IBM System x3400 M3 (Withdrawn)

Product Guide (withdrawn product)

The System x3400 M3 servers are self-contained, high-performance, 5U tower systems designed for web and business server applications in remote or distributed environments. These servers are highly scalable in configuration, performance, and availability. They offer two-way SMP power with the latest Intel Xeon 5600 series processors, a dual connector 8-port SAS/SATA RAID controller on hot-swap models, an embedded Gigabit Ethernet controller, and six PCI Express 2.0 slots. These servers support SATA or SAS HDDs.

These servers are flexible tower models that deliver the best blend of power, manageability, expandability, and serviceability. They meet the requirements of server applications in the small-to-medium businesses that need an affordable general-purpose network server. These servers fit into business environments where tower configurations are required. Figure 1 shows the IBM® System x3400 M3.

Figure 1. The IBM System x3400 M3

Did you know?

The System x3400 M3 server supports optional spare DIMMs, memory mirroring, and RAID-0, RAID-1, and RAID-1E support standard with optional RAID-5, RAID-6, RAID-10, and RAID-50 available. It features large amounts of internal expansion and I/O support. Comprehensive systems management tools such as advanced diagnostics, Predictive Failure Analysis, and the ability to control resources from a single point make it easy to deploy, integrate, service, and manage from any location.

Key features

The IBM System x3400 M3 has the following features.

Performance

The x3400 M3 offers numerous features to boost performance and reduce costs:

- Up to two 6-core Intel Xeon 5600 series processors offering superior performance. Xeon 5600 series processors offer up to 54% better performance than the previous generation 5500 series processors (workload dependent).
- 16 DIMMs of registered 1333 MHz DDR3 ECC memory provide speed, high availability, and a memory capacity of up to 128 GB.
- High-performance 6 Gbps SAS RAID controllers and 15K RPM 6 Gbps SAS disk drives in a variety of capacities to suit your local storage requirements.
- The use of solid-state drives (SSDs) instead of or along with traditional spinning drives (HDDs) can significantly improve I/O performance. An SSD can support 20,000 I/O operations per second (IOPS) whereas a typical HDD handles fewer than 500 IOPS.

Flexibility and scalability

The x3400 M3 has the ability to grow with your application requirements with these features:

- A choice of 4-core or 6-core processors with clock rates from 1.6 GHz to 3.6 GHz.
- 16 DIMM sockets allowing memory expansion of up to 128 GB.
- Up to two redundant hot-swap 920 W AC power supplies.
- Seven USB 2.0 ports available - two front, four rear, and one internal for an embedded hypervisor.
- The tower chassis can be converted to a 5U rack-mount chassis with the optional tower-to-rack conversion kit.
- Storage bay flexibility: Up to 16 hot-swap 2.5" drive bays for SAS or SATA HDDs, or solid-state drives (intermixing supported) in addition to a bay for an internal optical drive.
- Direct-attach SAS storage with the EXP2512, EXP2524, and EXP3000 storage enclosures is supported. IBM System Storage servers, including network-attached storage (NAS), and iSCSI or Fibre Channel-attached storage, can also be attached.
- Up to seven PCI Express (PCIe) 2.0 I/O slots for increased network or storage connectivity. Optional PCI-X slots for specialized adapters.

Manageability and security

Powerful systems management features simplify local and remote management of the x3400 M3:

- The x3400 M3 includes an Integrated Management Module (IMM) to monitor server availability, perform Predictive Failure Analysis, and trigger IBM Systems Director alerts.
- An optional Virtual Media Key enables additional systems management capabilities, including web-based out-of-band remote control (keyboard video and mouse), remote optical drive support, Windows “blue screen” error capture, and support for LDAP and SSL protocols.
- Text Console Redirection support allows the administrator to remotely view x3500 M3 text messages

over Serial or LAN connections.

- Integrated industry-standard Unified Extensible Firmware Interface (UEFI) next-generation BIOS. New capabilities include:
  - Human readable event logs — no more beep codes.
  - Complete out-of-band coverage by the Advance Settings Utility to simplify remote setup.
  - A complete setup solution, allowing adapter configuration functions to be moved into UEFI.
- Integrated Trusted Platform Module (TPM) 1.2 support.
- Industry-standard AES NI support for faster, stronger encryption.
- Integrated IPMI 2.0 support alerts IBM Systems Director to anomalous environmental factors, such as voltage and thermal conditions. It also supports highly secure remote power control using data encryption.
- IBM Systems Director is available for proactive systems management. IBM Systems Director comes with a portfolio of tools, including IBM Systems Director Active Energy Manager, IBM Service and Support Manager, and others. IBM Systems Director also offers extended systems management tools for additional server management and increased availability. When a problem is encountered, IBM Systems Director can issue administrator alerts via email, pager, and other methods.
- IBM Systems Director Active Energy Manager provides advanced power management features with actual real-time energy monitoring, reporting, and capping features.

Availability and serviceability

The System x3400 M3 provides many features to simplify serviceability and increase system uptime:

- The server offer Chipkill ECC memory protection (when using x4 DIMMs). Chipkill memory is up to 16 times better than standard ECC memory at correcting memory errors. This can help reduce downtime caused by memory errors.
- The server offers memory mirroring for redundancy in the event of a non-correctable memory failure.
- The server supports up to two redundant hot-swap 920 W AC power supplies.
- Toolless cover removal provides easy access to upgrades and serviceable parts, such as HDDs and memory. Similarly, the Virtual Media Key and the ServeRAID controller can be installed and replaced without tools. This means less time (and therefore less money) spent servicing the x3400 M3.
- The server offers hot-swap and redundant fan modules and power supplies and hot-swap disk drives (redundant when implemented in conjuction with a RAID controller). These features mean greater system uptime.
- Toolless slides ship with the server, together with a cable management arm (CMA), that allows the rack server to easily slide into place.
- A light path diagnostics panel and individual light path LEDs quickly lead the technician to failed (or failing) components. This simplifies servicing, speeds up problem resolution, and helps improve system availability.
- Solid-state drives (SSDs) offer significantly better reliability than traditional mechanical HDDs for greater uptime.
- The three-year (parts and labor) limited onsite warranty provides peace of mind and greater investment protection than a one-year warranty does.

Energy efficiency

The System x3400 M3 has an energy-efficient design with features including the following:

- Low-voltage processors draw less energy and produce less waste heat than high-voltage processors, thus helping to reduce data center energy costs. Available 4-core Xeon 5600 series processors use only 40 W and 6-core processors consume as little as 60 W.
- Optional solid-state drives (SSDs) use only 2 W of power per drive, compared to 9 - 10 W for 2.5-inch HDDs. This is as much as 80% less power than a 2.5-inch HDD would use, with a corresponding reduction in heat output that further improves the overall bottom line.
- Support for 1.35 V low-voltage DDR3 memory DIMMs that consume 20% less energy.
- Energy-efficient components, including low-voltage transistors and voltage regulator modules, and power supplies that are up to 90% efficient.
- The server uses hexagonal ventilation holes in the chassis. Hexagonal holes can be grouped more densely than round holes, providing more efficient airflow through the system chassis. This ultimately results in reduced operational costs.

Locations of key components and connectors

Figures 2 and 3 show the front and rear of the server.

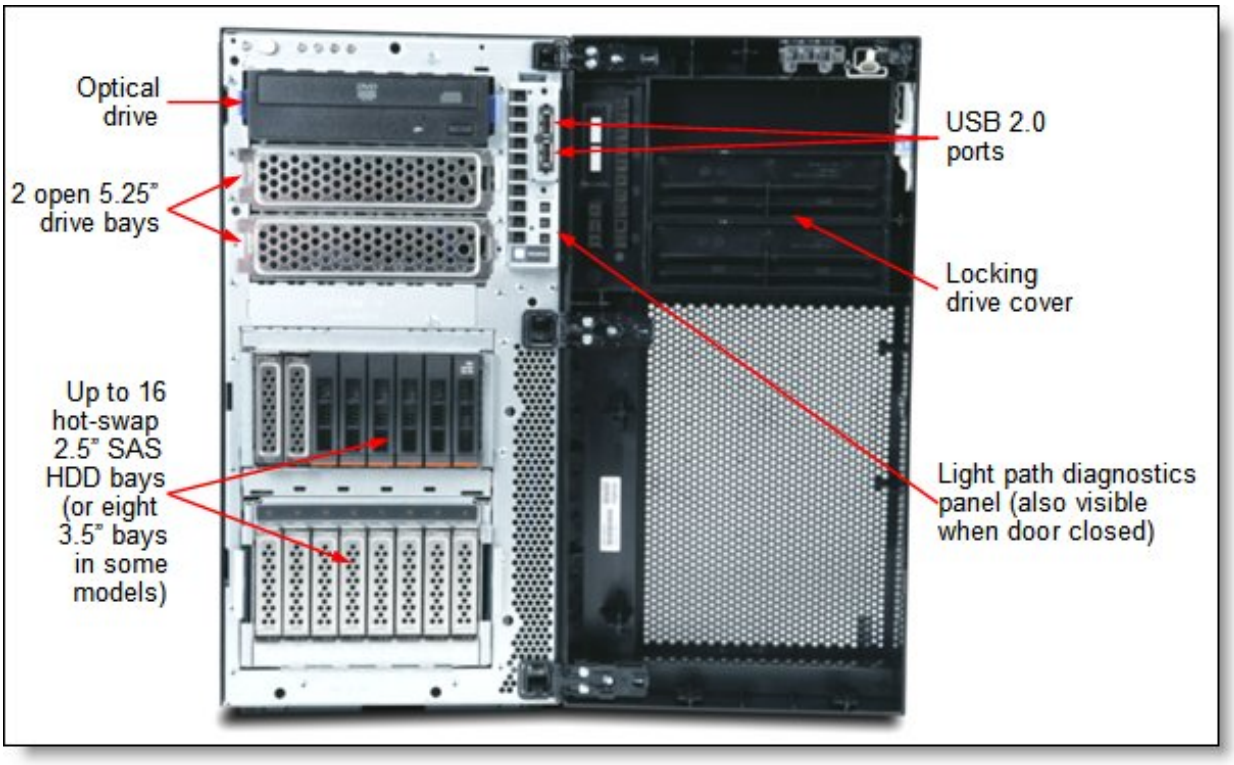

Figure 2. Front view of the IBM System x3400 M3

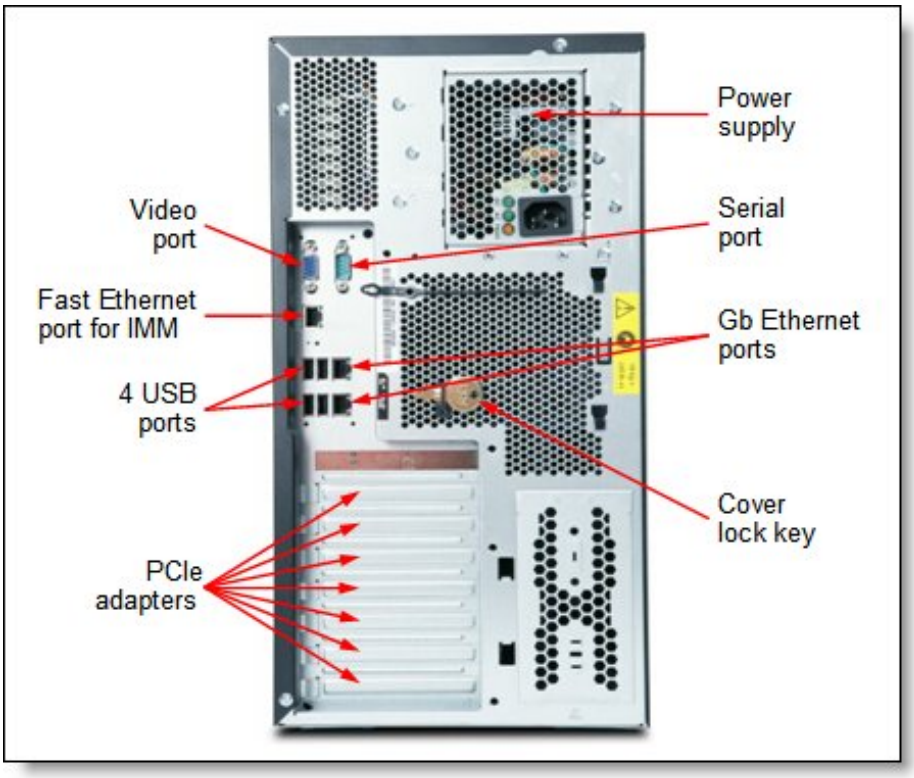

Figure 3. Rear view of the IBM System x3400 M3

Figure 4 shows the locations of key components inside the server.

