</td>
</tr>
</tbody>
</table>

**Dimensions**

- Width: 483 mm (19 in)
• Depth: 711 mm (28 in)
• Height: 178 mm (7 in)
• Weight:
  – Minimum configuration: 29.5 kg (65 lb)
  – Maximum configuration: 43.2 kg (95.25 lb)
  – Mounting rails with cable management arm: 7.9 kg (17.50 lb)

**Electrical**

- 100 to 127 (nominal) V ac; 50 Hz or 60 Hz; 4.0 A
- 200 to 240 (nominal) V ac; 50 Hz or 60 Hz; 2.0 A
- Input kilovolt-amperes (kVA) (approximately):
  – Minimum configuration: 0.966 kVA
  – Maximum configuration: 1.820 kVA
- Btu output:
  – Ship configuration: 683 Btu/hr (200 watts)
  – Full configuration: 6297 Btu/hr (1844 watts)
- Acoustical noise emission level: Sound power levels
  – 6.5 bels (idling)
  – 6.5 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 servers are intended for use as rack-drawer servers and are tested and designed to operate in a horizontal position.

**Physical specifications**

**System x3755**

Approximate shipping dimensions and weight:

- Single pack dimensions: 998 mm x 603 mm x 394 mm (39.3 in x 23.75 in x 15.5 in)
- Single pack weight: 52.2 kg (115 lb) fully loaded
- Quantity per pallet: 4
- Pallet load weight: 230 kg (505 lb) (includes pallet)
- Estimated safe stacking: 2 high
- Pallet load dimensions: 1200 mm x 1000 mm x 940 mm (47.25 in x 39.37 in x 37 in)

**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 51318.22-99, GOST R 51318.24-99, GOST R 51317.3.2-99, GOST R 51317.3.3-99
- IEC-60950-1 (CB Certificate and CB Test Report)
- CE Mark (EN55022 Class A, EN60950-1, and EN55024,EN61000-3-2, and EN61000-3-3)
- CISPR 22, Class A
• FCC - Verified to comply with Part 15 of the FCC Rules (Class A) prior to product delivery

**Operating environment**

- Temperature:
  - 10.0 to 35.0 degrees C (50 to 95 degrees F) (Server on)
  - 0.0 to 60.0 degrees C (-32 to 140 degrees F) (Server off)
- Relative humidity: 8% to 80%
- Maximum altitude: 2,133 m (7,000 ft)
- Heat output: 6297 Btu/hr (maximum configuration)
- Electrical power:
  - 100 to 127 V ac, .966 kVA maximum per power supply
  - 200 to 240 V ac, 1.82 kVA maximum per power supply
- Capacity of exhaust: 52 CFM (1.472 CMM)
- Noise level: 6.5 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**
For support, certification, and version information on network operating systems, visit


**Compatibility**
The System x3755 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 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 System x servers, visit


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

Limitations

- The System x3755 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.
- If using the Remote Supervisor Adapter II Slimline: The maximum resolution supported is 1280 x 768.
- To ensure proper air flow for cooling, the System x3755 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.
- Use the latest version of ServerGuide that is available on the Web. Earlier versions of ServerGuide may not be compatible with the server.

Refer to the Software requirements section for operating system limitations.

Planning information

Customer responsibilities

System x3755 and related options

The System x3755 server and related options are designated as customer setup. Customer setup instructions are shipped with system and options.

Configuration information

Bay configuration

The System x3755 server contains four drive bays, stacked vertically under the operator panel and DVD drive.

DVD is cabled directly to the IDE port.

Cabling

Standard non-RAID configurations

System x3755 hot-swap models contain a DASD backplane supporting four hot-swap, SCA-2-compliant drive bays. The backplane is connected to the internal connector of the integrated SAS controller through a 16-bit, low-voltage differential SAS cable.

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 server 4U rack-drawer models are designed for installation in a 19-inch rack cabinet made for 28-inch deep devices, such as the NetBAY42U ER and NetBAY42U SR. Installation into some of the older Netfinity® racks (9306900, 9306910, 9306200) requires a rack extension kit for proper cable bend radius and cooling.

If an System x3755 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 between 457.2 and 762 mm (24 and 30 in).
• The thickness of the mounting flanges must be between 1.9 and 3.3 mm (0.08 and 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 166 mm (6.53 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 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 adequate 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 server is an AMD Opteron quad-core system that supports internal processing speeds of up to 2.7 GHz and processing operations to memory of up to 667 MHz. The quad-core processor contains an integrated, full-speed ECC 512 KB of L2 cache per core and 6 MB of L3 cache. This system supports SMP applications through installation of four total processors in the System x3755.

Supported processor option

The following processor option is supported:

• Quad Core Opteron Processor Model 8384 (2.7 GHz 2 MB L2 6 MB L3 Cache 75w) - 46M2498

Supported memory options

The following memory options are supported:

• Express 2GB (2x1GB) PC2-5300 CL5 ECC DDR2 RDIMM (41Y2762)
• 4GB (2x2GB) PC2-5300 CL5 ECC DDR2 667MHz RDIMM (46C7539)
• 8GB (2x4GB) PC2-5300 CL5 ECC DDR2 667MHz RDIMM (46C7538)

Other options:

• Redundant fan kit - 3 fans (40K7545)

Power considerations

The System x3755 server includes a standard 1500-watt power supply. This power supply is capable of providing sufficient power to run the server fully configured with supported devices.

Cable orders

The dual 10/100/1000 Mbps, full duplex, Ethernet PCI controllers, standard with the System x3755, 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 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
  - System x3755 Installation Guide
  - Rack Installation Guide
  - CD-ROM packages
  - Rail kit

12 Documentation, IBM Director, Broadcom, ServerGuide, ServeRAID, and diagnostics

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

Processor upgrade options

- AMD Opteron processor
- Safety instructions/warranty

Supplies

None

Security, auditability, and control

Security and audibility 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.

AP, LA, CAN, Europe considerations

NLS support is provided for many of the System x3755 components in the following languages:

- U.S. English
- German
- French
- Italian
- Spanish
- Japanese
- Brazilian-Portuguese
- Simplified Chinese
- Korean
- Traditional Chinese (not committed)

The NLS support includes national language keyboard support, multi-lingual nomenclature, and translated documentation as required by the individual countries.

Terms and conditions

Warranty period

- Three years

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. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country- and location-specific information.

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

Customer Replaceable Unit (CRU) Service

IBM provides a replacement CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request. A CRU is designated as being either a Tier 1 (mandatory) or a Tier 2 (optional) CRU. Installation of Tier 1 CRUs, as specified in this announcement, is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation. You may install
a Tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service specified below, On-site Service.

Based upon availability, a CRU will be shipped for next business day (NBD) delivery. IBM specifies in the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM. When return is required, return instructions and a container are shipped with the replacement CRU, and you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

The following parts have been designated as Tier 1 CRUs:

- Battery  
- Blank filler  
- Cable-management arm  
- 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**

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

**International Warranty Service**

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

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

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

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


For more information on IWS, refer to Services Announcement ZS01-0168, dated September 25, 2001.
Licensing
Programs included with this product are licensed under the terms and conditions of the License Agreements that are shipped with the system.

IBM hourly service rate classification
Two

Field-installable features
Yes

Model conversions
No

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

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


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

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

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

Pricing
For all local charges, contact your IBM representative.

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Announcement countries

All European, Middle Eastern, and African countries.

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