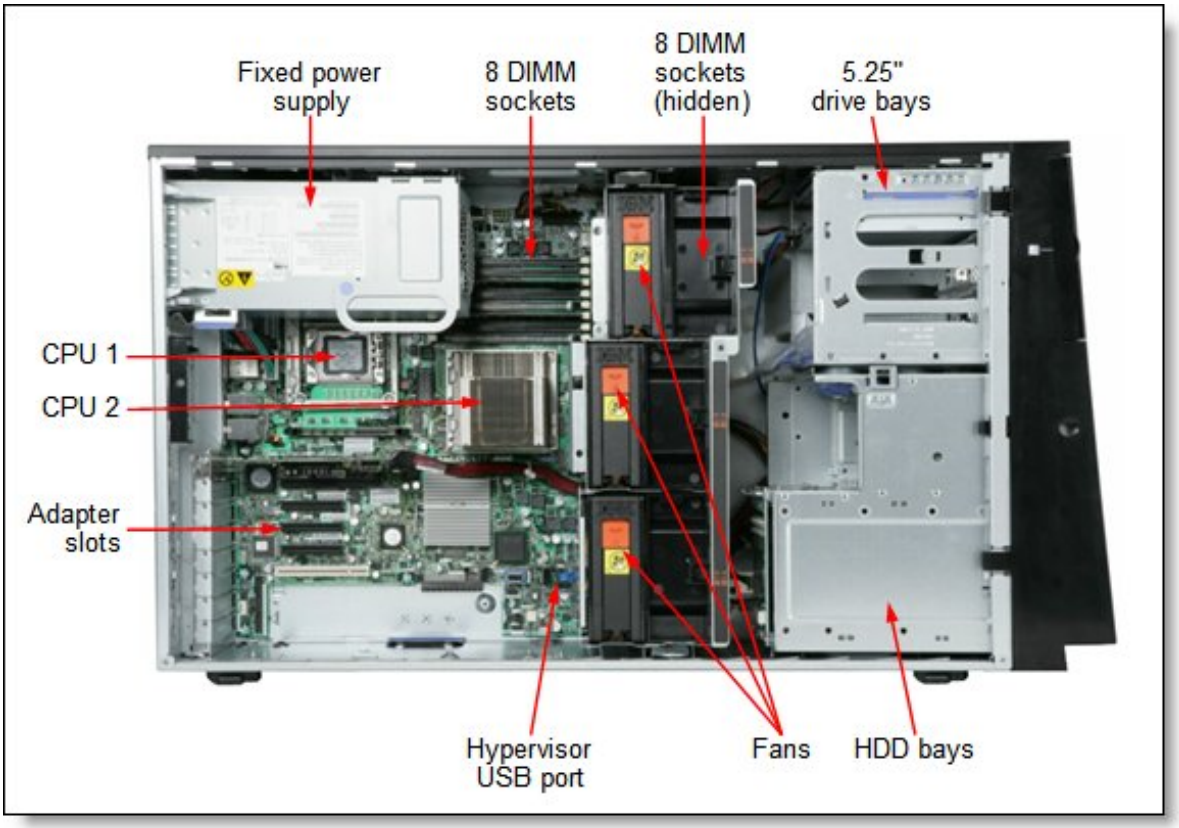

Figure 4. Inside view of the IBM System x3400 M3

Standard specifications

The following table lists the standard specifications.

Table 1. Standard specifications

Components	Specification
Form factor	Tower or 5U Rack.
Processor	Up to two six-core (up to 3.46 GHz) or quad-core (up to 2.66 GHz) Intel Xeon 5600 series processors with QuickPath Interconnect technology up to 6.4 GT/s, and up to 1333 MHz memory speed. Supports specific Quad-core Intel Xeon 5500 series processors via Configure-To-Order (CTO).
Memory cache	Up to 12 MB L3 for Xeon 5600 processors. Up to 8 MB L3 for Xeon 5500 processors.
Chipset	Intel 5520.
Memory	Up to 16 DIMM sockets (eight DIMMs per processor). Up to 128 GB with 8 GB DDR3 RDIMMs and 16 populated DIMM slots (up to 64 GB with eight DIMMs per processor), or up to 48 GB with 4 GB DDR3 UDIMMs and 12 populated DIMM slots (up to 24 GB with six DIMMs per processor).
Memory protection	ECC, ChipKill (for x4-based memory DIMMs), memory mirroring, and memory sparing.
Disk drive bays	Up to four 3.5" Simple-Swap SATA HDDs, or up to eight 3.5" hot-swap SAS/SATA HDDs, or up to 16 2.5" hot-swap SAS/SATA HDDs or solid-state drives. If the 670 W fixed power supply is used, only up to four 3.5-inch drives can be installed or up to eight 2.5-inch drives can be installed.
Maximum internal storage	Up to 12 TB with 3TB 3.5" SS SATA HDDs, or up to 24 TB with 3TB 3.5" HS SATA HDDs, or up to 9.6 TB with 600 GB 2.5" HS SAS HDDs. Intermix of SAS/SATA is supported.
RAID support	RAID 0, 1, 1E with ServeRAID BR10il v2 or M1015; RAID 0, 1, 5, 10, 50 with M5014 or M5015. An optional upgrade to RAID 5 is available for M1015. An optional upgrade to RAID 6, 60 is available for M5014/M5015.
Optical drive bays	One with support for HH DVD-ROM or Multiburner (for all models except 8x 3.5" HDDs), or one with support for UltraSlim DVD-ROM or Multiburner (for 8x 3.5" HDD models).
Tape drive bays	Two with support for HH internal tape drives. A maximum of one or two internal tape drives can be installed (tape drive dependent).
Ethernet	Integrated two Gigabit Ethernet ports. Broadcom 5716C controller.
PCI Expansion slots	The server supports up to eight PCI Express slots (six slots are on the system planar and one or two slots are on the extender card. The slot form factors are as follows. System planar: ● Slot 1: PCIe 2.0 x8, full height, half length ● Slot 2: PCIe 2.0 x16 (x8 wired), full height, full length ● Slot 3: PCIe 2.0 x8 (x4 wired), full height, full length ● Slot 4: PCIe 2.0 x8 (x4 wired), full height, full length ● Slot 5: PCIe 2.0 x8, full height, full length ● Slot 6: PCI 32-bit/33 MHz, full height, half length PCI Express extender card (comes with standard models): ● Slot 7: PCIe x8 (x4 wired), full height, half length PCI-X extender card (only available in CTO): ● Slot 7: PCI-X 64-bit/133 MHz, full height, half length ● Slot 8: PCI-X 64 bit/133 MHz, full height, half length

External ports	Two USB 2.0 on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, two RJ-45 network ports on rear. One internal USB port for embedded hypervisor. One internal USB port for internal USB tape drive.
Cooling	IBM Calibrated Vectored Cooling™ with three hot swap (non-redundant) fans
Power supply	Up to two redundant hot-swap 920 W AC power supplies or one fixed 670 W AC power supply (model dependent).
Hot-swap components	Hard drives, power supplies, fans.
Systems management	UEFI, IBM Integrated Management Module (IMM), Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director* and IBM Systems Director Active Energy Manager™, IBM ServerGuide. Optional Virtual Media Key for remote presence (graphics, keyboard and mouse, virtual media).
Security features	Power-on password, administrator's password, Trusted Platform Module (TPM).
Video	Matrox G200eV with 16 MB memory integrated into the IMM. Maximum resolution is 1280x1024 at 75 Hz with 16M colors.
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4.0 and 4.1, VMware ESXi 4.0 and 4.1 embedded hypervisor.
Limited warranty	One-year (7378) or 3-year (7379) customer-replaceable unit and onsite limited warranty with 9x5/next-business-day response time.
Service and support	Optional service upgrades are available through IBM ServicePacs®: 4-hour or 2-hour response time, 8-hour fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Width: 218 mm (8.6 in), depth: 767 mm (30.2 in), height: 440 mm (17.3 in)
Weight	Minimum configuration: 27.10 kg (59.7 lb), Maximum configuration: 37.85 kg (83.4 lb)

* Effective October 12, 2012, or until supply is depleted, IBM will discontinue the shipment of IBM Systems Director DVDs with IBM System x servers and IBM BladeCenter chassis. IBM Systems Director Express Edition and IBM Systems Director Standard Edition, which include software subscription and support, continue to be available for IBM System x servers and IBM Blade Centers.

The x3400 M3 servers are shipped with the following items:

- Statement of Limited Warranty.
- Important Notices.
- Documentation CD that contains the *Installation and User's Guide.*
- One 2.8 m line cord (model dependent).

Standard models

The following table lists the standard models.

Table 2. Standard models

Model†	Intel Processor* (2 maximum)	RAM	Disk controller	Disk bays (std/max)	Disks	Network	Optical	Power supply
Models announced February 2011								
7378/ 7379- A2x	1x E5603 4C 1.60 GHz 4 MB 1066 MHz	1x 2 GB	Integrated SATA (no RAID)	4x 3.5" SS / 4	Open	2 x GbE	DVD	1x 670 W Fixed
7378/ 7379- A4x	1x E5603 4C 1.60 GHz 4 MB 1066 MHz	1x 2 GB	ServeRAID BR10il v2	4x 3.5" HS / 4	Open	2 x GbE	DVD	1x 670 W Fixed
7378/ 7379- B2x	1x E5606 4C 2.13 GHz 8 MB 1066 MHz	1x 2 GB	Integrated SATA (no RAID)	4x 3.5" SS / 4	Open	2 x GbE	DVD	1x 670 W Fixed
7378/ 7379- B4x	1x E5606 4C 2.13 GHz 8 MB 1066 MHz	1x 2 GB	ServeRAID BR10il v2	4x 3.5" HS / 4	Open	2 x GbE	DVD	1x 670 W Fixed
7378/ 7379- C2x	1x E5607 4C 2.26 GHz 8 MB 1066 MHz	1x 2 GB	ServeRAID BR10il v2	4x 3.5" HS / 4	Open	2 x GbE	DVD	1x 670 W Fixed
7378/ 7379- 56x	1x E5620 4C 2.40 GHz 12 MB 1066 MHz	1x 4 GB	ServeRAID BR10il v2	4x 3.5" HS / 4	Open	2 x GbE	DVD	1x 670 W Fixed
7378/ 7379- 58x	1x E5620 4C 2.40 GHz 12 MB 1066 MHz	1x 4 GB	ServeRAID M1015	8x 2.5" HS / 16	Open	2 x GbE	DVD	1 x 920 W Hot-swap
7378/ 7379- D2x	1x E5645 6C 2.40 GHz 12 MB 1333 MHz	1x 4 GB	ServeRAID M1015	8x 2.5" HS / 8	Open	2 x GbE	DVD	1x 670 W Fixed
7378/ 7379- F2x	1x E5649 6C 2.53 GHz 12 MB 1333 MHz	1x 4 GB	ServeRAID M5014	16x 2.5" HS / 16	Open	2 x GbE	DVD	1 x 920 W Hot-swap

† The x3400 M3 is available as machine type 7378 with a 1-year warranty (AP only) or as machine type 7379 with a 3-year warranty. This is the only difference between systems of the same model (for example, comparing 7378-A2x and 7379-A2x).
* In the processor column: Standard quantity of processors, processor model, core speed, cores, L3 cache, memory speed.

Refer to the Standard Specifications section for information about standard features of the server.

Express models

The following table lists the region-specific Express models. Express models are preconfigured with additional components, such as processors and memory, to make the ordering and installation process simpler.

Table 3. Express models

Region/ model	Processor* (2 maximum)	Memory	RAID controller	Disk bays (std / max)	Disks	Network	Optical	Power supply
NA and LA								
7379-E1U	1x Xeon E5503 2.0 GHz 2C 4 MB 800 MHz	3x 2 GB	BR10il v2	4x 3.5" SS / 4	Optional	2x GbE	DVD-ROM	1x 670 W
7379-E2U	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	3x 4 GB	BR10il v2	4x 3.5" HS / 4	Optional	2x GbE	DVD-ROM	1x 670 W
7379-E3U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	3x 4 GB	M1015	8x 2.5" HS / 16	Optional	2x GbE	DVD-ROM	1x 920 W
NE and SW IOT								
7379-K1G	1x Xeon E5503 2.0 GHz 2C 4 MB 800 MHz	1x 2 GB	BR10il v2	4x 3.5" SS / 4	Optional	2x GbE	DVD-ROM	1x 920 W
7379-K2G	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	1x 4 GB	M1015	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W
7379-K3G	1x Xeon E5507 2.26 GHz 4C 4 MB 800 MHz	1x 4 GB	M1015 + Advance Feature Key	8x 2.5" HS / 16	Optional	2x GbE	Multiburner	1x 920 W
7379-K4G	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	1x 4 GB	M1015 + Advance Feature Key	8x 2.5" HS / 16	Optional	2x GbE	Multiburner	2x 920 W
7379-K8G	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	1x 4 GB	M5014	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	2x 920 W
7379-KDG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	1x 4 GB	M5014	8x 2.5" HS / 16	2x 146 GB	2x GbE	Multiburner	1x 920 W
7379KXG	1x Xeon E5607 2.26 GHz 4C 8 MB 1333 MHz	1x 4 GB	M1015	8x 2.5" HS / 8	Optional	2x GbE	Multiburner	1x 670 W
7379KZG	1x Xeon E5620 2.4 GHz 4C 12 MB 1333 MHz	1x 2 GB	M5014	6x 2.5" HS / 8	Optional	2x GbE	Multiburner	1x 670 W
CEE and MEA IOT								
7379-K5G	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	2x 4 GB	M1015	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W
7379-K6G	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	1x 4 GB	M5014	8x 2.5" HS / 16	2x 146 GB	2x GbE	Multiburner	2x 920 W
7379-K8G	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	1x 4 GB	M5014	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	2x 920 W

7379-KDG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	1x 4 GB	M5014	8x 2.5" HS / 16	2x 146 GB	2x GbE	Multiburner	1x 920 W
7379-KBG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	1x 4 GB	M5014	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W
RCIS								
7379-K9G	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	1x 4 GB	M5014	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W
7379-KAG	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	1x 4 GB	M5014 + Battery	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W
7379-KBG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	1x 4 GB	M5014	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W
7379-KCG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	2x 4 GB	M5015 + Battery	8x 2.5" HS / 16	Optional	2x GbE	Multiburner	1x 920 W
Japan								
7379-PAM	1x Xeon E5503 2.0 GHz 2C 4 MB 800 MHz	2x 2 GB	BR10il v2	4x 3.5" HS / 8	2x 1 TB	2x GbE	DVD-ROM	1x 920 W
7379-PAN	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	2x 2 GB	M5014 + Battery	4x 3.5" HS / 8	3x 300 GB	2x GbE	DVD-ROM	1x 920 W
China								
7379-I01	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	1x 4 GB	M1015	8x 2.5" HS / 8	1x 146 GB	2x GbE	DVD-ROM	1x 670 W
7379-I05	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	1x 4 GB	M5015 (no battery)	8x 2.5" HS / 8	1x 146 GB	2x GbE	DVD-ROM	1x 670 W
7379-I21	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	1x 4 GB	M1015	8x 2.5" HS / 8	1x 146 GB	2x GbE	DVD-ROM	1x 670 W
7379-I25	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	1x 4 GB	M5015 (no battery)	8x 2.5" HS / 8	1x 146 GB	2x GbE	DVD-ROM	1x 670 W
ISA								
7379-I4S	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	1x 2 GB	BR10i	4x 3.5" SS / 4	1x 250 GB	2x GbE	DVD-ROM	1x 670 W
7379-I3S	1x Xeon E5507 2.26 GHz 4C 4 MB 800 MHz	1x 4 GB	BR10i	8x 2.5" HS / 16	1x 146 GB	2x GbE	DVD-ROM	2x 920 W
Hong Kong								

7379-I5H	1x Xeon E5506 2.13 GHz 4C 4 MB 800 MHz	2x 2 GB	M5014	4x 3.5" HS / 4	Optional	2x GbE	DVD-ROM	1x 670 W

* In the processor column: standard quantity of processors, processor model, core speed, cores, L3 cache, memory speed.

Processor options

The server supports the processor options listed in the following table. The server supports up to two processors. The table also shows which server models have each processor standard. If there is no corresponding *where-used* model for a particular processor, then this processor is only available through CTO.

Table 4. Processor options

Feature code**	Description	Standard models where used
Intel Xeon 5600 series processors		
A0VC / A0VD	Intel Xeon Processor E5603 4C 1.60GHz 4 MB Cache 1066MHz 80w	A2x, A4x
A0VE / A0VF	Intel Xeon Processor E5606 4C 2.13GHz 8 MB Cache 1066MHz 80w	B2x, B4x
A0VG / A0VH	Intel Xeon Processor E5607 4C 2.26GHz 8 MB Cache 1066MHz 80w	C2x
4493 / 4631	Intel Xeon Processor E5620 4C 2.40GHz 12 MB Cache 1066MHz 80w	52x, 54x, 56x, 58x
4494 / 4632	Intel Xeon Processor E5630 4C 2.53GHz 12 MB Cache 1066MHz 80w	62x
4495 / 4633	Intel Xeon Processor E5640 4C 2.66GHz 12 MB Cache 1066MHz 80w	72x, 74x
A0VJ / A0VK	Intel Xeon Processor E5645 6C 2.40GHz 12 MB Cache 1333MHz 80w	D2x
A0VL / A0VM	Intel Xeon Processor E5649 6C 2.53GHz 12 MB Cache 1333MHz 80w	F2x
0723 / 7683	Intel Xeon Processor L5609 4C 1.86GHz 12 MB Cache 1066MHz 40w	-
0722 / 7682	Intel Xeon Processor L5630 4C 2.13GHz 12 MB Cache 1066MHz 40w	-
0721 / 7681	Intel Xeon Processor L5640 6C 2.26GHz 12 MB Cache 1333MHz 60w	-
4496 / 4634	Intel Xeon Processor X5650 6C 2.66GHz 12 MB Cache 1333MHz 95w	-
4497 / 4635	Intel Xeon Processor X5660 6C 2.80GHz 12 MB Cache 1333MHz 95w	-
4498 / 4636	Intel Xeon Processor X5670 6C 2.93GHz 12 MB Cache 1333MHz 95w	-
A0VS / A0VT	Intel Xeon Processor X5675 6C 3.06GHz 12 MB Cache 1333MHz 95w	-
Intel Xeon 5500 series processors		
0705 / 4639*	Intel Xeon Processor E5503 2C 2.0 GHz 4 MB Cache 800 MHz 80w	22x, 24x
6656 / 6955	Intel Xeon Processor E5504 4C 2.00 GHz 4 MB Cache 800MHz 80w	-
4428 / 4427	Intel Xeon Processor E5506 4C 2.13 GHz 4 MB Cache 800MHz 80w	32x, 34x
0706 / 4640*	Intel Xeon Processor E5507 4C 2.26 GHz 4 MB Cache 800MHz 80w	42x
4425 / 4424	Intel Xeon Processor E5540 4C 2.53 GHz 8 MB Cache 1066MHz 80w	-

** The first feature code is for Processor 1. The second feature code is for Processor 2.
* Withdrawn from marketing.

Memory options

IBM DDR3 memory is compatibility tested and tuned for optimal System x performance and throughput. IBM memory specifications are integrated into the light path diagnostics for immediate system performance feedback and optimum system uptime. From a service and support standpoint, IBM memory automatically assumes the IBM system warranty, and IBM provides service and support worldwide.

The IBM System x3400 M3 supports DDR3 memory. The server supports up to eight DIMMs when one processor is installed and up to 16 DIMMs when two processors are installed. However, the maximum number of DIMMs is limited by the number of ranks in the DIMMs:

- RDIMMs
  - Up to 16 single-rank RDIMMs for a maximum of 64 GB (16x 4 GB)
  - Up to 16 dual-rank RDIMMs for a maximum of 128 GB (16x 8 GB)
- UDIMMs
  - Up to 16 single-rank UDIMMs for a maximum of 16 GB (16x 1 GB)
  - Up to 16 dual-rank UDIMMs for a maximum of 64 GB (16x 4 GB)

Each CPU has three memory channels, two of which contain three DIMMs per channel and the third contains two DIMMs. RDIMMs can be populated up to three per channel. However, UDIMMs can only be populated two DIMMs per channel. That is, you can have up to 16 RDIMMs installed in the server, but only up to 12 UDIMMs. Mixing UDIMMs and RDIMMs is not supported.

Maximum memory speed is limited by memory speed supported by the specific CPU (that is, if the CPU only supports 1066 MHz, then the memory speed cannot exceed 1066 MHz in any case) and by the number and type of DIMMs installed (whatever is lower), as follows:

- Intel Xeon 5600 series processors:
  - 1333 MHz when one or two single-rank or dual-rank RDIMMs per channel are installed or one UDIMM per channel is installed
  - 1066 MHz when two UDIMMs per channel are installed
  - 800 MHz when three single-rank or dual-rank RDIMMs per channel are installed
- Quad-core Intel Xeon 5500 series processors:
  - 1333 MHz when one single-rank or dual-rank RDIMM per channel is installed or one UDIMM per channel is installed
  - 1066 MHz when two single-rank or dual-rank RDIMMs per channel are installed, or two UDIMMs per channel are installed
  - 800 MHz when three single-rank or dual-rank RDIMMs per channel are installed
- Dual-core Intel Xeon 5500 series processors only support memory speed at 800 MHz.

The server supports both 1.5 V and 1.35 V DIMMs. Mixing 1.5 V and 1.35 V DIMMs in the same server is supported for Intel Xeon 5600 series processor-based systems. In such a case, all DIMMs operate at 1.5 V. Intel Xeon 5500 series processor-based systems do not support 1.35 V DIMMs.

The following memory protection technologies are supported:

- ECC
- ChipKill (for x4-based RDIMMs)
- Memory mirroring

- Memory sparing

If memory mirroring is used, then DIMMs must be installed in pairs (a minimum of one pair per CPU), and both DIMMs in a pair must be identical in type and size. If memory sparing is used, then DIMMs must be installed in sets of three, and all DIMMs in the same set must be identical in type and size. Memory sparing is only supported for Intel Xeon 5600 series processor-based systems.

The following table lists memory options available for the x3400 M3 server.

Table 5. Memory options

Part number	Feature code	Description	Maximum quantity supported	Standard models where used
RDIMMs				
49Y1405	8940	2GB (1x2GB, 1Rx8, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM	16 (8 per CPU)	A2x, A4x, B2x, B4x, C2x
49Y1433*	8934	2GB (1x2GB, 2Rx8, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM	16 (8 per CPU)	22x, 24x, 32x, 34x, 42x
49Y1406	8941	4GB (1x4GB, 1Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM	16 (8 per CPU)	-
49Y1435*	8936	4GB (1x4GB, 2Rx4, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM	16 (8 per CPU)	52x, 54x, 62x, 72x, 74x
49Y1407	8942	4GB (1x4GB, 2Rx8, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM	16 (8 per CPU)	56x, 58x, D2x, F2x
49Y1397	8923	8GB (1x8GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM	16 (8 per CPU)	-
UDIMMs				
49Y1403	A0QS	2 GB (1x 2 GB, 1Rx8, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP UDIMM	12 (6 per CPU)	-
49Y1404	8648	4 GB (1x 4 GB, 2Rx8, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP UDIMM	12 (6 per CPU)	-

* Withdrawn from marketing.

Internal disk storage options

IBM System x3400 M3 server supports the following internal storage configurations:

- Four 3.5" simple-swap or four 3.5" hot-swap SATA hard drive bays
- Eight 3.5" hot-swap SAS/SATA hard drive bays
- Eight 2.5" SFF hot-swap SAS/SATA SFF hard drive bays
- 16x 2.5" SFF hot-swap SAS/SATA SFF hard drive bays

Figure 5 shows these configurations.

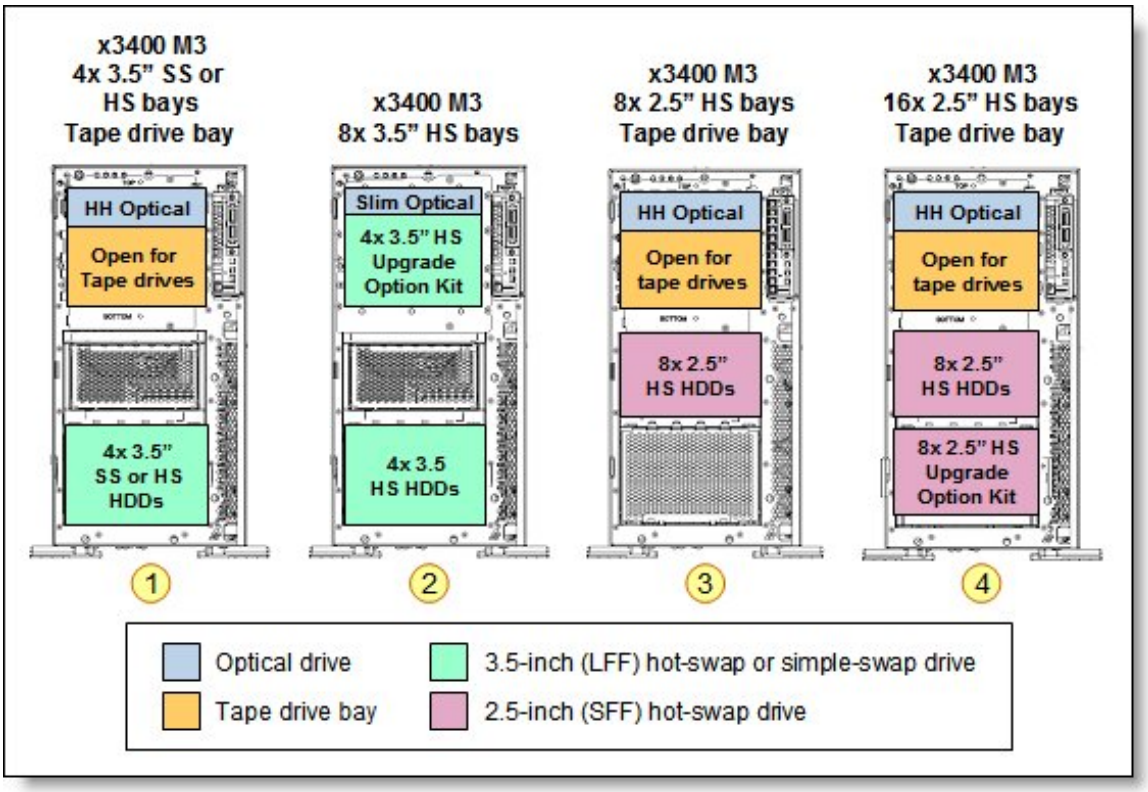

Figure 5. Internal drive configurations

Standard models of x3400 M3 ship with either four 3.5" SS SATA HHD bays (configuration 1 in Figure 5), four 3.5" HS SAS/SATA HDD bays (also configuration 1), or eight 2.5" SAS/SATA hot-swap hard drive bays (configuration 3). The following table shows internal storage expansion options available for the x3400 M3 server.

Table 6. Internal storage expansion options

Part number	Feature code	Name	Maximum supported
69Y0894	1731	Additional 4x 3.5-inch LFF hot-swap SAS/SATA HDD upgrade kit (used in configuration 2 in Figure 5)	1
69Y0895	1725	Additional 8x 2.5-inch SFF hot-swap SAS/SATA HDD upgrade kit (includes a 6 Gbps SAS expander) (used in configuration 4, as shown in Figure 5)	1

These options are used in the following ways:

- 69Y0894 upgrades models with four 3.5" hot-swap HDD bays to eight 3.5" hot-swap HDD bays (configuration 2 in Figure 5). Disk backplanes are directly connected to the ports on the RAID controller. If this option is used, then only one UltraSlim optical drive can be installed. Internal tapes are not supported in this configuration.
- 69Y0895 upgrades models with eight 2.5" hot-swap HDD bays to 16x 2.5" hot-swap HDD bays

(configuration 4 in Figure 5). This option includes a SAS expander card that fits into a regular PCI-E slot, decreasing the number of available slots by one. The RAID controller occupies a separate PCI-E slot. Two PCI-E slots are occupied by storage cards in this configuration. Disk backplanes are connected to the SAS expander, and the SAS expander is connected to the RAID controller.

The following table lists the RAID controllers and additional options used for internal disk storage of the x3400 M3 server.

Table 7. RAID controllers for internal storage

Part number	Feature code	Description	Maximum supported	Standard models where used
49Y4731	9742	ServeRAID-BR10il SAS/SATA Controller V2	1	A4x, B4x, C2x, 56x, 24x, 34x, 42x, 52x
81Y4492	A1XL	ServeRAID H1110 SAS/SATA Controller	1	-
46M0832	9749	ServeRAID M1000 Series Advance Feature Key	1	-
46M0831	0095	ServeRAID M1015 SAS/SATA Controller	1	58x, D2x, 54x, 62x, 72x
46M0917	5744	ServeRAID M5000 Series Battery Kit	1	-
46M0930	5106	ServeRAID M5000 Series Advance Feature Key	1†	-
81Y4426	A10C	ServeRAID M5000 Series Performance Accelerator Key	1†	-
46M0916	3877	ServeRAID M5014 SAS/SATA Controller	1	F2x
46M0829	0093	ServeRAID M5015 SAS/SATA Controller	2*	74x

† Only one key is supported in each controller, either the Advance Feature Key or the Performance Accelerator Key.
* Two M5015 RAID controllers are only supported via CTO in a sixteen 2.5" HDD bays configuration.

The ServeRAID BR10il v2 SAS/SATA Controller has the following specifications:

- One Mini-SAS internal connector
- Supports RAID levels 0, 1, and 1E
- 3 Gbps throughput per port
- Based on the LSI 1064E controller
- PCI Express 2.0 x4 host interface
- Stripe size: 64 KB (fixed)

The ServeRAID H1110 SAS/SATA Controller has the following specifications:

- Four internal 6 Gbps SAS/SATA ports
- One x4 mini-SAS internal connector (SFF-8087)
- 6 Gbps throughput per port
- Based on LSI SAS2004 6 Gbps RAID on Chip (ROC) controller
- x4 PCI Express 2.0 host interface

- Supports RAID 0, 1, 1E, and 10
- Supports up to two integrated volumes
- Supports up to two global hot-spare drives
- Supports drive sizes greater than 2 TB for RAID 0, 1E, and 10 (not RAID 1)
- Fixed stripe size of 64 KB

The ServeRAID M1015 SAS/SATA Controller has the following specifications:

- Two Mini-SAS internal connectors
- Supports RAID levels 0, 1, and 10
- Supports RAID levels 5 and 50 with optional ServeRAID M1000 Series Advanced Feature Key
- 6 Gbps throughput per port
- Based on the LSI SAS2008 6 Gbps RAID on Chip (ROC) controller
- PCI Express 2.0 x8 host interface
- Configurable stripe size up to 64 KB

The ServeRAID M5014 SAS/SATA Controller has the following specifications:

- Two Mini-SAS internal connectors
- Supports RAID levels 0, 1, 5, 10, and 50
- Supports RAID 6 and 60 with the optional M5000 Advanced Feature Key
- Performance optimization for drives with optional M5000 Series Performance Accelerator Key
- 6 Gbps throughput per port
- PCI Express 2.0 x8 host interface
- Based on the LSI SAS2108 6 Gbps ROC controller
- 256 MB of onboard cache
- Optional Intelligent Li-Ion-based battery backup unit with the ServeRAID M5000 Series Battery Kit

The ServeRAID M5015 SAS/SATA Controller has the following specifications:

- Two Mini-SAS internal connectors
- Supports RAID levels 0, 1, 5, 10, and 50
- Supports RAID 6 and 60 with the optional M5000 Advanced Feature Key
- Performance optimization for drives with optional M5000 Series Performance Accelerator Key
- 6 Gbps throughput per port
- PCI Express 2.0 x8 host interface
- Based on the LSI SAS2108 6 Gbps ROC controller
- 512 MB of onboard cache
- Standard Intelligent Li-Ion-based battery backup unit with up to 48 hours of data retention

The ServeRAID-MR10i SAS/SATA Controller has the following specifications:

- Full-height (3U), half-length card
- Two internal x4 SFF-8087 connectors
- PCI Express x8 host interface
- SAS Controller: LSI 1078e
- 3 Gbps per port data transfer rate
- Supports SAS 3 Gbps and SATA 2
- 256 MB cache
- Optional Li-Ion battery backup
- Maximum stripe size: 1024 KB
- RAID levels: RAID 0, 1, 5, 6, 10, 50, and 60

The ServeRAID MR10M SAS/SATA Controller has the following specifications:

- MD2 form factor card (2U low-profile height)
- Two SFF-8088 SAS x4 external connectors
- PCI Express x8 host interface
- SAS Controller: LSI 1078e
- 3 Gbps per port data transfer rate
- Supports SAS 3 Gbps and SATA 2
- 256 MB cache
- Li-Ion battery backup
- Maximum stripe size: 1024 KB
- RAID levels : RAID 0, 1, 5, 6, 10, 50, and 60

For more information, see the list of IBM Redbooks Product Guides in the RAID adapters category:
http://www.redbooks.ibm.com/portals/systemx?Open&page=pg&cat=raid
The following table lists hard drive options for internal disk storage of the x3400 M3 server.

Table 8. Disk drive options

Part number	Feature code	Description	Maximum supported*
3.5" Simple-Swap SATA and NL SATA HDDs			
81Y9778	A280	IBM 3TB 7.2K 6Gbps NL SATA 3.5" SS HDD	4
42D0787	5416	IBM 2 TB 7200 NL SATA 3.5" SS HDD	4
39M4514	5288	500 GB 7200 RPM 3.5" Simple-Swap SATA II	4
3.5" Hot-Swap SATA and NL SATA HDD			
81Y9774	A27Z	IBM 3 TB 7.2K 6Gbps NL SATA 3.5" HS HDD	8
42D0782	5415	IBM 2 TB 7200 NL SATA 3.5" HS HDD	8
43W7626	5560	IBM 1 TB 7200 SATA 3.5" HS HDD	8
39M4530	5196	500 GB 7200 RPM 3.5" Hot-Swap SATA II	8

3.5" Hot-Swap SAS HDDs			
44W2244	5313	IBM 600 GB 15 K 6 Gbps SAS 3.5" Hot-Swap HDD	8
44W2239	5312	IBM 450 GB 15 K 6 Gbps SAS 3.5" Hot-Swap HDD	8
44W2234	5311	IBM 300 GB 15 K 6 Gbps SAS 3.5" Hot-Swap HDD	8
3.5" Hot-Swap NL SAS HDDs			
81Y9758	A281	IBM 3 TB 7.2K 6Gbps NL SAS 3.5" HS HDD	8
42D0767	5417	IBM 2 TB 7.2 K 6 Gbps NL SAS 3.5" HS HDD	8
42D0777	5418	IBM 1 TB 7.2 K 6 Gbps NL SAS 3.5" HS HDD	8
2.5" Hot-swap SAS-SSD Hybrid Drive			
00AD102	A4G7	IBM 600GB 10K 6Gbps SAS 2.5" G2HS Hybrid	16
2.5" Hot-Swap NL SATA HDDs			
81Y9730	A1AV	IBM 1TB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	16
81Y9726	A1NZ	IBM 500GB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	16
81Y9722	A1NX	IBM 250GB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	16
2.5" Hot-Swap 10K SAS HDDs			
00AD075	A48S	IBM 1.2TB 10K 6Gbps SAS 2.5" G2HS HDD	16
81Y9650	A282	IBM 900GB 10K 6Gbps SAS 2.5" Slim-HS HDD	16
49Y2003	5433	IBM 600 GB 10 K 6 Gbps SAS 2.5" SFF Slim-HS HDD	16
42D0637	5599	IBM 300 GB 10 K 6 Gbps SAS 2.5" SFF Slim-HS HDD	16
2.5" Hot-Swap 15K SAS HDDs			
81Y9670	A283	IBM 300GB 15K 6Gbps SAS 2.5" SFF HS HDD	16
42D0677	5536	IBM 146 GB 15 K 6 Gbps SAS 2.5" SFF Slim-HS HDD	16
2.5" Hot-Swap NL SAS HDDs			
81Y9690	A1P3	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD	16
42D0707	5409	IBM 500 GB 7200 6 Gbps NL SAS 2.5" SFF Slim-HS HDD	16
2.5" Solid state drives			
00W1125	A3HR	IBM 100GB SATA 2.5" MLC HS Enterprise SSD	16
43W7718	A2FN	IBM 200GB SATA 2.5" MLC HS SSD	16
49Y5839	A3AS	IBM 64GB SATA 2.5" MLC HS Enterprise Value SSD	16
49Y5844	A3AU	IBM 512GB SATA 2.5" MLC HS Enterprise Value SSD	16
90Y8643	A2U3	IBM 256GB SATA 2.5" MLC HS Enterprise Value SSD	16
90Y8648	A2U4	IBM 128GB SATA 2.5" MLC HS Enterprise Value SSD	16

* If the server has a 670 W fixed power supply, then only 4x 3.5-inch drives or 8x 2.5-inch drives can be installed.

Internal backup units

The server supports the SATA, USB, and SAS internal tape drive and RDX options listed in the following table. These internal drives are installed in the 5.25" HH bays in the server. However, not all configurations offer 5.25" HH bays as shown in Figure 5. The configuration rules are:

- A maximum of two SATA tape drives, one SAS tape drive, or one USB tape drive is supported.
- The SAS tape drive requires a SAS HBA to be installed in the server.
- The USB tape and RDX drive connects to the dedicated USB tape drive connector on the system board.
- If two internal tape drives are installed, then the maximum number of optical drives is limited to one.
- Configurations with eight 3.5" HDD bay configurations do not support tape drives (Figure 5).
- Configurations with 24x 2.5" HDD bay support either one internal tape drive or one internal optical drive, but not both (Figure 5).

Table 9. Internal tape drives

Part number	Feature code	Description	Maximum supported
46C5399	5711	IBM DDS Generation 5 USB Tape Drive	1
39M5636	5395	IBM DDS Generation 6 USB Tape Drive	1
43W8478	5393	IBM Half High LTO Gen 3 SAS Tape Drive	1
44E8895	5397	IBM Half High LTO Gen 4 SAS Tape Drive	1
49Y9898	5345	IBM Internal Half High LTO Gen 5 SAS Tape Drive	1
00D2786	A2VE	IBM RDX Internal USB 3.0 Dock with 320GB Cartridge	1
00D2787	A2VF	IBM RDX Internal USB 3.0 Dock with 500GB Cartridge	1
00D2788	A2VG	IBM RDX Internal USB 3.0 Dock with 1TB Cartridge	1

For more information, see the list of IBM Redbooks Product Guides in the Backup units category: http://www.redbooks.ibm.com/portals/systemx?Open&page=pg&cat=tape

Optical drives

The server supports the optical drive options listed in the following table.

Table 10. Optical drives

Part number	Feature code	Description	Maximum supported	Standard models where used
None*	4154	IBM HH DVD-ROM		56x, 58x, A2x, A4x, B2x, B4x, C2x, D2x, E4x, E6x, F2x, 74x, E1x, E2x, E3x, 22x, 24x, 32x, 34x, 42Yx, 52x, 54x, 62x, 72x
81Y6404	4155	IBM HH Multiburner DVD		-
46M0901	4161	IBM UltraSlim Enhanced SATA DVD-ROM		E5x,
46M0902	4163	IBM UltraSlim Enhanced SATA Multiburner	1	-

* This option is only available via CTO or is already installed in standard models.

The two half-high drives in the table can be installed in any available 5.25" drive bays (Figure 5).

Half-High SATA DVD-ROM (feature 4154) supports the following media and speeds for reading:

- CD-ROM 48X
- CD-DA (DAE) 40X
- CD-R 48X
- CD-RW 40X
- DVD-ROM (single layer) 16X
- DVD-ROM (dual layer) 12X
- DVD-R (4.7 GB) 16X
- DVD-R DL 12X
- DVD+R 16X
- DVD+R DL 12X
- DVD-RW (4.7 GB) 12X
- DVD+RW 12X
- DVD-RAM (4.7/9.4 GB) 6X

Half-High SATA multiburner (81Y6404) supports the same media and speeds for reading as HH DVD-ROM. In addition, this drive supports the following media and speeds for writing:

- CD-R 24X
- CD-RW 4X
- High Speed CD-RW 10X
- Ultra Speed CD-RW 16X
- DVD-R 8X
- DVD-R DL 8X
- DVD+R 8X
- DVD+R DL 8X
- DVD-RW 6X
- DVD+RW 8X
- DVD-RAM 3X

IBM UltraSlim Enhanced SATA DVD-ROM (part number 46M0901) supports the following media and speeds for reading:

- CD-ROM 24X
- CD-DA (DAE) 20X
- CD-R 24X
- CD-RW 24X
- DVD-ROM (single layer) 8X
- DVD-ROM (dual layer) 8X
- DVD-R (4.7 GB) 6X
- DVD-R DL 4X

- DVD+R 6X
- DVD+R DL 4X
- DVD-RW (4.7 GB) 4X
- DVD+RW 4X
- DVD-RAM (4.7/9.4 GB) 4X

IBM UltraSlim Enhanced SATA Multi-Burner (part number 46M0902) supports the same media and speeds for reading as DVD-ROM (46M0901), in addition to the following media and speeds for writing:

- CD-R 24X
- CD-RW 4X
- High Speed CD-RW 10X
- Ultra Speed CD-RW 16X
- Ultra Speed Plus CD-RW 16X
- DVD-R 8X
- DVD-R DL 6X
- DVD+R 8X
- DVD+R DL 6X
- DVD-RW 6X
- DVD+RW 8X
- DVD-RAM 5X

I/O expansion options

The server supports up to eight PCI Express slots (six slots are on the system planar and one or two slots are on the extender card. The slot form factors are as follows.

System planar:

- Slot 1: PCIe 2.0 x8, full height, half length
- Slot 2: PCIe 2.0 x16 (x8 wired), full height, full length
- Slot 3: PCIe 2.0 x8 (x4 wired), full height, full length
- Slot 4: PCIe 2.0 x8 (x4 wired), full height, full length
- Slot 5: PCIe 2.0 x8, full height, full length
- Slot 6: PCI 32-bit/33 MHz, full height, half length

PCI Express extender card (comes with standard models):

- Slot 7: PCIe x8 (x4 wired), full height, half length

PCI-X extender card (only available in CTO):

- Slot 7: PCI-X 64-bit/133 MHz, full height, half length
- Slot 8: PCI-X 64 bit/133 MHz, full height, half length

Network adapters

The x3400 M3 supports two integrated Gigabit Ethernet ports. Integrated NICs have the following features:

- Broadcom BCM5709C chip
- TCP Offload Engine (TOE) support
- Wake on LAN support
- 802.1Q VLAN tagging support
- NIC Teaming (load balancing and failover)

The following table lists additional supported network adapters.

Table 11. Network adapters

Part number	Feature code	Description	Maximum supported
10 Gb Ethernet			
49Y7910	A18Y	Broadcom NetXtreme II Dual Port 10GBaseT Adapter for IBM System x	3
42C1820	1637	Brocade 10 Gb Dual-port CNA for IBM System x	3
49Y7950	A18Z	Emulex 10GbE Virtual Fabric Adapter II for IBM System x	3
49Y7960	A2EC	Intel X520 Dual Port 10GbE SFP+ Adapter for IBM System x	3
49Y7970	A2ED	Intel X540-T2 Dual Port 10GBase-T Adapter for IBM System x	3
81Y9990	A1M4	Mellanox ConnectX-2 Dual Port 10GbE Adapter for IBM System x	3
42C1800	5751	QLogic 10 Gb Dual Port CNA for IBM System x	3
Gigabit Ethernet			
39Y6066	1485	NetXtreme II 1000 Express Ethernet Adapter	6
90Y9352	A2V3	Broadcom NetXtreme I Quad Port GbE Adapter for IBM System x	6
90Y9370	A2V4	Broadcom NetXtreme I Dual Port GbE Adapter for IBM System x	6
42C1780	2995	NetXtreme II 1000 Express Dual Port Ethernet Adapter	6
49Y4220	5766	NetXtreme II 1000 Express Quad Port Ethernet Adapter	6
49Y4230	5767	Intel Ethernet Dual Port Server Adapter I340-T2 for IBM System x	6
49Y4240	5768	Intel Ethernet Quad Port Server Adapter I340-T4 for IBM System x	6
42C1750	2975	PRO/1000 PF Server Adapter by Intel	6

For more information, see the list of IBM Redbooks Product Guides in the Networking adapters category: http://www.redbooks.ibm.com/portals/systemx?Open&page=pg&cat=networkadapters

Storage host bus adapters

The following table lists storage HBAs supported by the x3400 M3 server.

Table 12. Storage adapters

Part number	Feature code	Description	Maximum quantity supported
Fibre Channel			
59Y1987	3885	Brocade 4 Gb FC Single-port HBA for IBM System x	3
59Y1993	3886	Brocade 4 Gb FC Dual-port HBA for IBM System x	3
46M6049	3589	Brocade 8 Gb FC Single-port HBA for IBM System x	3
46M6050	3591	Brocade 8 Gb FC Dual-port HBA for IBM System x	3
81Y1668	A2XU	Brocade 16Gb FC Single-port HBA for IBM System x	3
81Y1675	A2XV	Brocade 16Gb FC Dual-port HBA for IBM System x	3
42C2069	1698	Emulex 4 Gbps FC Single-Port PCI-e HBA for IBM System x	6
42C2071	1699	Emulex 4 Gbps FC Dual-Port PCI-e HBA for IBM System x	6
42D0485	3580	Emulex 8 Gb FC Single-port HBA for IBM System x	6
42D0494	3581	Emulex 8 Gb FC Dual-port HBA for IBM System x	6
81Y1655	A2W5	Emulex 16Gb FC Single-port HBA for IBM System x	3
81Y1662	A2W6	Emulex 16Gb FC Dual-port HBA for IBM System x	3
39R6525	3567	QLogic 4 Gb FC Single-Port PCIe HBA for IBM System x	6
39R6527	3568	QLogic 4 Gb FC Dual-Port PCIe HBA for IBM System x	6
42D0501	3578	QLogic 8 Gb FC Single-port HBA for IBM System x	6
42D0510	3579	QLogic 8 Gb FC Dual-port HBA for IBM System x	6
00Y3337	A3KW	QLogic 16Gb FC Single-port HBA for IBM System x	3
00Y3341	A3KX	QLogic 16Gb FC Dual-port HBA for IBM System x	3
Converged Network Adapters (CNA)*			
42C1800	5751	QLogic 10 Gb Dual Port CNA for IBM System x	3
42C1820	1637	Brocade 10 Gb Dual-port CNA for IBM System x	3
iSCSI			
39Y6146	2976	QLogic iSCSI Single-Port PCIe HBA for IBM System x	6
42C1770	2977	QLogic iSCSI Dual-Port PCIe HBA for IBM System x	6
SAS			
44E8700	3583	IBM 3 Gb SAS HBA v2	3
46M0907	5982	IBM 6 Gb SAS HBA Controller	3
46M0912	3876	IBM 6Gb Performance Optimized HBA	1

* Converged Network Adapters require SFP+ optical transceivers or DAC cables that must be purchased separately.

For more information, see the list of IBM Redbooks Product Guides in the Host bus adapters category: http://www.redbooks.ibm.com/portals/systemx?Open&page=pg&cat=hba

PCIe SSD adapters

The server does not support High IOPS SSD adapters.

Power supplies

The server supports either one 670 W AC fixed power supply or up to two 920 W AC hot-swap redundant power supplies, providing N+N redundancy. Standard models come with one power supply, either fixed or hot-swap, depending on the model as listed in Table 2. For models with one 920 W AC hot-swap redundant power supply, you can add a second power supply by ordering the option listed in the following table.

Note: If the server has a 670 W fixed power supply installed, then only up to four 3.5-inch drives can be installed or up to eight 2.5-inch drives can be installed.

Table 13. Power supplies

Part number	Feature code	Description	Maximum supported
44X0381	5056	IBM Redundant Power Supply for x3400/3500	2 (One power supply comes standard with every model.)

The power supply ships without a line cord. A line cord must be ordered separately.

Note: Power supply option 44X0381 is for both the x3400 M3 and the x3500 M3. The power supply option includes three fans however these fans are only for use with the x3500 M3. They are not used in the x3400 M3. (The x3400 M3 includes physical space for the fans but there is no electrical connection for the fans in the x3400 M3.)

Integrated virtualization

The server supports VMware ESXi installed on a USB memory key. The key is installed in a USB socket inside the server. The following table lists the virtualization options.

Table 14. Virtualization options

Part number	Feature code	Description	Maximum supported
41Y8278	1776	IBM USB Memory Key for VMware ESXi 4	1
41Y8287	3033	IBM USB Memory Key for VMware ESXi 4.1	1
41Y8296	A1NP	IBM USB Memory Key for VMware ESXi 4.1 Update 1	1
41Y8300	A2VC	IBM USB Memory Key for VMware ESXi 5.0	1
41Y8307	A383	IBM USB Memory Key for VMware ESXi 5.0 Update 1	1
41Y8311	A2R3	IBM USB Memory Key for VMware ESXi 5.1	1

Remote management

The server contains IBM Integrated Management Module (IMM), which provides advanced service-processor control, monitoring, and an alerting function. If an environmental condition exceeds a threshold or if a system component fails, the IMM lights LEDs to help you diagnose the problem, records the error in the event log, and alerts you to the problem. Optionally, the IMM also provides a virtual presence capability for remote server management capabilities.

The IMM provides remote server management through industry-standard interfaces:

- Intelligent Platform Management Interface (IPMI) Version 2.0
- Simple Network Management Protocol (SNMP) Version 3
- Common Information Model (CIM)
- Web browser

The optional virtual media key is required to enable the remote presence and blue-screen capture features. The remote presence feature provides the following functions:

- Remotely viewing video with graphics resolutions up to 1280x1024 at 75 Hz, regardless of the system state
- Remotely accessing the server using the keyboard and mouse from a remote client
- Mapping the CD or DVD drive, diskette drive, and USB flash drive on a remote client, and mapping ISO and diskette image files as virtual drives that are available for use by the server
- Uploading a diskette image to the IMM memory and mapping it to the server as a virtual drive

The blue-screen capture feature captures the video display contents before the IMM restarts the server when the IMM detects an operating system hang condition. A system administrator can use the blue-screen capture to assist in determining the cause of the hang condition. The following table lists the remote management option.

Table 15. Remote management option

Part number	Feature code	Description	Maximum supported
46C7527	5891	IBM Virtual Media Key For Entry Systems	1

Supported operating systems

The server supports the operating systems listed in this section.

- Microsoft Windows Essential Business Server 2008 Premium Edition
- Microsoft Windows Essential Business Server 2008 Standard Edition
- Microsoft Windows Server 2003, Web Edition
- Microsoft Windows Server 2003/2003 R2, Datacenter Edition
- Microsoft Windows Server 2003/2003 R2, Datacenter x64 Edition
- Microsoft Windows Server 2003/2003 R2, Enterprise Edition
- Microsoft Windows Server 2003/2003 R2, Enterprise x64 Edition
- Microsoft Windows Server 2003/2003 R2, Standard Edition

- Microsoft Windows Server 2003/2003 R2, Standard x64 Edition
- Microsoft Windows Server 2008 R2
- Microsoft Windows Server 2008, Datacenter x64 Edition
- Microsoft Windows Server 2008, Datacenter x86 Edition
- Microsoft Windows Server 2008, Enterprise x64 Edition
- Microsoft Windows Server 2008, Enterprise x86 Edition
- Microsoft Windows Server 2008, Standard x64 Edition
- Microsoft Windows Server 2008, Standard x86 Edition
- Microsoft Windows Server 2008, Web x64 Edition
- Microsoft Windows Server 2008, Web x86 Edition
- Microsoft Windows Server 2012
- Microsoft Windows Small Business Server 2003/2003 R2 Premium Edition
- Microsoft Windows Small Business Server 2003/2003 R2 Standard Edition
- Microsoft Windows Small Business Server 2008 Premium Edition
- Microsoft Windows Small Business Server 2008 Standard Edition
- Red Hat Enterprise Linux 4 AS for AMD64/EM64T
- Red Hat Enterprise Linux 4 ES for AMD64/EM64T
- Red Hat Enterprise Linux 4 WS/HPC for AMD64/EM64T
- Red Hat Enterprise Linux 5 Server Edition
- Red Hat Enterprise Linux 5 Server Edition with Xen
- Red Hat Enterprise Linux 5 Server with Xen x64 Edition
- Red Hat Enterprise Linux 5 Server x64 Edition
- Red Hat Enterprise Linux 6 Server Edition
- Red Hat Enterprise Linux 6 Server x64 Edition
- SUSE LINUX Enterprise Server 10 for AMD64/EM64T
- SUSE LINUX Enterprise Server 10 for x86
- SUSE LINUX Enterprise Server 10 with Xen for AMD64/EM64T
- SUSE LINUX Enterprise Server 11 for AMD64/EM64T
- SUSE LINUX Enterprise Server 11 for x86
- SUSE LINUX Enterprise Server 11 with Xen for AMD64/EM64T
- VMware ESX 4.0
- VMware ESX 4.1
- VMware ESXi 4.0
- VMware ESXi 4.1
- VMware vSphere 5
- VMware vSphere 5.1

See the IBM ServerProven® website for the latest information about the specific versions and service levels supported and any other prerequisites:
http://www.ibm.com/systems/info/x86servers/serverproven/compat/us/nos/matrix.shtml

Physical and electrical specifications

Tower:

- Width: 218.0 mm (8.6 in)
- Depth: 767.0 mm (30.2 in)
- Height: 440.0 mm (17.3 in)
- Weight:
    - 27.10 kg (59.7 lb) (minimum configuration)
    - 37.85 kg (83.4 lb) (maximum configuration)

Rack (using the Tower-to-Rack Conversion Kit, 69Y0893):

- Width: 424.0 mm (16.7 in)
- Depth: 702.0 mm (27.6 in)
- Height: 218.0 mm (8.6 in)
- Weight:
    - 25.80 kg (56.9 lb) (minimum configuration)
    - 36.00 kg (79.3 lb) (maximum configuration)

Supported environment:

- Air temperature
    - Server on: 10 - 35° C (50 - 95° F); altitude: 0 - 915 m (3,000 ft)
    - Server on: 10 - 32° C (50 - 90° F); altitude: 915 m (3,000 ft) - 2,134 m (7,000 ft)
    - Server off: 5 - 45° C (41 - 113° F)
    - Shipment: -40 - 60° C (-40 - 140° F)
- Humidity
    - Server on: 20 - 80%; maximum dew point 21° C; maximum rate of change 5° C/hr
    - Server off: 8 - 80%; maximum dew point 27° C
- Electrical
    - 100 to 240 V ac; 50 - 60 Hz; 10 - 5 A
    - Input kilovolt-amperes (kVA) (approximately):
        - Minimum configuration: 0.60 kVA
        - Maximum configuration: 0.82 kVA
- Btu output
    - Ship configuration: 2013 Btu/hr (590 watts)
    - Full configuration: 2788 Btu/hr (817 watts)
- Acoustical noise emission levels:
    - 5.5 bels (idling)
    - 6.0 bels (operating)

Warranty options

The IBM System x3400 M3 has a 1-year (7378) or 3-year (7379) onsite warranty with 9x5/next-business-day terms. IBM offers the warranty service upgrades through IBM ServicePacs, discussed in this section. The IBM ServicePac is a series of prepackaged warranty maintenance upgrades and post-warranty maintenance agreements with a well-defined scope of services, including service hours, response time, term of service, and service agreement terms and conditions.

IBM ServicePac offerings are country-specific, that is, each country might have its own service types, service levels, response times, and terms and conditions. Not all covered types of ServicePacs might be available in a particular country. For more information about IBM ServicePac offerings available in your country, see the IBM ServicePac Product Selector at:
https://www-304.ibm.com/sales/gss/download/spst/servicepac

The following table explains warranty service definitions in more detail.

Table 16. Warranty service definitions

Term	Description
IBM onsite repair (IOR)	A service technician will come to the server's location for equipment repair.
24x7x2 hour	A service technician is scheduled to arrive at your customer’s location within two hours after remote problem determination is completed. We provide service around the clock, every day, including IBM holidays.
24x7x4 hour	A service technician is scheduled to arrive at your customer’s location within four hours after remote problem determination is completed. We provide service around the clock, every day, including IBM holidays.
9x5x4 hour	A service technician is scheduled to arrive at your customer’s location within four business hours after remote problem determination is completed. We provide service from 8:00 a.m. to 5:00 p.m. in the customer's local time zone, Monday through Friday, excluding IBM holidays. If after 1:00 p.m. it is determined that onsite service is required, the customer can expect the service technician to arrive the morning of the following business day. For noncritical service requests, a service technician will arrive by the end of the following business day.
9x5 next business day	A service technician is scheduled to arrive at your customer’s location on the business day after we receive your call, following remote problem determination. We provide service from 8:00 a.m. to 5:00 p.m. in the customer's local time zone, Monday through Friday, excluding IBM holidays.

In general, the types of IBM ServicePacs are:

- Warranty and maintenance service upgrades
  - One, 2, 3, 4, or 5 years of 9x5 or 24x7 service coverage
  - Onsite repair from next business day to 4 or 2 hours
  - One or 2 years of warranty extension
- Remote technical support services
  - One or three years with 24x7 coverage (severity 1) or 9x5/next business day for all severities
  - Installation and startup support for System x servers
  - Remote technical support for System x servers
  - Software support - Support Line
    - Microsoft or Linux software
    - VMware
    - IBM Systems Director

Regulatory compliance

The server conforms to the following international standards:

- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 4, Class A
- UL/IEC 60950-1
- CSA C22.2 No. 69950-1-03
- NOM-019
- Argentina IEC60950-1
- Japan VCCI, Class A
- Australia/New Zealand AS/NZS CISPR 22:2006, Class A
- IEC-60950-1:2001 (CB Certificate and CB Test Report)
- Taiwan BSMI CNS 13438, Class A; CNS 14336
- China CCC (4943-2001), GB 9254-2008 Class A, GB 17625.1:2003
- Korea KN22, Class A; KN24
- Russia/GOST ME01, IEC-60950-1, GOST R 51318.22-99, GOST R 51318.24-99, GOST R 51317.3.2-2006, GOST R 51317.3.3-99
- 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)

External disk storage expansion

The external disk storage expansion enclosures listed in the following table are available.

Table 17. External storage expansion enclosures

Part number	Description	Maximum quantity supported per one M5025
172701X	IBM System Storage® EXP3000	18 (9 per port)
174712X	IBM System Storage EXP2512 Express	18 (9 per port)
174724X	IBM System Storage EXP2524 Express	9 (9 per port)
17226xx	IBM TotalStorage DS4300 Midrange Disk Systems (all models)	-
17429xx	IBM TotalStorage DS4500 Midrange Disk System (all models)	-
1746A2D	IBM System Storage DS3512 Express Dual Controller Storage System	-
1746A2S	IBM System Storage DS3512 Express Single Controller Storage System	-
1746A4D	IBM System Storage DS3524 Express Dual Controller Storage System	-
1746A4S	IBM System Storage DS3524 Express Single Controller Storage System	-

The hard disk drives listed in the following table are supported with external expansion enclosures.

Table 18. Hard drive options for external expansion enclosures

Part number	Description	Maximum quantity supported per one enclosure
EXP3000 Hot-Swap SATA 3.5" hard drives		
43W7630	IBM 1 TB 7200 Dual Port SATA 3.5" Hot-Swap HDD	12
49Y1940	IBM 2 TB 7200 Dual Port SATA 3.5" Hot-Swap HDD	12
EXP3000 Hot-Swap SAS 3.5" hard drives		
44W2234	IBM 300 GB 15 K 6 Gbps SAS 3.5" Hot-Swap HDD	12
44W2239	IBM 450 GB 15 K 6 Gbps SAS 3.5" Hot-Swap HDD	12
44W2244	IBM 600 GB 15 K 6 Gbps SAS 3.5" Hot-Swap HDD	12
EXP2512 Hot-Swap SAS 3.5" hard drives		
49Y1899	300 GB 15 K 6 Gb SAS 3.5" HDD	12
49Y1900	450 GB 15 K 6 Gb SAS 3.5" HDD	12
49Y1901	600 GB 15 K 6 Gb SAS 3.5" HDD	12
49Y1903	1 TB 7,200 RPM 6 Gb SAS NL 3.5" HDD	12
49Y1902	2 TB 7,200 RPM 6 Gb SAS NL 3.5" HDD	12
EXP2524 Hot-Swap SAS 2.5" hard drives		
49Y1896	146 GB 15 K 6 Gb SAS 2.5” HDD	24
49Y1895	300 GB 10 K 6 Gb SAS 2.5” HDD	24
81Y9596	600 GB 10 K 6 Gb SAS 2.5” HDD	24
49Y1898	500 GB 7,200 RPM 6 Gb SAS NL 2.5” HDD	24

The RAID controllers listed in the following table are supported with external expansion enclosures.

Table 19. RAID controllers for external storage expansion enclosures

Part number	Description	Maximum quantity supported
46M0830	ServeRAID M5025 SAS/SATA Controller	3
46M0930	ServeRAID M5000 Series Advance Feature Key†	1 per one M5025
81Y4426	ServeRAID M5000 Series Performance Accelerator Key†	1 per one M5025

† Only one key is supported in each controller, either the Advance Feature Key or the Performance Accelerator Key.

The ServeRAID M5025 SAS/SATA Controller has the following specifications:

- Two Mini-SAS external connectors
- Supports RAID levels 0, 1, 5, 10, and 50
- Supports RAID 6 and 60 with the optional M5000 Advanced Feature Key
- Performance optimization for drives with optional M5000 Series Performance Accelerator Key
- 6 Gbps throughput per port

- PCI Express 2.0 x8 host interface
- Based on the LSI SAS2108 6 Gbps ROC controller
- 512 MB of onboard cache
- Intelligent Li-Ion-based battery backup unit with up to 48 hours of data retention
- Supports connectivity to the EXP3000, EXP2512, and EXP2524 storage expansion enclosures

For more information, see the *ServeRAID M5025 SAS/SATA Controller for IBM System x* at-a-glance guide: http://www.redbooks.ibm.com/abstracts/tips0739.html?Open

The external SAS cables listed in the following table are supported with external expansion enclosures and M5025 RAID controllers.

Table 20. External SAS cables for external storage expansion enclosures

Part number	Description	Maximum quantity supported per enclosure*
39R6531	IBM 3 m SAS Cable	1
39R6529	IBM 1 m SAS Cable	1

* The EXP3000 and EX2500 series can be chained with each other. In such a case, one cable is used to connect first EXP25xx or EXP3000 to the RAID controller, and every consecutive EXP unit is connected to the previous one by one cable.

External disk storage systems

The following table lists the external storage systems that are supported by the server and can be ordered through System x sales channel. The server may support other IBM disk systems that are not listed in this table. Refer to IBM System Storage Interoperability Center for further information, http://www.ibm.com/systems/support/storage/ssic.

Table 21. External disk storage systems

Part number	Description
1746A2D	IBM System Storage DS3512 Express Dual Controller Storage System
1746A2S	IBM System Storage DS3512 Express Single Controller Storage System
1746A4D	IBM System Storage DS3524 Express Dual Controller Storage System
1746A4S	IBM System Storage DS3524 Express Single Controller Storage System
181494H	IBM System Storage DS3950 Model 94
181498H	IBM System Storage DS3950 Model 98
181492H	IBM System Storage EXP395 Expansion Unit
1746A2E	IBM System Storage EXP3512 Express Storage™ Expansion Unit
1746A4E	IBM System Storage EXP3524 Express Storage Expansion Unit

For more information, see the list of IBM Redbooks Product Guides in the Storage Systems category: http://www.redbooks.ibm.com/portals/systemx?Open&page=pg&cat=externalstorage

External backup units

External backup units

The server supports the external backup attachment options listed in the following table.

Table 22. External backup options

Part number	Description
External tape expansion enclosures for internal tape drives	
87651UX	1U Tape Drive Enclosure
8767HHX	Half High Tape Drive Enclosure
87651NX	1U Tape Drive Enclosure (with Nema 5-15P LineCord)
8767HNX	Half High Tape Drive Enclosure (with Nema 5-15P LineCord)
Tape enclosure adapters (with cables)	
44E8869	USB Enclosure Adapter Kit
40K2599	SAS Enclosure Adapter Kit
Internal backup drives supported by external tape enclosures	
46C5364	IBM RDX Removable Hard Disk Storage System - Internal USB 160 GB Bundle
46C5387	IBM RDX Removable Hard Disk Storage System - Internal USB 320 GB Bundle
46C5388	IBM RDX Removable Hard Disk Storage System - Internal USB 500 GB Bundle
46C5399	IBM DDS Generation 5 USB Tape Drive
39M5636	IBM DDS Generation 6 USB Tape Drive
43W8478	IBM Half High LTO Gen 3 SAS Tape Drive
44E8895	IBM Half High LTO Gen 4 SAS Tape Drive
49Y9898	IBM Half High LTO Gen 5 Internal SAS Tape Drive

External backup units*	
362516X	IBM RDX Removable Hard Disk Storage System - External USB 160 GB Bundle
362532X	IBM RDX Removable Hard Disk Storage System - External USB 320 GB Bundle
362550X	IBM RDX Removable Hard Disk Storage System - External USB 500 GB Bundle
3628L3X	IBM Half High LTO Gen 3 External SAS Tape Drive (with US line cord)
3628L4X	IBM Half High LTO Gen 4 External SAS Tape Drive (with US line cord)
3628L5X	IBM Half High LTO Gen 5 External SAS Tape Drive (with US line cord)
3628N3X	IBM Half High LTO Gen 3 External SAS Tape Drive (without line cord)
3628N4X	IBM Half High LTO Gen 4 External SAS Tape Drive (without line cord)
3628N5X	IBM Half High LTO Gen 5 External SAS Tape Drive (without line cord)
3580S3V	System Storage TS2230 Tape Drive Express Model H3V
3580S4V	System Storage TS2240 Tape Drive Express Model H4V
3580S5E	System Storage TS2250 Tape Drive Express Model H5S
3580S5X	System Storage TS2350 Tape Drive Express Model S53
3572S4R	TS2900 Tape Library with LTO4 HH SAS drive & rack mount kit
3572S5R	TS2900 Tape Library with LTO5 HH SAS drive & rack mount kit
35732UL	TS3100 Tape Library Model L2U Driveless
35734UL	TS3200 Tape Library Model L4U Driveless
46X2682†	LTO Ultrium 5 Fibre Channel Drive
46X2683†	LTO Ultrium 5 SAS Drive Sled
46X2684†	LTO Ultrium 5 Half High Fibre Drive Sled
46X2685†	LTO Ultrium 5 Half High SAS Drive Sled
46X6912†	LTO Ultrium 4 Half High Fibre Channel Drive Sled
46X7117†	LTO Ultrium 4 Half High SAS DriveV2 Sled
46X7122†	LTO Ultrium 3 Half High SAS DriveV2 Sled

* Note: The external tape drives listed can be ordered through System x sales channel. Server may support other IBM tape drives that are not listed in this table. Refer to IBM System Storage Interoperability Center for further information.
† Note: These part numbers are the tape drives options for 35732UL and 35734UL.

For more information, see the list of IBM Redbooks Product Guides in the Backup units category:
http://www.redbooks.ibm.com/portals/systemx?Open&page=pg&cat=tape

Top-of-rack Ethernet switches

The server supports the following top-of-rack Ethernet switches from IBM System Networking.
Table 23. IBM System Networking - Top-of-rack switches

Part number	Description
IBM System Networking - 1 Gb top-of-rack switches	
0446013	IBM System Networking RackSwitch G8000R
7309CFC	IBM System Networking RackSwitch G8000F
7309CD8	IBM System Networking RackSwitch G8000DC
7309G52	IBM System Networking RackSwitch G8052R
730952F	IBM System Networking RackSwitch G8052F
427348E	IBM Ethernet Switch J48E
6630010	Juniper Networks EX2200 24 Port
6630011	Juniper Networks EX2200 24 Port with PoE
6630012	Juniper Networks EX2200 48 Port
6630013	Juniper Networks EX2200 48 Port with PoE
IBM System Networking - 10 Gb top-of-rack switches	
7309DRX	IBM System Networking RackSwitch G8264CS (Rear to Front)
7309DFX	IBM System Networking RackSwitch G8264CS (Front to Rear)
7309BD5	IBM System Networking RackSwitch G8124DC
7309BR6	IBM System Networking RackSwitch G8124ER
7309BF7	IBM System Networking RackSwitch G8124EF
7309G64	IBM System Networking RackSwitch G8264R
730964F	IBM System Networking RackSwitch G8264F
7309CR9	IBM System Networking RackSwitch G8264TR
7309CF9	IBM System Networking RackSwitch G8264TF
0719410	Juniper Networks EX4500 - Front to Back Airflow
0719420	Juniper Networks EX4500 - Back to Front Airflow
IBM System Networking - 40 Gb top-of-rack switches	
8036ARX	IBM System Networking RackSwitch G8316R
8036AFX	IBM System Networking RackSwitch G8316F

For more information, see the list of IBM Redbooks Product Guides in the Top-of-rack switches category:
http://www.redbooks.ibm.com/portals/systemx?Open&page=pg&cat=tor

Uninterruptible power supply units

The server supports attachments to the uninterruptible power supply (UPS) units listed in the following table.

Table 24. Uninterruptible power supply units

Part number	Description
Rack-mounted UPS	
21304RX	IBM UPS 10000XHV
53951AX	IBM 1500VA LCD 2U Rack UPS (100V/120V)
53951KX	IBM 1500VA LCD 2U Rack UPS (230V)
53952AX	IBM 2200VA LCD 2U Rack UPS (100V/120V)
53952KX	IBM 2200VA LCD 2U Rack UPS (230V)
53953AX	IBM 3000VA LCD 3U Rack UPS (100 V/120 V)
53953JX	IBM 3000VA LCD 3U Rack UPS (200 V/208 V)
53956AX	IBM 6000VA LCD 4U Rack UPS (200 V/208 V)
53956KX	IBM 6000VA LCD 4U Rack UPS (230 V)

For more information, see the following at-a-glance guides:

- *IBM 3000VA LCD 3U Rack Uninterruptible Power Supply for IBM System x* at-a-glance guide
  http://www.redbooks.ibm.com/abstracts/tips0782.html?Open
- *IBM 6000VA LCD 4U Rack UPS* at-a-glance guide
  http://www.redbooks.ibm.com/abstracts/tips0793.html?Open

Power distribution units

The server supports attachments to the power distribution units (PDUs) listed in the following table.

Table 25. Power distribution units

Part number	Description
Switched and Monitored PDUs	
46M4002	IBM 1U 9 C19/3 C13 Active Energy Manager DPI® PDU
46M4003	IBM 1U 9 C19/3 C13 Active Energy Manager 60A 3 Phase PDU
46M4004	IBM 1U 12 C13 Active Energy Manager DPI PDU
46M4005	IBM 1U 12 C13 Active Energy Manager 60A 3 Phase PDU
46M4167	IBM 1U 9 C19/3 C13 Switched and Monitored 30A 3 Phase PDU
46M4116	IBM 0U 24 C13 Switched and Monitored 30A PDU
46M4119	IBM 0U 24 C13 Switched and Monitored 32A PDU
46M4134	IBM 0U 12 C19/12 C13 Switched and Monitored 50A 3 Phase PDU
46M4137	IBM 0U 12 C19/12 C13 Switched and Monitored 32A 3 Phase PDU
Enterprise PDUs	
71762MX	IBM Ultra Density Enterprise PDU C19 PDU+ (WW)
71762NX	IBM Ultra Density Enterprise PDU C19 PDU (WW)
71763MU	IBM Ultra Density Enterprise PDU C19 3 phase 60A PDU+ (NA)
71763NU	IBM Ultra Density Enterprise PDU C19 3 phase 60A PDU (NA)
39M2816	IBM DPI C13 Enterprise PDU without linecord
39Y8923	DPI 60A Three Phase C19 Enterprise PDU with IEC309 3P+G (208 V) fixed line cord
39Y8941	DPI Single Phase C13 Enterprise PDU without line cord
39Y8948	DPI Single Phase C19 Enterprise PDU without line cord
Front-End PDUs	
39Y8934	DPI 32amp/250V Front-end PDU with IEC 309 2P+Gnd connector
39Y8935	DPI 63amp/250V Front-end PDU with IEC 309 2P+Gnd connector
39Y8938	30amp/125V Front-end PDU with NEMA L5-30P connector
39Y8939	30amp/250V Front-end PDU with NEMA L6-30P connector
39Y8940	60amp/250V Front-end PDU with IEC 309 60A 2P+N+Gnd connector

Universal PDUs	
39Y8951	DPI Universal Rack PDU w/ US LV and HV line cords
39Y8952	DPI Universal Rack PDU w/ CEE7-VII Europe LC
39Y8953	DPI Universal Rack PDU w/ Denmark LC
39Y8954	DPI Universal Rack PDU w/ Israel LC
39Y8955	DPI Universal Rack PDU w/Italy LC
39Y8956	DPI Universal Rack PDU w/South Africa LC
39Y8957	DPI Universal Rack PDU w/UK LC
39Y8958	DPI Universal Rack PDU with AS/NZ LC
39Y8959	DPI Universal Rack PDU w/China LC
39Y8962	DPI Universal Rack PDU (Argentina)
39Y8960	DPI Universal Rack PDU (Brazil)
39Y8961	DPI Universal Rack PDU (India)
0U Basic PDUs	
46M4122	IBM 0U 24 C13 16A 3 Phase PDU
46M4125	IBM 0U 24 C13 30A 3 Phase PDU
46M4128	IBM 0U 24 C13 30A PDU
46M4131	IBM 0U 24 C13 32A PDU
46M4140	IBM 0U 12 C19/12 C13 60A 3 Phase PDU
46M4143	IBM 0U 12 C19/12 C13 32A 3 Phase PDU

Rack cabinets

The server supports the rack cabinets listed in the following table. Tower-to-Rack Conversion Kit (part number 69Y0893, 5Ux26" Tower to Rack Conversion Kit for x3400/x3500) is required for the server to be installed in a rack.

Table 26. Rack cabinets

Part number	Description
69Y0893	5Ux26" Tower to Rack Conversion Kit for x3400/x3500
201886X	IBM 11U Office Enablement Kit
14102RX	IBM eServer Cluster 25U Rack
93072PX	IBM 25U Static S2 Standard Rack
93072RX	IBM 25U Standard Rack
93074RX	IBM 42U Standard Rack
93074XX	IBM 42U Standard Rack Extension
14104RX	IBM 42U S2 standard rack
93084EX	IBM 42U Enterprise Expansion Rack
93084PX	IBM 42U Enterprise Rack
93604EX	IBM 42U 1200 mm Deep Dynamic Expansion Rack
93604PX	IBM 42U 1200 mm Deep Dynamic Rack
93614EX	IBM 42U 1200 mm Deep Static Expansion Rack
93614PX	IBM 42U 1200 mm Deep Static Rack
93624EX	IBM 47U 1200 mm Deep Static Expansion Rack
93624PX	IBM 47U 1200 mm Deep Static Rack

For more information, see the *IBM 47U and 42U 1200mm Deep Racks at-a-glance guide* , available from: http://www.redbooks.ibm.com/abstracts/tips0796.html?Open

Rack options

The server supports the rack console switches and monitor kits listed in the following table.

Table 27. Rack options

Part number	Feature code	Description
Monitor kits and keyboard trays		
172317X	1723HC1 fc 0051	1U 17in Flat Panel Console Kit
172319X	1723HC1 fc 0052	1U 19in Flat Panel Console Kit
Console switches		
1754D2X	1754HC2 fc 6695	IBM Global 4x2x32 Console Manager (GCM32)
1754D1X	1754HC1 fc 6694	IBM Global 2x2x16 Console Manager (GCM16)
1754A2X	1754HC4 fc 0726	IBM Local 2x16 Console Manager (LCM16)
1754A1X	1754HC3 fc 0725	IBM Local 1x8 Console Manager (LCM8)
Console cables		
43V6147	3757	IBM Single Cable USB Conversion Option (UCO)
39M2895	3756	IBM USB Conversion Option (4 Pack UCO)
39M2897	3754	IBM Long KVM Conversion Option (4 Pack Long KCO)
46M5383	5341	IBM Virtual Media Conversion Option Gen2 (VCO2)
46M5382	5340	IBM Serial Conversion Option (SCO)

For more information, see the following IBM Redbooks at-a-glance guides:

- *IBM 1754 LCM8 and LCM16 Local Console Managers* at-a-glance guide
  http://www.redbooks.ibm.com/abstracts/tips0788.html?Open
- *IBM GCM16 and GCM32 Global Console Managers* at-a-glance guide
  http://www.redbooks.ibm.com/abstracts/tips0772.html?Open
- *IBM 1U 17-inch and 19-inch Flat Panel Console Kits* at-a-glance guide
  http://www.redbooks.ibm.com/abstracts/tips0731.html?Open

IBM Global Financing

IBM Global Financing can help you obtain the IT solution you need while preserving funding for other strategic investments and optimizing cash flow. Our Fair Market Value (FMV) lease helps ensure that you have the latest IBM technology and with our mid-lease upgrade capability, you can increase the capacity of the system with little to no change in monthly payments. At the end of the lease, take advantage of our flexible end-of-lease options to fit your changing business needs. IBM Global Financing has the breadth and depth of offerings, longevity, proven success and global reach to help you develop a robust financing and asset management strategy that provides you the opportunity to leverage new technologies and turn your ambitious vision into a tangible solution.

Here are some other reasons why working with us makes solid financial sense:

- Expand your purchasing power—Affordable monthly payments allow you to change the technology acquisition discussion from “what can I afford right now” to “what solution is really right for my business.” IBM Global Financing allows you to expand your purchase power to get you the right solution.
- Accelerate your project’s cash flow break-even point—Acquire your IBM technology today and begin to realize its benefits now. An FMV lease can help you get the solution you need now, with low monthly payments that better align upfront costs with the anticipated return on investment from the technology.
- Easy to acquire with affordable rates—We offer one-stop shopping for a total IT solution, so you can acquire IBM hardware, software, services and the financing you need—from one IT provider.

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Related publications and links

For more information see the following resources:

- IBM System x3400 M3 product page
  http://www.ibm.com/systems/x/hardware/tower/x3400m3/index.html
- *Installation and User's Guide - IBM System x3400 M3 (7378, 7379)*
  http://ibm.com/support/entry/portal/docdisplay?lndocid=MIGR-5083571
- *Problem Determination and Service Guide - IBM System x3400 M3 (7378, 7379)*
  http://ibm.com/support/entry/portal/docdisplay?lndocid=MIGR-5083573
- ServerProven hardware compatibility page for the x3400 M3
  http://ibm.com/systems/info/x86servers/serverproven/compat/us/xseries/7378.html
- At-a-glance guides for IBM System x options
  http://www.redbooks.ibm.com/portals/systemx?Open&page=ataglance
- IBM System x DDR3 Memory Configurator
  http://www.ibm.com/systems/x/hardware/ddr3config/
- *IBM System x® Configuration and Options Guide*
  http://www.ibm.com/systems/xbc/cog/
- *xREF: IBM x86 Server Reference*
  http://www.redbooks.ibm.com/xref
- IBM System x Support Portal
  http://ibm.com/support/entry/portal/
  http://ibm.com/support/entry/portal/Downloads/Hardware/Systems/System_x/System_x3400_M3

Related product families

Product families related to this document are the following:

- 2-Socket Tower Servers

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